

**Future Collection Scheme Options for the Waste and Recycling Service**

**Cabinet Member** Cllr Clive Eginton  
**Responsible Officer** Head of Environmental Services

**Reason for Report:** To advise Members of the initial analysis of potential collection scheme changes to the service affecting all household collections in the district from October 2015.

**RECOMMENDATION(S):** That the PDG recommends to the Cabinet:

1. That the Cabinet agree the broad principles for any future changes, being:
  - a) to reduce service delivery costs while meeting statutory obligations
  - b) to improve the recycling service to include card, plastic bottles and food waste
  - c) to continue to provide a garden waste collection service
  - d) to reuse our investment in wheeled bins to hold residual refuse and improve safety conditions for staff.
2. That officers develop a detailed business case as outlined in this report, based on the above principles and report back to a future PDG.
3. That the Cabinet agree to the recommendation set out in section 8.3 and that the Council commence the procurement process for replacement recycling vehicles, as outlined.

**Relationship to Corporate Plan:** This is a highly visible service that fulfils the Council's statutory function as the Waste Collection Authority to collect refuse and recycling from domestic properties.

**Financial Implications:** The overall budget for the service is £2.5m per annum making it a substantial part of the Council's overall expenditure. This report excludes the trade waste and street cleansing operations account for approximately £0.5m of this total and are specifically excluded from this report.

**Legal Implications:** Under the Environmental Protection Act 1990 and the Household Waste Recycling Act 2003 we have a duty to collect all household waste and at least two specified recycling materials, increasing to four from 2015. These Acts provide the Council with the power to set the size and type of collection receptacles used, where they are placed and the frequency they are emptied. There is no legal obligation to collect from private roads. The Council also has no statutory duty to collect garden waste.

None of the collection options or recommendations considered in this report are contrary to the statutory duties and powers outlined above.

**Risk Assessment:** Members of the PDG have agreed that without considering and implementing changes to service delivery, the Council will face the risk that it runs a

service that is not affordable or will require deeper cuts to other services to support it. There is also the on-going risk that the recycling service will not continue to function unless end-of-life vehicles are replaced as soon as possible. These vehicles cannot be specified or procured until there is confident knowledge of the type of scheme and range of recycling materials to be collected in the future.

## **1.0 Introduction**

1.1 Following a working day on the 24 July, Members identified a number of potential options for changes to the waste and recycling collection service in Mid Devon in response to a range of current and on-going pressures, opportunities and threats in respect of service delivery. These include budget constraints, local and national policy drivers, strategic issues and health and safety issues.

1.2 A report by the Head of Environmental Services (HOES) was presented to the PDG on 3 September 2013 summarising the main findings of the working day. Members made the following recommendations in respect of this report:

Recommended to Cabinet that:

a) the current pressures on the waste and recycling service and the difficulties in delivering reduced costs without a fundamental review of the services provided be noted;

b) the possible timetable at Appendix 1 of the report be noted and that the Managing the Environment Policy Development Group make regular update reports to the Cabinet on proposals for change to the waste and recycling service; and

c) Officers to consider the long term aims for the service and report back to the November meeting of the Group.

1.3 This report addresses recommendation (c) above and sets out possible options for the service in the medium-long term, setting out potential arrangements that could be implemented from October 2015 in accordance with the timetable recommended in (b) above.

1.4 The focus of the report is on the operational, performance and financial impacts of potential specific changes to waste and recycling collection schemes in Mid Devon. This reflects the longer-term aims set out under section 7.0 of the September 2013 PDG report.

1.5 The current collection scheme within Mid Devon has the following features for comparison purposes:

- We service a population of more than 76,000 people in approximately 34,500 households
- 80% of households have an alternate weekly collection of household rubbish (black sacks) and compostable organic waste (card, food waste and garden waste combined in a brown wheelie bin or bio bag)

- 20% of households have no organic compostable collection and are currently provided with a weekly household rubbish collection
- 100% of households have a fortnightly dry recycling collection covering paper, tins & cans, glass bottles & jars, plastic milk bottles, carrier bags, cartons (tetrapak), household batteries, clothing & shoes and aluminium foil
- We therefore make 3 collection passes per fortnight at each household, with 2 passes completed by a refuse lorry and one by a smaller recycling lorry (kerbside or stillage). This excludes approximately 300 properties with severe narrow access serviced by 2 passes per fortnight using small light commercial vehicle
- Mid Devon provide free of charge, a 55 litre black recycling box (with no limit on number) and all containers for organic compostable material, which for the majority of customers is one 240 litre wheeled bin (some smaller properties or those with storage access issues have either a single 180 litre wheeled bin or six rolls of bio bags)
- We currently place no policy or enforcement restrictions on the quantity of household (residual) rubbish customers can present and we do not provide containers. We therefore handle rubbish in customer provided black sacks, ad-hoc alternative sacks e.g. farm feed bags, customer dustbins and private wheeled bins of various sizes and design
- All household rubbish is currently landfilled at Broadpath tip within the district. Mid Devon pay for all collection costs and Devon County Council (DCC) pay for all disposal costs
- All compostable material is currently composted in an in-vessel facility at Broadpath. Again, Mid Devon pay for all collection costs and DCC pay for treatment costs. The Council earn no income from compostable material and it is not eligible for Government recycling credits, however this is material diverted from landfill therefore can be discounted from the overall percentage of material we landfill which is reported nationally annually
- All dry recycling material is processed at the Silverton Mill depot. All collection costs are paid by Mid Devon however the Council earn an income from recycling credits and material sales
- In 2012/13 we:
  - Landfilled 16,582 tonnes of household (residual) rubbish
  - Composted 9112 tonnes of organic material
  - Collected 4370 tonnes of dry recycling materials via a kerbside sort scheme, earning £368k from sales and £218k from recycling credits
  - Diverted a peak rate of 49% of material from landfill (the combined NI192 composting/recycling rate)

- The Council also operate four household bring bank sites for glass, cans and paper. We currently pay for all collection/emptying costs however earn recycling credits on all material processed by third parties. Locations are Morrisons Tiverton and Crediton, Homebase Tiverton and Bampton car park.

## **2.0 Methodology**

- 2.1 In undertaking an analysis of potential collection scheme options, officers have firstly modelled the current baseline service and then, working closely with expert advice from the Government funded Waste and Resources Action Programme (WRAP) undertaken preliminary modelling of the impact of the options considered. Officers have taken advantage of support by Devon County Council to fund additional collections analysis via WRAP in particular in respect of food waste and dry recycling options and this was conducted in September 2013.
- 2.2 We have also drawn upon the on-going budget analysis process for 2014/15 to understand the potential financial impacts of the options going forward.
- 2.3 This work has also used lessons learnt from previous relevant pilot studies within Mid Devon and worked informally with a number of neighbouring Devon authorities to understand lessons from those authorities who have already introduced similar or identical options to those which could be considered in Mid Devon. Other benchmark data has been drawn from the CIPFA nearest neighbour/family group of local authorities.
- 2.4 Taking into account the longer-term aims identified by members, analysis has focussed on five specific collection scheme/service configuration options in order to make the task manageable. The options are outlined in Section 3.0 and represent a broad range of possible changes. Elements of the options could be interchanged with minimal further analysis if members wish to examine different variations of the options modelled at this stage, however specific recommendations are made herein.
- 2.5 The analysis also makes a wide range of assumptions in terms of modelling and interpretation which are not detailed fully within this report. However, the assumptions relating to key parameters are summarised in Appendix 1. Assumptions and underpinning information can be provided more fully within in any further analysis as part of a future detailed business plan for the service.
- 2.6 The analysis presented is a snapshot based upon one year and is not a detailed business case or risk analysis, however the results may be used to inform the early stages of a business case and social, practical and operational issues may need to be looked at more closely.

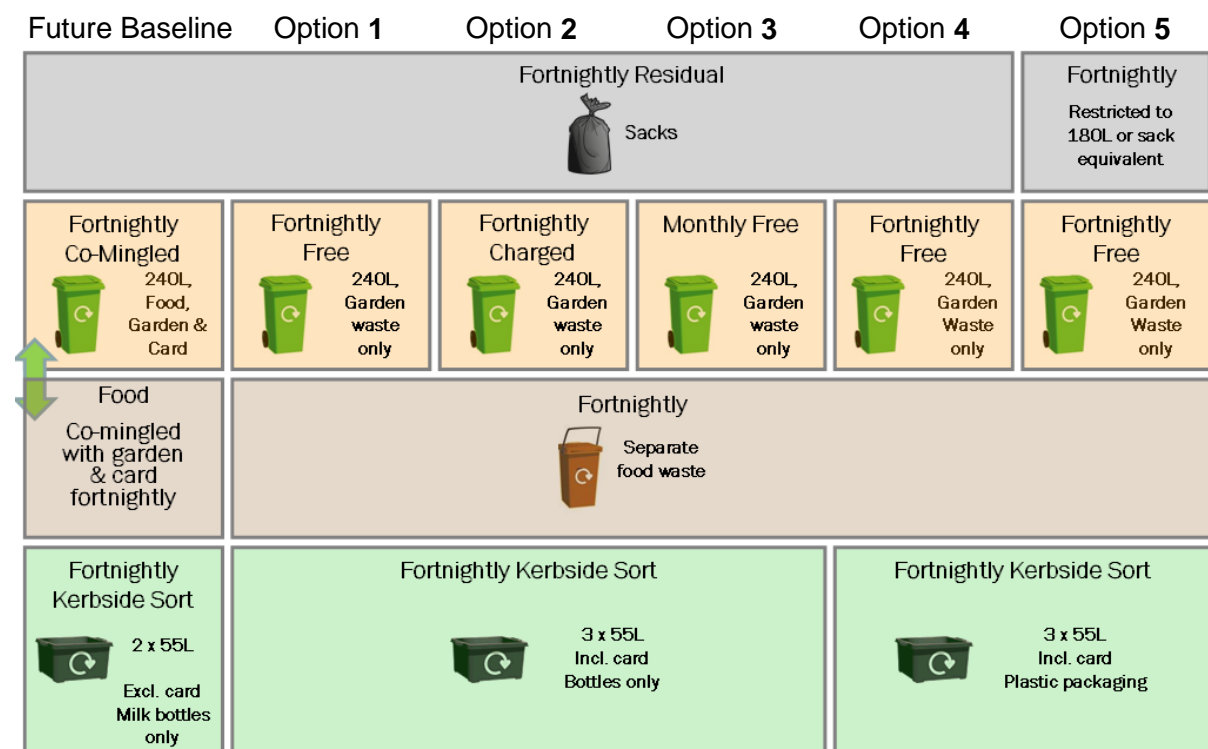
## **3.0 Options modelled**

- 3.1 The options modelled are described below.

Table 1 – Options modelled

Option	Dry recycling	Food waste	Garden waste	Residual waste
Baseline	Fortnightly kerbside sort with milk bottles only and no card	Fortnightly co-mingled food, garden waste and card for 80% of households		Fortnightly sacks for 80% of hhlds Weekly for 20%
Future baseline	Fortnightly kerbside sort with milk bottles only and no card	Fortnightly co-mingled food, garden waste and card		Fortnightly sacks
1	Fortnightly kerbside sort with plastic bottles only	Fortnightly separate food waste	Fortnightly garden waste	
2	Fortnightly kerbside sort with plastic bottles only		Fortnightly charged (£35) garden waste	
3	Fortnightly kerbside sort with plastic bottles only		Monthly seasonal garden waste	
4	Fortnightly kerbside sort with plastic packaging		Fortnightly garden waste	
5	Fortnightly kerbside sort with plastic packaging		Fortnightly garden waste	Fortnightly restricted residual

Figure 1 – schematic of options modelled (excluding current baseline)

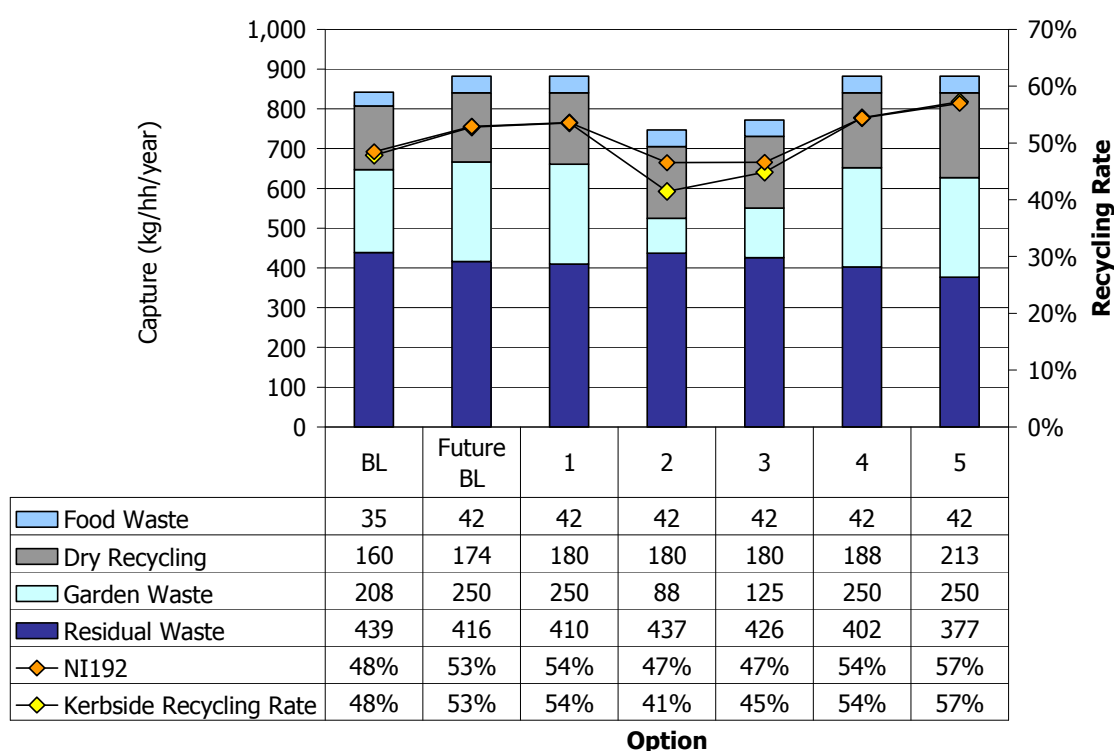


- 3.2 In all cases we have only modelled core dry recycling materials (paper, glass, tin/cans, milk bottles and tetrapak) collected in the kerbside sort. Therefore, minor material streams such as batteries are not taken in account and will provide a small increase to the recycling rate and income. We have also assumed up to three boxes are provided per property for cost purposes, though the reality will be very variable and may average lower depending on customer requests.
- 3.3 Options 1 – 5 all assume card and food waste are removed from the current co-mingled wheeled bin or bio-bag arrangements. Modelling has assumed this material will be collected separately as part of a future kerbside recycling collection/sort and new vehicle costs have assumed a specification of vehicle to manage this.
- 3.4 The free monthly garden waste service (option 3) is assumed to be March to October. Analysis of data provided by authorities currently offering this service shows that of the total material, approximately 75% is available during this period. Of the remaining material, 11% is assumed to go to household recycling centres, 9% to go into household rubbish and the remainder staying in the garden.
- 3.5 For the chargeable garden waste service (option 2) it is assumed that a new, clearly identifiable 240 litre wheeled bin is provided with a closed lid policy with customers purchasing of an annual service sticker to be displayed on the bin.
- 3.6 The impact of restricting the permissible quantity of household rubbish (a closed lid policy) has been included in order to demonstrate the potential improvement that is made on the dry recycling rate (and income). A 180 litre container has been modelled since this is by far the most commonly provided container supplied by authorities which have adopted this policy (>50 authorities identified UK wide). Mid Devon retains the option to re-use the 240 litre brown wheeled bins currently provided to the majority of households, this will reduce some initial capital container costs however the positive 'bounce' on the recycling rate and income may be slightly lower.
- 3.7 There are significant health and safety benefits to crews loading household rubbish via wheeled bins compared to the manual lifting hazards associated with sacks and dustbins. The highest level of benefits could be secured by a closed lid policy – i.e. crews would not have to handle side waste however some benefits can still be realised even if side waste continues to be permitted under policy. The refuse service currently loses more than 50 working-days per annum due to muscular-skeletal and back/joint injuries associated with manual lifting, despite regular training and monitoring. Therefore, there is a potential to reduce this injury rate and the associated agency worker cover costs.

## 4.0 Modelling results

- 4.1 This section presents the results of the collection options modelled, including the impacts of each one in terms of the combined recycling rate achieved, income and savings realised and key capital resources required.
- 4.2 Further analysis is possible in terms of modelling the environmental impact of each option but have not been included at this stage. A strategic environmental assessment may be formally required as part of any policy change and a more detailed business case will be required in examine more closely the full ranges of costs, risks and benefits involved with any particular option or combination of options.

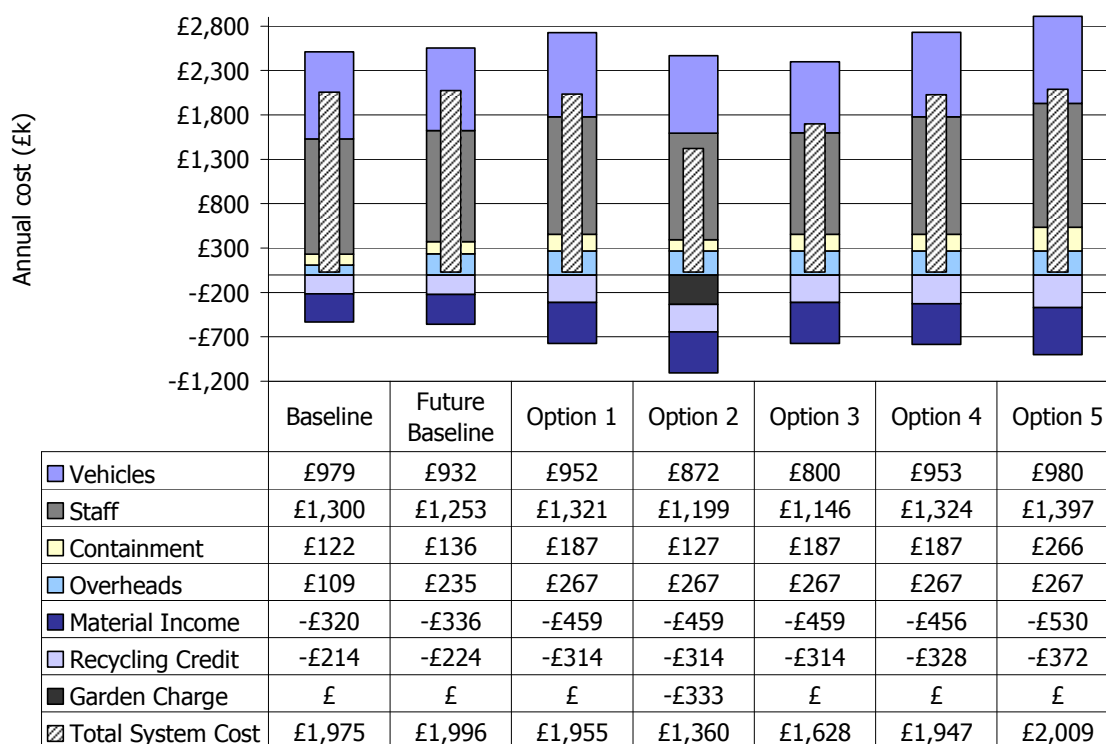
**Figure 2 – Yields and combined recycling rates by option**



- 4.3 Figure 2 indicates that by extending a free household compostable waste service across 100% (the future baseline) the combined recycling rate can increase to 53%. In respect of Options 1-5, Option 2 (fortnightly chargeable garden waste otherwise as 100% current scheme) delivers the lowest headline recycling rate of 47% based on the reportable NI192 calculation. Option 5 (100% current scheme with addition of all plastics but with a 180 litre restriction on household rubbish) delivers the highest headline recycling rate of 57%.
- 4.4 Further analysis of Option 5 indicates a 3% increase in the headline recycling rate would deliver an additional 131 tonnes of material per annum, not accounting for any additional gains as new properties are built and can be serviced on the newly optimised rounds. At current prices this equates to approximately £11k in sales income and £6.8k recycling credit income (£17.8k total). There are also additional cost savings for Devon County due to reduced landfill costs.

4.5 In all future option cases, the quantity of dry recycling material collected increases, therefore so will income from this material. The variable impact on the headline recycling rate is due to the quantity of material likely to remain in the household rubbish (residual) waste stream or be diverted elsewhere.

Figure 3 – Comparison of annual costs by option



4.6 Figure 3 indicates that all future options offer savings over the future baseline with the possible exception of Option 5:

There is very little difference in cost between:

- Option 1 (£1,955k);
- Option 4 which is the same system as option 1, but includes plastic packaging collection (£1,947k); and
- Option 5 which is the same as option 4 but including 180l residual restriction (2,009k).

The main difference in cost is generated by the recycling credits received due to the difference in tonnage collected between these three options.

4.6 Option 3 offers almost £300k savings over the baseline due to the reduction in garden waste collection frequency and the service being suspended in the winter.

4.7 Option 4 indicates the impact of increasing the quantity of material collected due to the provision for all plastic packaging, versus current arrangements for HDPE milk bottles only or alternative options for plastic bottles only. The result (as with Option 5) is the highest recycling rate however overall income is not significantly different to a plastic bottles only scheme due to the lower



quality of the material. This means the Council would have to work harder, processing more material and bear additional staffing and container costs, for no financial gain but would achieve a higher recycling rate. This is a significant factor.

- 4.8 Option 2 (where garden waste collection is charged for) is the cheapest (£1,360) because the income received from the garden waste charge offsets much of its collection cost and overall staffing and overhead costs are lowest. This potentially reduces service costs by £615k against the current baseline cost.
- 4.9 Option 5 is comparable to current baseline in cost terms. This is because technically the number of vehicles increases slightly over options 1-4, especially to deliver dry recycling collections. It is a very borderline case as to whether or not one or more additional vehicles are actually needed. If these were not required, then there would be an additional potential cost saving of £100k, however we have rounded the number of large vehicles up to be prudent. This also demonstrates that adopting a closed lid policy for household rubbish can be applied to other options, e.g. Option 2 without additional penalty assuming vehicle costs can be managed and with the benefit this would have on the headline recycling rate and material income.

## **5.0 Up-front capital investment**

- 5.1 Preliminary estimates for the total capital investment, for vehicles, containers, and depot infrastructure, are shown in Table 2. The capital investment for the baseline and future baseline is assumed to be zero, since the vehicles and containers are already in use. Options 1 to 5 involve purchasing new large and smaller narrow-access kerbloader-type recycling vehicles.
- 5.2 The capital cost of replacement refuse vehicles is not included in Table 2, under the assumption that this would either be the same in all options or some additional, un-specified savings may be possible in specific circumstances (under the chargeable garden waste option for example). Due to variable vehicle ages this would not happen all in one year.
- 5.3 Containment includes one additional kerbside box for dry recycling for all households, and a kerbside caddy for food waste. The other major area of potential capital expenditure associated with each of the options is the future depot infrastructure required to deliver each option.
- 5.4 As members will be aware from previous reports and briefings, the current recycling vehicle fleet is at the end-of-life and has zero effective value. As such, the Council will need to invest in new vehicles whatever option is chosen in order to meet our minimum statutory collection obligations. The replacement vehicles are required immediately, however the design (and to a lesser extent cost) will be dependent on preferred options for the recycling collection scheme from October 2015 given the life-span of these vehicles. Delay in determining at least the scope of those materials to be included in future recycling collections will continue to put at risk current and interim service delivery since procurement of new vehicles cannot practically

commence and vehicle down-time and maintenance costs on current vehicles continues to escalate.

Table 2 – Preliminary capital investment cost by option

	<b>Future baseline</b>	<b>Option 1 to 4</b>	<b>Option 5</b>
Recycling vehicles	-	£935k	£1,035k
Containers	-	£224k	£224k
Infrastructure	£292.5k	£617.5k	£617.5k
<b>Total</b>	<b>£292.5k</b>	<b>£1,776.5k</b>	<b>£1,876.5k</b>

5.5 There are not considered to be any ‘stranded’ assets that will require depreciation or right-off. Because the recycling vehicle fleet is end-of-life and fully depreciated and existing refuse vehicles continue to be used in addition to all existing household collection containers.

## 6.0 Other collection options

6.1 As part of the analysis of collection options going forward, we have examined two additional scenarios but these were not included in the detailed modelled presented above. These scenarios are:

- Additional bring banks for cardboard
- Central, communal collection points for household rubbish/recycling serving flatted and multiple occupation properties where current storage is restricted

6.2 The Council have approached a number of bring bank providers and have entered into preliminary discussions with a major card recycling company who have put forward an initial offer to fund four additional cardboard banks to be placed alongside the current banks (subject to agreement). The banks and scheduled collections will be provided free of charge by the company, with the Council receiving a recycling credit of £51.85 per tonne collected. This is a win-win scenario since it provides the Council with a modest income for no outlay costs and can be introduced ahead of any major collection scheme changes. It will also divert some current material away from composting into a more productive use.

6.3 In the long-term, cardboard banks are seen as complimentary to any card collection by the Council via its black box scheme and will offer a practical alternative to customers struggling to place large card items in our containers. Additional banks could be placed if the scheme proves successful.

6.4 Communal household collection facilities as described above have been considered in the context of the practical and legal issues which could arise. In summary, the main issues are:

- the Council would be legally obliged to continue to offer kerbside collections at the relevant properties but would have to service additional collection points at a cost;
- possible distances between residential blocks and communal facilities would discourage a number of potential users taking advantage of improved storage facilities;
- service issues in terms of access for larger refuse and recycling vehicles;
- there are security issues surrounding such facilities with potential for the locations to be abused and become targeted dumping areas for non-household, litter and other fly-tipped material – leading to additional enforcement and clean-up costs;
- additional risk of vandalism and/or fires at unmonitored collection locations;
- the Council do not own land for such facilities and private land owners would be reluctant to come forward with suitable sites. Possible use of Council parking spaces in its town-centre car parks has been considered, however this would result in an income drop and loss of a valuable parking spaces; and
- conflict with legal and moral obligations on landlords to provide adequate individual or communal waste and recycling storages facilities at their properties

6.5 Given the issues outlined above such communal facilities are not considered a suitable collection approach.

## **7.0 Summary**

7.1 The modelling and analysis of potential options presented in this report indicates that three broad choices are available in terms of future service delivery:

- a. Do nothing/little – retain the current service as is or the future baseline
- b. Change collections to maximise the headline recycling rate – i.e. Options 1 or 4 (possibly including Option 5)
- c. Change collections to maximise lower service delivery costs via efficiencies and additional income – i.e. Option 2, with the reuse of existing 240 wheeled bins for residual waste collection

7.2 With all of Options 1-5, food waste collected separately would be available to the waste disposal authority (Devon County Council) for use as a feedstock for anaerobic digestion/bio-gas therefore contributing to heat and/or power generation and is a stated policy aspiration of DCC.

- 7.3 A do nothing/little approach (a) will fail to address those service pressures and constraints outlined above and in the previous September 2013 report. Principally, it will fail to delivery any financial savings or health & safety benefits but a future baseline scenario where collections are consistent across 100% of the district produces a small improvement in headline (NI192) recycling rates.
- 7.4 Broad choice (b) addresses aspirations to increase the headline (NI192) recycling rates via broader recycling arrangements collecting more material. Of these the permutations possible, Options 4 and 5 are considered to be the most popular with customers and the disposal authority (DCC) since it extends the service to include separate food waste, card and all plastics. There would also be possible cheaper disposal options for DCC in respect of the remaining garden waste. None of options within this category offer any financial benefits to Mid Devon and current services costs would have to be maintained against reducing budget levels overall.
- 7.5 Broad choice (c) addresses aspirations to reduce service delivery costs significantly whilst continuing to meet our statutory obligations. The only main option in this category, Option 2, also has the benefit of improving the recycling service currently offered to customers by including card and plastic bottle recycling and a separate food waste collection. Overall, Mid Devon would still collect more dry recycling material with greater income but the headline (NI192) recycling rate would drop. A chargeable service for garden waste collections would not be initially universally welcome with customers, but would allow for this popular but non-statutory and high-cost service to continue on a relatively low-cost basis to the consumer. A detailed business case will show members the impact and potential choices that would be available.

## **8.0 Recommendations**

- 8.1 Given the current and future financial constraints this authority is under, Option 2, as summarised in 7.5 above, is considered to be the optimum choice for service delivery going forward. It offers an enhanced recycling service to customers whilst maintaining our statutory duties and current fortnightly household rubbish collection frequency. It also enables the non-statutory, popular garden waste collection scheme to continue possibly on a chargeable basis if the authority has to make vital savings in service cost.
- 8.2 A detailed business case and risk analysis is now progressed in respect of the referred choice for service delivery outlined above.
- 8.3 The procurement process now commence in respect of replacing the current end-of-life recycling vehicles on the basis of the preferred choice for service delivery outlined above. The timeline for this will be, firstly to inform the business case preparation and then enable the placing of orders at the earliest possible date. This may see us take delivery of the smaller, narrow access vehicles as soon as possible in 14/15 and the larger vehicles in 15/16 (ahead of the service changes implementation date of October 2015).

## APPENDIX 1

Overview of analysis assumptions used within this report.

- Current waste and recycling performance – derived from 2011/12 and 2012/13 Waste Data Flow reported results
- Current and future waste composition – from Eunomia provided data for Mid Devon, Teignbridge and South Hams local authorities and additional WRAP data for dry recycling materials not current collected
- Depot locations/cost – assumes a future combined (or near proximity) waste and recycling depot in the Tiverton area due to long-term lease uncertainties at Silverton Mill. Depot equipment costs principally required for more dry recycling have been included within the analysis but costs exclude any land or building costs if a new depot is required.
- Tipping location – Broadpath landfill and a Tiverton depot for recycling material and food waste (for onward bulk transfer by the waste disposal authority) up to 2022
- Coverage – baseline as the present scheme and all future options assume 100% of the district receiving the same collection scheme for both waste and recycling
- Participation – we have assumed a 100% participation in household rubbish collections and 90% rate for dry recycling (though achievements in terms of % material eligible for recycling versus quantity actually recycled is assumed to be lower). We have assumed 90% of customers would participate in a free, district wide garden waste collection scheme in the future (options 1 and 3) and have assumed that for a chargeable service this would be 33% - its noted that authorities which have switched from a free service to a chargeable one have achieved up to a 50% participation rate whereas those introducing a chargeable scheme from with a pervious service have achieved typically 25%, therefore 33% is considered a conservative, realistic estimate
- Chargeable garden waste charges have been assumed at a UK average of £35 per household/container with £5 for administration and £30 for collection costs
- Work content – for residual waste and compostable material we have assumed 6.25 hours work content, which takes into account an average 7.4hr day/37 hour week with 15min periods at the start and end of the day for vehicle checks, cleaning and refuelling plus a statutory driving break of 30 minutes per day and tipping-off times. Similar assumptions are made for recycling crews, however the work content hours are slightly less than 6 hours due to longer material processing/depot unloading times
- Vehicle – current fleet including capital value for baseline cost analysis and for future options, cost assumptions based on available vehicle options at current manufacturer pricing with purchase or low-cost loan financing over

seven years (not leasing) with the annualised capital cost calculated with interest at 7%

- Material income (from dry recycling) – two-year actual average August 2011-August 2013 with a one-year sensitivity analysis. Government recycling credits per tonne are assumed unchanged at £51.85 per tonne
- Staff costs – as 2013/14 budget including agency sick/holiday cover and overtime
- Containers – volume and design details are included in section 3 above. Containers are assumed to be purchased outright at 2013 prices with costs annualised over the typical lifetime of the specific container (in reality, any new containers required will need to be purchased fully up-front)

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