Appendix A :
Options for increasing the Council's recycling and composting rate

Analysis of residual (green bin) waste

The most recent data available for the analysis of the composition of residual waste in Breckland dates from 2006, from a survey carried out for Defra by Entec UK Ltd. That survey showed that the greatest fraction by weight of recyclable or compostable waste in residual bins if food waste (36.6%), followed by paper products (11.3%) and glass bottles and jars(4.1%). See table below:

Recyclable/compostable material	Average % in the green bin by weight
Food waste	36.6
Garden waste	3.5
Plastic bottles	0.6
Glass bottles and jars	4.1
Mixed Paper	11.3
Card/cardboard	1.8
Cans and tins	1.1
Other metals	2.1
Textiles and shoes	3.5
Electricals	1.0
Liquid cartons/ TetraPak	0.4
Household batteries	0.1

Fig 1. Recyclable/compostable materials in Breckland residual waste. March 2006, Entec UK Ltd

Option 1: Separate kerbside food waste collection service

Food waste forms the largest fraction of recyclable/compostable material in residual waste, and being organic is the type of waste least desirable for landfill, creating as it does methane gas on decomposition. This being the case, there is a powerful technical case for the separation of food waste for composting or other suitable treatment.

A joint evaluation of the potential for food waste collections has been carried out by officers of both Breckland and South Norfolk Councils. In particular, the benefit of a joint pilot to take place in the Attleborough and Wymondham areas was examined in detail. These areas had particular potential as they are close to an existing food waste treatment facility.

Food waste needs to be treated in a more controlled way as a result of the Foot and Mouth Crisis. All food waste needs to be treated at an animal by-product (ABP) compliant facility, and requires separate collection in a compliant vehicle. Because of the treatment needed, gate fees for food waste are substantially higher than for garden waste, which can be composted in the open air.

Broadland District Council has trialled a food waste collection service to 6000 households (recently rolled out to further households). The initial cost of the Broadland trial was approximately £10 per household for containers and communications materials, and £24 per household per year in ongoing costs (£21 hh/yr in running costs plus £3 per household for compostable starch liners).

The assumptions for such a food waste collection trial in Breckland and South Norfolk are based on the successful Broadland trial, as this scheme fits in with both Councils current waste collection arrangements. Attleborough and Wymondham are sizeable areas of population, and are close to Carleton Rode, where an ABP treatment facility is located. The costings presented are based on a trial to 5300 households in the Attleborough area.

Costings are based on:

- Provision of a 23 litre kerbside caddy for collection of food waste at the kerbside
- Provision of a 7 litre caddy for the kitchen for each household
- Provision of a year's supply of compostable starch liners – studies show that if liners are supplied, contamination of the waste is less likely.
- Hire of an *Animal By Product* compliant vehicle for the duration of the trial
- Staffing of 1 driver and 1 loader
- An expected enhanced recycling credit income of £80 per tonne for this material (2011/12)
- A gate fee of £50 at the treatment facility
- A participation rate of 70% of households, from which 60% of all available compostable ford waste is collected.

The total net cost in year one of a food waste collection trial in Attleborough is estimated at a minimum of circa £106,000, depending upon the type and age of the vehicle used, or around £23.00 per participating household based upon 5300 households. Some of this cost is attributed to delivery of caddies, liners and essential communications material. The total net cost in year two and beyond is estimated at £78,000 or £18.00 per household at today's prices.

The impact on recycling rates would be an estimated 0.65% based upon 307 tonnes per annum collected. If this were extrapolated across the district this would represent an additional 7% recycling.

These costs are based upon an assumption of a joint trial with South Norfolk; however there is no clear evidence to suggest that the efficiencies of a joint food collection service can be extended beyond the trial areas across the two districts due to the dispersed nature of the areas of population, and the resulting requirement for more than one depot facility in order to control logistical and waste mileage issues.

It should be noted that, whilst Norfolk County Council has indicated an enhanced recycling rate for food waste of £80 per tonne (compared to £47.64 per tonne for other material) the longevity of this arrangement cannot be assured. With the development of the Norfolk waste PFI contract over the coming years, the approach to the disposal of food waste may err toward thermal treatment (incineration) rather than composting within a small number of years. Any reduction or withdrawal of such financial support would have significant implications for Breckland should this scheme be adopted.

The table in figure 2 below sets out the breakdown of estimated costs between South Norfolk and Breckland for a joint trial I the Attleborough and Wymondham areas:

Estimated net costs of joint food waste trial - year one

	Attleborough	Cost per household (5300 households)	Cost per tonne (306 tonnes)
Caddies	£22,472.00		
Liners	£15,582.42		
Delivery	£4,346.00		
Communications	£3,657.00		
Staff	£53,084.00		
Gate fees (307 tonnes @£50 a tonne)	15350		
Recycling credit (£80)	-24560		
TOTAL (excluding vehicles)	**£89,931.42**		
Estimated maximum cost with vehicles	**£123,916.22**	**£23.38**	**£403.64**

Estimated net costs of joint food waste trial - year two

	Attleborough	Cost per household (5300 households)	Cost per tonne (306 tonnes)
Liners	£15,582.42		
Communications	£2,438.00		
Staff	£53,084.00		
Gate fees (£50 a tonne)	15350		
Recycling credit (£80)	-24560		
TOTAL (excluding vehicles)	**£61,894.42**		
Estimated maximum cost with vehicles	**£95,879.22**	**£18.09**	**£312.61**

Fig 2. Breckland Council - Estimated maximum costs of a joint food waste collection trial with South Norfolk District Council.

Option 2: Separate kerbside glass collection service

Breckland currently operates a network of 99 glass bring bank sites across the district. These banks generate around 2250 tonnes of glass per annum, and provide an additional benefit for local community groups that benefit from payment in return for promoting and keeping tidy their local bring banks. Details of the scheme for providing recycling credits to local community groups are outlined in appendix B. The total cost of servicing the banks, including community payments, was £62,000 in 2009/10. Income generated for the same period was £104,000, resulting in a net income of £42,000, or £19 net income per tonne of glass collected.

The 2006 Entec report estimated that recyclable glass represents around 4 % of the contents of the average residual (green) waste bin in Breckland. This can be

extrapolated to 1100 tonnes of recyclable glass per annum ending up in landfill, or 20 kg per household.

In January 2010 indicative quotes were provided for the provision of a fortnightly kerbside glass collection service for the Thetford area (approximately 10,100 households). These quotes range from a gross revenue cost before recycling credits of £75,000 - £108,000 per annum. If all of the available glass currently being put into green bins in Thetford were collected through such a scheme (200 tonnes per annum) , the net cost after recycling credit income would be an estimated minimum of £62,500 per annum, or a net cost per tonne of £312. The impact on recycling rates would be an additional 0.25%. If this were extrapolated across the district this would represent an additional 1.4% recycling.

It is reasonable to assume that not all households would participate, and that somewhat less than 100% of available glass would be collected under such a scheme; at an 80% collection rate the net cost increases to over £400 per tonne or approx £6 per household.

In addition to ongoing revenue costs, year one capital costs of at least £37,000 would be incurred for the provision of suitable containers.

Costs could be potentially reduced if the collection schedule was four weekly rather than fortnightly, but this might impact upon participation. In addition, with a kerbside glass collection in place, it is reasonable to assume that much of the glass currently in glass bring banks would appear in kerbside containers. This would represent a switching from a more cost effective collection system to a less cost effective collection system.

Details of relevant costing appear in figure 3 below:

Glass collection proposals

Both are based on a fortnightly collection

	Contractor A 100%	Contractor B
Total cost p/a	**£74,983**	**£108,160**
Income from recycling credit (£47.64 p/tonne) Based on 20kg h/hold from 10100 households (100% participation)	(£9,528)	(£9,528)
Income from glass (£15 per tonne)	(£3,000)	(£3,000)
Total cost (minus income)	**£62,455**	**£95,632**
Net cost per tonne (100% collection)	**£312.28**	**£478.16**

Receptacle	Box	Bin/box mix 50/50
Capital cost of bins/boxes (yr 1)	£37,161	£95,800*

Increase to recycling rate	0.25%	0.25%

Fig 3. Proposals for the provision of kerbside glass recycling in Thetford, January 2010.

Option 3: Promoting increased take up of garden waste collections

The Council operates a separate and chargeable fortnightly garden waste collection service for households. The current charge to customers is £36 per annum, for which they are provided with a 240 litre brown wheeled bin. The service currently has 14,700 subscribers, who produce approximately 6000 tonnes of garden waste per annum, dependant upon seasonal factors, which contributes around 13% to the overall recycling and composting rate(NI192).

Once the cost of providing the service through the Serco contract is netted against income from subscriptions and recycling credits, there is typically a modest net income for the Council of circa £1 per subscriber per annum.

For each additional 1000 net subscribers, the recycling and composting rate is likely to increase by around 0.85 per cent at no net cost to the Council. However, it must be noted that garden waste does not represent an significant fraction of residual (green bin) waste, and thus every additional tonne of garden waste collected represents an overall increase in waste collected; it does not in itself reduce the tonnage destined for landfill (NI191 waste).

In addition, the pricing mechanism for the Serco contract does require periodic step changes in the cost of this service as existing capacity is met and exceeded and new collection rounds are required. This means that at certain points the Council may be required to pay for an entire new round even if it is not fully utilised. This acts as a barrier to promotion of the service when existing resources are close to capacity. This is the situation at the time of writing. However, negotiations are currently taking plac3e between Environmental Services with a view to creating a more progressive payment arrangement on the basis of “no better, no worse” to make a more direct proportional link to the number of subscribers and the contract payment.

Nevertheless, there is no doubt that promoting greater take up of garden waste collections is likely to represent an extremely cost effective means of increasing recycling performance. Such promotion could take place through existing modes of communication such as The Voice and the Contact Centre, as well as partners such as Wayland Radio, within existing budgets. It is estimated that up to additional 2000 subscribers could be achieved within one year, settling to more modest growth thereafter of circa 500 additional subscribers per annum.

Option 4: Focussing upon reducing residual waste

In keeping with the growing sense of partnership between Serco and Environmental Services, joint workshops are being held with a view to devising joint initiatives for reducing residual waste. This will include a review of policies regarding bin size, side waste etc for consideration by members, as well as greater targeting of areas where high levels of residual waste are evident through door knocking and promotional campaigns.

The intention is to put in place targets for the reduction of residual waste, including food waste, over the coming year and beyond, backed up by a residual waste reduction strategy. There is a real enthusiasm for putting increased energy into decreasing residual waste, and progress on this campaign will be monitored through the Green Agenda Working Group.

A set of policies and service standards for consideration and approval by Cabinet will be drafted, with specific recommendations for the standard size of residual waste bins, the approach to larger households, and opportunities for changing behaviour.

In addition, the 1100 tonnes of glass currently disposed of through green bins will be specifically targeted through promotional activities through existing modes of communication such as The Voice and the Contact Centre, as well as partners such as Wayland Radio, within existing budgets. Opportunities for increasing the coverage of the bring bank system will also be reviewed.

In addition, through working more closely with those community groups currently caring for glass bank sites we can ensure their energy and resources are focussed upon realising the value of that material through increased recycling. Should option 2 above not be adopted, the additional potential of glass currently disposed of could generate significant additional net income; if 40% of the potential were realised this could generate up to £8,000 at current levels of recycling credit and materials payments.

Option 5: Recycling of bulky household waste

Following further discussions with Pearson's, a trial of the bulky waste material taken into Thetford transfer station was due to commence in January 2010. In the report to Executive board of November 2009, it was projected that a district wide scheme of this sort for bulky waste likely to increase recycling by up to 0.7%, and reduce waste to landfill by up to 200 tonnes per annum.

Charges proposed were £60 per tonne, with excess charges of £4.50 for televisions and computer monitors and £8.50 for fridge and/or freezer units. These charges would be offset by recycling credits of £47.64 per tonne. For the 9% of waste currently produced in the Thetford area, this would equate to net costs in the order of £700, for the recycling of 18 tonnes of material. In recycling rate terms, this trial would equate to less that 0.1%.

The verifications of weights of materials has proved to be an obstacle to progress for this initiative, with the County Council as waste disposal authority concerned about certain aspects of the audit process that ensures materials are actually recycled. Negotiations will continue between all parties with a view to commencing a limited trial of this scheme by September 2010.

A district wide expansion of this trial would necessitate bulky waste currently taken to Shipdham transfer station being bulked up and deliverd to the Pearson's depot in Thetford, and will require separate negotiations with WRG who manage the transfer stations with a view to ascertaining the likely cost implications. Due to the possible scale of costs involved a contract tendering process would likely be required, and this would be dependant upon the availability of the likely funding requirement.