

APPENDIX D

WAVERLEY BOROUGH COUNCIL

EXECUTIVE – 20TH MAY 2008

Title:

WASTE MANAGEMENT – FOOD WASTE MINIMISATION

[Wards Affected: All]

[Portfolio Holder: Cllr J R Sandy]

Summary and Purpose

The purpose of this report is to consider the Council's strategy for taking forward the waste minimisation agenda with particular reference to the management of food waste.

Environmental Implications

The management and treatment of domestic waste has considerable implications for the environment in respect of the emission of 'greenhouse' gases and production of damaging leachate. The reduction in biodegradable municipal waste sent to landfill, particularly food waste, can reduce environmental pollution.

Social/Community Implications

The effective management of domestic waste can best be achieved with the co-operation and consent of the whole community whose personal waste management practices and behaviour are fundamental to reducing the impact on the environment.

E-Government Implications

The management of domestic waste requires effective and user-friendly communication with all of the householders in Waverley, and those who can influence their household waste practices. Enhanced communication through the Council's web-site will benefit that process.

Resource and Legal Implications

Any publicity campaigns and/or promotions arising from the recommendations of this report will require resourcing both in terms of staff and revenue/capital funding, for which no provision is currently identified.

Introduction

1. The Council's implementation of alternate weekly collection of residual waste and recyclables (AWC), which was largely completed in October 2006, in combination with a subscription service for garden waste collected and composted, has lifted its annual average recycling rate to around 39% of household waste collected (year average to February 2008). It has also put Waverley in first place in the Country for the biggest reduction in municipal waste sent to landfill (for 2006/07).
2. The Council has signed up to the Surrey-wide Joint Municipal Waste Management Strategy (JMWMS) which seeks to achieve combined recycling and composting targets across Surrey of 40% by 2010/11 and 45% by 2013/14. However, Waverley's Corporate Plan seeks to meet targets of 45% and 55% respectively by those dates.
3. The largest single constituent of the remaining non-recyclables in the residual waste collected from households is food waste. The latest available waste compositional analysis carried out in April 2007 revealed approximately 18% fruit and vegetable waste and 18% cooked/prepared food in the residual waste stream in Waverley. Card/Cardboard represented only 5% (by weight) of the total. Any step-change in recycling performance can, therefore, most effectively be made by addressing the management of food waste. All of the Surrey Districts/Boroughs have signed up to the principle of diverting food waste from landfill through the Surrey JMWMS. Surrey County Council have agreed in principle to incentivise food waste collection and expect to have local treatment facilities available by mid-2010.
4. The landfilling of food waste and other biodegradable wastes results in the production of gases and leachate that are harmful to the environment. The landfilling of biodegradable municipal waste (BMW) is subject to statutory National and European Regulations and Targets that are designed to progressively increase the penalties for landfilling itself and for failing to meet reduction targets. Hence the landfill tax payable by the disposal authority (Surrey County Council) for every tonne of BMW sent to landfill is ratcheting up from £32 (2008/09) to £48 (2010/11).
5. There is a Landfill Allowance Trading Scheme (LATS) under which each Waste Disposal Authority (WDA) is allocated a landfill quota which is progressively reduced over time to reflect BMW reduction targets. Those WDAs unable to keep within their quota may purchase allowances unused by other WDAs at a rate dictated by the commercial value of the allowance of any given time. There is no evidence that SCC cannot operate within its current quota for the foreseeable future and therefore the LATS allowance currently has no value. However, each Waste Collection Authority (WCA e.g. Waverley) has a contribution to make in keeping Surrey in that position and therefore needs to consider any opportunities to reduce its individual contribution to Surrey's residual waste stream. The reduction of food waste through education, encouragement, home composting or processing, or

separate collection for treatment by the WDA is one of those key opportunities. Each of those will be considered in this report.

Kerbside Food Waste Collection Trials

6. In its capacity as a member of the Surrey Joint Municipal Waste Management Strategy Group (SMWMSG) Waverley has been following the trial of a dedicated kerbside food waste collection service in three districts of Surrey. The trials were funded by the Government Office of the South East (GOSE) and the Government's Waste and Resources Action Plan (WRAP) through funding to the Surrey Local Authority Agreement (LAA) of which Waverley is a partner. One of the priorities for the LAA under the new National Indicators (NIs) is increasing the percentage of household waste recycled and composted (NI192). Waverley funding through the LAA was directed to improving cardboard recycling largely through enhanced 'Bring' Site cardboard bank provision and is also being used for a trial collection of dry-cell batteries and textiles from approximately 10 000 households.
7. The food-waste trials were carried out in small areas of Elmbridge Borough Council (2,950 households), Guildford Borough Council (2,928 households) and Mole Valley District Council (3897 households) between May 2007 and March 2008. A dedicated vehicle was used in each District collecting food waste from containers presented by the householder at the kerbside on a weekly basis. No food waste processing facilities are currently available in Surrey. The waste from each district was bulked at Leatherhead and subsequently trucked to Dorset for in-vessel composting. The precise provision of food-waste processing plants in Surrey is not yet clear but Surrey County Council have given an assurance that there will be local provision within the County by mid-2010. Before that date, the County Council will also be providing interim facilities that will be geographically closer.
8. Each participating household was provided with a small (7 litre capacity) caddy for use in the kitchen and a 20 litre capacity bin for bulking the waste from the caddy and for presenting at the kerbside. Some households were provided with biodegradable liners for the caddies to determine if that would influence participation levels. The participation rates (i.e. the number of householders using the scheme as a percentage of those offered it) varied from 57% to 85% with an average 71%. Provision of caddy liners made little difference to participation. If the weight of food waste collected in the trial is averaged across the number of households served by the trial (ie. those offered the service), and is projected for a full year, the result is 78kg per household served per annum. However, if the average is calculated on the average 71% participating properties alone, those households would present 110kg each per annum.
9. The environmental impact of an additional waste collection vehicle servicing the households was weighed against the environmental benefits of treating that weight of waste by anaerobic digestion rather than landfill. This was calculated using a life cycle analysis formula produced by the Environment

Agency. The disbenefit of the additional vehicle activity was calculated to be negligible in relation to the benefits of anaerobic composting.

Implications of Dedicated Food Waste Collection in Waverley

10. If Waverley introduced a Borough-wide dedicated food waste collection service and the participation and presentation levels experienced in the trials were replicated in Waverley, it is estimated that the total tonnage collected would be between 4,000 and 5,000 tonnes per annum based on the lower and upper levels of participation experienced in the trial. The total household waste arisings in the borough in 2007/08 (recycled materials plus residual waste) was approximately 39,100 tonnes.
11. However, the cost of such a service is high and there is currently no budget identified for such expenditure. The Council's contractor has estimated that the provision of a dedicated vehicle crew and supporting infrastructure to service 5,000 households in an urban or semi-urban area (1,000 per day) would be approximately £119,000 per annum or approximately £1.3m to cover the whole Borough. However, this is a conservative estimate of the number of households that could be serviced in a day based on current disposal arrangements. Both the participation rate and density and layout of the built-up areas could increase the collection rate up to 1200 households per day in the towns. It is estimated that provision of a kitchen caddy and food-waste bin would add a further £25,000 for a 5,000 household pilot, or £220,000 if we purchased 51,000 units of each at one time for the whole Borough. Recycling credit is currently paid at the rate of £45 per tonne so the income would be between £180 000 and £225 000 p.a. providing Surrey did not charge a 'gate' fee for its treatment. A 'gate' fee is a charge that Surrey may make for the receipt, handling, transport and processing of recyclables separated from the residual waste stream.
12. Other authorities in Surrey, particularly those engaged in the trial collection, are proposing to reduce these costs by the co-collection of weekly kitchen waste together other kerbside recyclables in a hybrid kerbside recycling vehicle and/or a hybrid refuse collection vehicle both of which would need to be designed and constructed for that purpose. Food waste ideally needs to be collected weekly, so this system would work best where the other kerbside sorted recyclables are collected weekly. Guildford's proposal requires the replacement of the entire refuse and recycling fleet at a cost in excess of £4 million. However, it is introducing the scheme, as are others, in conjunction with a move to alternate weekly residual waste collection, thereby realising further savings. Others are approaching the point of re-tendering their waste collection contracts and have the opportunity to specify new vehicles equipped for the purpose in the Contract Specifications.
13. Waverley is not yet 2½ years into a 7 year initial term (+ 7 year optional extension) contract for the supply of its waste and recycling services. Re-negotiation of the extended term would normally commence in year 5 of the initial term. The emerging developments in vehicle technology that Guildford and its peers hope to take advantage of is not retro-fittable to Waverley's fleet

of vehicles. The costs of the service to Waverley, which achieved very significant savings upon its re-tender in 2005, are predicated upon a vehicle life of 7 years. Replacement of those vehicles by the contractor at this point would require significant investment by Waverley. We would, therefore, at present have no choice but to provide a separate service using dedicated vehicles as described in Para 11. The savings that accrued from Waverley's move to AWC have been absorbed by the general fund and are not therefore available to support such a new initiative at this time.

14. Whilst Waverley should consider, and plan for, a kerbside food waste collection service in the future, in pursuit of its own ambitions, and those of the Surrey JMWMS to have a service across Surrey, no funding for this purpose was identified in this year's budget making process.

Other Action to Reduce Food Waste

15. Whilst kerbside collection of food waste is not currently built-in to the Council's budget, there are other means to reduce food waste entering the residual waste stream. However, experience elsewhere suggests that these should not be relied upon as universal solutions in themselves, they include:
 1. by promoting 'smarter' buying of food products, buying only what can reasonably be consumed within the 'sell-by' date and healthy eating parameters;
 2. by promoting the re-processing of surplus food products ('left-overs') into new recipes;
 3. by promoting better freezer/fridge management avoiding wholesale 'binning' of out-of-date products;and,
 4. by promoting and supporting home composting/treatment.

Home Composting

16. If more residents could be convinced of the benefits of, and could be persuaded to practice, home composting in the Borough, a significant reduction could be made in the approximate 18% fruit and vegetable waste and 18% other food waste typically found in the residual waste stream in Waverley. Simple garden composters alone can process most vegetable and fruit waste. Engaging householders in home food waste management encourages greater participation in recycling generally and can increase the recycling of other commodities.
17. It is difficult to predict the number of householders that might be prepared to, and have the facilities to, manage food waste at home, without the benefits of a pilot scheme to gauge the level of response that we might expect. It is proposed that the Council initially considers a pilot promotion of subsidised home composters/digesters to begin as soon as reasonably practicable. The Council's newly enhanced web-site has a key role in launching such a

promotion. Annexe 1 sets out an illustration of the costs of a typical promotion of subsidised home composters, which has been informed by similar promotions by peer authorities in Surrey.

18. There are a number of proprietary products on the market for the composting, digestion or other biological treatment of waste from the kitchen and garden varying from traditional garden waste composters, 'green cones' into which food waste is simply thrown and forgotten, to 'wormeries', 'hot composters' and 'Bokashi Bins' which require various levels of intervention and management. A brief outline of the working and advantages/disadvantages of each are described below;

1. Conventional Garden Composter;
Proprietary plastic bins of various sizes and manufacturer or home-made containers can be used for depositing vegetable peelings, eggshells, grass cuttings, soft prunings and clean (stripped of plastic parcel tape) scrunched-up cardboard to produce a soil improver for use on the garden. Occasional aeration by turning or forking improves the product. Can be used in any location.

2. Green Cone; - Food Waste Digester
Proprietary product that requires a hole approximately 900mm (3ft) diameter and 750mm (2' 6") to be dug to receive a perforated plastic bucket that must be bedded on, and surrounded by, gravel or other drainage media. The buried basket is topped by a surface mounted plastic twin-walled green cone to create a heat trap. Most food waste including cooked vegetables, pasta, meat, bones, dairy products and pet faeces can be placed into the cone. The waste is digested by micro-organisms to produce carbon dioxide and a nutrient-rich water (leachate). Cooking oil/fat should be excluded. Accelerator powder can be used to start off the digestion process or to keep it going in cold weather.

'Green Cones' are ideally suited to well drained soils in sunny dispositions. They do not work where the water table rises into the buried basket (i.e. the water level must be at least 600mm (2') below ground at all seasons) or where the excavation is flooded. There is no usable product after digestion.

3. 'Green Johanna' – Food Waste Digester/Composter
The Green Johanna is a proprietary twin-walled plastic surface-mounted bin that is described as a 'hot' composter. It requires both food waste and garden waste in proportion 2 to 1, to produce a good quality compost for garden use. It takes all food waste provided it has 30% garden waste added. It requires no excavation and can be used regardless of ground conditions. It is best positioned in a shady spot. Its optimum management requires the fitting of an insulating jacket (provided as an extra) whenever the temperature falls consistently below 5°C or is constantly above 10°C, to maintain the correct temperature for the survival and activity of the micro-organisms.

4. 'Wormery'
The 'Wormery' is a proprietary plastic bin produced in a number of designs and capacities divided into a number of chambers in one of which live Tiger Worms which are native to the UK and occur naturally wherever there is organic waste such as compost heaps. The worms digest all forms of kitchen waste and produce a nutrient-rich liquid food which can be diluted for use as a plant food. A Wormery can be kept indoors or outdoors. A small version is available specifically for indoor use.
5. Bokashi Bins or Buckets
This proprietary system ideally complements a Wormery or Compost Bin allowing all kitchen waste to be turned into nutrient-rich compost. All kitchen waste, including meat, fish, dairy products and cooked food, is placed into an air-tight container and sprinkled with a bran-based powder made with a culture of micro-organisms which begin to digest the waste. The Bokashi performs the first stages of decomposition following which the contents should be transferred into a traditional compost bin or Wormery or can be dug into the garden as a soil conditioner. Liquid drained from the Bokashi Bucket can be diluted as a plant feed or drained to a foul drain.

Food Waste Minimisation

19. The Council has a role to play in promoting the minimisation of food waste by highlighting the amount of food (typically 18% fruit & vegetable + 18% prepared food) in the residual waste stream and urging better management by householders of food purchasing and use. A publicity exercise could be launched to link with the health agenda and the rising cost of food above the rate of inflation. The exercise could focus on food wastages resulting from 'buy one – get one free' offers and packaging of products in multiples when consumers may only need one. There is evidence from food still in original packaging that quantities of waste food arising from periodic purges of freezer contents due to the 'freeze and forget' culture. Support and behavioural change can best be gained by regular informative publicity.

Residual Food Waste Management

20. There are inevitably properties where on-site composting/treatment is not practicable, such as flats and those with very small gardens. Advice therefore needs to be given on how best to wrap waste food and manage residual waste in hot weather. It is proposed, therefore, that the Council repeats the publicity exercise was conducted for this purpose prior to last summer.

Resource Implications

21. There is currently no budget for the extension of a waste minimisation campaign, the provision of greater support for home composting or for the introduction of a dedicated food waste collection service. The implementation

of any initiatives in this area will require supplementary estimates in 2008/09, with additional growth in the 2009/10 Budget.

Conclusion

22. Food waste constitutes a very significant part of the total residual household waste stream. Any step-change in recycling activity can best be achieved by addressing the management of this waste. The Council has an ambition to continuously increase its recycling performance and has joined its partners in the Surrey Joint Municipal Waste Management Strategy Group in adopting the objective to divert food waste from landfill in the long term.
23. Reducing biodegradable municipal waste (BMW) landfilled has significant environmental benefits, will reduce SCC's liabilities for Landfill Tax payments, and will help meet the EU targets on BMW landfilled. It will also reduce the risk of SCC needing to purchase Landfill Allowance Trading Scheme credits.
24. Separate collection of food waste requires that SCC provide an infrastructure to receive and treat that waste either by anaerobic digestion, or in-vessel composting. Assurances have been given that more local facilities will soon be available.
25. However, in the longer term, there are clear benefits in the objective of diverting food waste from the residual waste stream. The issue is how that can best be achieved, at what pace, and how that should be funded. It is recognised that, at present, the Council has made no provision in its budget this year, or in subsequent years, for a separate food waste collection from households.
26. The options for the Council, if it is to pursue the objective of diverting food waste, are;
 - i. to promote food waste minimisation and home composting/treatment, by publicity and subsidising the provision of home composters
 - ii. to work towards the provision of a universal kerbside food waste collection by initially implementing a pilot scheme using the maximum productivity of one dedicated vehicle and crew, or;
 - iii. to consider the implications of focusing the kerbside food waste collection on those built-up areas where home composting is more difficult and to promote and assist householders to manage their kitchen waste in their gardens in the more rural areas.

Recommendation

It is recommended that the Executive;

1. strongly support the objective to divert domestic food waste from landfill and accordingly instructs officers to investigate a fully costed proposal for a limited dedicated fortnightly kerbside food waste

collection using the maximum productivity of a 7.5 tonne dedicated vehicle and crew, and that the Environment and Leisure Overview and Scrutiny Committee be requested to participate fully in this investigation; and

2. approve an immediate supplementary estimate of up to £20,000 for a one-off promotion of the sale of Green Cones at £10 each and Green Johannas at £20, in addition to existing offers, and on the basis of one item per household in Waverley.

Background Papers (DoE)

There are no background papers (as defined by Section 100D(5) of the Local Government Act 1972) relating to this report.

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ANNEXE 1

FOOD WASTE MINIMISATION HOME COMPOSTER PROMOTIONS

1. Garden Composters:

The Government's Waste and Resources Action Plan (WRAP) Surrey Recycling Campaign currently offers garden composters at heavily discounted rates, through its 'Recycle Now' promotion;

220 litre composter £12.00 (rrp £40)

330 litre composter £15.00 (rrp £50)

Residents requesting composters are passed by Waverley to WRAP which organises delivery direct to homes.

Waverley currently offers 'Garden Tumblers' (an end-over-end composting drum mounted on a steel cradle for easy turning of compost) at the cost price (to Waverley) of £38.00 Waverley pays the delivery charge of £7. This has not been actively promoted this year.

2. Wormeries:

Waverley currently provides 'Wormeries' on request at a subsidised price of £32.50. The cost to Waverley is £56.30. This offer has not been actively promoted this year.

3. Bokashi Kitchen Composter

Double Bokashi Kitchen Composters with a starter pack of activator is currently retailed at £55 (delivery £6). 2 months supply of activator bran is £3.99.

4. Green Cones/Green Johannas

The Green Cone Company are willing to work in partnership with Waverley to promote the Green Cone and Green Johanna Food Waste Composters. Promotions can either be by;

(a) 'Truck' sales;

The company will set up on a site designated by Waverley for a one day sales promotion with a truck loaded with the number of composters that Waverley has agreed to subsidise. Householders, on proof of residence, may collect their chosen composter and pay the subsidised

price to Green Cone Ltd. Waverley pays the balance of the price. Green Cone Ltd will manage all publicity and advice to customers on which unit is best suited to their requirements. Waverley recycling assistants will also be in attendance to offer advice.

(b) Direct Delivery;

Waverley will publicise its offer to subsidise Green Cones/Green Johannas and agree with Green Cone Ltd the total subsidy. Householders may then order their chosen composter by post, telephone or web-sales, for direct delivery to their homes. The offer will be on a 'first-come, first-served' basis limited by the number available.

5. Indicative Costs

Waverley has negotiated indicative costs for quantities of between 100 and 1000 units as follow;

Green Cone £42.50 (rrp £60)
Green Johanna £64.50 (rrp £119)

An illustration of the number of units that could be supplied, **per £10,000 of subsidy**, at different levels of subsidy is produced below;

Green Cone (Bulk Price £42.50)		
Subsidised Cost to Householder	Subsidy by WBC	No. of Units per £10k of subsidy
£	£	£
10	32.50 (76%)	307
15	27.50 (65%)	364
20	22.50 (53%)	444
25	17.50 (41%)	571

Green Johanna (Bulk Price £64.50)		
Subsidised Cost to Householder	Subsidy by WBC	No. of Units per £10k of subsidy
£	£	£
15	49.50 (77%)	202
20	44.50 (69%)	225
25	39.50 (61%)	253

30	34.50 (53%)	290
35	29.50 (46%)	339

Summary

The cost to the householder needs to be sufficient to ensure that the composters will be installed and used regularly but sufficiently modest to make their purchase attractive. A peer authority offering Green Cones at £10 and Green Johannas at £15 were unable to meet the initial demand with an allocation of 500 units but have contained it well within their allocated 1000 units.

On the basis of a 60/40 split on demand for Green Cones/Green Johannas, an initial investment by Waverley of £20000 would fund approximately 500 composters. It is recommended that an initial promotion should aim to meet this target on a 'first-come, first-served' basis.