



BILLET D'ÉTAT

WEDNESDAY, 27th MAY, 2009

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B I L L E T D ' É T A T

TO THE MEMBERS OF THE STATES OF THE ISLAND OF GUERNSEY

I have the honour to inform you that a Meeting of the States of Deliberation will be held at **THE ROYAL COURT HOUSE, on WEDNESDAY, the 27th MAY, 2009**, immediately after the meetings already convened for that day, to consider the items contained in this Billet d'État which have been submitted for debate.

G. R. ROWLAND
Bailiff and Presiding Officer

The Royal Court House
Guernsey
8 May 2009

LADIES' COLLEGE BOARD OF GOVERNORS

NEW MEMBERS

The States are asked:-

I.- To elect

1. as a member of the Ladies' College Board of Governors with effect from 1st June, 2009, Mr Michael Bruce Riley who has been nominated in that behalf by the Education Department for election by the States.
2. as a member of that Board of Governors with effect from 1st June, 2009, Mrs Stephanie Ann Nickolls who has been nominated in that behalf by the States appointed Governors and the Education Department nominated Governors for election by the States.

(NB The Education Department has provided the following profiles of Mr Riley and Mrs Nickolls

Michael Bruce Riley

Bruce Riley has a keen interest in education, having served as a non-States member of the Education Council and as a Director of Elizabeth College, and has been a Governor of The Ladies' College since July 2001. Other involvement with young people and the arts has included the posts of Chairman of the Guernsey Symphony Orchestra and Treasurer and director of Drug Concern. Bruce Riley is a chartered accountant and was the first full time financial regulator appointed in Guernsey, serving as States Commercial Relations Advisor from 1975 to 1986. From 1986 until his retirement in 1999 he was local chief executive and main board director of an international investment management group. Currently his business interests include a number of directorships of investment funds and insurance companies. He was founder chairman of the Guernsey Fund Managers Association (now the Guernsey Investment Funds Association) and is a past chairman of the Guernsey International Business Association (GIBA). He was a member of the Guernsey Financial Services Tribunal until it was wound up. Both his children were educated in Guernsey, and with one grandchild already attending a local primary school and another starting in September he maintains a close personal interest in the quality of the Island's education system, which he believes passionately is crucial to the wellbeing of the younger generation and also to the Island's continuing economic success.

Stephanie Ann Nickolls

Stephanie Ann Nickolls was born in Guernsey and educated at Castel Primary School, Melrose and The Ladies' College, leaving in 1961. Following appointments at the Pharmacy Department of The Princess Elizabeth Hospital and as a secretary/receptionist at Tektronix she successfully undertook General Nurses Training in London 1964 to 1967 and moved back to Guernsey to marry Mr. Richard Nickolls in 1968. She was then employed for 12 years as a

Nurse/Receptionist/Dispenser for Drs. Cambridge, Kellett Smith and Razzak leaving to assist her husband in their own successful retail business, Design Ltd, that they have run for 32 years. In 1991 she qualified as a Reflexologist and had her own practice for 14 years. During the years that their daughter attended Melrose and The Ladies' College Stephanie Nickolls was Chairman of the Melrose Parent Teachers Association and followed on as chairman of The Ladies' College Parents Association. She has been a Governor of The Ladies' College since June 2000.)

GUILLE-ALLÈS LIBRARY COUNCIL

NEW MEMBER

The States are asked:-

II.- To elect a sitting member of the States as a member of the Guille-Allès Library Council to fill the vacancy which will arise on 1st June, 2009, by reason of the expiration of the term of office of Deputy M J Fallaize, who is eligible for re-election.

(NB Only a sitting member of the States who is also a member of the Education Department is eligible for election.)

ADMINISTRATIVE DECISIONS (REVIEW) (GUERNSEY) LAW, 1986

NEW CHAIRMAN AND DEPUTY CHAIRMAN OF PANEL OF MEMBERS

III.- To elect, in accordance with the provisions of section 4 (2) of the Administrative Decisions (Review) (Guernsey) Law, 1986:-

1. a Chairman of the Panel of Members, who shall be a sitting member of the States of Deliberation and who has held a seat in the States for a period of three years or more, to fill the vacancy which will arise on 1st June, 2009, by reason of the expiry of the term of office of Deputy R R Matthews, who is eligible for re-election;
2. a Deputy Chairman of that Panel, who shall be one of the Deans of the Douzaines but who shall not have a seat in the States, to fill the vacancy which will arise on 1st June, 2009, by reason of the expiry of the term of office of Douzenier J R Domaille, who is eligible for re-election.

(NB The Deans of the Douzaines are Douzeniers J R Domaille, R A R Evans, R L Heaume, J E Foster, M A Ozanne, Mrs B J Hervé, P B Bott, N N Duquemin, P I Le Tocq and N M Dorey.)

POLICY COUNCIL

USE OF STATEMENTS OBTAINED UNDER COMPULSION

Executive Summary

This report proposes the enactment of legislation to permit statements obtained by compulsion to be used in civil proceedings, but at the same time ensuring that such provisions comply with the European Convention on Human Rights (ECHR) and so are not susceptible of challenge under the Human Rights (Bailiwick of Guernsey) Law, 2000, and enabling a common form of wording to be utilised in all relevant legislation.

Report

HM Procureur has recently written to the Policy Council in the following terms:-

“The Guernsey Financial Services Commission ('GFSC') have recently raised an enquiry into the extent to which Guernsey's financial services regulatory legislation ("the Laws") permit statements obtained by the GSFC under legal compulsion to be used in proceedings, being statements that persons are obliged to give to assist the GFSC or its inspectors with their investigations into whether the relevant Law has been breached. The GFSC's enquiry concerned whether it would be able to take into account such statements when making regulatory decisions, including enforcement decisions e.g. a fine. A review of the Laws has revealed that certain provisions in them do restrict the use of statements obtained under compulsion in legal proceedings, which thus affects the GFSC's ability to rely on them, in particular in (non-criminal) regulatory proceedings.

Following this review, I have undertaken a review of similar provisions used in other Bailiwick legislation, and found a number of other provisions that contain similar restrictions.

Over the years, the wording of the provisions in legislation restricting the use of statements obtained under compulsion has been variously modified to reflect the prevailing UK wording (which has itself evolved over the years to reflect current drafting practice), but in the result the wording is not uniform, as (in my opinion) it should be. The opportunity should therefore be taken to ensure that the wording of all these clauses is the same.

I therefore write to ask that the Policy Council recommend that the States approve a *Projet de Loi* in order to permit statements obtained by compulsion to be used in civil proceedings, but at the same time ensuring that such provisions comply with the ECHR and so are not susceptible of challenge under the Human Rights (Bailiwick of Guernsey) Law, 2000, and enabling a common form of wording to be utilised in all relevant legislation.

The background to this is as follows. The use of statements obtained under legal compulsion creates a tension with the common law privilege against self-incrimination, which is protected by the ECHR (Article 6) as a privilege integral to the requirement of a fair trial - see *Saunders v United Kingdom*. This is the reason why the use of such statements must be balanced, at least in part by express or implied restrictions on the permissible uses of the evidence obtained. Prior to *Saunders*, it was usual for legislation to provide that statements obtained under compulsion may be used without limitation. *Saunders* held that evidence collected in this manner cannot be freely used without some limitation or qualification to protect the statement's maker, otherwise it could amount to an abuse of the ECHR.

The use of statements obtained under legal compulsion must also represent a necessary and proportionate response to the situation that their use seeks to address, in order not to infringe the right to a fair trial.

After *Saunders*, extant legislation here and in the UK was amended to provide limitations and qualifications on the right to use statements obtained under legal compulsion. New legislation ensured that such limitations and qualifications were in place where the power to use statements obtained under compulsion was introduced.

The review of the relevant provisions, which arose from the GFSC enquiry, revealed that:

- (i) some Bailiwick/Guernsey legislation has not been amended post-*Saunders*, and requires amending in order to conform with the ECHR;
- (ii) some legislation provides that statements obtained under compulsion cannot be used in civil i.e. non-criminal proceedings. This restriction is not absolutely necessary to conform to the ECHR, and leads to the result that the statement cannot be used for all the purposes in support of which it was obtained. Guernsey's financial services regulatory Laws fall into this category.

Both situations merit modification. I have therefore asked St James' Chambers legislative counsel to prepare a *Projet* which (a) modifies all of the provisions that have been identified as falling within the two categories above, by use of a new model provision, and (b) brings other provisions that do not fall into either of these categories into line with the same model provision. In the event that any further such provisions are found, the *Projet* will permit these provisions to be amended by Ordinance (section 2).

This has been drafted as Bailiwick legislation, as some Bailiwick-wide legislation is affected including, most importantly, our financial services regulatory Laws. The correction of this manifestly unsatisfactory situation is urgent, due to the demands of the imminent IMF review. The *Projet* proposes

that should any future legislation require amending and adding to the Schedule of the *Projet*, it will only be necessary for the relevant insular legislative body to approve the Laws which apply to them i.e. both the States of Alderney and the Chief Pleas of Sark will be engaged in the process of approving any amendment to legislation which extends to them respectively.

I do not believe that there will be a significant resource implications created by this *Projet*."

The Policy Council supports HM Procureur's proposals and has advised the authorities in Alderney and Sark accordingly.

Recommendation

The Policy Council recommends the States to enact legislation as set out in HM Procureur's letter quoted above.

L S Trott
20th April 2009

(NB The Treasury and Resources Department has no comment on the proposals.)

The States are asked to decide:-

IV.- Whether, after consideration of the Report date 20th April, 2009, of the Policy Council, they are of the opinion

1. To enact legislation as set out in HM Procureur's letter quoted in that Report.
2. To direct the preparation of such legislation as may be necessary to give effect to their above decision.

HEALTH AND SOCIAL SERVICES DEPARTMENT

PUBLIC HEALTH LEGISLATION: HOUSING – OVERCROWDING STANDARDS

The Chief Minister
Policy Council
Sir Charles Frossard House
La Charroterie
St Peter Port

11th March 2009

Dear Sir

1. EXECUTIVE SUMMARY

The Health and Social Services Department is seeking States approval to strengthen existing public health legislation so that better statutory protection against overcrowding may be provided and weaknesses in the existing, very antiquated anti-overcrowding legislation can no longer be exploited as easily as may currently be the case.

2. BACKGROUND

Overcrowding of housing is presently regulated under section 1(4) of the Loi relative à la Santé Publique 1934 (as amended), which states that “*The expression “nuisance” shall apply to*”, inter alia, “*Any house or part of a house so overcrowded as to be either dangerous, or prejudicial to the health of the inmates, whether or not members of the same family.*”

Such overcrowding is defined in Article V of the Ordonnance relative à la Santé Publique, 1936, as amended, which provides that “*A dwelling-house or part of a dwelling-house shall not be deemed to be so overcrowded as to be dangerous or injurious to the health of the inmates thereof, if the number of cubic feet of space in any room therein bears to the number of persons inhabiting such room at any time between nine o’clock in the evening and six o’clock in the morning a proportion of not less than three hundred.*”

The definition of overcrowding is open to abuse on a number of points.

Since it is based on volume, the legislation is powerless to prevent the occupation of either very high rooms with insufficient floor area for the occupants to lie down or very low rooms with insufficient height for the occupants to stand up. Whilst this is an extreme example, in practice knowledgeable landlords can and do use the weakness in the drafting of the

legislation to cram as many individuals into as small a floor area as possible. As an example, a reasonable standard room in a building once used as a hotel, with dimensions of 12ft x 13ft and a ceiling height of 7ft 9in would have a volume of just over 1200 cubic ft. This would be let as a double room in the hotel, probably for a few nights' accommodation. Now converted to a lodging house, under the current legal definition of overcrowding, four persons could occupy this room on a permanent basis, even though the beds and a one foot wide access area alongside each would take up over two thirds of the floor area and there would be precious little room for storage or indeed privacy.

In addition, the legislation only makes reference to the use of a room for sleeping at night, i.e. between the hours of 2100 and 0600. This linking of overcrowding to a time of use means that any person working a night shift and using the room outside these hours could be excluded from protection. This would, in theory, allow these workers to be offered even lower standards of sleeping accommodation during the daytime period without any contravention of the legislation. It must be said, however, that the Environmental Health Officers have no specific experience of this ever having taken place.

It is, therefore, felt that the legislation is in need of bringing up to date.

3. CURRENT POSITION IN THE UK

The current UK standards are based on those in the Housing Act 1936 and were last re-enacted in Part 10 of the Housing Act 1985. These specify measurement by two different standards, the room standard and the space standard. If either standard is exceeded the property is considered overcrowded. All rooms except kitchens, bathrooms and hallways are counted. Children under 1 year old do not count and children aged 1 - 10 years count as 0.5.

Room standard:

There should be sufficient rooms in each individual letting so that no male and female aged 10, or over, should have to sleep in the same room, unless they are living as "husband and wife".

No. of rooms	Max no. of people
1	2
2	3
3	5
4	7.5
5	2 per room

Space standard:

This specifies the number of people who can sleep in any room based on its floor area.

Floor area of room	Max no. of people
10.2 m ² or more	2
8.3 m ² - 10.2 m ²	1.5
6.5 m ² - 8.3 m ²	1
4.6 m ² - 6.5 m ²	0.5

The floor area figures in m² relate to 110 - 90 - 70 - 50 square feet from the original legislation.

These floor areas are based on a 2.1 m (7 ft) ceiling height. Where rooms are situated in the roof space (attic rooms), space is measured to include any area with a ceiling height of at least 1.5 m (5 ft) and in such rooms at least half of the area must have a ceiling height of 1.8 m (6 ft) or more.

The standard as written still has some potential shortcomings, i.e. living rooms are counted as potential bedrooms, it makes no provision for living in civil partnerships and there are no age restrictions on same sex siblings sharing a room. These concerns are currently being consulted on by the UK Government but, in the overwhelming majority of cases, the current UK standard ensures that premises are not generally overcrowded.

4. CONCLUSION

The latest UK statistics estimate that between 20,000 and 25,000 households, or around 0.1% of the total, are statutorily overcrowded. However, this overall figure masks the fact that virtually all overcrowded households are part of shared accommodation, i.e. houses in multiple occupation, at the lowest end of the privately rented market.

Although no statistics are kept as regards the situation in Guernsey, this position is likely to be exaggerated due to the proportionally larger number of persons in short term accommodation due to housing licence restrictions.

In view of all of the above information, the Department is, therefore, recommending to the States that local legislation should be modified so that standards are brought broadly into line with the existing position in the UK. Furthermore, when drafting the necessary amending Guernsey legislation, the Department recommends that, where possible and practicable, perceived shortcomings in the UK standards are improved upon for Guernsey's purposes.

The Department considers that the current legislative standard is woefully inadequate and fails to meet the basic requirements of some of the most vulnerable members of the community. It has been and will continue to be exploited by landlords, especially those employing short-term labour and providing employment tied accommodation. The provision of adequate minimum standards of space in accommodation must be underwritten by amending the minimum statutory standard.

5. **CONSULTATION**

The Environment Department and the Housing Department have been consulted over these proposals. The Environment Department has no comment to make and its minimum standards in new or refurbished accommodation were based on the same UK legislation mentioned above.

The Housing Department is supportive of the proposals and has expressed the view that the proposals would have a profound benefit in helping to eliminate overcrowding, particularly in lodging houses and staff accommodation, and would help to give additional protection to those potentially vulnerable housing groups.

More generally, at staff level, the Housing and Health and Social Services Departments have been working together, and with other States Departments and agencies, to investigate ways of improving the quality of the accommodation at the bottom end of the private rental sector. Proposals are currently being developed to introduce minimum standards and a register for properties in multiple occupation.

The Department considers it pertinent to draw attention to this further workstream within this report, in order to make it clear that further proposals are intended to be submitted for consideration in the future. This work is inextricably linked with the proposals contained in this report, as they both have implications for landlords, particularly for those offering accommodation with shared facilities.

6. **RECOMMENDATIONS**

The Health and Social Services Department recommends the States:

- (i) to agree that the current public health legislation requirements on overcrowding are amended to provide specific space and bedroom standards as detailed in this report; and
- (ii) to agree that all references to sleeping and times of the day in connection with overcrowding provisions should be removed; and
- (iii) to direct the preparation of the necessary legislation.

Yours faithfully

A H Adam
Minister

(NB The Policy Council has no comment on the proposals.)

(NB The Treasury and Resources Department has no comment on the proposals.)

The States are asked to decide:-

V.- Whether, after consideration of the Report dated 11th March, 2009, of the Health and Social Services Department, they are of the opinion:-

1. That the current public health legislation requirements on overcrowding shall be amended to provide specific space and bedroom standards as detailed in that Report.
2. That all references to sleeping and times of the day in connection with overcrowding provisions shall be removed.
3. To direct the preparation of such legislation as may be necessary to give effect to their above decisions.

PUBLIC SERVICES DEPARTMENT

KERBSIDE COLLECTION OF RECYCLABLES

The Chief Minister
Policy Council
Sir Charles Frossard House
La Charroterie
St Peter Port

27th March 2009

Dear Sir

1.0 Executive Summary

- 1.1 Island-wide kerbside collection of recyclable materials has long been hailed as a potential way of increasing significantly the levels of recycling in Guernsey.
- 1.2 The Public Services Department has actively considered such a scheme. It has managed kerbside trials over an extended period in St Peter Port and St Pierre du Bois and it has also taken independent expert advice on its feasibility.
- 1.3 The Department has reached the clear conclusion that an Island-wide kerbside collection scheme in the Guernsey context would not provide value for money and would be fraught with difficulties. The Board of the Public Services Department has previously decided, therefore, not to pursue kerbside recycling as an option for Guernsey.
- 1.4 Following this decision, a Requête was lodged by Deputy De Lisle (Appendix 1) which requested that the Department report back to the States by June 2009 on the matter. In fulfilling this requirement, this report also sets out the Department's reasons for its decision and the other measures that it would intend to implement in pursuit of the 50% household recycling target set by the States in February 2007.
- 1.5 While the kerbside recycling trials were well regarded, the effectiveness of the collections in capturing recyclable material compared to the Island's highly successful bring bank system was unable to be quantified. The Department estimates that only half of the eligible households took part in the scheme each week.
- 1.6 Local waste management consultants Integrated Skills Ltd (ISL) conducted a modelling exercise on potential kerbside collection options. In their report

“Modelling of Kerbside Recycling Options” they presented 13 kerbside scenarios, compared to the status quo (Appendix 2). The recycling rates projected were based on 80% of households taking part.

- 1.7 As directed by the Requête, this report examines scenarios relating to collection of both wet and dry recyclables. The Department has also considered collections that relate purely to dry recyclables. For the purposes of this report, “Wet” recyclables are food and green waste. “Dry” recyclables are the materials that are already collected at existing bring bank sites.
- 1.8 This report comments upon:
 - Funding mechanisms (see section 6);
 - Practical implications, which would have bearing on when any collection scheme could be introduced and the success that might be achieved (see section 7); and
 - “Plans” - work that would have to be done in advance of a scheme being launched (see section 8)
- 1.9 To achieve a significant increase in the amount of material being recycled by Islanders would require:
 - The vast majority of households to participate fully in the kerbside scheme; and
 - That food waste be collected from households. This would then need to be processed so it could be used in some way other than being sent to landfill.
- 1.10 The decision of the Board of the Public Services Department not to pursue the introduction of kerbside recycling collections in any form was based on a number of factors.

1.10.1 Collection of Wet Waste

Collection of wet material was firmly discounted due to the current absence of a suitable and sustainable channel for dealing with the waste, based upon:

- Application to local land:

The Island’s principal experts in the fields of environmental health, water supply and farming all indicated that putting such material on the land, even after extensive composting/digestion could present far reaching health, environmental and logistical issues:

- Potential threat to local water supplies (see section 7.2.4);
 - Animal health concerns (see section 7.2.11);
 - Limitations on the land available on which compost/digestate could be spread (see section 7.2.17) and
 - The times of year at which such applications could take place (see section 7.2.19)
- Export - Legal and sustainability issues (see section 7.2.21)
 - Anaerobic digestion and landfill - limited volume/mass reduction gains and the illogic of expending great amounts of energy and time making dedicated collections in order to generate energy (see section 7.2.26)

1.10.2 Dry Recyclable Collections

Discounting collection of wet waste does not rule out the overall possibility of kerbside collections. However, there are other challenges associated with kerbside, such as capital investment, running costs, noise and traffic issues all of which are significant, albeit not as key as the hazards of contaminating the Island's limited agricultural land and water supplies. The following were considered to be of particular note:

- Ineffectiveness of dry recyclable collections in reaching the 50% target set by the States (see section 9.1). Participation issues could reduce the gain from even the best performing scenario to just 6 percentage points above the existing rate.
- Value for money (see section 9.2). In the order of £1 million per annum would be required to achieve this limited improvement in recycling rate.
- Traffic issues (see section 7.7). The segregated systems required to maintain the high quality material currently generated through the bring bank system necessitates day-time collections which would present traffic management issues – including congestion and dissatisfaction for the travelling public.
- Noise issues (see section 7.8). Night-time collections have the potential to generate excessive noise when Islanders should most be able to expect peace and quiet.

Other factors deemed to be of importance are detailed in addition in the main body of this report.

- 1.11 Ongoing introduction of new initiatives and increasing incorporation of recycling into popular culture has seen the Island's recycling rate rise steeply in the last few years. In 2005 the rate was recorded as 19.7% (excluding green waste). The comparable 2007 figure was 31.2% (36.5% including green waste). These figures were utilised by ISL in their modelling exercise and are employed in this report to facilitate direct comparison. This report sets out measures which the Department believes will assist in continuing this trend and increasing Guernsey's recycling rates in a cost effective fashion (see section 10.0).

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2.0 Background

- 2.1 During its January 2007 meeting, the States set itself a target to achieve a recycling rate of 50% for both domestic and commercial waste by 2010. Until recently, it was considered that the kerbside collection of recyclables had the potential to play a key part in the achievement of the household target.
- 2.2 Also in January 2007, the Public Services Department took over the kerbside recycling trials that were ongoing in two areas of the Island – St Peter Port (North) and St Pierre du Bois. These had been launched by the Environment Department in 2006, on a minimal cost basis, making use of free labour provided by the Social Security Department's Community and Environmental Projects Scheme (CEPS). Throughout the course of the trials, the tonnages of the recyclables collected were monitored. Following the Department's assumption of responsibility for them a review was conducted, including delivery of a questionnaire to all households on the trial routes, to obtain detailed feedback.
- 2.3 During 2008, ISL, a locally based waste management consultant with extensive and recent experience of kerbside collection schemes in the United Kingdom, was engaged to carry out a comprehensive review of kerbside recycling options and scenarios. In parallel with undertaking this work, ISL carried out a waste analysis study to ensure that the information utilised in its model was current and directly applicable to Guernsey.
- 2.4 The kerbside trial ended in December 2008. By this time, the Board of the Public Services Department was in possession of a great deal of information and, in light of this information and after very careful consideration, made the decision that kerbside recycling should not be pursued further as a local solution at this time.
- 2.5 Following this decision, a Requête was lodged, which requested that the Department report back to the States by June 2009 on the matter. This report is submitted further to that Requête.
- 2.6 Throughout this report, use of the terms "Including" or "Excluding" in relation to green waste figures refers to how the overall recycling rate is reported. Regardless of whether green waste is collected at the kerbside or is delivered by householders to collection points (Chouet and Martel's Garden World), it is still recycled into soil conditioner. Until recently, Guernsey's domestic recycling rate was only reported in regard to dry recyclables. However, the Department now publishes two sets of data – one relating to dry recycling only ("Excluding Green Waste"), the other including the household green waste that is composted ("Including Green Waste"), which enables simpler comparison to UK rates. This dual system of reporting was also utilised by ISL in their report.

3.0 The Requête

The Requête listed a number of points to justify its request to direct the Department to report back to the States on the matter of kerbside collection of recyclables. The Department considers that some of these points are fundamentally flawed and present a misleading view of the issue. The record needs to be set straight in regard to the following points in particular to enable an informed debate:

- The Requête quotes an “excluding green waste” figure in relation to the Department’s June 2008 recycling rate, but an “including green waste” figure when referring to the potential gains. This is not comparing like with like and implies poorer existing performance and also greater potential for kerbside than could in reality be realised. The 2007 “including green waste” figure reported in the ISL study was 36.5% - 5.7 percentage points higher than the figure quoted in the Requête.
- The simple presentation of the percentages achievable through kerbside does not do justice to the complexity of the situation. In particular the 61% rate theoretically achievable with collection of food and green waste is in reality subject to severe complications and indeed, as will be seen later in this report, the Department does not even consider such collections to be an option.
- Contrary to the implication of the Requête, the Department believes that resource recovery, intensive waste segregation, recycling and composting are already extremely active in Guernsey. **Of particular relevance is the fact that, aside from the possible collection of food waste, which is not supported by the Department, all the other recyclables that could be collected at the kerbside are already collected in Guernsey. It is merely the method of collection that would change.**
- The Requête states that kerbside collections will help enable the States to achieve the waste policy to attain the 50% recycling target for household **and** commercial waste by 2010. This target, originally being open to interpretation, was clarified in the Environment Department’s report on waste arisings, recycling and growth (Billet d’Etat XXIV of 2007). In accepting that report the States further accepted that the target was to recycle 50% of household waste and 50% of commercial waste with a delivery date of 2010. The statement in the Requête, therefore, is considered to be incorrect – only half of this target would be addressed. Kerbside schemes only collect from domestic households and will provide no assistance to the commercial sector.
- The Department’s deliberations have concluded that despite the significant costs involved, only limited gains could be realistically achieved in the recycling rate. In regard to States finances, therefore, the

Department cannot agree that kerbside collection represents a low-risk strategy.

The issues referred to above are covered in more detail later in this report.

4.0 Results of the Kerbside Recycling Trial

4.1 Tonnages

4.1.1 As shown in Table 1 below, the tonnages achieved from the 1750 households in the trial areas (approximately 1300 in St Peter Port and 450 in St Pierre du Bois) over the life of the trial was 547 tonnes. The amount collected in 2008 was 214 tonnes, while the total amount of household waste recycled in Guernsey during that same year was 6290¹ tonnes. Therefore, kerbside collections covering approximately 7% of Guernsey households yielded approximately 3.4% of all applicable household recyclables.

Table 1: Tonnages achieved during the Kerbside Collection Trials

	St Peter Port	St Pierre du Bois	Total
2006	98	46	144
2007	118	71	189
2008	127	87	214
TOTAL	343	204	547

4.1.2 The responses received to the 2007 survey highlighted that the majority of those who responded and were making use of the service felt that the kerbside trial scheme had encouraged them to recycle and thereby reduce their black bag waste. However, it is impossible to establish what proportion of the material collected under kerbside would have otherwise been recycled through the bring bank system.

4.2 Participation

4.2.1 The trial schemes were launched on an “opt-out” basis: kerbside packs were issued to all households in the trial areas at its inception and householders were thus in control of participation. Participation was unable to be quantified precisely, because:

- a) only 37% of those issued with a questionnaire responded;
- b) trial households did not necessarily place out recycling every week;

¹ The sum of the material streams that featured in kerbside collections, namely: Paper, card, plastic bottles, glass, tins & cans, textiles and cartons.

- c) in multiple-residence units, it was not possible to gauge clearly what proportion of households were actively participating.

4.2.2 **By the end of the trial, anecdotal evidence from collectors and from other indicators, and indeed supported by the simple calculation performed in 4.1.1 above, gave an estimated participation each week of approximately 50%.**

4.3 Recycling Habits of Participants

The 2007 postal questionnaire revealed that 40% of the respondents who were actively using the scheme still chose to visit the bring banks on occasion, for a variety of reasons. Where kerbside schemes are in operation elsewhere some bring banks are generally also supplied for domestic use. Indeed the ISL report works on the supposition that bring sites will be retained, albeit that there is likely to be a 60% reduction at the bring banks in respect of any materials that are collected via a kerbside scheme.

5.0 Options: Scenarios Modelled by ISL

5.1 The Requête and indeed the remainder of this report make reference to the ISL report “Modelling of Kerbside Recycling Options”. States Members have received copies of this report previously and should be familiar with the content and issues raised. For ease of reference, this report is appended as Appendix 2.

5.2 ISL reported on 13 options for kerbside collections that appeared to have some potential for implementation in Guernsey. These have necessarily been reduced for the purposes of this report.

5.2.1 The Requête required the Department to report on plans for the introduction of island-wide collections of both wet **and** dry recyclables on a permanent basis. This automatically eliminates a number of scenarios. For reasons explained later in this report the Department has, however, retained two dry recyclable scenarios for examination.

5.2.2 The UK Government’s Waste and Resources Action Programme (WRAP) has reported ² that a scheme that targets a wide range of materials is more effective than one that only targets a single or limited number of materials. Increasing the range of materials collected at kerbside is likely to increase the capture rate of all materials. Consequently the Department has removed from consideration a number of ISL’s other options which, although collecting both wet and dry streams, collect such a narrow range (for example, paper, card and food waste alone) that it would not be worth undertaking collections from the doorstep for the reasons set out above.

² Kerbside Recycling: Indicative Costs and Performance report

5.2.3 Finally, the Department has not considered options that collect green waste as the single “wet” recyclable. Green waste is not universal to households in Guernsey and would be expected to be subject to significant seasonal variation. Private householders who want to remove green waste from their properties are currently well served by the Chouet and Martel’s Garden World sites, which received 1259 tonnes of private green waste in 2008, for conversion into soil conditioner. WRAP has also concluded that there is growing evidence to suggest that offering a free garden collection service simply increases the amount of material that reaches the public waste stream – i.e. material that would otherwise have been retained at the property (through home chipping, composting etc) , is diverted to collection services when they become available. The tonnages recycled may be increased, but so too is the amount of waste set out in the first place. This is considered to be an artificial way of increasing recycling figures.

5.2.4 The remaining scenarios are summarised in Appendix 3, which uses the reference numbers from the ISL report.

5.3 Considerations

The scenarios must be considered with a number of caveats in mind.

Assumptions

5.3.1 The ISL model was based on assumptions relating to the following critical factors. Any deviation in any of the assumptions incorporated into the model will have corresponding affects on recycling rate and cost factors.

- Capture rates – the amount of each targeted material set out for kerbside collection by each participating household compared to the amount of the targeted material actually generated by the household. The model utilised rates yielded in a 2005 UK study, adjusted as appropriate to local circumstances.
- Participation rate – the percentage of households that set out recyclables for collection. In their report, ISL defined this as “the percentage of served households putting out a container at least once a month”. It should be noted, however, that for the purposes of their modelling exercise, these same rates were applied for average participation in **every** collection (weekly/ fortnightly). The model utilised a very high participation rate of 80% where weekly collections were involved (dropping to 72% for fortnightly collections). In reality it is considered most unlikely that such a high participation rate would be achieved, which is borne out by the experience of the trials.

- Relationship between the bring banks and kerbside collections - the model assumed a 60% reduction in material collected through bring banks.
- Coverage rate - the model assumed that it would be feasible to service 100% of households. This is unlikely to be the case.

Contamination/Quality

5.3.2 Kerbside collections can be grouped into three general types:

- Co-mingled – recyclables are collected in a single vessel with all sorting of the material being undertaken at a Materials Recovery Facility
- Segregated – different material streams are kept separated in the collection vehicle, minimising later sorting requirements.
- Hybrid - a mixture of the above two types. Material is partially separated – an example would be the collection of “fibres” – paper and card in one vessel/compartiment and “containers” – plastic bottles, tins, cans, bottles in another.

5.3.3 The method of collection can affect how much material must be rejected at the Materials Recovery Facility or Anaerobic Digestion/In-Vessel Composting plant because of items being unsuited to the collection or unable to be sufficiently separated. Rejected items would be sent to disposal (landfill). It should be noted that potential for contamination was not built into the ISL model and so is not taken into account in the projections for recycling rate or costs.

5.3.4 A recent WRAP report³ estimated contamination for co-mingled systems to stand at 10%, and 5% for hybrid. The actual degree of contamination that would be experienced in reality would be related to key factors such as the containment method and the collection policy adopted and implemented by the collection crew.

5.3.5 An issue beyond the amount of matter rejected at a Materials Recovery Facility is the quality of the resultant processed material. The economic downturn has seen re-processors who accept collected recyclables reducing their intake of lower-quality comingled materials, favouring better quality source segregated matter. Groups, such as the Campaign for Real Recycling, are also actively lobbying for source-segregated systems which result in a high quality product which is consistently acceptable to UK re-processors.

³ Kerbside Recycling: Indicative Costs and Performance

- 5.3.6 Segregated systems require daylight collections and are more complex for householders; however, as indicated above they present advantages in the quality of material obtained. (In the same report noted previously, WRAP estimated typical contamination rate of 1%.) Segregated collections also provide potential for useful feedback to householders, with any inappropriate material identified during the collection process being able to be notified to them via a feedback slip left with the boxes/bags, thus enabling continual improvement.

Collected Materials

- 5.3.7 At the time of the ISL study, carton recycling had not been introduced, thus collection of this additional stream was not built into the model. It would be sensible to assume that additional cost would be incurred if cartons were to be included. Equally, it can be assumed that there would be some impact on recycling rate achieved, although with a current projection of approximately 100 tonnes of cartons being collected from the bring sites in 2008, it is anticipated that this would have limited effect.

6.0 Funding Mechanisms

- 6.1 It must be emphasised that the costs highlighted in the report are very broad indicative costs that have the potential to be substantially affected by a number of factors. Regardless of the precise cost level, it is clear that a significant level of finance would need to be available to advance any kerbside system.
- 6.2 A significant proportion of the charges levied at Mont Cuet are not retained by the Department, but rather represent a surcharge that passes directly to the Treasury and Resources Department. Until March 2008, the surcharge monies were used to cover the costs of the previous abortive attempt to procure an Energy from Waste plant during the period 2001 – 2004. With that loan fully serviced, the surcharge income is now being used to fund the current waste project, with a small percentage being used for recycling initiatives. However, as the waste project progresses, the full surcharge income will be needed to fund it and the surcharge excess will disappear. The remaining income from Mont Cuet together with income from the other two main sites is used to fund the running costs of the waste sites and other Departmental operations including the on-going costs associated with recycling, maintenance of roads and drainage infrastructure. This reduces the cash limit the Department has to request from General Revenue as part of the annual budget.
- 6.3 Funding kerbside collections through the existing charges levied at States waste sites is not, therefore, an option. The Department has consequently given consideration to other potential funding mechanisms.

General Revenue Funding

- 6.4 As indicated above, the Department already strives to minimise the amount of General Revenue funding that is required from the States each year. The funding that is received is fully committed in the provision of essential services. An appropriate budget increase would, therefore, need to be submitted to the States for approval.

Introduction of a User Charge

- 6.5 Another possibility is the application of a charge to householders to pay for the introduction of kerbside recycling. Relating as it would to a separate service, this charge would be in addition to the rates paid to the Parishes for disposal of black bag waste. The potential for introduction of new taxes or increases in existing taxes to improve States finances has been a subject covered extensively in the local media recently, generally to negative reception by the public. It is considered that the introduction of such a blanket fee would be contentious.
- 6.6 The current bring bank system is very well utilised voluntarily by the Guernsey public. Moreover, the users perceive this system to be free, financed as it is through the Department's budget, rather than by a direct individual charge to users. Were a kerbside regime to be introduced, although it would be subject to rationalisation, the bring system would still be retained. Islanders are likely to resist payment of a charge for a collection service when they could make use of the "free" equivalent.
- 6.7 Those Islanders who currently resist recycling (and who may not be persuaded otherwise by kerbside collections) would certainly resent payment of a universally applied charge.
- 6.8 Collection systems for charges would need to be investigated in more detail, but the most practical method might be through the Cadastre or other such organisation that regularly collects fees from the Island's households. Options in this respect have not been investigated or discussed with other bodies at this stage.
- 6.9 One of the main drivers for the introduction of a kerbside scheme is to reduce the amount of waste being sent to landfill by removing more recyclable/compostable items from residual waste. Weight reductions may, therefore, be realised in Parish (black bag) waste tonnages. It should be emphasised, however, that a great deal of recyclable material (including heavy materials such as glass and paper) is already channelled through the bring bank system, and thus does not feature in existing bag weights. It is questionable what extent of weight saving could, therefore, actually be achieved. Should any weight savings indeed be realised, then it would be down to individual Parishes to consider reassessing their waste rates.

7.0 Practical Implications

7.1 The Requête required the Department to report on all practical implications relating to kerbside collections of wet and dry recyclables on a permanent basis. The following issues will inevitably have some bearing on how/when any scheme could be run and the level of success that might be achieved.

- Food Waste
- Processing Facilities
- Staffing/Vehicular Resources
- Participation Rates
- Markets
- Traffic Flow and Congestion
- Noise Nuisance
- Rationalisation of the Bring System

In due course it is likely that other relevant issues would emerge but those listed above are considered to be the main ones.

7.2 Food Waste

7.2.1 ISL's 2008 Waste Analysis study identified food waste to be the dominant fraction of household waste in Guernsey, comprising just under 22% of the average local black bag, indicating that the processing of this represents a major way to advance recycling. Further than this, **of all the scenarios presented by ISL, it is only those including food waste collections that reach the 50% recycling target.** Inclusion of food waste is also, however, the greatest single issue requiring objective and detailed consideration. Proposing to collect food waste under a kerbside regime automatically requires that something be done with the material gathered.

7.2.2 Direct landfill of untreated food waste material following specific collection would be nonsensical. This would achieve no improvement on our existing system whereby food waste goes to landfill (in Parish waste), yet it would inconvenience householders with the requirement to separate food from residual waste and incur more expense for collections. This leaves three options:

- Application to local land (after treatment)

- Export
- Anaerobic digestion and landfill

Application to local land

7.2.3 The question of application to land is a complex issue. Contemplating this as a solution requires the States to be sure that:

- a) It would be acceptable to all parties responsible for safeguarding Guernsey's health (human, plant and animal) and
- b) There would even be a sufficient outlet for all the material generated, on a permanent basis.

Essentially, the issue of disposal of processed food waste to land is linked to risk, and determining an acceptable level of risk.

- Guernsey Water's View

7.2.4 A plentiful supply of clean and safe drinking water is a priceless asset which Islanders take for granted. Guernsey relies 100% on surface derived water for its public water supply and there are no other viable sources. In regard to application of food waste derived product to local land, the Director of Water Services, has advised as follows:

7.2.5 Decomposed household food waste breaks down into materials that contain nitrates and if it is the intention to spread these onto land which is in the water catchment area then very careful consideration must be taken so as to avoid poisoning the aquatic environment. The harmful effects of nitrates in drinking water are well documented and as a result the EC maximum acceptable concentration (MAC) for nitrate in drinking water is 50mg per litre.

7.2.6 It has to be borne in mind that the water resources of Guernsey are far more sensitive than in the UK where vast areas of agricultural farm land can be used to absorb nitrate rich materials throughout the year. In an attempt to reduce the runoff of nutrient rich substances Guernsey has implemented regulations to ensure that farm slurries are not spread onto the land for a period of three months each year when conditions are inappropriate for spreading. Storing food waste, pre- or post- treatment, for this period would be challenging on Guernsey.

7.2.7 Guernsey Water's catchment protection scientists, working closely with the Agriculture and Environment Advisor and the whole of the farming and horticultural community, have been able to exercise sufficient control so as to maintain the level of nitrates in the drinking water to below the MAC. It should, however, be appreciated that the water in our

streams regularly exceeds this limit, but through blending and the use of alternative sources water quality is maintained.

- 7.2.8 Despite Guernsey's advanced water treatment technology, nitrates cannot be removed from the water using our current processes. To remove nitrates from water is very expensive – based on UK industry experience, very broad costs for construction of an appropriate treatment plant alone (i.e. excluding any associated land purchase costs) would be in the region of £25 million. Typical annual running costs would lie around 10-20% of the capital cost. Even if a plant was built, it would leave a material which has a high concentration of nitrates in it that still has to be disposed of.
- 7.2.9 The problem of nitrates is not unique to Guernsey and the UK's "Nitrate Pollution Prevention Regulations 2008 – Statutory Instrument 2008 No. 2349" stipulate the acceptable amounts of nitrate that can be applied to farm land. Whilst this UK law is not statutory here in Guernsey it does represent 'best practice' and should not be ignored. At this point it is very doubtful whether there is sufficient farm land available.

- Agriculture & Animal Health View

- 7.2.10 The States Agriculture and Environment Advisor, provided an input into the Department's deliberations, following his earlier letter on the spreading of compost to agricultural land (dated 4th June, 2008). This letter formed an appendix to the ISL Report, which is itself included here as Appendix 2. A clear distinction should be drawn between solid compost that might be most appropriately applied to arable land and pasteurised liquid digestate (from an anaerobic digester) that could also be applied to grassland provided that regulation safeguards were observed.
- 7.2.11 Food waste containing meat and meat products has been responsible for a number of very high-profile outbreaks of notifiable disease in livestock. Recent UK examples include the 2000 Swine Fever and 2001 Foot and Mouth outbreaks. In Guernsey (and now in the UK also), it is illegal to feed food waste that might contain meat to farm livestock.
- 7.2.12 Any incidence of, for example, 'Foot and Mouth Disease' would be disastrous not just for the farming community, but could also have a lasting effect on the local economy as a whole and on Guernsey's international reputation. By virtue of Guernsey's association with the UK, an outbreak of a 'notifiable' animal disease, such as 'Foot and Mouth Disease', could also have 'knock-on' implications for the UK and other Member States of the EU, and on intra-community trade.
- 7.2.13 It is possible for pathogens responsible for livestock disease to be

eliminated during treatment, providing fully appropriate processes are employed. Theoretically, the idea of 'meat-excluded' systems can also go some way toward allaying the disease element, however, it cannot be guaranteed that kitchen or catering waste will not contain meat.

- 7.2.14 Although Guernsey is not directly subject to EU law there is no doubt that, where kerbside collections were concerned (general or 'meat-excluded'), the States Veterinary Officer and the Director of Environmental Health & Pollution Regulation would, as a minimum, require compliance with the full EU Regulations for treating kitchen and catering waste including animal by-products. These Regulations prescribe the minimum durations and minimum temperatures to which waste must be subjected, and require a stringent and rigorous testing regime to be observed. A compliant product is technically achievable through in-vessel composting and anaerobic digestion (followed by secondary high temperature pasteurisation). However, variations in how these processes can be undertaken can significantly affect vital operational issues such as processing times and storage requirements pre and post treatment.
- 7.2.15 Assuming possession of a suitable site and a process that can satisfy the Director of Environmental Health and Pollution Regulation and the States Veterinary Officer, there would then be no fundamental objection to the application to agricultural land of compost or digestate that included food waste, provided that this was carefully monitored and did not breach EU and UK Regulations. However, the limited area of suitable land available, the potentially large number of small fields, and practical issues concerned with the necessity to apply compost or digestate to land only when required for crop growth would make this a difficult operation to manage.
- 7.2.16 As highlighted in the earlier view from Guernsey Water, there are restrictions in regard to the amount of nitrate that can be applied to any unit area of land and excess phosphate can also leach from soils, causing eutrophication of stored fresh waters. This immediately brings land availability into question and demonstrates the fundamental difference between the island and many other places in the world where such systems are in operation successfully. In the UK and Europe it is not problematic to transport compost/digestate from the area generating the waste to another area where there is a high proportion of cultivated agricultural land that can absorb it.
- 7.2.17 Ideally, composted food waste (solid product) would only be applied to arable (i.e. cultivated) land as this would minimise the risk of contamination of grassland that might be used for livestock grazing or for silage conservation. In the case of liquid digestate, areas of grass crops grown for silage conservation (winter feed) could potentially act as

recipients of liquid digestate from an anaerobic digester. In any event, EU and UK Regulations would prohibit the application of compost and digestion residues to land that is intended to be used for grazing or cropping for feeding stuffs within two months for pigs and within three weeks for other farmed animals.

- 7.2.18 The total area of arable farm crops (which includes maize crops that are made into silage and cereal grains that are grown as food for dairy cattle) grown in Guernsey varies considerably from one year to the next. For example, in 2006 some 1,419 verges of land were used for arable crops. In 2008, however, the figure was just 1,209 verges. In regard to land used for grass silage production, this has also varied from 2,962 verges in 2006 to 2,111 in 2008, although an average of about 2,500 verges of grass is normally cropped for silage each year.

- 7.2.19 Large amounts of animal and poultry manure are already generated on-island every year and recycled back into the farming system, meeting much of the demand for nutrients. These can only be applied at specific times of the year (generally early spring), and so must be safely stored at other times of the year. Food waste compost/digestate would also only be able to be applied at these set times. This immediately highlights that not only land area, but also storage capacity, would be an issue.

- 7.2.20 In short, before accepting application to local land as a solution, the States would have to be able to provide sufficient information and assurances to farmers / land-owners to be able to convince them that utilising processed food waste (in replacement for any artificial fertilisers that they may currently use) would be sufficiently neutral or beneficial to their operations to warrant them changing from their existing tried and tested systems. In the event that this was possible, in line with the direction of the Requête, this avenue would be required to remain open on a permanent basis. Although nutrient rich compost or digestate might have a fertiliser saving value for crop production, realistically, it could be anticipated that farmers might require some form of monetary incentive to allow the application of appropriately processed food waste to their land.

Export

- 7.2.21 Export of any material leaves the Island subject to external forces over which it may not be able to exert much influence or control. Changes in circumstances to those in existence at the outset could see the diminishment or loss of an export channel and leave the island without a disposal route.

- 7.2.22 The procedures that would apply to, for example, shipment to the UK or France would depend on the status of the material to be shipped.

7.2.23 Material which can be considered as a complete product in its own right and which would not require any further treatment before it could be used for its intended purpose in the country of receipt, does not need to comply with Transfrontier Shipment of Waste Regulations. Soil conditioner or compost, for example, should be treated and tested in accordance with the appropriate full Animal By-Product Regulations and British Standards. A ready market would, however, have to be available before such shipment is even contemplated. Potential for decline or withdrawal of the market must always be factored into any risk assessment. Shipment of a ready-made product would mean that Guernsey would have to go to the expense of processing the material and exporting it, although such costs could potentially be offset by income generated from a buyer.

7.2.24 By virtue of being a signatory to the Basel Convention, Guernsey could only ship “waste” to an EU Member State or other fellow signatory and would be bound to comply with Transfrontier legislation. Under this legislation, the following would all be considered to be waste:

- Untreated or preliminarily treated food waste – destined for landfill, incineration or other disposal treatment
- Food waste that had been composted or digested to generate a product, but which had not been processed to the full standards that would apply to allow use in the receiving country.

7.2.25 Securing an appropriate notification approval from a competent authority to ship waste is not a simple or swift process and there is no guarantee of longevity. Approved notifications are only valid for a maximum of 12 months and at any point of renewal, there is potential for refusal. Absolutely no long-term security can be assumed for shipment of waste.

Anaerobic Digestion and Landfill

7.2.26 The Department understands that there is some support in the community for collecting food waste at the kerbside and passing it through an anaerobic digestion system to generate biogas and subsequently produce electricity, with the resulting digestate being landfilled. This would produce a source of “alternative” energy, although the requirement for dedicated collections and processing elements would influence how cost effective such generation would be. Information relating to the volume reductions that can be achieved through anaerobic digestion is something that is lacking from published material. Direct enquiries have also been of limited assistance. Broad estimates at this time, however, indicate that mass reduction could be in the region of 40%, dependent on the specific system and nature of the feedstock. Inputs to Mont Cuet would be

reduced, but not by as much as might be expected and the reduction would come about at a cost.

7.3 Processing Facilities

- 7.3.1 The purpose of the ISL report was to identify and cost collection scenarios for kerbside collections. The modelling exercise conducted was, by necessity, of a very broad nature to enable an extremely wide range of scenarios to be funnelled down to those that have some potential for Guernsey (those listed in the ISL report). Incorporating too many variables and limitations at such a point would have been simply prohibitive. It should be noted that to date, therefore, although the need for processing facilities has been identified and some broad 'typical' costs built into the model, issues such as actual land-take, detailed costings and quality levels of outputs have not been examined in any detail.
- 7.3.2 Any kerbside option will present the requirement for the provision of a suitable Materials Recovery Facility (MRF) of some degree of sophistication. Processing of wet recyclables will necessitate land for in-vessel composting/anaerobic digestion or, in the case of export of untreated food waste, for bulking operations. This represents a substantial issue for consideration.
- 7.3.3 Fontaine Vinery is not a long-term option for the MRF. This site was designated for temporary use only, and is operating pending construction of more appropriate long-term sorting/recycling facilities at an alternate location. The terms of its licence prohibit entrance of food waste matter to the site. If it was necessary to use this facility as a short-term solution for dry recyclables, the waste segregation side of operations would likely be impacted. If it proved necessary, cessation would undoubtedly have a 'knock-on' effect on the amount of commercial/ business waste that was diverted from landfill which could in turn reduce or negate any gain achieved by kerbside collections of personal items.
- 7.3.4 No alternative to Longue Hougue has been identified or has planning permission secured for waste sorting/separation operations. An area of land in the Longue Hougue key industrial area would be most appropriate, and provision for waste sorting facilities at this site should be covered in the proposed plan amendment for Longue Hougue following the recent Planning Enquiry. Should sufficient land not be available at this site, an alternative location would have to be sought. This is dependent on the land take for the future residual waste treatment option. An alternative site will require a land search and a strategic environmental assessment for a change to the Strategic Land Use Plan. Under Schedule 1 of the Land Planning and Development (Environmental Impact Assessment) Ordinance, 2007, such a facility will require an Environmental Impact Assessment (EIA). This would have a

significant impact on the timescale within which a suitable facility could become available for use, and the costs involved.

- 7.3.5 The model assumes provision of land for processing facilities, free of charge, by the States. Should land in private ownership be required, additional cost may be incurred. This may be connected to an operational contract within the private sector, resulting in this cost being hidden within the contract value.

7.4 Staffing/Vehicle Resources

Any kerbside collection service would be put out to tender. The above would have a bearing on whether private business would be involved with the requisite processing facilities. At this time it is unknown what the level of interest might be, but would be affected by the scale of the project, timescale and costs. To give an idea of the level of resources that would be involved, Table 2 below displays the anticipated resources that would be needed to deliver the best performing “Wet and Dry” and “Dry” scenarios (Scenarios 7 and 8 respectively). Based on 80% participation, and the assumption that vehicles would operate 5 days a week, it is currently projected that the following would be required. (The wide ranges noted are derived from the differences in the potential collection and sorting systems).

Table 2 – Projected Collection Resources Required

	Wet & Dry (Scenario 7)	Dry (Scenario 8)
Number of Vehicles	6 - 10	4 - 6
Collection Staff	12 - 22	7 – 15

The main factor dictating when a scheme could become active would be when the processing facilities would become available for use.

7.5 Participation Rates

- 7.5.1 The participation rates assumed by ISL – 80% for weekly collections and 72% for fortnightly collections - are very high. Participation has the potential to affect significantly the actual recycling rate realised and the proportional costs involved. The weekly household participation for the kerbside trial was approximately 50%, and should this be the level achieved for an Island wide scheme the recycling rate increases would be nowhere near those projected by ISL. The value for money of such a scheme would also be affected. Table 3 below shows the impact that 50% participation would have on the scenarios currently forecast to yield the greatest increases (Wet & Dry / Dry). In short, dependent on the specific scenario, the recycling rate that could actually be achievable would fall by up to 10 percentage points, but at the same time the cost required to finance each percentage point increase could rise by in excess of 50%.

Table 3: Impact of 50% Participation on the Highest Performing Scenarios (Weekly Collection of all Wet & Dry Recyclables; and Weekly Collection of all Dry Recyclables)

Scenario		Participation Rate	Total Annual Average Cost (£)	Recycling Rate (Incl. Green Waste) (%)	Cost per % Increase**
Weekly Wet & Dry	7a	80% 50% *	1,599,000 1,210,000	61.2 51.8	64,700 79,080
	7b	80% 50% *	1,308,000 1,047,000	61.2 51.8	53,000 68,430
Weekly Dry	8a	80% 50% *	927,000 838,000	46.3 42.3	94,600 144,480
	8b	80% 50% *	1,136,000 989,000	46.3 42.3	115,900 170,500
	8c	80% 50% *	1,031,000 926,000	46.3 42.3	105,200 159,650
	8d	80% 50% *	869,000 654,000	44.4 41.2	110,000 139,150

* Figures provided by ISL – not modelled in their study

** Based on the ISL methodology, the cost per % increase is calculated using the “Including Green Waste” recycling rate.

- 7.5.2 Key to achieving the considerable participation and capture figures modelled is establishing an easy to use and convenient recycling scheme. Vital to this is:

Storage

- 7.5.3 It would be simple to decide what is, for example, the most cost effective container solution. However, residents must be provided with an appropriate method of containment. This means taking into account the types of materials, frequency of collections, the nature of the housing stock, storage availability and how easy it will be to set out for collection. It further suggests that one single solution may not be appropriate for all areas.

Set-out Requirements

- 7.5.4 The effort required for residents to engage with and use the service must be minimised. This suggests that collection arrangements must be simple, preferably with all recyclable / composting streams being able to be set out on the same day. A system that, for example, collects dry

recyclables, wet recyclables and residual waste all once a week, but on different days, may be regarded as too complex for householders, and risks material that has missed its collection day being discarded with general waste.

Frequency of Collections

- 7.5.5 In general, fortnightly recycling collections are projected to give slightly less yield than the equivalent collected on a weekly basis, based on reduced participation rate and presumably also because people are more likely to exceed the capacity they have for storing recyclables in their home and resort to disposing of the excess in their black bag. As identified by ISL, the best recycling rates in the UK are achieved where collections are made as part of an alternate week collection scheme, where recyclables are collected fortnightly but so too is the residual waste. Such systems require householders to assume a more active role in thinking about how they handle their individual waste stream.
- 7.5.6 Should participation fall significantly below that assumed, in order for a kerbside collection service to retain any value, the States would have to contemplate what measures it might be prepared to implement to encourage use. Strategies that have been introduced elsewhere to reduce black bag waste/ encourage recycling include alternate week collections and pay-as-you-throw systems. Alternate weekly collection systems are now common in the UK and the Chartered Institution of Wastes Management believes that they can be a valuable part of a local authority's strategy to reduce waste and maximise recycling, but that introduction should be based on specific local needs and circumstances. Although apparently successful in areas of Europe such as Holland, UK Government plans for 'pay as you throw' schemes have been shelved after no local councils came forward to take part in a pilot study. In the absence of specific local research on the subject, the Department cannot comment on how practical or effective such systems would be for implementation in Guernsey.

7.6 Markets

However recyclable material is collected, be it by kerbside or bring bank, it needs a market to enable recycling to be achieved. In recent months, the economic downturn has impacted on recycling, with decline in global markets and in the prices paid. Worst affected have been recyclables of low quality, such as can be obtained through mixed (comingled) collections. At this time, Guernsey collects segregated material via the bring system, yielding recyclables that are considered to be of very high quality. It is not possible to predict how markets may change in the future but it would perhaps be inadvisable to pursue a route that would generate lower quality recyclables which could, based on current experience at least, jeopardise entry into global markets. Such a

situation would lead to recyclables needing to be disposed of on-island after much finance had been directed at their initial collection.

7.7 Traffic Flow and Congestion Issues

If kerbside collections were to be undertaken on source-segregated recyclable streams, daylight collections would be necessary. This type of collection is, by its nature, slower moving than that associated with picking-up residual waste. In order to maximise efficiency of collection operations and minimise unit costs, route optimisation would be undertaken. However, given the nature of Guernsey's road network and development patterns, proposals to service households with slow moving vehicles/teams during the day would inevitably generate traffic management concerns relating to congestion and dissatisfaction of the travelling public. Indeed, the Environment Department already imposes restrictions upon slow moving vehicles at peak times. Health and safety issues would undoubtedly also be presented for collection staff who would have to consider vehicles, particularly driven by frustrated delayed drivers, as a potential risk when carrying out their tasks.

7.8 Noise Nuisance

Collecting non-segregated recyclables opens up the possibility of night-time collections. However, the contamination/rejection rate increases and the quality of the material collected falls. In addition, current recyclers will be familiar with how noisy it can be when glass jars or tin cans are fed into bring banks. Collecting such items from households late at night or very early in the morning would lead to noise at the times when householders should most be able to expect peace and quiet. Densely populated residential areas, where a great many bags would be deposited in succession into a collection vehicle that was stationary or moving only very limited distances between each pick-up would be subjected to the greatest noise nuisance. Although black bag rounds are already undertaken at similar times, a large proportion of such material is absent from pick-ups, due to bring bank recycling. Where glass and tins are present in the rubbish, it is currently mixed with other waste which muffles the sound and reduces impact.

7.9 Rationalisation of the Bring System

As highlighted earlier in this report, the introduction of a kerbside system does not obviate the need for a bring bank system. The ISL report assumes that the bring banks would experience a 60% reduction in material deposited in them. Retaining the existing bring bank sites would not be practical and rationalisation would be demanded, primarily through removal of sites that do not offer a comprehensive array of banks. However, it should not be thought that a directly proportional reduction in servicing costs would be achieved – i.e. removing 50% of bring sites would not yield a direct 50% saving in existing operational costs, as vehicles and personnel would need to be retained to fulfil service requirements.

8.0 Plans

8.1 The Requête directed the Department to present plans for the introduction of kerbside collections of wet and dry recyclables. Due to the wide range of possible permutations, the Department considers that it would be impractical to create detailed plans for any individual scenario at this point. Rather, a very broad outline of work that would be required is presented below. This list is by no means exhaustive. The majority of the stages would be common to both “Wet & Dry” and “Dry” collection schemes. Although presented sequentially, this should be regarded as a fluid checklist as it may prove to be necessary or prudent to undertake some simultaneously or out of the presented order.

8.2 Work Streams

- Secure States direction in regard to the nature of the collection service – “Wet and Dry” or “Dry”, and frequency.
- Secure States direction in regard to the funding mechanism: General Revenue or User Charge. Seek advice on the preparation of any required legislation.
- Market research - establish quality parameters for (wet and) dry recyclables that would realistically be acceptable to nearby markets in the short and long term.
- Establish which collection system/vehicle would best suit the market
- Move to construct/secure appropriate processing facilities, including processing equipment. Facilities could be States owned and run or provided by a contract with the private sector. (Note: as highlighted at 7.3.4, dependent on the land-take required by the Waste project, this may require a land search, strategic environmental assessment and Environmental Impact Assessment, which would all significantly impact on timescale and costs. Subject to agreement with the St Sampson’s Douzaine, appropriate cessation/ reduction in commercial waste segregation activities and investment in appropriate sorting machinery, could enable interim (short-term use) of the Fontaine Vinery for dry recyclables)
- If applicable, initiate procedures to secure Transfrontier Shipment of Waste notification approval. (Export of food/green waste).
- Identify appropriate storage vessels for households across the Island – this may or may not be the same for all households. To optimise ‘buy-in’ from Islanders, this might involve a public consultation exercise.
- Establish collection routes

- Investigate traffic flow implications
- Tender process and award of contract for the collection service
- Procure storage vessels
- Intensive public relations campaign in advance of launch
- Review of the bring bank system to rationalise sites
- Ongoing public relations campaign in support of the scheme

It is clear that the launch of a kerbside scheme is not something that could or should be achieved quickly. Each step would have to be taken with care to ensure that the scheme was appropriate to Guernsey's needs and all the while seeking maximum possible support from the public.

9.0 The Public Services Department's View

In December 2008 the Board of the Public Services Department, after careful consideration, made the decision not to pursue kerbside collections as a local solution at this time. This view has not altered and is based on a number of factors, explained in more detail below.

9.1 Effectiveness in Achieving the Household Recycling Target

- 9.1.1 The Department does not dispute that kerbside collections could increase the amount of recyclables collected above that received via the existing bring bank system. It does, however, question how much additional recycling can actually be achieved.
- 9.1.2 In terms of the option to lay processed food waste to local land, assuming that all the relevant licensing authorities could be satisfied and further still that there is at this time sufficient land and interest in applying it (all major assumptions at this point with no proof that this could or would be the case) it still leaves continued **permanent** assurance of the outlet channel in the hands of a very small number of businessmen who may at any time be required to alter farming practices based on legislative, practical or economic drivers. This is not considered to be sufficiently sustainable or secure.
- 9.1.3 Export is similarly considered to be largely impractical, with total reliance on outside parties and factors over which Guernsey may not be able to assert any level of control or influence. At this time, the Department has no idea at all how likely the Island would be to secure the appropriate (12 month) licence that would be required for waste to be exported. Similarly, the Department has no idea what, if any, market

might be available for a finished soil conditioner/compost/digestate product. This is not considered to be sufficiently sustainable or secure.

- 9.1.4 Anaerobic digestion for electricity generation followed by landfill is also discounted by the Department. Landfill savings would not be pronounced and the energy, time and cost expended in an island-wide collection process (by necessity in a separate vehicle to any dry recyclables) would have to be considered against any electricity produced. In generating local recycling and waste statistics, the Department follows methodology set-down by the UK Government. Guidance issued indicates that food/green waste put through an anaerobic digestion process but then landfilled, could not be included in recycling/compost figures. This option is seen as neither practical, nor acceptable to the public.
- 9.1.5 It was highlighted earlier in this report that only scenarios that include food waste were projected to achieve the States' target to recycle 50% of household waste. However, in line with the above, **the Department firmly believes that collection of food waste would be inadvisable.**
- 9.1.6 Having discounted food waste, and bearing in mind that the Department has earlier in this report set out its thoughts regarding the inadvisability in collecting green waste as a lone wet recyclable, **the Department feels that practical options for kerbside collections are limited to dry recyclables.**
- 9.1.7 As will have already been seen from the summary table (Appendix 2) the best performing scenario limited to dry recyclables alone, Scenario 8 (weekly collection), is projected to achieve a recycling rate of 46.3%. This is less than 10 percentage points higher than the 36.5% that ISL reported for the status quo. Furthermore, Table 3 demonstrated that 50% participation could actually decrease the projected recycling rate by 4 percentage points, giving a mere 6 percentage point increase on the existing rate. With the participation rate that would actually be achieved by kerbside collections unknown, the Department very seriously questions just how much gain would really be achieved by kerbside collections.
- 9.1.8 **To summarise:**
- **The Department firmly believes that wet recyclables should not be collected**
 - **The collection of wet recyclables are required to achieve the 50% recycling target**
 - **Assuming 80% of households take part, the best performing Dry Recyclable scenario will achieve just 10 percentage points more than**

the status quo.

- **A lower participation rate than that modelled (and as was actually experienced in the trials) could significantly reduce these 10 percentage points.**
- **To achieve a 6-10 percentage point increase on the current recycling rate would cost in the region of £1 million per year.**
- **Improvements to the existing bring system that would otherwise be carried out would further reduce the actual benefit that would be realised through kerbside collections.**

9.2 Value for Money

9.2.1 The reason that has most frequently been quoted as why the Department does not wish to proceed with kerbside collections is cost. This is not strictly correct. More accurately, the Department's decision not to implement kerbside collections stems from the **value for money** that would be achieved.

9.2.2 It is clear from the success of the bring bank system and other Departmental initiatives such as the Waste Recycling Facility at Longue Hougue, that the public of Guernsey has embraced recycling and already voluntarily built it into their lives in many ways. In these financially unsettled times, the Department believes that Government finances should be carefully guarded and directed at projects that are truly essential, rather than something that could rather be considered to be "desirable". In short, any money spent on waste management recycling solutions should represent the best that can be achieved for any given level of finance, rather than what may be perceived to be the best answer.

9.3 Commercial Recycling

The States' aim is to achieve 50% recycling for both household and commercial waste streams by 2010. Kerbside recycling collections will do nothing at all to assist commercial entities in reaching their recycling target. Although the Department believes that appropriate recycling/disposal of waste is part of responsible business management, it also believes that the States should act as a facilitator – ensuring that commercial recycling routes are locally available, accessible, coordinated and economically feasible. To date, it cannot be denied that the majority of effort and finance has been directed at assisting Guernsey's householders to recycle. The Department considers that this must change and a more balanced approach be taken. Targeting such significant finance and resources toward kerbside recycling, which is inaccessible to Guernsey's commercial sector, would not achieve this aim and merely perpetuate the same unbalanced approach.

9.4 The Waste Hierarchy

- 9.4.1 As is common practice in waste management, the Department subscribes to the ‘waste hierarchy’ concept when considering strategies. Stages broadly run as follows:

Prevention – Minimisation (Reduction) – Reuse – Recycling – Recovery – Disposal.

The Department considers that it would be prudent at this point to clearly and emphatically state that it has no agenda to hinder recycling in any way in order to boost waste to “feed an incinerator”. The waste figures supplied to tenderers for the commission of a waste plant (of whatever type), rely on the 50% targets being attained and the resulting recyclables being diverted from the waste stream. **The Department, therefore, has no wish to reduce recycling, rather every desire to maximise it.**

- 9.4.2 The above hierarchy indicates, however, that recycling is by no means the only or most effective way of dealing with waste. Greater savings in landfill space (and ultimately resource use) would be achieved if all areas from prevention to recycling were targeted, which in turns necessitates more education, promotion and different kinds of facilities than are developed by kerbside. Concentrating such significant finance and resources on a single project, which will only benefit a portion of the Island (domestic users), would undoubtedly limit the finance and resources that could be made available for such other initiatives.

10.0 Other Measures to Advance Recycling Rates

In 2005, the recycling rate (excluding green waste) was 19.7%. The comparable figure for 2007 (as was used in the ISL report) was 31.2%. This increase was achieved through introduction of initiatives enabling more material streams to be recycled and also, the Department believes, increasing incorporation of recycling into Guernsey’s popular culture.

However, the Department recognises that it is not acceptable to reject kerbside recycling without providing guidance as to what other options could be pursued in its place to continue to work toward reaching the States’ target in a fairer and more financially acceptable manner. The Department would look to advance all of the following areas:

10.1 Overhaul of the Bring Bank System

- 10.1.1 Guernsey’s existing bring bank system is remarkably good at capturing recyclables, comparing very well to UK authorities when figures are compared like for like. This success has been achieved with a fleet of mismatched bring sites, with significant variance in the

comprehensiveness of bank cover. A summary of the Island's bring bank sites is attached as Appendix 4.

10.1.2 In many ways, the existing system has been a victim of its overwhelming success, with sites expanding and multiplying to cater for increasing demand. In line with this, sites are visually unappealing, service requirements have been stretched, banks fill quickly and excess material is left around the banks, causing litter and encouraging fly-tipping. Thus the current system rather unfortunately also presents distinct disincentives to recycling.

10.1.3 The Department does not consider this current situation to be acceptable and wishes to see an improved system that is more user-friendly, attractive and better suited to the needs of the population. Detailed examination work and investment have, however, been hindered by the lack of a decision regarding kerbside recycling, which could potentially have rendered any improvements obsolete. Should the States be in agreement with the Department and be minded to discount the introduction of kerbside collections, a programme of thorough review, rationalisation and improvements would be proposed.

10.1.4 As a first point of principle, the Department would be minded to work with other Departments and businesses to ensure better location of comprehensive "super sites" across the Island as appropriate according to population density and development patterns.

10.1.5 Great effort would be directed toward locating these sites in areas where they will lend themselves to enabling combined purpose journeys. The Department is aware that an argument to support kerbside collections over bring banks is related to carbon footprint, specifically the amount of vehicle usage required - limited collection trucks versus thousands of personal cars. The Department has not conducted detailed research itself into this subject, but it would strongly question the apparent assumption that Islanders make a dedicated trip to do their recycling. Independent research by Welch⁴ revealed that out of 345 recyclers questioned while using local bring banks, 81% confirmed that their journey had not been a dedicated trip but had rather been combined with another purpose. Already, the Island's major (and indeed many other) recycling sites are located at, for example, supermarkets, car-parks and along major routes. In short, places which very many islanders will actually already be visiting/passing for another reason.

10.1.6 In line with moves to create more comprehensive sites, the Department

⁴ Welch S. Best Practical Environmental Option (BPEO): An Evaluation of Some Aspects of the Environmental Impacts of Waste Paper Collection in Guernsey [dissertation]. Portsmouth: University of Portsmouth; 2008

would look to rationalise the remainder of the fleet to remove less utilised sites, ensuring greater efficiency for servicing than can currently be achieved.

- 10.1.7 It is envisaged that the installation of purpose made, largely underground, receptacles could have great potential for appropriate (this will not be all) sites. Such “iceberg” banks have a very small above-ground presence (similar in size to a litter-bin), with appropriate openings, but have massive underground storage capacities. These allow large amounts of recyclables to be deposited without overflowing; are much more discrete in terms of visual impact and are easily utilised by wheelchair users, the elderly and other groups who might find use of the Island’s existing banks challenging. To date, only very broad initial indicative costs have been secured. Based on an order of just 6 units (so not accounting for any economies of scale that might be secured for larger orders), each unit would cost approximately £7,500 delivered to Guernsey, with installation costs being determined by site-specific conditions. Although not insignificant, it should be borne in mind that due to the capacity presented by each receptacle, and the fact that not all sites would be suitable for use, modest numbers would be required.
- 10.1.8 Regardless of what general ideas may be in mind at this point, the Department appreciates that every individual location would have to be assessed and designed according to its merits. It would be the Department’s aim to ensure that, rather than ‘eyesores’ to be ashamed of, sites could either blend with the landscape through sympathetic, location-appropriate screening such as earth banks and dry-stone walls etc; or indeed be designed in such a way to become a feature of the landscape.
- 10.1.9 In addition to general comprehensive ‘super sites’, the Department is considering more targeted facilities. For example, initial staff level discussions have been opened with the Housing Department in regard to the potential to site facilities in areas of high density housing and where a significant proportion of residents may have issues utilising existing bring sites, such as States Housing Estates. One such area was included in the 2008 Waste Analysis study and findings indeed indicated a low participation in recycling activities. Initial contact has been promising and this is a topic that the Department is keen to progress.
- 10.1.10 Any alterations, such as those described above, would require the Department to re-evaluate existing resources to ensure that a servicing schedule could be maintained that was suited to the Department’s determination to present an enhanced service. Iceberg banks for example, would necessitate additional vehicles to those that are used to empty the current banks. The Department’s contract regarding the recycling of paper, card, plastic and cartons would also need to be reviewed.

10.2 Assistance Systems

The results of the Department's 2007 kerbside survey highlighted that 91% of the respondents had access to appropriate transport, while of those that did not have cars, many still recycled using the bring bank system. However, the Department accepts that a fair criticism of the existing bring-bank system is that those who are less mobile through health reasons, or are lacking cars etc may be unable to recycle to the extent that they might wish. Therefore, to ensure that all those who wish to recycle can do so, the Department is keen to work with other bodies to establish assistance systems for those unable to recycle at the bring banks. It has been noted that some Parishes are already showing an interest in such systems, while the Department feels that organisations that have a role supporting individuals in the community may also be able to play a role in helping Public Services to identify, advise and assist appropriate individuals.

10.3 Promotion, Education and Liaison

10.3.1 The Department believes that it must target not just recycling, but also encourage people to tackle waste higher up the hierarchy. Active work is already undertaken on different streams, including:

- Intensive programmes of visits to educational institutions, social clubs etc, by the Recycling Officer;
- Promotional stalls at major public events;
- Publication of helpful information in leaflets, telephone directories, on the Department's website and via the Department's recorded information line;
- Supply of subsidised home composting kits;
- Provision of subsidies to encourage the use of real nappies.

10.3.2 Promotion and education is also an active part of the activities of the Guernsey Recycling Advisory Forum (GRAF). This body was set up by the Department to advise it in respect of opportunities for recycling the Island's waste. Current initiatives include working closely with local supermarkets to run in-store campaigns to help consumers focus on various aspects of waste at the point of sale, before the material even reaches their home.

10.3.3 The Department intends to build further on these strategies. The Department is also aware of investigations into a scheme to try and reduce the amount of black bag waste generated in at least one Parish and it would be interested to liaise with any Parish officials or other bodies with similar aims.

10.4 Commercial Activities

10.4.1 As the issue under debate is kerbside recycling, the Department has largely confined the content of this report to the domestic side of recycling. However, as pointed out above, the Department feels that a more balanced approach must be taken to support the commercial sector in its endeavours to increase recycling. The Department has previously established a Waste Industry Forum to advise it on waste reduction, re-use and recycling opportunities and associated matters from the perspective of local industry/businesses. Through GRAF, the Department maintains an ongoing relationship with the Chamber of Commerce and local retailers, both of which are demonstrating enthusiasm for recycling and waste prevention matters.

10.4.2 The Department intends to continue with existing commercial interaction and indeed build upon it. In building these links and raising expectations of guidance, assistance and initiatives it is vital that the Department be able to direct the finances and resources required. It is envisaged that this will be more achievable if the States is not already directing hundreds of thousands of pounds every year toward household kerbside collections.

11.0 Recommendations

The Public Services Department recommends the States to agree:

- 1) Not to pursue household kerbside recycling collections, in any form and
- 2) To endorse the other measures and work identified.

Yours faithfully

B M Flouquet
Minister

Appendix 1

REQUÊTE

KERBSIDE COLLECTION OF RECYCLABLES

THE HUMBLE PETITION of the undersigned Members of the States of Deliberation SHEWETH:-

1. In January 2007 the States supported an amendment to adopt a target of 50% recycling of the island's household and commercial waste by 2010.
2. Up to the end of June 2008, the Public Services Department claimed that household recycling had risen to 30.8%.
3. In August 2008 consultants Integrated Skills Ltd reported that with kerbside collections of dry recyclables recycling would reach 46% and with food waste collection of wet recyclables we could progress to 61%.
4. In the opinion of your Petitioners kerbside collection of recyclables will channel efforts into resource recovery, intensive waste segregation, recycling and composting and extend the life of Mont Cuet.
5. In the opinion of your Petitioners kerbside collection of recyclables will help enable the States to achieve the waste policy to attain the 50% recycling target for household and commercial waste by 2010.
6. In that kerbside collection of recyclables is considered a low risk strategy to reduce waste volumes and increase recycling rates, your Petitioners believe that it would promote a positive image to the recycling efforts of the States of Guernsey.

THESE PREMISES CONSIDERED, YOUR PETITIONERS humbly pray that the States may be pleased to resolve as follows:-

To direct the Public Services Department to report back to the States by no later than June 2009 on the matter of kerbside collection of recyclables, such report to include plans and funding mechanisms and a comprehensive assessment of all practical implications relating to the introduction of collections island wide of wet and dry recyclables on a permanent basis.

AND YOUR PETITIONERS WILL EVER PRAY

GUERNSEY, this 10th day of December, 2008

D de G De Lisle
M J Fallaize
C A Steere
J A B Gollop
M W Collins
M P J Hadley
A R Le Lievre
B L Brehaut
J Kuttelwascher
S J McManus

C N K Parkinson
G P Dudley-Owen
M G G Garrett
J M Tasker
J M Le Sauvage
M M Lowe
L R Gallienne
S L Langlois
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PUBLIC SERVICES

A STATES OF GUERNSEY GOVERNMENT DEPARTMENT

Modelling of Kerbside Recycling Options

FINAL REPORT

presented by



Integrated Skills Limited

July 2008

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APPENDIX A – Application of Compost to Agricultural Land



1. INTRODUCTION

1.1 Background & Project Methodology

In January 2007 the States of Guernsey resolved to “commit to high recycling for household and commercial waste, with a target of 50% and a 2010 delivery date”.

As providers of Technical Service Support to the Public Services Department (PSD), and the only locally based waste management consultants with extensive and recent experience of kerbside collection schemes (for both recyclables and residual waste), Integrated Skills (Guernsey) Ltd (ISL) was appointed to carry out a comprehensive review of kerbside recycling options and scenarios. The specific constraints for kerbside recycling in Guernsey and the States of Guernsey’s target of 50% recycling by 2010 were fundamental factors to be considered by the project.

The project methodology followed a series of logical steps:

- Establish baseline data for information required by the model e.g. population, number of households, waste composition, etc.
- Comprehensive review of all options related to kerbside recycling
- Coarse screening of options to produce a shortlist for detailed modelling
- Development of a comprehensive model incorporating relevant baseline data, constraints and assumptions
- Modelling and comparison of viable kerbside collection scenarios
- Reporting of modelling results and key conclusions

1.2 Structure of this Document

The remainder of this document is presented as follows:

- Section 2:** presents a summary of the baseline data used for modelling
- Section 3:** provides an overview of the critical factors and rates achieved for recycling
- Section 4:** contains a preliminary review of the kerbside collection options leading to a short list for further investigation
- Section 5:** sets out the assumptions used in the model and presents the results of the scenario modelling
- Section 6:** presents the report’s key conclusions
- Appendices** provide supporting information relating to the application of compost to land



2. BASELINE DATA

2.1 Household and Population Data

In the absence of recent accurate household and population data for Guernsey, the 2001 census data was used as a starting point to extrapolate estimated data for 2009 that were subsequently used for modelling (see Table 1 below). The estimate extrapolated number of households for 2009 compares very well with the latest information from the States of Guernsey's Corporate Address File (CAF).

Table 1: Household and Population Data

Parish	Households			Population
	2001 Census	2009 (est.)	2008 Guernsey Corporate Address File (CAF)	2009 (est.)
St Peter Port	6767	8,367	8049	22097
Vale	3559	3,759	3766	9927
St Sampson	3313	3,713	3673	9806
Castel	3190	3,390	3288	8953
St Martin	2254	2,254	2547	5953
St Saviour	1020	1,020	1032	2694
St Andrew	855	855	878	2258
St Pierre du Bois	786	786	826	2076
Forest	536	536	600	1416
Torteval	366	366	384	967
Total	22646	25,046	25043	66145

2.2 Waste Arisings – Quantity

The latest data from PSD shows that 23,752 tonnes of household waste were produced in Guernsey in 2007. States Works estimate that an additional 2,000 tonnes of green waste from Guernsey households were collected through the bring scheme, which means that the overall total for Guernsey household waste production for 2007 was 25,752 tonnes (see Table 2 below).

Table 2: Household Waste Production (2007)

Waste Type	Quantity (tonnes)
Parish Waste	14,633
Bulky Waste Collections	510
Litter	268
Civic Amenity Site (Non-Recyclable)	935
Household Waste Recycled	7,405
Green Waste (estimate)	2,000
Total Household Waste Produced	25,752



Based on previous work undertaken by ISL and Enviros, a growth rate of 1.75% per annum has been applied to determine forecasts for household waste production. These are shown in Table 3.

Table 3: Forecast Household Waste Production

Year	Quantity (tonnes)
2009	26,661
2010	27,128
2011	27,603
2012	28,086
2013	28,577
2014	29,077
2015	29,586

Effect of Kerbside Collection of Green Waste on Total Quantities Collected

This is a complex issue. However, a recent report¹ undertaken for WRAP concluded that there is growing evidence to support the following conclusions:

- Free garden waste collections increase the quantity of waste arisings. In areas with high proportions of detached and semi-detached houses, quantities of garden waste collected can exceed 300 kg per household. Such outcomes increase recycling rates, but they also increase the overall quantity of waste to be collected and treated.
- The increase in collection of garden waste at the kerbside is not offset on anything like a one-to-one basis by a reduction in the collection at Household Waste Recycling Centres (HWRCs), or by a reduction in quantities of refuse collected. Hence, a 'genuine' increase in collected waste can be expected (as opposed to an increase in collected garden waste simply reducing quantities collected through other routes). In some systems, the ratio of 'new material' to 'material previously collected' might be as high as 2:1 for garden waste.

Taking into account the conclusions above, we have based our modelling scenarios on an assumption that the introduction of kerbside collection for green waste would double the quantity of green waste in the household waste stream.

It should be clearly emphasised that kerbside collection of 'new material' and the subsequent composting and usage of the final product would incur additional costs that are currently not incurred when householders undertake home composting.

2.3 Waste Arisings – Composition

Reliable composition data is a fundamental and critical requirement for considering which materials to collect as part of a kerbside collection scheme. As the accuracy and

¹ Eunomia: Managing Biowastes from Households in the UK: Applying Life-cycle Thinking in the Framework of Cost-benefit Analysis – A Final Report for WRAP (May 2007).



confidence in waste composition data rises, so will the accuracy and confidence in forecasting the recycling rates achievable for various materials and scenarios.

Prior to this study, the last composition analysis of Guernsey's household waste was undertaken in 1995 and 1996. Since that date, various attempts have been made to interpret and use that data for waste related projects. However, during the course of this study it was agreed that composition data that is over 10 years old was unreliable and posed too great a risk to the accuracy of the model's findings. Therefore a new composition analysis was subsequently carried out in April 2008 and the findings are shown in Table 4 below.

Table 4: Household Waste Composition Analysis					
	Average for a Guernsey household²	Extrapolated Parish Waste for 2007³	Recyclables⁴	Total Waste & Recyclables	Adjusted Average for a Guernsey household
Primary Categories	Concentration (%)	Quantity (tonnes)	Quantity (tonnes)	Quantity (tonnes)	Concentration (%)
Kitchen organics	35.58	5206		5206	21.66
Garden organics	1.41	206	2000	2206	9.18
Paper	12.20	1787	3049	4836	20.12
Card	5.69	831	1260	2091	8.70
Glass	4.31	631	1667	2298	9.56
Plastic Bottles	1.45	212	160	372	1.55
Other Plastics	12.23	1790		1790	7.45
Cans & Alu foil	3.00 ⁵	457	177	634	2.64
Other Metals	0.97	123	688	811	3.37
Textiles and shoes	3.48	509	403	912	3.80
Sanitary	8.32	1217		1217	5.06
Hazardous	0.31	45		45	0.19
WEEE	0.86	126		126	0.52
Wood	0.95	139		139	0.58
Misc. combustible	2.61	382		382	1.59
Misc. non combustible	1.25	183		183	0.76
Fine elements	5.39	789		789	3.28
Total	100.00	14633	9404	24037	100.00

The dominant materials are kitchen organics (food waste) and paper, which make up 21.66% and 20.12% of household waste respectively.

² Composition data taken from April 2008 survey.

³ Each material category extrapolated based on composition data and total parish waste for 2007.

⁴ Actual collection data from 2007 bring scheme (with the exception of garden organics figure, which is an estimate provided by States Works).

⁵ Based on the assumption that 75% of ferrous metal was food cans, drink cans and aerosols.



A high proportion of paper is already collected for recycling via the bring scheme. The latest waste audit also found that a significant fraction of the paper currently found in residual household waste was either non recyclable or only suitable for home composting. Taking account of the quantities of paper currently recycled via the bring scheme, it can be calculated that only up to approximately 85% of all paper found in the average Guernsey household waste composition is potentially recyclable via a standard bring or kerbside collection scheme.

It is also important to note that a high proportion of other significant dry recyclables such as card and glass are already collected for recycling via the bring scheme.

Table 5 shows that a maximum of 86% of the overall amount of household waste produced in Guernsey is potentially recyclable. However, only 74% is potentially recyclable via kerbside collection. Critically, these figures do not take into account coverage, capture and participation rates that need to be applied to the total amounts of potentially recyclable materials in order to calculate the realistic estimate of achievable recycling rates. This is discussed further in section 3 below.

Clearly, a simplistic review of the amounts of potentially recyclable material already indicates that the collection of food waste will provide the greatest potential for increasing the overall recycling rate. However, the viability of a food waste collection scheme will depend on the ability to find a sustainable market for the resulting compost.

Table 5: Summary of Potentially Recyclable Material

	Adjusted Average Waste Composition for a Guernsey household	Material that is Potentially Recyclable (Kerbside or Bring)	Material that is Potentially Recyclable (Kerbside Only)
Primary Categories	Concentration (%)	Concentration (%)	Concentration (%)
Kitchen organics	21.66	21.66	21.66
Garden organics	9.18	9.18	9.18
Paper	20.12	17.10	17.10
Card	8.70	8.70	8.70
Glass	9.56	9.56	9.56
Plastic Bottles	1.55	1.55	1.55
Other Plastics	7.45	7.45	0
Cans & Alu foil	2.64	2.64	2.64
Other Metals	3.37	3.37	0
Textiles and shoes	3.80	3.80	3.80
Sanitary	5.06	0	0
Hazardous	0.19	0	0
WEEE	0.52	0.52	0
Wood	0.58	0.58	0
Misc. combustible	1.59	0	0
Misc. non combustible	0.76	0	0
Fine elements	3.28	0	0
Total	100.00	86.11	74.19



3. RECYCLING RATE

3.1 Critical Factors

The quantity of recyclable material collected and therefore the recycling rate is dependent on a number of critical factors, which include:

- Household waste composition: the quantity of each waste material
- Capture rates: the amount of each targeted material set out by the participating households compared to the amount of the targeted material generated by the participating households
- Participation rates: the percentage of served households putting out a container at least once per month
- Coverage rate: the number of households offered the service compared to the total number of households

There are a variety of factors⁶ which can influence each of the variables outlined above, these include:

- Frequency of collection
- Receptacle/containment method
- Area/housing characteristics and demographics
- Seasonal variation
- Educational and awareness campaigns
- Use of home composting bins
- Location and provision of facilities at civic amenity sites (and the relationship between kerbside and bring collection schemes)

It is also important to have an understanding of the relative sensitivity of these factors in relation to costs and the overall recycling rate for each material when determining which collection scheme will achieve best value within limited resources. For example, the overall recycling rate:

- will not be sensitive to potentially costly efforts to increase capture & participation rates for materials that only make up a small fraction of the waste composition.
- may not be sensitive to costly efforts to achieve a 100% coverage rate, and a lower coverage rate for kerbside collection that targets densely populated areas combined with strategically placed bring sites may achieve a similar overall recycling rate for a much lower cost.

⁶ Northamptonshire County Council – Waste Compositional Analysis – Final Report (March 2007)



3.2 Guernsey's Recycling Rate

Successful recycling schemes based on bring banks have been operating in Guernsey for a number of years. The official data for 2007 determined that 31.2% was recycled excluding green waste and this figure increases to 36.5% when green waste is included as it is in the UK figures.

Despite the resolution to “commit to high recycling for household and commercial waste, with a target of 50% and a 2010 delivery date” made by the States of Guernsey in January 2007, it should also be noted that the Environment Department's report to the States for the same January 2007 meeting stated:

“Whilst the [Environment] Board supports the desire for high recycling and believes that Guernsey's current performance can be improved, it has serious reservations over the achievability and long-term deliverability of the 50% target.”

3.3 Recycling Performance Elsewhere

High recycling rates in other parts of the world are often cited as a reason why Guernsey should also be able to set and achieve similar targets. However, consideration should be given to whether the same conditions and constraints exist and the same assumptions apply before accepting that such comparisons are appropriate and / or valid.

For example, a recent publication⁷ by the Scottish Government referred to high recycling rates of greater than 60% being achieved by Bavaria, Netherlands, Flanders and Austria. However, the report stated that all of these countries / regions have systems in place for variable charging for households and Extended Producer Responsibility (EPR). Considered in the context of Guernsey:

- It would be possible for Guernsey to introduce variable charging, whereby householders are charged based on the amount of residual waste they actually produce, but this and other initiatives to encourage behaviour change (and therefore increase recycling) are beyond the scope of this study.
- The use of EPR whereby responsibility for product-related waste shifts to private industry, obliging producers, importers and/or sellers to internalise waste management costs in their product prices, is unlikely to be practicable for Guernsey due to the relatively small scale of the Island and its inability to exert influence on producers.

3.3.1 Europe

Mandatory recycling targets for all EU Member States have recently been agreed by the European Parliament. The new Waste Framework Directive will stipulate that EU Member States will have to achieve recycling rates of 50% for household and similar wastes by 2020, and 70% recycling rates for construction and demolition waste by the same date.

⁷ International Review of Recycling Policies by the Scottish Government Rural and Environment Research and Analysis Directorate (2008)



Although the revisions are still to go through the full European Union (EU) legal process before becoming mandatory, the compromise agreement reached between the European Parliament and the European Council, and the European Commission made it probable that these targets would remain.

According to Defra's Waste Regulation Policy Manager⁸:

- Green waste will not count towards the 50% target for municipal waste as set out in the revisions to the European Waste Framework Directive
- The target for recycling and re-use of municipal waste in the current version of the revisions only applied to metal, glass, paper and plastic
- Article 11 of the current compromise agreement states

“By 2020, the preparing for re-use and the recycling of waste materials such as at least paper, metal, plastic and glass from households and possibly from other origins as far as these waste streams are similar to waste from households, shall be increased to a minimum of overall 50% by weight.”

- The current wording of how the UK will interpret this clause is

“The UK intends to apply to the totality of household waste the requirement to increase, by 2020, to a minimum of overall 50% by weight, the preparing for re-use and the recycling of waste materials from households and, possibly, similar waste streams. The four waste streams specified in paragraph 2(a) of Article (i.e. paper, metal, plastic and glass) would be included in that overall target where they originate from households but the 50% target would not apply individually to each of the specified wastes.”

This would mean that although each of these four materials would not individually require a 50% municipal re-use or recycling rate, overall the total contribution of each material would have to lead to meeting the 50% target.

3.3.2 Top Performing Local Authorities in England

The latest data published by Defra states that “there was an increase in the household recycling rate, from the average rate of 30.9% between April 2006 and March 2007 to 33.2% between October 2006 and September 2007”.

The most recent published data for individual English local authorities shows household waste recycling and composting rates for the period from April 1, 2006 to March 31, 2007. It shows that:

- North Kesteven District Council had the highest overall recycling & composting rate with 55.49%, consisting of 28.08% from recycling and 27.41% from composting.
- Only 8 of the 393 local authorities achieved an overall recycling & composting rate of greater than 50%. The type of waste collection system adopted by all of these high performing authorities is an alternate weekly collection (AWC) scheme where residual waste is collected in week one and recyclables and organic waste is collected the following week. The organic material targeted tends to be garden

⁸ News item on the Recycling & Waste Management News & Information website



waste (with or without cardboard), while some co-mingle garden waste with food waste in a wheeled-bin. AWC schemes have been widely adopted as a method to improve recycling rates, promote waste minimisation and limit collection costs.

- The highest recycling rate achieved for only dry recyclables (i.e. without composting) was 34.21% by Mid Suffolk District Council.

An interesting example of recent progress made since the publication of the figures above is Uttlesford District Council (UDC). UDC is now consistently attaining a recycling rate for household waste of approximately 55%. This is particularly interesting because they are achieving this without kerbside collection of garden waste. There appear to be 3 key factors to their success:

1. The introduction of kerbside collection for food waste
2. A change to Alternate Weekly Collection (AWC) for dry recyclables and residual waste
3. Implementation of significant investment into a public communications strategy and resources to achieve high participation and capture rates, which has also increased the quantities collected by their bring scheme e.g. glass and green waste.

3.3.3 Other Comparable Island Communities

Jersey⁹

Jersey has a similar waste collection system and institutional arrangements as Guernsey's insofar as the vast majority of recyclables are collected through the bring scheme, and it is the responsibility of each of the 12 Parishes to collect household waste.

St John is the only Jersey Parish that currently has a kerbside collection service. It is a relatively basic service that collects from approximately 1000 households using 3 refuse collection vehicles (RCVs) that follow each other with each one collecting different materials. A participation rate of greater than 70% is achieved.

Jersey has considered the introduction of a collection service for kitchen/food waste but it was considered that the Island's 'land bank' was insufficient to take the resulting biosolids in addition to the biosolids that are already applied to land from green waste composting and sewage sludge from wastewater treatment.

Jersey does not record separate recycling rates for household and commercial wastes. In 2007, Jersey achieved an overall recycling rate of 30.4% for all wastes.

The States of Jersey's Transport & Technical Services 2008 Business Plan states "The Solid Waste Strategy is reliant upon increasing recycling and this continues to be a key focus for the Department. The target for 2008 is to recycle and compost at least 30% of total waste tonnage. So far, the Island has been doing very well and has been slightly ahead of target, this must be built upon. Kerbside collection of recyclables has been very successful in St John."

⁹ Information from John Rive and Emma Richardson, Recycling Officers, Transport & Technical Services, States of Jersey



Recently published information¹⁰ by Jersey's Minister for Transport & Technical Services and the Director of Jersey's Waste Strategy Project stated that:

- Jersey needs to double the amount [quantity] of waste recycled in order to meet a 36% recycling rate by 2018
- To achieve the 36% target, doorstep [kerbside] recycling will have to be introduced in each parish by 2011

Isle of Man

An official figure for the recycling rate of household waste in the Isle of Man does not appear to have been published. However, the following information was obtained from the Isle of Man Government website and discussions with their Recycling Manager¹¹:

- For 2005/06, 47,430 tonnes of household waste were produced (including CA sites) and 2,600 tonnes were collected for recycling at bring sites. This gives a recycling rate of 5.2%.
- A new recycling strategy has been agreed and implementation of a kerbside collection scheme is currently ongoing. The strategy is "to offer where practically, environmentally and economically feasible a Kerbside Recycling Collection Service to all main centres of population and housing density on the Isle of Man" and to "enhance 'Bring Site' facilities in areas not included within a kerbside collection scheme".
- The first implementation phase will provide kerbside recycling collection for the 3 most densely populated areas, which will cover approximately 50% of the households in the Isle of Man.
- The new strategy includes the following relatively modest targets:
 - Divert 8% by weight of material collected at the kerbside for recycling by 2010
 - Divert 10% by weight of material collected at the kerbside for recycling by 2014.
 - Divert 15% of material collected at the kerbside for recycling by 2018

¹⁰ Article in the Jersey Evening Post dated 10 June 2008

¹¹ Information from Stephanie Gray, Recycling Manager, Waste Management Unit, Department of Local Government & the Environment, Isle of Man Government



4. REVIEW OF KERBSIDE COLLECTION OPTIONS

4.1 Options Overview

A wide range of options and variables need to be carefully reviewed and considered before implementing a new or revised kerbside collection scheme. These include:

- Segregation and sorting method
- Containerisation
- Collection vehicles
- Collection area
- Collection timing
- Householder participation
- Collection frequency
- Residual collection frequency
- Materials collected

Each of the options is briefly described below.

The optimal kerbside collection scheme will be the combination of options that provides the best value scenario to meet specified targets within the constraints for a particular location and set of circumstances.

In order to narrow down the number of options to a reasonable number to be modelled, the options under each of the following headings were coarse screened based on their suitability for implementation in Guernsey.

Segregation and Sorting Method

Options include:

- Segregated and kerbside sort

Kerbside sort systems are where materials are sorted by type at the kerbside into different compartments of a collection vehicle. A recently published report¹² by WRAP commented:

“In kerbside sort systems, most materials are kept in separate streams on the vehicle and not compacted, though some material streams can be collected mixed, e.g. cans and plastic bottles. This is to reduce the picking time and increase the effective use of space on the vehicle.

An advantage of sorting the material at the kerbside is that contamination or materials that cannot be recycled can be identified and left in the container. If the reasons for this are explained, residents are provided with feedback on the correct use of the service. More importantly, this sorting ensures a high

¹² Kerbside Recycling: Indicative Costs and Performance (published by WRAP in June 2008)



quality material for market. Typically the contamination in kerbside sort materials is less than 0.5%.”

- Single stream co-mingled and MRF

Single stream co-mingled systems are where materials are collected in a single compartment vehicle with the sorting of the materials occurring at a MRF (Materials Recovery Facility).

- Hybrid (e.g. two stream partially co-mingled.)

A hybrid collection involves a mixture of separated and co-mingled dry recyclable material. A wide range of combinations of containerisation used (for example: 2 bins, 1 bin and 1 bag, 1 bin and 1 sack, 2 sacks, and so forth). The same types of vehicles as outlined below are utilised, depending on the particular containerisation used.

All of these options are considered to be viable for Guernsey and will be modelled.

Containerisation

Options include:

- Bags (disposable, reusable, and coloured sub-options)
- Rigid boxes
- Wheeled bins
- On-street / communal bins

According to the UK’s Waste & Resources Action Programme (WRAP), the factors affecting kerbside container choice include:

- handling and ease of use;
- ongoing maintenance;
- materials collected;
- the degree of kerbside sorting; and
- compatibility with collection vehicles.

However, the list above fails to adequately cover the critical factors of on-site storage and accessibility, which is a key constraint in Guernsey due to the high average density of housing. Without further research and direct surveying of households in Guernsey, it is not possible to be certain, but we believe that the use of wheelie bins would be impractical for many Guernsey households, particularly if more than one is required. We also believe that on-street / communal bins would be unsuitable for Guernsey. Therefore, only bags and rigid boxes will be modelled in this study.

Collection Vehicles

There are many different vehicles available for kerbside collection of recyclables. They can be broadly divided into either single-compartment or multi-compartment options.



Single-compartment vehicles include:

- Rear loading refuse collection vehicles (RCVs)
- Rear loading single-cage flatbeds

Multi-compartment vehicles include:

- Kerbsiders

Kerbsiders allow loaders to sort materials into troughs mounted to the nearside of the vehicle. The troughs are hydraulically emptied into different compartments. Each compartment is tipped in turn at a recycling depot/bulking station.

- Stillage vehicles

Stillage vehicles are purpose built and comprise a number of cages or boxes for the different materials collected. Stillages are removed by fork lift truck and emptied at a recycling depot/bulking station.

- Split-body vehicles

Split body vehicles (RCV or caged vehicle) enable separate waste streams to be loaded into separate compartments of the vehicle on the same collection round. The main variations¹³ are:

- ‘Twin Pack’ – the section split is vertical from front to the rear of the vehicle
- ‘Duo’ – the vehicle has a separate section behind the cab serviced by a bin-lift, and a single section at the rear
- ‘One Pass’ – the vehicle has a conventional refuse collection body to the rear of the vehicle, but this body is split vertically to customers’ requirements. It also has a recycling box behind the cab serviced by a bin-lift

The choice of vehicle for kerbside collection can be complex and will depend on:

- Costs
- Combination of materials collected
- Collection frequency
- Collection mode (co-mingled or segregated)
- Collection timing (night or day time)
- Required collection speed (constraints related to traffic disruption)
- Technical constraints such as:
 - Length (~7m) and width (2.3m) restrictions
 - Flatbed vehicles unsuitable for food waste
 - Kerbsider unsuitable for card collection and night time work
 - Side loading difficult in narrow lanes

¹³ Collecting, transfer, treatment and processing household waste and recyclables (published by the Health and Safety Executive 2008)



-
- Time per stop critical for daytime collection
 - Health and safety concerns for caged flatbed vehicles
 - Noise issues (night time and early start)
 - Different crew requirements and capacities (tonnage and volume)
 - Varying number of trips per day

Technical constraints, particularly width restrictions, mean that many vehicle options that are commonly found elsewhere would not be suitable for use in Guernsey. Following a detailed review and analysis of the market, it was decided that only 5 vehicles offered the critical “narrow body and short wheelbase” specification required for use in Guernsey’s narrow lanes. The 5 vehicles, which will be taken forward for modelling, are:

- Rear loading RCV
- Side loading multi-compartment kerbside recycling vehicle (kerbsider)
- Rear loading dual compartment RCV (Ecofar model only)
- Rear loading single-cage flatbed vehicle
- Rear/side loading multiple-cage flatbed vehicle

Figure 1: Rear loading RCV





Figure 2: Kerbsider



Figure 3: Rear loading dual compartment RCV (Ecofar)



Collection Area

Options include:

- Island-wide
One collection service for all of Guernsey.
- Parish-based
A separate collection service for each of Guernsey's parishes.
- Densely populated areas only
One collection service that only collects from the most densely populated parts of Guernsey.

Given the relatively high density of households throughout Guernsey and assuming that a new kerbside recycling service would be offered to all households (a coverage rate of



100%), the option to provide the service to 'densely populated areas only' will not be modelled. Island-wide and parish-based options will be modelled.

Collection Timing

The timing of collections rounds is very important, particularly in Guernsey where heavy traffic (e.g. on commuter routes or near schools) needs to be avoided. Specific issues related to collection timing include:

- Congestion and disruption to the travelling public caused by collection vehicles
- Low collection productivity caused by congestion
- Health and safety concerns for collection crew due to other vehicles
- Noise caused by handling and/or sorting of recyclables, particularly when dry recyclables are sorted at the kerbside

Many variations are possible for collection timing, but some possible options include:

- Rounds that start at about 7am (for daylight) in rural areas and arrive at urban areas after peak traffic.
- Rounds that start at very earlier in the morning in highly trafficked areas but then work out towards rural areas before peak traffic times. However, this option could cause noise problems in residential areas (particularly if kerbside sorting is used).

The detailed collection timing options are too numerous and complex to be modelled during this exercise. However, the implementation of any kerbside collection scheme will need to consider the issues listed above.

Householder Participation

Options include:

- **Opt-in:**
Householders are offered a kerbside recycling scheme and must confirm that they would like to participate.
- **Opt-out:**
Householders are offered a kerbside recycling scheme and those that do not want to participate can choose to say so and will not be included in the scheme.
- **Compulsory:**
Householders are offered a kerbside recycling scheme and participation is made a legal requirement.

For this study we have assumed that opt-out participation will be used for all kerbside recycling scenarios.



Collection Frequency

The most common collection frequencies for dry recyclables and organic wastes are weekly and fortnightly. A seasonal collection for green waste is also an option.

For this study we have assumed that all kerbside recycling scenarios will have a collection frequency of weekly and/or fortnightly.

Residual Collection Frequency

The collection frequency of residual waste influences the capture and participation rates for kerbside recycling schemes. Collection frequency options for residual waste include twice weekly, weekly and fortnightly.

Many English local authorities now collect on a fortnightly basis, rotating between residuals collection one week and recyclables the next. Alternate weekly collection (AWC) is becoming more common across all housing types, with at least 100 local authorities¹⁴ now having fortnightly collections to a greater or lesser degree. AWC schemes have been widely adopted as a method to improve recycling rates, promote waste minimisation and limit collection costs.

The type of the AWC scheme adopted generally follows two main designs:

- Week 1: residual waste in wheeled-bin; Week 2: organic waste (garden only or garden, kitchen and card) in wheeled-bin plus weekly or fortnightly collection of dry recyclables (from box/bag/bin).
- Week 1: residual refuse in wheeled-bin; Week 2: co-mingled dry recyclables in wheeled-bin (with optional chargeable garden waste service).

One of the reasons that AWC schemes are successful is they encourage householders to consider how they manage their household waste in order to fit in with the collection schedule and limited storage provision (i.e. refuse collection in week one and recyclables/organic waste in week two). This effectively shifts the responsibility for waste minimisation and increased separation of recyclable materials to the householder, resulting in higher levels of participation and recycling.

For the purposes of this study, we have assumed that alternate weekly collection would not be acceptable (publicly or politically) at this point in time, and therefore no changes will be made to the existing collection service for residual waste.

Materials Collected

Options include:

- Dry recyclables
 - Paper
 - Cardboard

¹⁴ Collecting, transfer, treatment and processing household waste and recyclables (published by the Health and Safety Executive 2008)



-
- Tins & cans
 - Glass
 - Plastic bottles
 - Textiles
 - Organic Waste
 - Food/Kitchen Waste
 - Green/Garden Waste

The collection and processing of the dry recyclables listed above is well established in Guernsey via the bring scheme. The introduction of kerbside collection for any combination of these materials is a relatively straightforward decision to make based on the model's forecast recycling rates and costs.

However, whilst it is also relatively straightforward to model and forecast recycling rates and costs for kerbside collection of organic wastes (food and green waste), the decision to introduce such a scheme is much more difficult due to the crucial and complex issues related to the use of the resulting compost (likely to be application to land in Guernsey). Resolution of these issues is beyond the scope of this study. However, they are commented on further in section 4.2 below.

Other significant factors to consider regarding kerbside collection of organic wastes were summarised in a report¹⁵ recently published by Northamptonshire County Council:

“Kitchen waste arisings are more consistent than green garden waste, both in terms of production profiles amongst different types of household and over time, so it should be easier to set up a stable collection system for this material. However, the separation of kitchen waste from residual waste requires a change of practice in the home, which in turn requires ongoing education, publicity and physical storage space for the segregated material.”

Defra recently published the following findings from major new research¹⁶ on food waste recycling:

- Nearly two-thirds of households regularly use a food waste collection scheme when it is provided on a weekly basis with residual waste collected each fortnight.
- Weekly food waste and fortnightly residual waste system provided the highest amount of food waste collected from households.
- Only one in 10 homes did not see the point of recycling their food waste.
- It suggests that dedicated food-only collection systems capture more food waste than schemes combined with garden waste collections.

¹⁵ Northamptonshire County Council – Waste Compositional Analysis – Final Report (March 2007)

¹⁶ Enhancing participation in kitchen waste collection schemes - household behaviour and motivations (Defra, 2008)



-
- There are complex factors involved in making a food waste collection scheme successful. These include taking account of householder ages and socio-demographic profiles.

Defra and the WRAP have been trialling household food waste collection systems in 19 council areas to develop good practice guidance. A final report on the trials is expected in late spring / early summer 2008.

Kerbside collection of various combinations of all of the dry recyclables and organic wastes listed above will be modelled in this study.

4.2 Key Issues and Constraints

4.2.1 *Island-Wide versus Parish-Based Collection*

Guernsey's existing collection services for residual waste are provided through parish-based contracts. A key question for the implementation of kerbside recycling collection in Guernsey is whether it should be an island-wide or parish-based scheme.

Key factors that need to be considered include:

- The comparative costs of island-wide and parish-based schemes. This is discussed further in section 5.3.4 below.
- Guernsey's Parish Douzaines have responded negatively to proposals for a parish-based scheme, mainly due to concerns about the additional costs.
- Existing smaller parish waste contractors believe that the high capital investment required to implement kerbside recycling means that parish-based schemes will not be economically viable. However, States Works does have sufficient resources to carry out a parish-based system.
- With parish-based schemes, it would be more difficult to maintain adequate control to ensure the quantities & quality required for recycling targets and processing facilities respectively.
- Strategic considerations e.g. creation of a monopoly situation, need for regulation, etc.

4.2.2 *Application of Compost to Agricultural Land*

The demand for compost derived from green and/or food waste and the ability of Guernsey's 'land bank' to assimilate the additional biosolids is a critical factor influencing the decision to introduce a collection service for organic wastes. This issue also needs to consider other potential future contributors to the quantity of biosolids that may require application to Guernsey's 'land bank' e.g. food waste derived compost and sewage sludge. It has already been stated in section 3.3.2 above that Jersey is not pursuing kerbside collection of food waste due to these limiting factors.

Anecdotal evidence from at least one major local farmer suggests that there is potential to apply significant quantities of compost to land if the quality of the compost can be proven. However, the same anecdotal evidence also suggests that farmers would not pay for the compost.



Integrated Skills

The States of Guernsey's Agriculture and Environment Adviser was asked to comment on this key area of concern. His response, which is appended in full to this report, highlighted the following issues that need to be considered and resolved:

- Potential contamination of composts produced from food waste with glass, plastic and other fine material
- Risk of infection and disease caused by food waste containing material of plant and animal origin
- Limited area of agricultural land where composted waste could be applied in Guernsey
- Use of compost and compost-like material on land within the water catchment area and the level of nitrates and other nutrients in both ground water and surface waters
- Quality Assurance standards laid down in commercial agreements between farmers and local supermarkets



4.3 Short List of Options

Based on the review of options above, the short list of options for modelling and further consideration is summarised below in Table 6.

Table 6: Short list of options for modelling

Category	Option	Sub-options
Segregation and Sorting Method	Segregated and kerbside sort	
	Single stream co-mingled and MRF	
	Hybrid	
Containerisation	Bags	Disposable Reusable Coloured sub-options
	Rigid boxes	
Collection Vehicle	Single-compartment	Rear loading RCV Rear loading single-cage flatbed vehicle
		Side loading multi-compartment kerbside recycling vehicle (kerbsider)
	Multi-compartment	Rear loading dual compartment RCV (Ecofar)
		Rear/side loading multiple-cage flatbed vehicle
Collection Area	Island-wide	
	Parish-based	
Householder Participation	Opt-out	
Collection Frequency	Weekly	
	Fortnightly	
Residual Collection Frequency	Status Quo of twice weekly for St Peter Port and St Sampson, and weekly for all other parishes	
Materials Collected	Dry recyclables	Paper
		Cardboard
		Tins & cans
		Glass
		Plastic bottles
		Textiles
	Organic Waste	Food / Kitchen Waste
		Green / Garden Waste



5. MODELLING KERBSIDE COLLECTION SCENARIOS

5.1 Assumptions

The model developed for this study requires a significant amount of baseline data and assumptions to establish the framework within which the various scenarios can be modelled. The key assumptions are set out below.

Capture rates

There is very little published data related to capture rates. For the purpose of this study, the capture rates were based on actual capture rate data from Wyre Forest in 2005. Based on the 2008 composition analysis of Guernsey household waste, the rates for paper and glass were adjusted to account for the non-recyclable fractions of each of these materials. The rates used for modelling were:

- Glass = 85%
- Cans = 65%
- Plastic bottles = 75%
- Paper = 70%
- Cardboard = 75%
- Textiles = 70%
- Green waste = 80%
- Food waste = 80%

Participation rate

Based on Guernsey's excellent performance relating to participation in the bring recycling scheme, we have assumed that the participation rate for kerbside recycling would also be at a high level, which in the UK is considered to be 80%. Therefore the rates used for modelling were:

- Dry recyclables = 80%
- Green and food waste = 80%
- The model also applies a 10% reduction to the participation rate for fortnightly collections e.g. If dry recyclables were collected on a fortnightly basis, the participation rate used by the model would be 72%.

Relationship between Bring Scheme and Kerbside Collection

The model makes the assumption that there is a 60% reduction in bring scheme recycling for each material collected in a kerbside collection scenario.



Coverage rate

It is assumed that the whole Island would receive the kerbside recycling service. Therefore the coverage rate used for modelling was 100%.

Communications campaign

The model assumes that a 'medium' level communications campaign would be undertaken at a cost of £50,000.

Containerisation for organic wastes

The model assumes that

- A 22 litre kerbside caddy and a 5 litre kitchen caddy will be provided at no cost to each household if food waste is collected.
- Householders will be required to pay for their own 'biobags' if food waste is collected.
- Reusable bags will be provided at no cost to each household if green waste is collected.

Collection productivity

Productivity for kerbside collection of recyclable materials is a critical factor within the model for determining the number of vehicles required for each scenario. It will vary significantly depending on the following key parameters used in the model:

- Combination of materials collected
- Number and type of container
- Property density
- Collection frequency
- Vehicle type and crew size
- Travel speeds (influenced by traffic, road size, drive & turn restrictions, etc.)

In addition, constraints relating to working conditions such as the application of health & safety regulations, night/day working, staff breaks, staff motivation and general conditions of contract (i.e. task & finish versus fixed working hours) will have an impact on productivity.

ISL has made use of its recent and extensive project experience in the UK waste sector to condense all these factors down into headline figures of expected productivity for each scenario and these have been factored into the model.

Costs

The scope of this study focussed on a review of collection options and their associated costs. However, the options and associated costs for both processing and the markets available for processed dry recyclables and organics are critical factors that need to be considered in order to provide comparable scenarios.



The following options and costs were used by the model for processing of dry recyclables and organics:

MRFs

The actual costs of a MRF will depend on significant factors such as the cost of land, building, and equipment. We have assumed that the land will be provided by the States of Guernsey at no cost. For the purposes of this study, three different sized MRFs were modelled and applied to relevant scenarios. The cost assumptions for these MRFs were as follows:

<i>Table 7: Assumed MRF Costs</i>			
	'Minimal'	'Intermediate'	'Advanced'
Total Capex (£'000)	200	525	1000
Total Operating Cost (£'000 /annum)	98	250	529
No. of Operatives	2	4	12

A /IVC

Recently published data¹⁷ from WRAP provides a cost range of £35 - £50 per tonne for processing by AD or IVC. As relatively small quantities of organic waste are produced in Guernsey, this means that a relatively small AD or IVC facility would be required, which would not benefit from economies of scale. Therefore, we have assumed a cost of £50 per tonne within the model.

Markets for processed dry recyclables and organics

The model assumes a neutral position with respect to markets for processed dry recyclables and organics. In other words, it is assumed that markets do exist for all of the collected and processed materials but no costs or income has been built into the annual average costs for each scenario.

5.2 Modelled Scenarios

Derived from an established model that ISL has successfully used for similar projects for DEFRA, WRAP and several UK local authorities, a comprehensive bespoke model for kerbside recycling in Guernsey was developed, which incorporated the constraints and assumptions referred to in the sections above.

Based on the options shortlisted in section 4.3 above, 14 scenarios (viable combinations of options) were developed and modelled. The main differentiating parameters between the various scenarios were the materials that were collected and the frequency of collection. Up to 4 different sub-scenarios were modelled for each scenario depending on how many vehicle options were considered viable. The complete list of scenarios (and sub-scenarios) that were modelled is presented in Table 8.

Recycling rates and annual average costs have been forecast by the model for each sub-scenario. These are also presented in Table 8 and discussed below in section 5.3.

¹⁷ 'Anaerobic Digestion: Opportunities for recycling food waste' by Phillip Ward, Director For Local Government Services, WRAP (2007)



Table 8: Kerbside Collection Scenarios Modelled

ID	Scenario	Collection Vehicle(s)	Processing (MRF = Materials Recovery Facility, AD = Anaerobic Digestion, IVC = In-Vessel Composting)	Material & Collection Frequency (W = Weekly, F = Fortnightly)								Recycling Rate (%)		Annual Average Cost (£,000)			
				Residual	Paper	Card	Glass	Plastic Bottles	Cans & Alu Foil	Textiles	Food Waste	Green Waste	Including Green Waste	Excluding Green Waste	Kerbside Collection	Processing	Total
1	Status Quo	n/a	None	W									36.5	31.2	n/a	n/a	n/a
2	Weekly collection of food waste	RCV	AD / IVC	W							W		49.5	45.3	502	183	685
3	Weekly collection of paper and food waste	Split Compartment (Ecofar compactor)	AD / IVC	W	W						W		53.3	49.4	489	183	671
4	Weekly collection of paper, card and food waste	Split Compartment (Ecofar compactor)	Minimal MRF & AD / IVC	W	W	W					W		55.2	51.4	529	281	809
5	Weekly collection of paper, card, tins & cans, and food waste	Split Compartment (Ecofar compactor)	Intermediate MRF & AD / IVC	W	W	W				W			56.1	52.4	539	433	972
6a	Weekly collection of all dry recyclables and food waste	RCV & Split Compartment (Ecofar compactor)	Advanced MRF & AD / IVC	W	W	W	W	W	W	W	W		59.3	55.9	872	712	1584
		RCV & Split	Advanced	W	W	W	W	W	W	W	W		59.3	55.9	768	712	1480
Compartment			MRF														



Table 8: Kerbside Collection Scenarios Modelled

ID	Scenario	Collection Vehicle(s)	Processing (MRF = Materials Recovery Facility, AD = Anaerobic Digestion, IVC = In-Vessel Composting) & AD / IVC	Material & Collection Frequency (W = Weekly, F = Fortnightly)									Recycling Rate (%)		Annual Average Cost (£,000)		
				Residual	Paper	Card	Glass	Plastic Bottles	Cans & Alu Foil	Textiles	Food Waste	Green Waste	Including Green Waste	Excluding Green Waste	Kerbside Collection	Processing	Total
6c		(Caged Flat Bed)	& AD / IVC														
		2 RCVs	Advanced MRF & AD / IVC	W	W	W	W	W	W	W	W		59.3	55.9	647	712	1359
7a	Weekly collection of all dry recyclables and all organic wastes	Kerbsider & RCV	Minimal MRF & AD / IVC	W	W	W	W	W	W	W	W	W	61.2	56.1	1146	452	1599
7b		2 RCVs	Intermediate MRF & AD / IVC	W	W	W	W	W	W	W	W	W	61.2	56.1	703	604	1308
8a	Weekly collection of all dry recyclables	RCV	Advanced MRF	W	W	W	W	W	W	W	W		46.3	41.8	398	529	927
8b		Split Compartment (Ecofar compactor)	Advanced MRF	W	W	W	W	W	W	W	W		46.3	41.8	606	529	1136
8c		Split Compartment (Caged Flat Bed)	Advanced MRF	W	W	W	W	W	W	W	W		46.3	41.8	502	529	1031
8d		Kerbsider	Minimal MRF	W	W		W	W	W	W	W		44.4	39.7	771	98	869
9a	Weekly collection of all dry recyclables and	Kerbsider & RCV	Minimal MRF	W	W	W	W	W	W	W	W	W	49.2	42.0	1084	166	1251
9b		2 RCVs	Advanced MRF	W	W	W	W	W	W	W	W	W	49.2	42.0	630	597	1228



Table 8: Kerbside Collection Scenarios Modelled

ID	Scenario	Collection Vehicle(s)	Processing (MRF = Materials Recovery Facility, AD = Anaerobic Digestion, IVC = In-Vessel Composting)	Material & Collection Frequency (W = Weekly, F = Fortnightly)								Recycling Rate (%)		Annual Average Cost (£,000)			
				Residual	Paper	Card	Glass	Plastic Bottles	Cans & Alu Foil	Textiles	Food Waste	Green Waste	Including Green Waste	Excluding Green Waste	Kerbside Collection	Processing	Total
	green waste																
10a	Weekly collection of paper, card and green waste	Split Compartment (Ecofar compactor)	Minimal MRF	W	W	W						W	45.4	37.4	518	166	684
10b		Split Compartment (Caged Flat Bed)	Minimal MRF	W	W	W							W	45.4	37.4	530	166
11a	Fortnightly collection of all recyclables and weekly collection of all organic wastes	Kerbsider & RCV	Minimal MRF & AD / IVC	W	F	F	F	F	F	F	F	W	60.2	55.0	864	452	1316
11b		2 RCVs	Advanced MRF & AD / IVC	W	F	F	F	F	F	F	F	W	60.2	55.0	570	883	1454
11c		Split Compartment (Ecofar compactor)	Advanced MRF & AD / IVC	W	F	F	F	F	F	F	F	W	60.2	55.0	480	883	1364
11d		RCV & Split Compartment (Caged Flat Bed)	Advanced MRF & AD / IVC	W	F	F	F	F	F	F	W	W	60.2	55.0	691	883	1575
12a	Fortnightly collection of all recyclables and	Split Compartment (Ecofar compactor)	Advanced MRF & AD / IVC	W	F	F	F	F	F	F	W	W	58.3	54.7	463	712	1175



Table 8: Kerbside Collection Scenarios Modelled

ID	Scenario	Collection Vehicle(s)	Processing (MRF = Materials Recovery Facility, AD = Anaerobic Digestion, IVC = In-Vessel Composting)	Material & Collection Frequency (W = Weekly, F = Fortnightly)								Recycling Rate (%)		Annual Average Cost (£,000)				
				Residual	Paper	Card	Glass	Plastic Bottles	Cans & Alu Foil	Textiles	Food Waste	Green Waste	Including Green Waste	Excluding Green Waste	Kerbside Collection	Processing	Total	
12b	weekly collection of food waste	2 RCVs	Advanced MRF & AD / IVC	W	F	F	F	F	F	F	F	W		58.3	54.7	525	712	1237
12c		Kerbsider & RCV	Minimal MRF & AD / IVC	W	F		F	F	F	F	F	F	W		56.6	52.9	764	281
13a	Fortnightly collection of all dry recyclables	RCV	Advanced MRF	W	F	F	F	F	F	F	F			45.2	40.6	292	529	822
13b		Kerbsider	Minimal MRF	W	F		F	F	F	F	F			43.6	38.8	513	98	610
13c		Split Compartment (Ecofar compactor)	Advanced MRF	W	F	F	F	F	F	F	F	F			45.2	40.6	436	529
13d		Split Compartment (Caged Flat Bed)	Advanced MRF	W	F	F	F	F	F	F	F			45.2	40.6	391	529	920
14a	Fortnightly collection of all recyclables and weekly collection of green waste	RCV	Advanced MRF	W	F	F	F	F	F	F	F		F	48.0	40.8	355	595	950
14b		Split Compartment (Ecofar compactor)	Advanced MRF	W	F	F	F	F	F	F	F		F	48.0	40.8	453	595	1048
14c		Split Compartment (Caged Flat Bed)	Advanced MRF	W	F	F	F	F	F	F	F		F	48.0	40.8	513	595	1108



5.3 Assessment of Modelled Scenarios

5.3.1 Scenario Ranking in relation to Recycling Rates

For most scenarios, the forecast recycling rate remains constant for each of the related sub-scenarios. The forecast recycling rate remains constant because in most cases it is only the type of collection vehicle that has changed, which does not affect the amount of material collected. The only exceptions are for those sub-scenarios that do not collect card due to the assumption that a kerbsider suitable for Guernsey's roads would not be able to collect this material due to its bulky nature.

According to the model, the order of the scenarios forecast to deliver the highest recycling rates (including green waste) is:

- i. Scenario 7: Weekly collection of all dry recyclables and all organic wastes = 61.2%
- ii. Scenario 11: Fortnightly collection of all recyclables and weekly collection of all organic wastes = 60.2%
- iii. Scenario 6: Weekly collection of all dry recyclables and food waste = 59.3%
- iv. Scenario 12: Fortnightly collection of all recyclables and weekly collection of food waste = 58.3%
- v. Scenario 5: Weekly collection of paper, card, tins & cans, and food waste = 56.1%
- vi. Scenario 4: Weekly collection of paper, card and food waste = 55.2%
- vii. Scenario 3: Weekly collection of paper and food waste = 53.3%
- viii. Scenario 2: Weekly collection of food waste = 49.5%
- ix. Scenario 9: Weekly collection of all dry recyclables and green waste = 49.2%
- x. Scenario 14: Fortnightly collection of all recyclables and weekly collection of green waste = 48.0%
- xi. Scenario 8: Weekly collection of all dry recyclables = 46.3%
- xii. Scenario 10: Weekly collection of paper, card and green waste = 45.4%
- xiii. Scenario 13: Fortnightly collection of all dry recyclables = 45.2%
- xiv. Scenario 1: Status Quo = 36.5%

The following observations can be made from a review of the findings above:

- The collection and processing of organic wastes provides the greatest potential to increase the overall recycling [and composting] rate.
- Due to the success of the existing bring scheme, the implementation of kerbside collection for dry recyclables is forecast to result in a relatively small increase to the overall recycling rate.



- The States' target of 50% will be difficult to meet without the collection of organic waste. It would require exceptionally high capture and participation rates (beyond those used in the model).

5.3.2 Scenario Ranking in relation to Annual Average Cost

The overall annual costs are based on capital and revenue expenditure costs for both kerbside collection and processing of the materials modelled in each scenario.

Costs for vehicles, labour, fuel and containers were obtained from a variety of relevant sources including States Works (for local labour, fuel, etc.) and directly from suppliers (vehicles and containers). Vehicle costs include a factor for the spare capacity required to ensure service continuity.

According to the model, the order of the scenarios forecast to be implemented at the least average annual cost (the sub-scenario that is forecast to have the lowest average annual cost is taken to represent the overall scenario and the maximum forecast cost for a related sub-scenario is shown in brackets) is:

- i. Scenario 13: Fortnightly collection of all dry recyclables = £610k (up to £965k)
- ii. Scenario 3: Weekly collection of paper and food waste = £671k
- iii. Scenario 10: Weekly collection of paper, card and green waste = £684k (up to £696k)
- iv. Scenario 2: Weekly collection of food waste = £685k
- v. Scenario 4: Weekly collection of paper, card and food waste = £809k
- vi. Scenario 8: Weekly collection of all dry recyclables = £869k (up to £1,136k)
- vii. Scenario 14: Fortnightly collection of all recyclables and weekly collection of green waste = £950k (up to £1,108k)
- viii. Scenario 5: Weekly collection of paper, card, tins & cans, and food waste = £972k
- ix. Scenario 12: Fortnightly collection of all recyclables and weekly collection of food waste = £1,045k (up to £1,237k)
- x. Scenario 9: Weekly collection of all dry recyclables and green waste = £1,228k (up to £1,251k)
- xi. Scenario 7: Weekly collection of all dry recyclables and all organic wastes = £1,308k (up to £1,599k)
- xii. Scenario 11: Fortnightly collection of all recyclables and weekly collection of all organic wastes = £1,316k (up to £1,575k)
- xiii. Scenario 6: Weekly collection of all dry recyclables and food waste = £1,359k (up to £1,584k)

The following observations can be made from a review of the findings above:

- Factoring in the need for spare vehicle capacity combined with the necessary rounding up to the nearest whole number of forecast vehicles required within the



model, mean that each of the forecast costs needs to be considered as 'best estimates' to be used for relative comparison of different scenarios. This rounding factor accounts for the fact that scenario 2 (food waste only using RCVs) is forecast to be slightly more expensive than scenario 3 (paper and food waste using split-body vehicles). It can be concluded that both scenarios will have relatively similar average annual costs.

- Fortnightly collection is less costly than weekly collection.

Further observations need to take account of the cost relative to the forecast recycling rate and the detailed components of each scenario e.g. the processing options. This is considered in section 5.3.3 below.

5.3.3 Scenario Ranking in relation to Overall Best Value

In order to present an overall scenario ranking, we have assumed that 'best value' can be defined as 'the cost per percentage increase in recycling rate (over the status quo recycling rate)'. Based on this logical definition, the 'best value' ranking for all of the modelled scenarios is presented in Table 9 below.

If the application to land of compost derived from organic waste is possible, the kerbside collection scenarios that appear to offer the best value in terms of increasing the recycling rate at a reasonable cost are:

- Scenario 3: Weekly collection of paper and food waste = £39.9k per % increase
- Scenario 4: Weekly collection of paper, card and food waste = £43.3k per % increase
- Scenario 5: Weekly collection of paper, card, tins & cans, and food waste = £49.6k per % increase

Additional benefits of scenarios that collect food and paper are that they remove a heavy fraction from households and will indirectly help to improve the tidiness of bring sites that suffer from wind blow paper.

However, if the application to land of compost derived from organic waste is not possible, the choice of kerbside collection scenarios that appear to offer the best value in terms of increasing the recycling rate at a reasonable cost are severely reduced to:

- Scenario 13b – Fortnightly collection of all dry recyclables (kerbsider) = £85.9k per % increase
- Scenario 13a – Fortnightly collection of all dry recyclables (RCV) = £94.5k per % increase
- Scenario 8a – Weekly collection of all dry recyclables (RCV) = £94.6k per % increase

This clearly shows that it will be twice as costly to increase recycling rates using only dry recyclables / without collecting organic wastes.

It is also worth noting that scenario 7b (weekly collection of all dry recyclables and all organic wastes (using RCVs)) provides relatively good value (£53.0k per percentage increase in recycling rate) and is also forecast to achieve a recycling rate of 61.2% which is the equal highest of all the scenarios modelled.



It can be concluded that, if it is not possible to collect food waste and it is not desirable to collect green waste, then this simply leaves options that collect dry recyclables at a high cost for a relatively small increase in the overall recycling rate, which is unlikely to reach the States' target of 50%.

Table 9: Scenario Ranking in relation to Overall Best Value

Rank	Scenario	Recycling Rate (%)	Average Annual Cost (£,000)	Cost per % Increase in Recycling Rate (£'000)
1	3 – Weekly collection of paper and food waste	53.3	671	39.9
2	4 – Weekly collection of paper, card and food waste	55.2	809	43.3
3	5 – Weekly collection of paper, card, tins & cans, and food waste	56.1	972	49.6
4	12c – Fortnightly collection of all recyclables and weekly collection of food waste (Kerbsider & RCV)	56.6	1045	52.0
5	2 – Weekly collection of food waste	49.5	685	52.7
6	7b – Weekly collection of all dry recyclables and all organic wastes (2 RCVs)	61.2	1308	53.0
7	12a – Fortnightly collection of all recyclables and weekly collection of food waste (Split Compartment (Ecofar compactor))	58.3	1175	53.9
8	11a – Fortnightly collection of all recyclables and weekly collection of all organic wastes (Kerbsider & RCV)	60.2	1316	55.5
9	12b – Fortnightly collection of all recyclables and weekly collection of food waste (2 RCVs)	58.3	1237	56.7
10	11c – Fortnightly collection of all recyclables and weekly collection of all organic wastes (Split Compartment (Ecofar compactor))	60.2	1364	57.6
11	6c – Weekly collection of all dry recyclables and food waste (2 RCVs)	59.3	1359	59.6
12	11b – Fortnightly collection of all recyclables and weekly collection of all organic wastes (2 RCVs)	60.2	1454	61.4
13	7a – Weekly collection of all dry recyclables and all organic wastes (Kerbsider & RCV)	61.2	1599	64.7
14	6b – Weekly collection of all dry recyclables and food waste (RCV & Split Compartment (Caged Flat Bed))	59.3	1480	64.9
15	11d – Fortnightly collection of all recyclables and weekly collection of all organic wastes (RCV & Split Compartment (Caged Flat Bed))	60.2	1575	66.5
16	6a – Weekly collection of all dry recyclables and food waste (RCV & Split Compartment (Ecofar compactor))	59.3	1584	69.5
17	10a – Weekly collection of paper, card and green waste (Split Compartment (Ecofar compactor))	45.4	684	76.9
18	10b – Weekly collection of paper, card and green waste (Split Compartment (Caged Flat Bed))	45.4	696	78.2
19	14a – Fortnightly collection of all recyclables and weekly collection of green waste (RCV)	48	950	82.6
20	13b – Fortnightly collection of all dry recyclables (Kerbsider)	43.6	610	85.9
21	14b – Fortnightly collection of all recyclables and weekly collection of green waste (Split Compartment (Ecofar compactor))	48	1048	91.1
22	13a – Fortnightly collection of all dry recyclables (RCV)	45.2	822	94.5



23	8a – Weekly collection of all dry recyclables (RCV)	46.3	927	94.6
24	14c – Fortnightly collection of all recyclables and weekly collection of green waste (Split Compartment (Caged Flat Bed))	48	1108	96.3
25	9b – Weekly collection of all dry recyclables and green waste (2 RCVs)	49.2	1228	96.7
26	9a – Weekly collection of all dry recyclables and green waste (Kerbsider & RCV)	49.2	1251	98.5
27	8c – Weekly collection of all dry recyclables (Split Compartment (Caged Flat Bed))	46.3	1031	105.2
28	13d – Fortnightly collection of all dry recyclables (Split Compartment (Caged Flat Bed))	45.2	920	105.7
29	8d – Weekly collection of all dry recyclables (Kerbsider)	44.4	869	110.0
30	13c – Fortnightly collection of all dry recyclables (Split Compartment (Ecofar compactor))	45.2	965	110.9
31	8b – Weekly collection of all dry recyclables (Split Compartment (Ecofar compactor))	46.3	1136	115.9

5.3.4 Island-Wide versus Parish-Based Collection

Previous estimates to extend the St Peters kerbside trial has led to misleading interpolation of the costs of implementing a parish-based kerbside collection for the whole Island. This is because the costs were based on:

- Existing staff and fleet (no new capital expenditure)
- Fortnightly collection for a limited period of 6 months only
- Lowest cost possible and accepting associated risk due to short term contract
- Limited to the collection of dry recyclables

Assuming that any processing required (e.g. MRF or AD/IVC) would be provided centrally by the States of Guernsey, the model was used to compare the costs of island-wide collection versus parish-based collection for weekly kerbside collection of food waste only (using RCVs). The forecast collection costs (not including processing costs) were:

- Island-wide: £502k p.a.
- Parish-based: £1,135k p.a.

This clearly shows that parish-based collection would be more than twice the cost of island-wide collection.



6. CONCLUSIONS

6.1.1 *Maximum Achievable Recycling Rate*

The maximum achievable recycling rate is fundamentally based on the composition of household waste, and capture and participation rates.

A maximum of 86% of the overall amount of household waste produced in Guernsey is potentially recyclable. However, only 74% is potentially recyclable via kerbside collection. Critically, these figures do not take into account coverage, capture and participation rates that need to be applied to the total amounts of potentially recyclable materials to calculate the realistic estimate of achievable recycling rates.

Applying capture and participation rates for kerbside collection, it is predicted that the maximum achievable recycling rate will be approximately 61.2%.

6.1.2 *Key Issues and Constraints*

The collection and processing of the various dry recyclables is well established in Guernsey via the bring scheme. The introduction of kerbside collection for any combination of these materials is a relatively straightforward decision to make based on the model's forecast recycling rates and costs.

However, the decision to introduce a kerbside collection scheme for organic wastes (food and green waste) is much more difficult due to the crucial and complex issues related to the use of the resulting compost (likely to be application to land in Guernsey), which are beyond the scope of this study. The States of Guernsey's Agriculture and Environment Adviser highlighted the following issues that need to be considered and resolved:

- Potential contamination of composts produced from food waste with glass, plastic and other fine material
- Risk of infection and disease caused by food waste containing material of plant and animal origin
- Limited area of agricultural land where composted waste could be applied in Guernsey
- Use of compost and compost-like material on land within the water catchment area and the level of nitrates and other nutrients in both ground water and surface waters
- Quality Assurance standards laid down in commercial agreements between farmers and local supermarkets

It is recommended that detailed analysis of the preferred scenario(s) is undertaken to verify:

- the complex issues related to the use of compost resulting from collection of organic household waste
- the assumptions made by this study relating to relevant processing requirements e.g. materials recovery facility (MRF), anaerobic digestion (AD) and in-vessel composting (IVC)



6.1.3 Modelling Results

Ranking in relation to Recycling Rates

Based on the ranking of modelled scenarios in relation to forecast recycling rates, the following can be concluded:

- The scenarios forecast to deliver the highest recycling rates (including green waste) are:
 - Scenario 7: Weekly collection of all dry recyclables and all organic wastes = 61.2%
 - Scenario 11: Fortnightly collection of all recyclables and weekly collection of all organic wastes = 60.2%
 - Scenario 6: Weekly collection of all dry recyclables and food waste = 59.3%
- The collection and processing of organic wastes provides the greatest potential to increase the overall recycling [and composting] rate.
- Due to the success of the existing bring scheme, the implementation of kerbside collection for dry recyclables is forecast to result in a relatively small increase to the overall recycling rate.
- The States' target of 50% will be difficult to meet without the collection of organic waste. It would require exceptionally high capture and participation rates (beyond those used in the model).

Ranking in relation to Annual Average Cost

Based on the ranking of modelled scenarios in relation to average annual cost, the following can be concluded:

- The scenarios forecast to be implemented at the least average annual cost are:
 - Scenario 13: Fortnightly collection of all dry recyclables = £610k
 - Scenario 3: Weekly collection of paper and food waste = £671k
 - Scenario 10: Weekly collection of paper, card and green waste = £684k
- Factoring in the need for spare vehicle capacity combined with the necessary rounding up to the nearest whole number of forecast vehicles required within the model, mean that each of the forecast costs needs to be considered as 'best estimates' to be used for relative comparison of different scenarios. This rounding factor accounts for the fact that scenario 2 (food waste only using RCVs) is forecast to be slightly more expensive than scenario 3 (paper and food waste using split-body vehicles). It can be concluded that both scenarios will have relatively similar average annual costs.
- Fortnightly collection is less costly than weekly collection.



Ranking in relation to Overall Best Value

In order to present an overall scenario ranking, we have assumed that 'best value' can be defined as 'the cost per percentage increase in recycling rate (over the status quo recycling rate)'.

If the application to land of compost derived from organic waste is possible, the kerbside collection scenarios that appear to offer the best value in terms of increasing the recycling rate at a reasonable cost are:

- Scenario 3: Weekly collection of paper and food waste = £39.9k per % increase
- Scenario 4: Weekly collection of paper, card and food waste = £43.3k per % increase
- Scenario 5: Weekly collection of paper, card, tins & cans, and food waste = £49.6k per % increase

Additional benefits of scenarios that collect food and paper are that they remove a heavy fraction from households and will indirectly help to tidy bring sites that suffer from wind blow paper.

However, if the application to land of compost derived from organic waste is not possible, the choice of kerbside collection scenarios that appear to offer the best value in terms of increasing the recycling rate at a reasonable cost are severely reduced to:

- Scenario 13b – Fortnightly collection of all dry recyclables (kerbsider) = £85.9k per % increase
- Scenario 13a – Fortnightly collection of all dry recyclables (RCV) = £94.5k per % increase
- Scenario 8a – Weekly collection of all dry recyclables (RCV) = £94.6k per % increase

This clearly shows that it will be twice as costly to increase recycling rates using only dry recyclables / without using organic wastes.

It is also worth noting that scenario 7b (weekly collection of all dry recyclables and all organic wastes (using RCVs)) provides relatively good value (£53.0k per percentage increase in recycling rate) and is also forecast to achieve a recycling rate of 61.2% which is the equal highest of all the scenarios modelled.

It can be concluded that, if it is not possible to collect food waste and it is not desirable to collect green waste, then this simply leaves options that collect dry recyclables at a high cost for a relatively small increase in the overall recycling rate, which are unlikely to reach the States' target of 50%.

Island-Wide versus Parish-Based Collection

The model forecasts that parish-based collection would be more than twice the cost of island-wide collection. Due to high costs and the lack of support from parish douzaines and some existing contractors, an island-wide kerbside collection scheme is recommended.

APPENDIX A

APPLICATION OF COMPOST TO AGRICULTURAL LAND

COMMERCE AND EMPLOYMENT DEPARTMENT

Graeme Falla
Project Services Manager
States Property Services
Sir Charles Frossard House
St Peter Port
GY1 1FH

4th June 2008

Dear Graeme

The Application of Compost to Agricultural Land

Thank you for your memorandum concerning the application of compost and compost-like material on agricultural land. We discussed this on the telephone recently and this letter is to confirm and expand on some of the points that were raised in that conversation.

My understanding was that the States had resolved that any waste treatment solution would involve the following processes:

1. A waste treatment plant – such as a waste to energy ‘incinerator’;
2. A mechanical/biological treatment plant
3. An MBT facility allied with some other form of advanced thermal treatment, such as gasification and pyrolysis.

My understanding was that a composting plant was not considered to be a part of the solution. However, if part of the solution was to have a sophisticated MBT plant then you could obtain a ‘compost-like’ output. I recall that this has been discussed previously. Whereas some might refer to this as a ‘compost-like’ material, others would envisage it being pelleted and might refer to it as a ‘refuse derived fuel’ for a waste to energy facility or for gasification and pyrolysis. If the States approved, the ‘compost-like’ material could then be composted either using an in-vessel process or used, possibly with livestock slurry, as a feed source for an anaerobic digester. This solution might have the added benefit that methane would be produced and electricity / usable heat generated. Anaerobic digestion is considered as one method by which methane (a greenhouse gas) can be removed from organic manures.

You mention that the processes envisaged would comply with PAS 100 or PAS 110 (in development) but my understanding was that only two processes - in-vessel composting or anaerobic digestion - could comply with these standards. I was not aware that any

other solutions could meet this requirement. Again, my understanding of PAS 100 was that it has to meet very specific heat treatment requirements for a substantial period of time prior to the application to land.

Your specific question was whether it would be acceptable to apply these ‘composts’ to agricultural land. There are a number of issues that would need to be considered and resolved:

1. The food waste and other compostable material would need to be of a sufficiently high standard of separation to ensure that glass, plastic and other fine material were not included in the material for composting. This would essentially be very dependent upon the active cooperation of the public and might require a high level of ‘policing’ to ensure that there was as little contamination of the waste as possible. In practice I understand that there does tend to be a lot of contamination of composts produced from food waste as once glass, plastics or some other materials have been included it is very difficult to separate them out.
2. Food waste will contain material of plant and animal origin. The animal products - meat and bones – could be infected with Foot and Mouth virus (meat and meat products come to the island from many sources, and Foot and Mouth Disease is endemic in some parts of the world). The use of this on land could pose a very real threat of infection of the island’s cattle and other livestock, which could be catastrophic for the industry. The knock-on effects of a disease outbreak could be substantial and would have considerable economic impact beyond the immediate farming industry. It is for this reason that the States banned the use of food waste (pig swill) for animal feeding. Any process would have to ensure that meat, meat products and bones were uniformly treated at a sufficiently high temperature to ensure that all viruses were killed and then the application to the land would have to comply with an appropriate regulation, perhaps similar to that required in the UK. The ‘Animal By-Products Regulations 2005’ regulate this in the Great Britain, following similar regulations in the EU, but this legislation is not in force in Guernsey.
3. The area of agricultural land where composted waste could be applied is very small in Guernsey and most compost might need to be used on land fill sites and other similar areas. Much will depend on the likely quantity of compost or compost like material that will be available. Although there are over 10,000 vergees of agricultural land, very little land is in arable cropping and most of that is for local potato production. In total there are under 1000 vergees (164 hectares) in arable production and this land is mainly very fragmented so the application to land might be a difficult and expensive operation. It will also depend on the active cooperation of farmers and land owners as most land is in private ownership. With such a small area of land available it is unlikely, even given the current high price of fertilisers, that farmers would pay for the compost as a fertiliser or soil conditioner, and might expect to be paid for disposing of it. This then once again raises the question of whether it would be

used as a waste product or as a fertiliser, which significantly affects how it is viewed from a regulatory standpoint. I would suggest that a first priority would be to ensure that the quantity of compost that is envisaged could be effectively disposed of to agricultural land. Farmers and land owners will need to be consulted at an early stage.

4. Guernsey Water will no doubt have a view on the use of compost and compost-like material on land within the water catchment area. The existing water catchment area covers most of the island and will shortly be extended to the small areas on the west coast that currently remain outside the area. My understanding is that any substances applied to the catchment area are rigorously controlled and supervised by Guernsey Water under the present Pollution Control legislation and a permit must be obtained before any application is made. Before granting such permission Guernsey Water scientists have to be satisfied that the application of any substance will not jeopardise the quality of the public water supply. Extensive leachate testing is a prerequisite before any material can be considered. It must be understood that the Guernsey standards of raw water quality exceed those in the UK because of our aquatic environment and the need to protect the public supply.

5. This Department and Guernsey Water have agreed measures, approved by the States, to reduce the level of nitrates and other nutrients in both ground water and surface waters. These measures include a provision that all manures, including solid manure and slurry must be stored over the winter period (a 3 month 'closed period' for the spreading of organic manures currently exists) and only applied to agricultural land for actual crop requirements. This department and Guernsey Water have accepted that the island is a 'Nitrate Vulnerable Zone' within the terms of EU Nitrate Directive (91/676). EU water catchment legislation specifies limits on the amount of organic manure that can be applied to agricultural land. Again, this would suggest that compost could only be applied to land to provide for an actual fertiliser requirement for the crop, and the legislation sets down maximum amounts that may be applied. It should be remembered that most of the farms in Guernsey are dairy farms that produce their own organic manures for application to the land and a maximum of 170 kg N/hectare (27kg N/vergee) has been set as a maximum limit. Many island soils are also high in phosphate and potassium and so, again, care would need to be exercised to ensure that an excess is not applied that could affect inland and coastal waters. Therefore, it cannot be assumed that sufficient land exists to dispose of all the organic compost that might be produced. This would be very dependent on the annual quantity of compost produced and I have seen no figures on this.

6. Most of the farmed land in Guernsey is under grass for livestock grazing or cutting. In part 3 of The Animal By-Products Regulations 2005 there are specific restrictions on the use of animal by-products. This prevents the feeding of catering waste to any livestock or the application of any such material to pasture land. For instance, Section 12 states that it is an offence to use land for

grazing or for cropping for feedingstuffs following the application of organic fertilisers or soil improvers within a two month period in the case of pigs or 3 weeks in the case of other farmed animals. Therefore, in the main, it is likely that any composted material would need to be used on arable cropped land. If it is used on grazing land then solid materials, such as a compost, could only be applied at specific times of the year when it would not affect the palatability of the grass or fermentation of silage, which might argue for the use of a liquid product for use on grassland that could be injected into the soil or applied to the surface of the land with a specialist applicator.

7. Where compost was applied to agricultural land that is in potato cropping the main producers sell potatoes to local supermarkets and must comply with the Quality Assurance standards laid down by those businesses. I know that there are concerns about potato production using land/compost where glass might be included and it would be essential to ensure that the growers that might be the main clients for the compost/compost-like materials could use composted municipal waste under the terms of their commercial agreements.
8. Whilst EU/UK regulations do not carry the force of law in Guernsey it is unlikely that the Environmental Health Department, which will regulate the process, will agree to any standards in Guernsey that are less onerous or demanding than in other parts of the UK or Europe.

I trust that these comments are useful. They should be taken as an initial response to your question. Please let me know if you would like me to consider and research this further. If it is decided to proceed with a composting solution that might require the disposal/use of the product on agricultural land then I should be grateful if you would consult further with this Department at an early stage.

Yours sincerely

Dr Andrew Casebow
Agriculture and Environment Adviser

Appendix 3 – Shortlisted Kerbside Collection Scenarios

ISL ID	Scenario	Collection Vehicle(s)	Collection System	Recycling Rate (%)		Average Annual Cost (£,000)			Cost per % increase in recycling rate (£) (Based on “Including Green Waste” fig)	Comment on the Streams Proposed for Collection for Composting/Digestion
				Including Green Waste	Excluding Green Waste	Kerbside Collection	Processing	Total		
6a	Weekly collection of all dry recyclables and food waste	RCV & Split Compartment (Ecofar compactor)	H	59.3	55.9	872	712	1584	69,500	Food waste separate.
6b		RCV & Split Compartment (Caged Flat Bed)	H	59.3	55.9	768	712	1480	64,900	
6c		2 RCVs	H	59.3	55.9	647	712	1359	59,600	
7a	Weekly collection of all dry recyclables and all organic wastes	Kerbsider & RCV	S	61.2	56.1	1146	452	1599	64,700	Food, green and card comingled – increases the amount of compost/digestate requiring disposal route (application/export/landfill)
7b		2 RCVs	C	61.2	56.1	703	604	1308	53,000	
11a	Fortnightly collection of all recyclables and weekly collection of all organic wastes	Kerbsider & RCV	S	60.2	55.0	864	452	1316	55,500	Food and green waste comingled, increases the amount of compost/digestate/green waste requiring a disposal route (land application/export/landfill)
11b		2 RCVs	C	60.2	55.0	570	883	1454	61,400	
11c		Split Compartment (Ecofar)	H	60.2	55.0	480	883	1364	57,600	
11d		RCV & Split Compartment (Caged Flat Bed)	H	60.2	55.0	691	883	1575	66,500	

12a	Fortnightly collection of all recyclables and weekly collection of food waste	Split Compartment (Ecofar)	H	58.3	54.7	463	712	1175	53,900	Food waste separate
12b		2 RCVs	C	58.3	54.7	525	712	1237	56,700	
12c		Kerbsider & RCV	H	56.6	52.9	764	281	1045	52,000	
8a		RCV	C	46.3	41.8	398	529	927	94,600	
8b	Weekly collection of dry recyclables only	Split Compartment (Ecofar)	H	46.3	41.8	606	529	1136	115,900	N/A
8c		Split Compartment (Caged Flat Bed)	H	46.3	41.8	502	529	1031	105,200	
8d		Kerbsider (no card)	S	44.4	39.7	771	98	869	110,000	
13a		RCV	C	45.2	40.6	292	529	822	94,500	
13b	Fortnightly collection of dry recyclables only	Kerbsider	S	43.6	38.8	513	98	610	85,900	N/A
13c		Split Compartment (Ecofar)	H	45.2	40.6	436	529	965	110,900	
13d		Split Compartment (Caged Flat Bed)	H	45.2	40.6	391	529	920	105,700	

Note: For the purposes of the table, the collection system status as Comingled (C), Hybrid (H) or Segregated (S) relates to the dry recyclables fraction. For example, Scenario 7a is designated as segregated because although the food waste, green waste and card are to be collected co-mingled for composting together, dry recyclables are to be collected segregated.

Appendix 4 - Bring Bank Sites

Ref	Site Location	Tins/ Cans	Clear Glass	Mixed Glass	Poly- styrene	Cartons	Plastic Bottles	Paper	Cardboard	Textiles
1	Chouet Headland	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	Vazon (car park)	✓	✓	✓		✓	✓	✓	✓	✓
3	Checkers (Manor Stores) St Martin's	✓	✓	✓		✓	✓	✓	✓	✓
4	Safeway	✓	✓	✓		✓	✓	✓	✓	✓
5	Salerie Corner	✓	✓	✓		✓	✓	✓	✓	✓
6	L'Eree	✓	✓	✓		✓	✓	✓	✓	✓
7	Longfrie Inn	✓	✓	✓		✓	✓	✓	✓	✓
8	Cobo (Mare de Carteret Pumping Station)	✓	✓	✓		✓	✓	✓	✓	✓
9	Pembroke	✓	✓	✓			✓			✓
10	Port Soif	✓								
11	L'Islet - Checkers Express	✓	✓	✓						
12	Bailloterie Campsite	✓	✓	✓						
13	Bordeaux Kiosk	✓	✓	✓				✓		
14	Grandes Rocques	✓	✓	✓						
15	Alliance	✓	✓	✓				✓		
16	Bucktrouts Warehouse (Hougue Jehannet)	✓	✓	✓						
17	Scout HQ, Rue Mainguy	✓	✓	✓						
18	Hampshire Lodge Hotel	✓	✓	✓				✓		
19	Pony Inn (Olivers)	✓	✓	✓						
20	Southside, St Sampson's	✓	✓	✓				✓		✓
21	Wine & Beer Importers, Southside	✓	✓	✓						
22	Mare de Carteret School	✓					✓			
23	Les Nicolles Prison	✓	✓					✓		
24	Bulwer Avenue	✓	✓	✓						
25	Rockmount Hotel (far end of car park)	✓	✓	✓						
26	Blanc Bois	✓	✓	✓				✓		
27	Landes Du Marche	✓	✓	✓						
28	The Track, Victoria Ave (far end)	✓								
29	The Bowl, Victoria Ave (car park)	✓	✓	✓						
30	Saumarez Park	✓	✓	✓						

(NB The Policy Council strongly supports the views of the Public Services Department and recommends that the States endorse this Report.)

(NB The Treasury and Resources Department has no comment on the proposals.)

The States are asked to decide:-

VI.- Whether, after consideration of the Report dated 27th March, 2009, of the Public Services Department, they are of the opinion:-

1. Not to pursue household kerbside recycling collections, in any form.
2. To endorse the other measures and work identified.

PANEL OF MEMBERS

(constituted by The Administrative Decisions (Review) (Guernsey) Laws, 1986-1993)

REPORT OF COMPLAINTS RECEIVED IN 2008

The Chief Minister
Policy Council
Sir Charles Frossard House
La Charroterie
St Peter Port

6th April 2009

Dear Sir

Section 8 of The Administrative Decisions (Review) (Guernsey) Laws, 1986-1993 requires me to submit an annual report on the complaints received by the Chief Executive of the States and HM Greffier.

Section 1 of the Law provides that all applications for a matter to be reviewed by a Review Board shall be made to the Chief Executive of the States except where the matter complained of relates to the Policy Council and its staff, in which case application is made to Her Majesty's Greffier.

The Chief Executive of the States received one complaint against the Treasury and Resources Department alleging that the draft of a proposed agreement did not accord with previously agreed terms. However the complainants failed to supply sufficient information for the Chief Executive to consider and the complaint was therefore treated as withdrawn.

No complaints have been received by HM Greffier during 2008.

During the year I received one communication from someone wishing to make a complaint. I did not comment on the detail but referred the complainant to the requirements of the Law. It would be helpful if Members of the States and public understood that the procedure requires all complaints to be referred in the first place to the Chief Executive of the States.

Yours faithfully

R. R. Matthews
Chairman

(NB The Policy Council has no comment on the proposal.)

(NB The Treasury and Resources Department has no comment on the proposal.)

The States are asked to decide:-

VII.- Whether, after consideration of the Report dated 6th April, 2009, of the Review Board constituted under the Administrative Decisions (Review) (Guernsey) Laws, 1986 – 93, they are of the opinion:-

To note that Report.

STATUTORY INSTRUMENTS LAID BEFORE THE STATES**THE FISHING (DESIGNATION OF FISHERIES) ORDER, 2009**

In pursuance of section 1(6) of the Fishing (Licensing and Protection of Fisheries) Ordinance, 1987 as amended, the Fishing (Designation of Fisheries) Order, 2009, made by the Commerce and Employment on 24th March, 2009, is laid before the States.

EXPLANATORY NOTE

This Order prescribes the parts of the foreshore and sea adjacent thereto which have been designated as licensed fisheries under the Ordinance of 1987, and revokes the two Orders made previously under the Ordinance of 1987. This Order came into force on the 26th March 2009.

THE HEALTH SERVICE (BENEFIT) (LIMITED LIST) (PHARMACEUTICAL BENEFIT) (AMENDMENT) REGULATIONS, 2009

In pursuance of Section 35 of The Health Service (Benefit) (Guernsey) Law, 1990, the Health Service (Benefit) (Limited List) (Pharmaceutical Benefit) (Amendment) Regulations, 2009, made by the Social Security Department on 16th April, 2009, are laid before the States.

EXPLANATORY NOTE

These Regulations add to the limited list of drugs and medicines available as pharmaceutical benefit which may be ordered to be supplied by medical prescriptions issued by medical practitioners or dentists, as the case may be.

*APPENDIX I***CULTURE AND LEISURE DEPARTMENT****CHANNEL ISLANDS LOTTERY – 2008 REPORT AND ACCOUNTS**

The Chief Minister
Policy Council
Sir Charles Frossard House
La Charroterie
St Peter Port

24th March 2009

Dear Sir

I am pleased to be able to provide a report on the Bailiwick of Guernsey's performance within the Channel Islands Lottery for 2008. The requirement to report is contained within section 2 (5) of the Gambling Channel Islands Lottery Ordinance. The report is included as an appendix to a Billet d'Etat.

We regret to report that sales continued to fall in 2008, mainly attributable to scratch tickets, although there was also a small reduction in Christmas Draw sales.

LOTTERY FORMAT

Throughout 2008 the Lottery was run on an instant prize scratch card basis, with the exception of Christmas, which also includes a draw of winning numbers.

Two separate scratch card games are run side by side, both offering a maximum prize of £20,000.

Changes to the structure of the game and prize structure are routinely monitored after consultation with the Lottery Advisory Panel. The panel meets to review and make recommendations about the Lottery.

SALE OF TICKETS

Five main Agents are appointed to sell Lottery tickets within the Bailiwick of Guernsey; three in Guernsey, one in Alderney and one in Sark. The Agents purchase tickets from the Department and ensure that the tickets are on sale as widely as possible through a chain of sub-agents.

Total ticket sales in 2008 were as follows:-

	Bailiwick of Guernsey	Jersey	Total Sales
Scratch Cards	756,000	956,000	1,712,000
Christmas Draw	597,700	1,100,000	1,697,700
Total	£1,353,700	2,056,000	3,409,700

PRIZES UNCLAIMED

Prizes which are not claimed are forfeited after a given period of time. The total value of prizes unclaimed in the Bailiwick of Guernsey amounted to £19,001 in 2008. £24,600 was transferred to the Christmas Draw to support a minimum guaranteed prize structure for the draw. The balance of unclaimed prizes as at 31 December 2008 stood at £168,095.

DONATION TO THE ASSOCIATION OF GUERNSEY CHARITIES

The profits from the Christmas Bumper Draw are paid to the Association of Guernsey Charities for distribution to charitable groups. The amount paid to the association in respect of the 2008 Christmas Draw was £147,454.71, a record payment to the Association from the Channel Islands Lottery. In spite of lower Christmas Draw sales in 2008, cost savings were achieved, thus resulting in the increased profit.

With the Department's agreement the Association of Guernsey Charities has distributed the funds as detailed on the attached schedule.

ACCOUNTS

The accounts for the Channel Islands Lottery (Guernsey) Fund for 2008 are attached. These reveal that the promotion of the Lottery in the Bailiwick of Guernsey produced a surplus of £284,603 which was shared within the Bailiwick in proportion to the number of tickets sold in each Island as follows:-

Chief Pleas - Sark	£1,934
States of Alderney	£2,945
States of Guernsey	£279,724

Yours faithfully

Mike O'Hara
Minister

ASSOCIATION OF GUERNSEY CHARITIES

2008 CHRISTMAS LOTTERY GRANT ALLOCATIONS

CHARITY	AGC MEMBER	PURPOSE	PROPOSED GRANT
Channel Islands Air Search	053	To replace pagers for crew members	4,000.00
Drug Concern	153	Part salary costs and rental of new property	10,000.00
Friends of the Priaux Library	264	Access facilities for Disabled users	3,690.00
Girlguiding Guernsey	012	Display equipment for Centenary Celebrations	200.00
GSF Mental Health Fellowship	108	Training Bursary	5,000.00
Guernsey Association for Mental Health (Gsy MIND)	049	Rental accommodation for secondees	7,800.00
Guernsey Bereavement Service	243	Specialist bereavement training	10,000.00
Guernsey Cheshire Home	035	Fuel, Heating and Motor expenses	19,500.00
Guernsey Chest and Heart	099	Lung function testing equipment	2,800.00
Guernsey Disability Alliance	306	To commission report	5,000.00
Guernsey Driveability	310	To fit out a special vehicle for assessments	2,000.00
Guernsey Sailing Trust	117	To replace clothing and buoyancy aids	2,000.00
Guernsey Sports Commission	260	Youth shelter at Les Genats	5,000.00
Guernsey Welfare Service Ltd	020	Rent and welfare vouchers	10,000.00
Information Exchange	216	Young carers project worker	1,170.00
Les Naftiaux Community Centre	253	Salary contribution and PL insurance	4,000.00
Maison St Pierre	125	Roof repairs and annual insurance	5,000.00
Methodist Homes for the Aged	095	Specialist bath purchase	7,400.00
Multiple Sclerosis Society	011	New specialist equipment	5,000.00
National Autistic Society Guernsey Branch	293	SPELL Training and general support	2,000.00
NSPCC	043	Contribution to annual running costs	12,500.00
Philippi Guernsey LBG	270	Training costs re prof development	3,800.00
St. John Ambulance & Rescue Service	021	Inshore rescue lifejackets	5,000.00
West United Agricultural and Horticultural Society	172	Assist in running costs of West Show	2,000.00
Wings Club	313	UK trip to assist mental health recovery	3,998.04
WRVS	057	Vehicle Running Costs	10,160.00
TOTAL			149,018.04

Note: This is the distribution of £147,454.71 from the 2008 Christmas Lottery.

It also includes £1,500 returned from the 2007 Lottery plus £63.33 from the Association of Guernsey Charities Charitable Fund.

The Association of Guernsey Charities website contains details on over 250 local organisations, together with useful information for charities.

www.charity.org.gg

CHANNEL ISLANDS LOTTERY (GUERNSEY) FUND

	2008 £	2007 £
FORFEITED PRIZES ACCOUNT		
Balance at 1 January	173,694	140,412
Share of forfeited prizes	19,001	57,882
Transfer to Operating Account	(24,600)	(24,600)
Balance at 31 December	<u>£168,095</u>	<u>£173,694</u>
OPERATING ACCOUNT		
Forfeited prizes	24,600	24,600
Sale of tickets	1,353,700	1,422,100
	<u>1,378,300</u>	<u>1,446,700</u>
Agents' commission	(180,691)	(189,441)
Contribution to prize fund including forfeited prizes	(812,220)	(853,260)
Printing and stationery	(63,504)	(68,313)
Promotion	(9,818)	(11,222)
Staff costs	(23,522)	(25,921)
States of Jersey administration charges	(1,575)	(10,000)
Other expenses	(2,367)	(1,194)
Surplus	<u>284,603</u>	<u>287,349</u>
Chief Pleas of Sark - share of surplus	(1,934)	(2,224)
States of Alderney - share of surplus	(2,945)	(2,926)
States of Guernsey - share of surplus transferred to Appropriation Account	(279,724)	(282,199)
	<u>£ -</u>	<u>£ -</u>
APPROPRIATION ACCOUNT		
Balance at 1 January	13,105	16,168
Share of surplus transferred from Operating Account	279,724	282,199
	<u>292,829</u>	<u>298,367</u>
Donation to Association of Guernsey Charities	(147,455)	(145,262)
Transfers to Beau Sejour Centre	(130,000)	(140,000)
Balance at 31 December	<u>£15,374</u>	<u>£13,105</u>

- Notes: (a) The balance on the Appropriation Account is payable ultimately to the Beau Sejour Centre under States Resolutions I of 27 September 1972 and XXII of 26 February 1998.
- (b) In accordance with the States Resolution of 23 February 1995 (Billet D'Etat V, February 1995), with effect from 2000 any forfeited prize money from expired Draws which remains unused in the current year will be retained for use as a contingency to support the prize funds in future Draws.

Guernsey Retail Prices Index⁹³⁷

Quarter 1 - 31 March 2009

Issue Date - 22nd April 2009

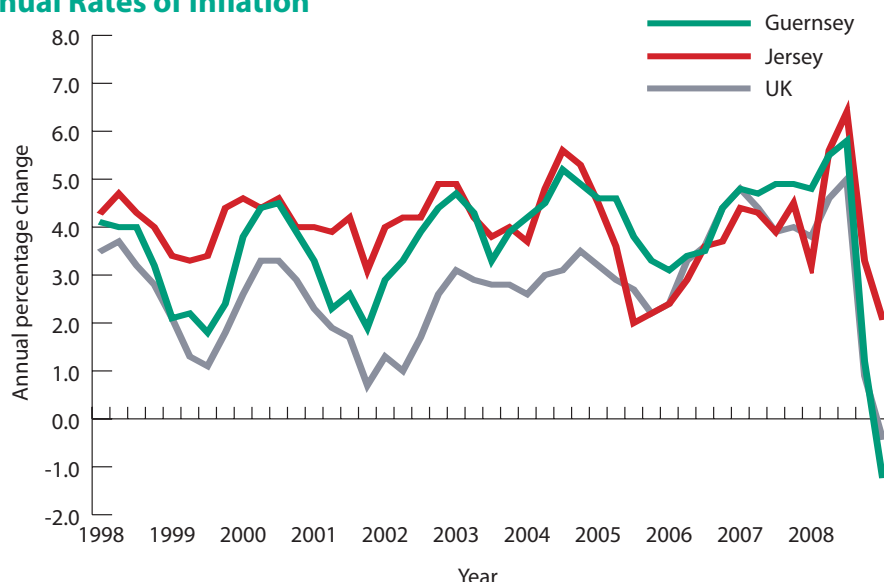
Introduction

The Guernsey Retail Prices Index (GRPI) is the measure of inflation used in Guernsey. It measures the change in the prices of goods and services bought for the purpose of consumption or use by households in Guernsey. It is published quarterly by the States of Guernsey Policy and Research Unit. The calculation of the GRPI is based on the price change of items within a 'shopping basket'. Whilst some prices rise over time, others will fall or fluctuate and the Index represents the average change in these prices. More detailed information on the RPI and its calculation can be found at the end of this handout.

Headlines

- At the end of March 2009 Guernsey's annual headline rate of inflation was -1.2%, compared to 1.2% at the end of December and 4.8% at the end of March 2008.
- In the UK and Jersey the equivalent figures for the end of March 2009 were -0.4% and 2.1% respectively (see Figure 1).
- Guernsey's RPIX ("core" inflation excluding mortgage interest payments) was 3.3% this quarter, compared to 4.6% at the end of December and 4.3% at the end of March 2008.
- The Housing group contributed a decrease of -3.2 percentage points to the headline annual rate of inflation as a result of unprecedented reductions in the Bank of England base rates (from 5.25% to 0.5%) over the last 12 months, leading to significant decreases in the mortgage interest component.
- The Fuel Light & Power and Leisure Goods groups also decreased during the year.
- However, the remaining eleven of the fourteen RPI groups increased or remained stable over the year ending March 31st 2008: the Food, Alcohol, Household Services and Leisure Services groups contributed the largest increases.
- The Index stood at 137.4 (1999 base).

Figure 1: Annual Rates of Inflation



IN THE STATES OF THE ISLAND OF GUERNSEY ON THE 27th DAY OF MAY, 2009

**The States resolved as follows concerning Billet d'État No XIII
dated 8th May 2009**

LADIES' COLLEGE BOARD OF GOVERNORS

NEW MEMBERS

I.- To re-elect

1. as a member of the Ladies' College Board of Governors with effect from 1st June, 2009, Mr Michael Bruce Riley who has been nominated in that behalf by the Education Department for election by the States.
2. as a member of that Board of Governors with effect from 1st June, 2009, Mrs Stephanie Ann Nickolls who has been nominated in that behalf by the States appointed Governors and the Education Department nominated Governors for election by the States.

GUILLE-ALLÈS LIBRARY COUNCIL

NEW MEMBER

II.- To re-elect Deputy M J Fallaize as a member of the Guille-Allès Library Council with effect from 1st June 2009.

ADMINISTRATIVE DECISIONS (REVIEW) (GUERNSEY) LAW, 1986

NEW CHAIRMAN AND DEPUTY CHAIRMAN OF PANEL OF MEMBERS

III.- In accordance with the provisions of section 4 (2) of the Administrative Decisions (Review) (Guernsey) Law, 1986:-

1. To re-elect Deputy R R Matthews as Chairman of the Panel of Members with effect from 1st June 2009.
2. To re-elect Douzenier J R Domaille as Deputy Chairman of that Panel with effect from 1st June 2009.

POLICY COUNCIL

USE OF STATEMENTS OBTAINED UNDER COMPULSION

IV.- After consideration of the Report dated 20th April, 2009, of the Policy Council: -

1. To enact legislation as set out in HM Procureur's letter quoted in that Report.
2. To direct the preparation of such legislation as may be necessary to give effect to their above decision.

HEALTH AND SOCIAL SERVICES DEPARTMENT

PUBLIC HEALTH LEGISLATION: HOUSING – OVERCROWDING STANDARDS

V.- After consideration of the Report dated 11th March, 2009, of the Health and Social Services Department:-

1. That the current public health legislation requirements on overcrowding shall be amended to provide specific space and bedroom standards as detailed in that Report.
2. That all references to sleeping and times of the day in connection with overcrowding provisions shall be removed.
3. To direct the preparation of such legislation as may be necessary to give effect to their above decisions.

IN THE STATES OF THE ISLAND OF GUERNSEY ON THE 28th DAY OF MAY, 2009

(Meeting adjourned from 27th May 2009)

**The States resolved as follows concerning Billet d'État No XIII
dated 8th May 2009**

PUBLIC SERVICES DEPARTMENT

KERBSIDE COLLECTION OF RECYCLABLES

VI.- After consideration of the Report dated 27th March, 2009, of the Public Services Department:-

1. TO NEGATIVE THE PROPOSITION not to pursue household kerbside recycling collections, in any form.
2. TO NEGATIVE THE PROPOSITION to endorse the other measures and work identified.

PANEL OF MEMBERS

(constituted by The Administrative Decisions (Review) (Guernsey) Laws, 1986-1993)

REPORT OF COMPLAINTS RECEIVED IN 2008

VII.- After consideration of the Report dated 6th April, 2009, of the Review Board constituted under the Administrative Decisions (Review) (Guernsey) Laws, 1986 – 93:-

To note that Report.

STATUTORY INSTRUMENTS LAID BEFORE THE STATES

THE FISHING (DESIGNATION OF FISHERIES) ORDER, 2009

In pursuance of section 1(6) of the Fishing (Licensing and Protection of Fisheries) Ordinance, 1987 as amended, the Fishing (Designation of Fisheries) Order, 2009, made by the Commerce and Employment Department on 24th March, 2009, was laid before the States.

**THE HEALTH SERVICE (BENEFIT) (LIMITED LIST) (PHARMACEUTICAL
BENEFIT) (AMENDMENT) REGULATIONS, 2009**

In pursuance of Section 35 of The Health Service (Benefit) (Guernsey) Law, 1990, the Health Service (Benefit) (Limited List) (Pharmaceutical Benefit) (Amendment) Regulations, 2009, made by the Social Security Department on 16th April, 2009, were laid before the States.

**S M D ROSS
HER MAJESTY'S DEPUTY GREFFIER**