



To: Executive Councillor for Environmental and Waste Services: Councillor Jean Swanson
Report by: Jen Robertson, Waste Strategy Manager
Relevant scrutiny Environment 10/1/2012
committee: Scrutiny Committee
Wards affected: All Wards

ROUTE OPTIMISATION PROJECT FOR REFUSE AND RECYCLING COLLECTIONS - OPTIONS FOR CHANGE

Key Decision

1. Executive summary

- 1.1 This report sets out options for change to the domestic waste service and a methodology for considering these options. An update report will be tabled at the Committee recommending the Executive Councillor to instruct the Director of Environment to consult staff and unions on a preferred option. Unfortunately it is not possible to provide the modelling results now as this exercise is not complete. This report is designed to give members as much information as possible before the meeting so that the tabled update need only be brief. This report contains information about the criteria by which the various scenarios will be judged. The two aims below are included within the list of criteria.
- 1.2 The aims of the Route Optimisation project are:-
- To reduce the cost of refuse & recycling operations at Cambridge City Council from the 2011/12 base budget in time for 2012/13 financial year.
 - To reduce the fuel usage based on 2010/11 figures and consequently carbon emissions from the refuse & recycling fleet at Cambridge City Council from 2012/13.
- 1.3 Consultation with staff will be carried out under the council's Organisational Change Policy – October 2010. Officers are keen for staff to be fully engaged with this process and to support the proposed improvements.
- 1.4 The route optimisation software is designed to take the existing collection round information and within certain set parameters (eg

length of working day) calculate the optimum amount of resource required to operate services efficiently and determine the most efficient routes for the collection services.

- 1.5 The implementation of the agreed scenario will take place in July 2012, with an extensive resident communications campaign prior to this.

2. Recommendations

The Executive Councillor is recommended:

- 2.1 To instruct the Director of Environment to undertake consultation with the staff and unions about a preferred option based on the scenarios set out in the foregoing report and subject to modelling data to be provided at the meeting of the Committee on 10 January 2012;
- 2.2 To instruct the Director of Environment to implement the preferred option set out in 2.1 subject to the results of the staff and union consultation and also subject to consultation with the Executive Councillor, Chair and Opposition Spokespersons.

3. Background

- 3.1 This project began in June 2011 with the purchase of route optimisation software. Baseline or current collection round data has been entered into the system to build an accurate picture of existing collection rates and routes. In order for the computer model to be accurate an extensive mapping exercise was required. This data takes account of the number of bins at each property, the average weight of each bin, properties that share bins and how long it takes to collect bins in each street. The model also looks at other parameters such as:-
 - safe working practices eg single sided collections on busy roads
 - legal working practices eg number of breaks required in a certain period, daily rests and weekly rests.
 - standard working week
 - geographic matters that apply specifically to Cambridge eg the number and location of busy main roads, etc.
 - how long it takes to tip the collected load and how frequently this is required
 - restrictions on collection times eg schools arrival and departure times, not collecting in residential areas before 7am etc.

- 3.2 Establishing a picture of the existing rounds (baseline) has been difficult, as very little round information has been recorded to date. Existing data consisted of incomplete round sheets with inaccurate data about property numbers, no GPS information and limited route information. The large proportion of properties sharing bins, including both blocks of flats and Houses in Multiple Occupation (HMO's) has added to the difficulty in mapping baseline services.
- 3.3 Some round balancing was carried out in 2005 before the move to fortnightly refuse collections but this work did not include optimising routes or changes in working practices. At present the council operates a system of 'task and finish' for refuse and recycling crews, which means that once they have finished their defined task they can go home. A system of this type has always operated within the council for collection staff although there have been changes to the defined task to improve flexibility. All the scenarios outlined in 3.9 below would involve staff working a longer day within a 37-hour week.
- 3.4 Once the baseline is established it is then possible to feed into the software package certain criteria to model various scenarios in order to meet the following project aims:-
- 3.4.1 To increase efficiency of refuse & recycling operations in terms of time and resources at Cambridge City Council with effect from the 2012/13 financial year and thereafter.
- 3.4.2 To reduce the fuel usage based on 2010/11 figures and consequently carbon emissions from the refuse & recycling fleet at Cambridge City Council by 2012/13.
- 3.5 A number of waste collection scenarios will be mapped within the software allowing for a full cost benefit analysis to be done.
- 3.6 The analysis of each scenario will include a look at the following:-
- the achievability within the set parameters listed above
 - the level of potential savings
 - how much fuel consumption can be reduced, thereby making CO₂ savings
 - whether there is sufficient capacity to allow for growth within the city over the next three years.
 - the type and nature of disruption to residents (although residents can expect changes to collection days in all but one scenario)
 - the impact on staff and redundancies
- 3.7 The mapping/modelling work is complex and requires rigorous testing and checking to ensure there is minimal risk from a whole service

change to collection arrangements.

- 3.8 The main scenarios investigated are listed below and will involve changes to collection days for residents and changes to the working practices of staff.
- 3.9 The scenarios being mapped are for collecting 3 different domestic bins/streams are as follows. Please see table below for details.
- 3.9.1 Remodelling of the existing service with 4 vehicles for each stream and a total of 12 full time equivalent (FTE) staff for each of the 3 streams. However, it is important to note that a proportion of current staff are on fixed term contracts and that there are some staff vacancies. This scenario will mean no change in collection day for residents but should provide fuel savings of between 5-15%.
- 3.9.2 A 4 day week with a standard shift pattern, but with 3.5 vehicles i.e. a reduction of half a vehicle for each stream. The number of staff required rounded up would be 11 FTE staff for each of the 3 streams. This scenario would provide vehicle, fuel, staff and some bank holiday overtime savings.
- 3.9.3 A 5 day week with a standard shift pattern, but with 3 vehicles per waste stream and 9 FTE staff. This scenario would provide vehicle, fuel and staff savings.
- 3.9.4 A 5 day week with 3.5 vehicles and 11 FTE staff for each of the 3 streams. This scenario would provide vehicle, fuel and staff savings.
- 3.9.5 A 4 or 5 day week with corresponding resources for the different waste streams. This may include different resources for different seasons. Due to the number of variations this is not tabled below.
- 3.10 The results of the mapping exercise for the above scenarios will not be confirmed until January but will be presented to ESC members with a report tabled at the meeting.
- 3.11 The table below provides information for the 4 scenarios above.

Scenario Mapping	No of vehicles per stream	No of staff per stream	No of streams	Total no of vehicles	Total no of staff	No of Collection Days	No of Collection Rounds
5 day week 4 vehicles (3.9.1)	4	12	3	12	36	10	40
4 day week 3.5 vehicles (3.9.2)	3.5	11	3	11	32	8	28
5 day week 3 vehicles (3.9.3)	3	9	3	9	27	10	30
5 day week 3.5 vehicles (3.9.4)	3.5	11	3	11	32	10	35

Table 1 – Scenario information (nos. have been rounded up to whole nos.)

- 3.12 At this stage, various parts of the service (i.e. bulky waste service, the vehicles that collect from colleges, schools bring banks and flats and our trade waste services) have been excluded from this report although the intention is for these to follow a similar chosen scenario and mapping exercise. This will be undertaken in the early part of next year for implementation at the same time. These elements will be included in the consultation with staff.
- 3.13 The initial mapping exercise will determine the feasibility of each option. The mapping software uses GPS tracking information to determine collection rates, and actual tonnage data to determine collection yields. But further work will need to be done to determine the robustness of each option.
- 3.14 In November a resident telephone and web survey was conducted. The report containing the analysis of this survey is attached at Appendix A. A representative sample of 1000 people were telephoned and asked a number of questions about their preferences in terms of waste and recycling collections. 431 people filled in the online survey and, although this sample was not representative, information about responses where they differed from the telephone survey has been included in the report. The questions were grouped into the following topic areas:-
- Day of collection
 - Time of collection
 - Frequency of collection
 - Collection point Improvements to recycling services
- 3.15 Headline results showed that 87% of respondents stated that they would either not mind or would support on the grounds of efficiency, changes to their collection day. However, just under one third of respondents said they would prefer their collection day to be the same for their recycling bins as their refuse bin. This also applied to the question about having blue and green bins collected on different days. In general residents were happy for collections to start earlier at 6.30 and finish after 3pm. Three quarters of respondents said the collection frequency was about right.
- 3.16 In terms of improving recycling services three quarters of respondents said they would not recycle more if they were rewarded for recycling. In addition three fifths stated that it would not make any difference if a separate weekly food waste collection was introduced as they said

they said they put all their food waste in the green bin. Two thirds said that nothing would encourage them to recycle more as they recycle all they can already.

3.17 Any changes to collection days will need to be well communicated to residents and the communication plan will include the following:-

- Articles in Cambridge Matters
- Information at Area committees
- Engagement with Community groups
- Use of Recycling Champions to communicate messages
- Bin stickers for properties changing collection day
- New collection calendars
- Coverage in local media

4. Implications

(a) **Financial Implications**

The outcome report to be tabled in January will include savings information about the proposed scenario. Estimates of savings are included in the budget papers and are expected to total £250, 000 per annum. Savings are subject to the feasibility of the proposed options. Not all options investigated can meet this saving requirement.

(b) **Staffing Implications** (if not covered in Consultations Section)

Staff and unions will be consulted on the preferred option based on the scenarios set out in the report and subject to modelling exercise. This process will be carried out under the council's organisational change policy. Officers are keen for staff and union representatives to be fully engaged with this process and will be asking staff for their views before the formal consultation is released.

There are staff implications related to the likely reduction in the number of vehicles needed based on the optimisation of the rounds. At present, as it is unclear exactly which option will be taken forward, it is therefore not possible to quantify staff numbers that may be affected. However, under the policy the council will "aim to minimise any redundancies" and has been working towards this by not replacing vacancies and appointing some vacancies with people on fixed term contracts. Currently there are 4 refuse and recycling staff on fixed term contracts. These contracts are due to expire at the time of the change. The service is also currently operating 2 staff under establishment.

(c) **Equal Opportunities Implications**

An Equality Impact Assessment will be carried out once the decision has been taken as to which scenario is to be introduced.

(d) **Environmental Implications**

There will be a positive environmental impact from the implementation of this project as the likelihood is that fewer vehicles will be required to carry out refuse and recycling collections. This will have a proportionate carbon saving with less fuel being used. There is a predicted 5-10% saving against current fuel usage as a result of optimising all rounds.

(e) **Consultation**

Briefings with Members were carried out in Oct/Nov 2011 and a resident telephone and web survey was conducted in November. Briefings with staff have also begun but will be ongoing, with a formal consultation in February 2012.

(f) **Community Safety**

There are no community safety issues as a result of this report.

5. Background papers

These background papers were used in the preparation of this report:

If an Equality Impact Assessment has been undertaken please include details in the background papers

6. Appendices

Appendix A - Waste and Recycling Survey 2011 report

7. Inspection of papers

To inspect the background papers or if you have a query on the report please contact:

Author's Name: Jen Robertson
Author's Phone Number: 01223 - 458225
Author's Email: jen.robertson@cambridge.gov.uk