

A report from Overview & Scrutiny





Foreword

By Councillor Martin Mullaney

Chair, Transportation and Street Services Overview and Scrutiny Committee



Waste collection is one of the most prominent services that people see their local authority providing. Over recent years, we have all become more aware of sustainability issues and one of the more straightforward ways in which we can contribute is by recycling more of our waste. Local authorities are responding to this by making it easier to recycle and Birmingham is doing its part, with great strides being made in recent years. However, alongside this an often emotive debate has been taking place in our city over the way in which we store and collect our waste and recycling.

Overview and Scrutiny is often described as part of the democratic 'checks and balances'. But it is also much more. Through Scrutiny we must talk about the things that matter to the people that we as Councillors represent. We have looked at this subject as an all-party group of members, representing people from different parts of our city. One of the strengths of Scrutiny as a process is that it brings Elected Members together in this way.

We don't always reach a point where we agree entirely with one another. In this instance, that is the case and we have a position where we have not been able to present a unified report to you. I see this in no way as a failing. We started this work by seeking to get a better understanding of the different alternatives for waste containers, so that in looking forward we are considering all options on their merits and from an informed perspective. I am happy that we have done that.

In many respects, our difference of opinion reflects the debate that we must continually have to ensure that we continue to improve how we manage waste. It also shows that we, as Elected Members can discuss important issues and see the debate from both sides. Accordingly, as well as the report agreed by the majority of Members, within this overall report you will also find a Minority Report produced by two members of our working group.

I am pleased that we have been able to produce a detailed and dispassionate overview of this subject, seeking to present the entire argument in the round. I would like to thank my colleagues, Councillors Robert Alden, Steve Bedser, Jerry Evans, Kath Hartley and Timothy Huxtable for their very positive and constructive contributions to our working group.





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Majority Report

1 Introduction

- Overview and Scrutiny is not doing its job if it does not address the controversial issues facing the Council and the city as a whole. One of these issues currently is the debate around waste collection methods.
- 1.2 There has already been much discussion across the city about the efficiency and effectiveness of different means of collecting discarded and waste materials. We therefore agreed, on a cross-party basis, that there would be value in providing more background information to facilitate discussion around options for the future.
- 1.3 Our intention was never to come forward with a set of prescriptive recommendations but rather to research comparative information with a view to reaching broad conclusions on which subsequent decisions might be taken. This we saw as particularly important in the context of the City Council's flagship policy of devolution and localisation which is looking towards increasing the number of decisions reflecting local circumstances being taken at a more local level.
- 1.4 We formed an all-party Member group from Members of the Sustainability and Climate Change Task and Finish and Transportation and Street Services Overview and Scrutiny Committees to examine the subject of containers for waste in some detail. One of our principal aims was to provide a rounded and objective view of different types of container, so that we could evaluate alternatives for the city.
- 1.5 We asked officers from the Scrutiny Office to provide that assessment, with assistance from officers in Fleet and Waste Management and from other local authorities. The attached report looks at the range of options available to the City Council in considering the right mix of containers for collecting our waste and recyclate. We are satisfied that the result is a reasonable and balanced assessment of the advantages and disadvantages from a number of different perspectives, alongside a conservative estimate of the cost issues.
- 1.6 Whilst the report considers the four main types of container, it is fair to say that much of it focuses on the comparison of wheeled bins with plastic sacks. This reflects the fact that these two containers are the most appropriate for the collection of large quantities of refuse. Indeed, much of the debate in the Council Chamber and outside has been about the relative merits of these two containers. We have therefore considered these alternatives to see what conclusions could be drawn.
- 1.7 It is clear that the city is currently undergoing much change as kerbside recycling is extended significantly across the city. From a low base much is now being achieved. It is important to emphasise that we endorse the view expressed in the background report that this roll-out of doorstep collection must have time to bed down and for participation to increase. Our proposals



therefore are not about undoing or altering what is currently being done, but how we build on this, to achieve the next step up in achieving higher recycling rates.

Plastic Sacks and Wheeled Bins 2

- 2.1 The full comparison of the different aspects of containers is within the attached report. This compares containers in terms of:
 - Operational and financial factors (section 3);
 - Environment factors (section 4);
 - Waste Volumes and recycling rate (section 5); and
 - Public views (section 6).

Our discussion therefore focuses on the heart of the debate: to what extent wheeled bins offer potential for improvement over existing sack collections.

Cost

2.2 The most striking part of the report is the estimated cost models comparing capital and revenue costs for plastic sack and wheeled bin rounds. We accept that these are indicative and based on a number of assumptions which must be tested further, including the actual size of a wheeled bin round and the cost of a wheeled bin.

- 2.3 However, the costings provided in the attached report suggest that the ongoing revenue costs of operating a wheeled bin system are less than that of plastic sacks reflects anecdotal evidence from other local authorities. The fact that a smaller crew is needed on a wheeled bin round means there are potential savings, which generally outweigh the need for more rounds using wheeled bins.
- 2.4 Financially, the key concern is the capital cost of getting the wheeled bins and the vehicles² needed to collect them. There are a number of ways in which this capital might be provided. It would be a significant cost to the Council to fund these out of the existing mainstream budget. There are a number of alternatives which could be explored, although these could increase the overall cost if they involve borrowing that incurs interest.

¹ This is supported by, largely anecdotal, evidence from other local authorities that use wheeled bins for domestic refuse collection. However as these were introduced 10 years ago or more it is not possible to support their assertions with figures.

² Additional vehicles would be needed as more rounds would be needed. Also vehicles with the appropriate lifting equipment would be needed – although these could be replaced as part of the natural cycle of renewing the fleet. We would also ask that when new vehicles are purchased, consideration is given to vehicles which use more environmentally friendly fuel sources – LPG or electric.



- 2.5 However, these are not the only options. Two ways in which capital could be sourced would be for full or part funding via:
 - A successful bid via the Council's Capital Programme; or
 - A successful business case approval for funding from the Constituencies Service Improvement Fund (£1.25m).
- 2.6 If this can be done and costs of capital avoided, the broad level calculations show that the reduced revenue costs could cover the initial capital expenditure over six years.

Recycling Rates

- 2.7 However, a saving in revenue costs would not, on its own, be sufficient to necessitate the introduction of wheeled bins to the residents of Birmingham. So what other reasons are there to consider our current position?
- There are clearly operational benefits of wheeled bins (containment of waste, reducing the possibility of rats and improving street cleanliness; improved safety for operatives) but also some disadvantages (storage in smaller properties; wheeled bins left in the street). Some issues are neither resolved nor exacerbated by wheeled bins for example, rubbish however it is stored attracts anti-social behaviour. So none of these points definitively end the argument for or against wheeled bins. What would make the difference would be the expectation of a significant impact on our recycling rates.
- The potential impact on recycling rates must be considered in the context of the current roll-out of recycling doorstep collections, which is already increasing our recycling rates. According to the Fleet and Waste Management department's own estimates, this system of doorstep collection is expected to enable us to achieve a rate of 34% recycling by 2011/12. It is also important to allow this roll-out of doorstep collection to bed-down and for recycling activity to become well-established throughout the city. However, the City Council should be looking forward now to what the next steps will be, and how we will move on from that 34%. And a key part of that will be an examination of the containers we use.
- 2.10 So how could a change in containers help to increase recycling rates or reduce the amount of waste overall? There are two basic options:
 - i. To move from plastic sacks to wheeled bins for residual waste: Supported by policies for no side-waste and "lids-down", this would restrict the amount of waste people could put out each week (currently people can put out as many black sacks as they wish); or
 - ii. To move from boxes/ plastic sacks to wheeled bins for recyclate: This would increase the volume of recyclate residents could put out each cycle without the need for additional containers.



- 2.11 We have real concerns about the first option. Evidence from other local authorities³ indicates that introducing 240-litre wheeled bins on a weekly collection of domestic waste would increase the overall volume of waste collected. There are different options to consider minimising this, for example using smaller (140-litre) wheeled bins on a weekly basis or larger (240-litre) wheeled bins on a fortnightly basis. However, we believe that fortnightly collection would not currently be acceptable to all Birmingham residents and the use of smaller bins may initially result in increased side-waste and fly-tipping. We are also mindful of the recent report from the House of Commons Communities and Local Government Committee on Refuse Collection⁴ which highlighted the need for public reassurance on the safety of fortnightly collection of residual waste.
- 2.12 We do feel that there is scope to introduce wheeled bins for recyclate. Green waste is currently collected in plastic sacks. Although this has the advantage of being flexible (residents can put out as many bags as they like) it does mean that the sacks must be individually emptied into the vehicle and disposed of separately. A 240-litre wheeled bin for green waste may encourage greater volumes of recyclate. However, there is a possibility that providing a wheeled bin could also cause some residents to put green waste for recycling, rather than for home composting. In this case, this would increase overall waste volumes and be less environmentally preferable.
- 2.13 Currently, multi-material recyclate (plastic, glass and cans) is collected fortnightly in 55-litre boxes, as is paper and cardboard. Giving residents a 140-litre wheeled bin would considerably increase the capacity for recyclate⁵ and could increase volumes collected significantly. The experience of other local authorities suggests this.⁶ It would also represent an enhancement of the current service a necessary feature of any new scheme to ensure participation.

3 Our Conclusions and Recommendations

Options for Containers

3.1 In the context of the current roll-out of recycling schemes, to simply introduce a new system of wheeled bin collection across the city could be questionable in terms of whether it would raise recycling rates. However, we still feel that wheeled bins could offer enough potential benefits to form a part of how waste is collected in the city. Therefore, our recommendation is that a pilot is used to test the benefits and costs of using wheeled bins for recyclate collection.

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³ Again, largely anecdotal given the length of time wheeled bins have been used.

⁴ Fifth Report of Session 2006–07, 10 July 2007

⁵ Currently residents can request additional boxes. However, there are problems as the boxes are not designed to be stacked one on top of the other, and this is something that should be considered if more boxes are to be bought in the future

⁶ In particular Sheffield, which has recycling rates similar to Birmingham with only a four weekly collection of paper in 140-litre wheeled bins.



- 3.2 Work will need to be done to establish the parameters of the pilot, including:
 - What materials would be collected this way: Green waste, multi-material (plastic, glass and cans) and/ or paper and cardboard. This is dependent on how the material will be disposed of and how co-mingling affects the quality of the recyclate;
 - How large the pilot would be: There will need to be sufficient households to justify any
 expenditure on vehicles and to ensure a good price for the wheeled bins, as well as to facilitate
 an operational round size;
 - How frequently would the wheeled bins be collected: With larger containers, four-weekly collections could be considered;
 - Where would the pilot take place local Member and Constituency involvement is critical.
- Our preference is for any decision to be taken in full consultation with the local area hosting the pilot. For this reason, we are therefore asking Constituencies in the first instance to propose areas where a recycling pilot with wheeled bins could work. These should be planned in close consultation with Elected Members.
- Constituency Committees are of course already in a position to suggest pilots for their areas, and the process for doing so is set out in the "Devolution & Localisation Action Plan Recommendation 14: Promoting pilots in Constituencies" report⁷. However, we believe that the work done in this and the attached report will assist Elected Members in coming to a decision on how to extend recycling in their area.

Conclusions

- 1. Due to potential increases in volumes of waste and cost considerations, it is difficult to justify introducing wheeled bins for residual waste at this time. However, this should not preclude it as an option for the future.
- 2. There is however sufficient potential benefit to merit a pilot of wheeled bins as a container for recyclate (green waste, multi-material or paper and cardboard).
- 3. Constituency Committees should propose areas to conduct this pilot.

⁷ Cabinet Committee Devolution, 21 March 2007



	Recommendation	Responsibility	Timescale
R01	Constituency Committees should consider: Whether they wish to put forward a proposal for a pilot of wheeled bin collection of recyclate within that Constituency; and (If so) to identify suitable areas. Any area proposed should have the explicit consent of the relevant Ward Councillors. (Two or more Constituencies can choose to work together on this if a suitable area crosses administrative boundaries). This should be reported to the Cabinet Member for Transportation and Street Services.	Constituency Chair(men)	31 August 2008

- 3.5 Once a suitable area has been identified and agreed, we ask that the Cabinet Member instructs officers in Fleet and Waste Management to develop potential proposals and fully cost and define a pilot area. This assessment should include:
 - Consideration of a workable and cost-effective round size;
 - · Detailed costing;
 - Consideration of how and where the recyclate would be processed;
 - The combination and quality of material to be collected and how that impacts on disposal.
- 3.6 Once detailed proposals have been produced and agreed by the relevant Constituency and Ward Committees, it should then be for the Constituency in conjunction with the Cabinet Member for Transportation and Street Services to take practical proposals forward.

Conclusions

4. Any pilot should be of sufficient scale to justify capital expenditure on vehicles and to obtain the best price for bins.



	Recommendation	Responsibility	Timescale
RO2	Once a suitable area has been identified and agreed the Cabinet Member for Transportation and Street Services should refer the above proposals to Fleet and Waste Management officers for more detailed assessment, in terms of: Consideration of a workable and cost-effective round size; Detailed costing; Consideration of how and where the recyclate would be processed; The combination and quality of material to be collected and how that impacts on disposal.	Cabinet Member for Transportation and Street Services	30 September 2008

Existing Containers

- 3.7 As we stated at the start of this report, the intention is not to introduce wholesale change immediately but rather to allow the current arrangements and therefore recycling to become embedded. However, there are some short term measures that would improve the use of boxes.
- 3.8 The boxes currently in use for paper and multi-material recyclate are not stackable i.e. do not slot together for easy storage. If boxes are to be replaced in the future, consideration should be given to this.
- 3.9 Keeping the material enclosed is also important and we therefore ask the Cabinet Member to explore the option of providing lids for the boxes, as other authorities do.

Conclusions

5. As boxes will continue to play a role in recycling in the city, consideration should be given to how to improve these. We suggest that having boxes which are easily stackable and have lids would be more attractive to residents.

	Recommendation	Responsibility	Completion Date
R03	The Cabinet Member for Transportation and Street Services should explore the option of providing lids for boxes used for the collection of recyclate, and to consider purchasing stackable boxes as replacements for the current stock.	Cabinet Member for Transportation and Street Services	30 June 2008



Education and Publicity

- 3.10 Another very important part of this report focuses on publicity for recycling campaigns and how residents are being helped to recycle and to understand what is expected of them. We welcome the recent moves outlined in section 7 of that report. The importance of this cannot be overemphasised. Increases in recycling rates will not be achieved purely by operational factors although these are significant.
- 3.11 What is needed is a change in culture, whereby throwing recyclable material away is frowned upon and where every household participates in recycling schemes. This will require both explanatory and publicity material, as well as information events and in some cases, individual assistance to householders.
- 3.12 This is particularly important, as although this report has focused on doorstep recyclate collection from houses, work is continuing on developing recycling facilities for flats and other difficult-to-reach households, which often require tailored solutions. We are keen that this work is stepped up so that all residents in Birmingham have access to this service.
- 3.13 Communication with residents and publicity of recycling services has not been sufficient in recent years. We welcome the money from WRAP and the activities that it will fund. However, we note that the funding for the Communications Officer is for one year only, and would like to be reassured that this work will be extended well beyond April 2008.

Conclusions

6. How the Council develops its role in changing attitudes to waste in the City should be examined further by the Transportation and Street Services O&S Committee.

	Recommendation	Responsibility	Completion Date
R04	The Transportation and Street Services O&S Committee should commence a piece of work examining the communication strategy to support the increase of recycling in the city and its continued implementation.	Chair – Transportation and Street Services O&S Committee	31 July 2008



Progress on Implementation

3.14 Finally, we ask that progress against implementing these recommendations is tracked by the Transportation and Street Services Overview and Scrutiny Committee within the normal process for following up Overview and Scrutiny recommendations.

	Recommendation	Responsibility	Completion Date
RO5	Progress towards achievement of these recommendations should be reported to the Transportation and Street Services O&S Committee on 30 September 2008. Subsequent progress reports will be scheduled by the Committee thereafter, until all recommendations are implemented.	Cabinet Member for Transportation and Street Services	30 September 2008



Minority Report

4 Introduction

- 4.1 The introduction of the Majority Report refers to the importance of Scrutiny tackling the controversial issues facing the Council and we agree with this wholeheartedly. We formed part of Member group agreeing that this particular issue that of how waste and recyclate is collected in the city should be thoroughly investigated and discussed.
- 4.2 However, we have serious concerns about the conclusions drawn from the evidence put forward in this case. So concerned are we about the possible consequences of the recommendations put forward in the majority report that we have therefore decided to present this Minority Report. In it, we set out where we agree and where we disagree, and put forward alternative recommendations.
- 4.3 In summary, our view is that any future changes in recyclate collection should be focused on value for money and increasing recycling rates. The nub of our disagreement is that we do not feel the evidence presented demonstrates that by introducing collection by wheeled bins those aims would be achieved. The capital costs would be considerable and it is questionable as to whether either revenue savings or increased recycling rates would result. We therefore suggest alternative recommendations which we believe would better meet these objectives.

5 Existing Containers and Education and Publicity

- Firstly, it is important to say that we do agree with some areas of the Majority Report. It is right to say that the current roll-out of doorstep collection "must have time to bed down and for participation to increase" (paragraph 1.7).
- We also agree that boxes will continue to play a major role in the collection of recyclate in the city, and exploring ways to make these more attractive would be beneficial to recycling rates. Therefore, we support Recommendation 3 that:
 - The current use of containers could be improved by considering the use of lids for boxes and stackable boxes.
- However, we would ask that in addition to lids on boxes, the Cabinet Member for Transportation and Street Services is requested to explore the option of providing nets, which would provide an alternative cover for the boxes.
- 5.4 The importance of continuing to communicate with our residents and to help them recycle in ways convenient to them is also recognised. We therefore support Recommendation 4 that:
 - Further work on examining the communication strategy to support the increase of recycling in the city and its continued implementation.



6 Plastic Sacks and Wheeled Bins

Our main area of disagreement is in answer to the question posed in paragraph 2.1 of the Majority Report: to what extent do wheeled bins offer potential for improvement over existing sack collections?

Cost

- One area where we disagree with the conclusions drawn in the Majority Report is in relation to the costs. The figures published in the Background Report reflect the current cost models, and indicate potential revenue savings if the city were to move to wheeled bins.
- 6.3 We feel that the current situation is too fluid to be the basis for future cost modelling. As the Majority Report emphasises, the proposed pilots are to take place in a couple of years from now after the current roll-out has had time to bed down. During that time, changes will be made to the collection of recyclate and we expect these to lead to greater efficiencies.
- 6.4 For example, the City Council is currently buying and rolling out the use of "split-bodied" vehicles i.e. vehicles with two compartments to collect two forms of recyclate simultaneously. These will be used to collect paper and multi-material recyclate in one round. We welcome this step as we believe this will lead to increased efficiency and will also mean fewer vehicles out on the road with the resulting reduced emissions and reduced congestion.⁸
- As the Majority Report says, we must give current arrangements time to bed down and we strongly feel that this also applies to the new "split-bodied" vehicles. If these deliver significant efficiencies without the need for significant additional capital outlay (bearing in mind that vehicles have to be replaced approximately every ten years) then this is clearly a better situation. Once we have evaluated the effectiveness of these vehicles, then we will be in a better position to compare with any proposed wheeled bin round.

Recycling Rates

6.6 The Majority Report is right to say that much is currently being achieved and also right to put increasing recycling rates as a priority. However, we feel that there is not sufficient evidence to say that introducing wheeled bin collections for recyclate collection will deliver higher recycling rates. As the Majority Report states:

In the context of the current roll-out of recycling schemes, to simply introduce a new system of wheeled bin collection across the city could be questionable in terms of whether it would raise recycling rates.

Paragraph 3.1

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⁸ We are also pleased that the new vehicles are rated 'Euro 5'. Currently the requirement is to have vehicles of 'Euro 4' standard only. Euro 5 vehicles emit half the amount of oxides of nitrogen of a Euro 4.



- 6.7 Whilst it then goes on to say that "we still feel that wheeled bins could offer enough potential benefits to form a part of how waste is collected in the city", we feel that this case is not proven.
- By recommending the introduction of wheeled bins, even just on a pilot basis, we are in danger of simply replacing one container with another rather than actively seeking to increase recycling. It would be more productive, we feel, to extend the number of households covered by doorstep recycling collections and to consider collecting additional materials at the kerbside.

7 Our Conclusions and Recommendations

Proposed Pilots

- 7.1 Whilst we welcome the fact that the majority report does not direct the Cabinet Member to introduce wheeled bins and that this decision is left to the Constituencies, we have grave reservations about recommending such a course of action to Constituency Committees.
- 7.2 Firstly, the introduction of a pilot for wheeled bins calls for significant capital investment. We are not convinced that the evidence presented justifies this expenditure either in terms of efficiency gains or recycling rates increase, as outlined above.
- 7.3 Secondly, the Majority Report calls for Constituency Committees to "propose areas to conduct [a] pilot". Our concern is that this would result in a piecemeal approach to waste collection. Rather than having pilots designed to fit in with existing rounds and utilise existing arrangements as the pilots for green and multi-material waste in 2004 did in practice areas are likely to be identified on grounds of suitability for storing and manoeuvring wheeled bins and public demand.
- 7.4 There are no safeguards in the Majority Report to ensure that the situation does not arise whereby one or more rounds of wheeled bin pilots are proposed which are not contiguous or even near each other. Such an approach would necessitate the re-drawing of a number of rounds and if these rounds are spread across the city this would lead to increased inefficiencies and increased pollution and congestion as vehicles have to drive further. At the very least, much more investigation is needed of the impact of varying rounds in this way.
- 7.5 Thirdly, although not specifically proposed in the Majority Report, it would be open for Constituency Committees to propose pilots based on larger containers on a less frequent collection (e.g. 140-litre wheeled bins for multi-material on a four-weekly basis) as one way to get maximum efficiency. However, our view is that this would be seen rightly as a reduction in service by residents and is therefore unacceptable. We certainly see this as contrary to the Council's commitment of not cutting front line service delivery to achieve efficiencies.
- 7.6 There are also potential dangers in introducing wheeled bins in that closed containers may lead to an increase in contamination of recyclate, causing it to be rejected. Currently the bags in which green waste is collected and the boxes for multi-material and paper allow the crews to see the material before tipping into the vehicle. We also feel that greater consideration must be given to the effect of introducing wheeled bins for green waste. Currently householders can put out as



- many bags of green waste as they need to. If these same householders are restricted to a wheeled bin, this may result in a reduction of waste put out for recycling as waste which will not go in the bin may be put out with the residual waste.
- 7.7 Of course, it is always open for Constituencies to propose ideas in their area providing the money can be identified. We are concerned that it is proposed that Constituencies conduct such pilots using centralised resources rather than those that are already delegated to Constituencies.

Alternative Proposals

- 7.8 As stated at the beginning of this report, it is important to continue to work to maximise recycling rates and there is still much work to be done to achieve this in Birmingham. We believe that the key to this is the availability of kerbside collections to all residents in Birmingham and the range of materials that can be recycled at the kerbside.
- 7.9 Our proposal is that resources should be focused on extending the number of households which receive kerbside collections, and expanding the range of materials collected.
- 7.10 By April 2008, it is expected that around 360,000 households will be on doorstep collection rounds for paper, multi-material and green recyclate. Our view is that it is imperative that this extended is to all households in the city as soon as is practicable. This would not only result in higher recycling rates but would also ensure that all residents have access to the same level of service across the city, no matter what type of housing they live in.
- 7.11 We are aware of a current pilot to collect multi-material recyclate from properties served by an "alley cat" collection round, i.e. those locations where it is necessary to use a smaller vehicle for the weekly collection of household waste. The pilot includes multi-material recycling and green waste collections, in partnership with CSV, at over 3,000 houses in the South-west of the city.
- 7.12 This scheme is proving successful and, we believe, should be mainstreamed as soon as possible, as well as extended to those areas currently not served by the doorstep recycling collection.
- 7.13 Another move to increase recycling would be to look at the range of materials collected from the kerbside. Currently paper, cardboard, cans, plastic, glass and green/ garden waste are collected. However, the Background Report shows some other local authorities collecting a wider range of materials from the kerbside, including clothing and textiles, household batteries, spectacles and aerosol cans.
- 7.14 We suggest that examining the collection of materials such as wood or clothing would make a more significant contribution to increasing recycling rates. This of course must be examined and therefore a pilot should be introduced to test this. This pilot should utilise existing rounds for efficiency.
- 7.15 As explained in 5.1, we do agree with some of the recommendations from the majority report. However, there are other recommendations that we wish to make. For simplicity, we have listed all the recommendations we wish to make in their entirety here.



Conclusions

- 7. We do not believe that the evidence presented justifies recommending pilots to Constituency Committees as neither the efficiency savings nor increased recycling rates can be guaranteed.
- 8. We are also concerned that having pilots across different Constituencies would lead to a piecemeal approach which would incur greater inefficiencies and increase pollution and congestion levels as vehicles would have to travel further.
- 9. There is more likelihood of achieving increasing recycling rates by increasing the number of households on doorstep collection rounds and by extending the range of materials collected at the kerbside.

	Recommendation	Responsibility	Timescale
R01	The Cabinet Member should consider increasing the number of households receiving a doorstep collection of recyclables service and expand the range of materials collected, should any future resources be identified for waste collection.	Cabinet Member for Transportation and Street Services	30 June 2008
R02	The Cabinet Member is asked to consider conducting a pilot of collecting other recyclable materials (such as wood or clothing) from the doorstep using existing rounds.	Cabinet Member for Transportation and Street Services	30 June 2008
R03	The Cabinet Member is asked to consider both extending the current pilot of doorstep collection of recyclate to all areas served by "alley cats", and to mainstreaming this service.	Cabinet Member for Transportation and Street Services	30 June 2008
R04	The Cabinet Member for Transportation and Street Services should explore the option of providing a retention covering for boxes used for the collection of recyclate, and to consider purchasing stackable boxes as replacements for the current stock.	Cabinet Member for Transportation and Street Services	30 June 2008
R05	The Transportation and Street Services O&S Committee should commence a piece of work examining the communication strategy to support the increase of recycling in the city and its continued implementation.	Chair – Transportation and Street Services O&S Committee	31 July 2008



	Recommendation	Responsibility	Timescale
R06	Progress towards achievement of these recommendations should be reported to the Transportation and Street Services Overview and Scrutiny Committee on 30 September 2008. Subsequent progress reports will be scheduled by the Committee thereafter, until all recommendations are implemented.	Cabinet Member for Transportation and Street Services	30 September 2008



Background Report

8 Introduction

Background

In January 2006, the Transportation and Street Services Overview and Scrutiny Committee published its Scrutiny Review of *Recycling: Looking to the Future*. The report emphasised, amongst other things, that "city-wide kerbside collection of recyclable materials must play a major part in any future plans" to increase recycling, as people find kerbside collections to be convenient and easy. It went on to say:

"However, getting the right programme in place is critical: type of container and frequency of collection are considerations, along with whether any scheme should be compulsory or not."

- Since then there has been a significant roll-out of doorstep recyclate collection across the city. A three-year programme to put 360,000 households on paper, green and multi-material recyclate collections commenced in 2006 and is likely to be completed ahead of schedule in April 2008. Alongside this, work is on-going to address "harder to reach" households for example those in flats or other multi-occupancy households.
- 8.3 Despite these significant advances, the debate surrounding the type of container continues and many people have already made their positions clear on this subject. Given the clear public interest, Overview and Scrutiny Members said that they wished to see an independent, rounded and objective evaluation of the merits of different containers, and therefore asked officers from the Scrutiny Office to carry this out.

What We Set Out to Do

- This report sets out the results of this evaluation of different containers for waste, examining what is right for Birmingham. In summary, the options for containers are:
 - **Boxes:** Plastic or cardboard boxes, with or without lids;
 - **Disposable sacks:** Sacks that are either disposed of with the refuse, or recycled (but are not re-used);
 - **Re-usable sacks and bags:** Sacks that are returned to the householder to be re-used;
 - Wheeled bins: Plastic or metal refuse containers on wheels.
- 8.5 These containers are considered for both recyclate and residual waste. The key question the report sets out to answer is:

"What are the relative merits of the different containers for waste and recycling and what would be the implications of their use in Birmingham?"



Our Methodology

- 8.6 We adopted four main lines of inquiry:
 - i. To understand the full picture of how waste is managed in Birmingham;
 - ii. To compare this with how other local authorities manage waste;
 - iii. To examine this from the perspective of private waste management companies;
 - iv. To examine best practice and other views.
- 8.7 In seeking comparisons with other local authorities, we were mindful to do this on the basis of a number of factors. Our primary aim was to select comparators from urban areas similar to Birmingham, in terms of key factors which affect operation of waste collection, including:
 - Types and proportions of housing;
 - Character of the urban environment;
 - Population density.
- It was agreed that the Core Cities would be one obvious set of comparator authorities, and in addition that Greater Manchester would also provide good comparisons, in that the nine authorities in the Greater Manchester Waste Disposal Authority collectively represent an urban area not dissimilar to Birmingham.⁹ A simple comparison between Birmingham and other authorities by various waste materials collected is shown in **Appendix 1**.
- 8.9 The perspective of private waste management companies was gathered as part of the research with other local authorities a number of whom outsource waste collection and by contact with Veolia (Birmingham's strategic waste partner).
- 8.10 Best practice was also discussed with representatives of WRAP (Waste Recycling Action Programme) which provides an advisory service for local authorities.

How We Have Compared Containers

- 8.11 Our analysis is based across a number of factors and is intended to provide a rounded perspective on the relative merits of the main container types. We have considered these across four areas:
 - i. Operational and financial factors;
 - ii. Environmental factors;
 - iii. Effect on waste volumes and recycling rates; and
 - iv. Public views.

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⁹ The Greater Manchester Waste Disposal Authority is composed of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside and Trafford. The tenth member of the Association of Greater Manchester Authorities, Wigan, is its own Waste Disposal Authority.



- 8.12 Under each of these areas, we have analysed the relative merits of the containers by:
 - Specific issues for each kind of container;
 - A summary of the main mitigating measures and some of the policy considerations that local authorities have made to tackle the issues raised;
 - Providing further comments as appropriate in each area.
- 8.13 Throughout our analysis, we have focused upon the main options used by authorities for large volume collection: disposable plastic sacks and wheeled bins. This is not intended to detract from the role that other containers can play as part of the overall mix of collection methods. Most authorities employ a mix of container types as the most effective way to ensure broad coverage and higher participation.
- 8.14 We have also focused domestic door-step collections from houses and have therefore not looked at schemes for flats or other communal options, which require individual solutions to be worked out according to the particular circumstances.

9 Context

National Context

- 9.1 The approach of local authorities with regard to waste collection and disposal and recycling is informed by both legislative requirements and strategies set out by central government. Two significant examples are the Household Waste Recycling Act 2003 which places a duty on local authorities to provide kerbside collection for at least two recyclates by 2010 and the National Waste Strategy.
- 9.2 The National Waste Strategy for England was published in May 2007. It builds on the Waste Strategy 2000, and the progress made since then, but aims for greater ambition by tackling the key challenges for the future. This includes addressing the impact of waste on climate change and examining waste as a shared responsibility between producers and consumers as well as local authorities and the waste management industry.
- 9.3 The key objectives of this Strategy are to:
 - Break the link between economic growth and waste growth;
 - Exceed the Landfill Directive diversion targets for biodegradable municipal waste;
 - Encourage the use of waste as a resource with a focus on re-use, recycling and recovery of energy from waste;
 - Invest in infrastructure that will divert waste from landfill; and
 - Provide stronger incentive to reduce waste.



- 9.4 The approach is based on the waste hierarchy (waste minimisation, re-use, recycle/compost, energy recovery, disposal) and making sure that action is directed at the top of this hierarchy. It also stresses the importance of lifecycle thinking that is, taking into account the impact and content of materials from extraction, through production to disposal or recovery.
- 9.5 Local authorities have a role to play in the Waste Strategy in five key areas:
 - Prices consultation is underway on removing the ban on local authorities introducing household financial incentives for waste reduction and recycling. This would mean that local government would be free to introduce schemes where householders who recycle their waste receive payments funded by householders who do not recycle. All schemes would have to be revenue-neutral.
 - 2. **Regulation** by strengthening action on fly-tipping and illegally dumping abroad through prevention, more effective risk-based enforcement, strengthened export controls, data improvements and encouraging the courts to take illegal waste activities seriously.
 - 3. Investment in waste collection and treatment greater segregation and sorting of waste at (or close to) source by households and businesses is key to more efficient recovery of materials and energy. Proposals to facilitate the planning for, and investment in, collection, sorting, reprocessing and treatment facilities are outlined. This includes encouraging the use of energy recovery technologies.
 - 4. **Local and regional governance** changes to the performance standards for local authorities (see below) and legislative changes planned for joint waste authorities are outlined. Local authorities will also be encouraged to take on a wider role (in partnerships) to help local (particularly smaller) businesses reduce and recycle their waste.
 - 5. **Shared agenda** the need for local leadership to encourage re-use, recycling and composting of waste is emphasised. This includes extending the campaigns for recycling to awareness and action on reducing waste, reducing single use shopping bags and providing more recycling bins in public places.
- 9.6 As mentioned, the Strategy sets out performance targets for the future. This includes higher targets than in 2000 for:
 - Recycling and composting of household waste at least 40% by 2010, 45% by 2015 and 50% by 2020; and
 - Recovery of municipal waste 53% by 2010, 67% by 2015 and 75% by 2020.
- 9.7 In recognition of the increased focus on waste prevention, a new target will be introduced to reduce the amount of household waste not re-used, recycled or composted by 29% from over 22.2 million tonnes in 2000 to 15.8 million tonnes in 2010. There is an aspiration to reduce it further to 12.2 million tonnes in 2020 a reduction of 45%. This is equivalent to a fall of 50% per person (from 450kg per person in 2000 to 225kg in 2020).



- 9.8 In the longer term, an indicator measuring the climate change impact of a local authority's waste management operations is to be developed.
- 9.9 Another influential document in this area is Sir Michael Lyons report on the future of local government (March 2007). His report highlights the specific and growing pressures on waste services as the UK aims to reduce its dependence on cheap landfill, in the face of growing waste volumes. To help combat this, he advocates the creation of permissive powers for local authorities so that they can charge for domestic waste collection. This would enable them to introduce incentives to reduce household waste and manage costs and help ensure that the remaining costs are shared in a fair way.
- 9.10 In addition, Lyons recommends that the Government should give greater recognition to the fact that effective waste management is a shared responsibility between central and local government and consider ways to provide greater flexibility to manage the waste stream locally (including waste production).
- 9.11 As a result of this, national media and public interest has focused on the possibility of councils charging for waste collection and the use of 'chip' technology to monitor how much households throw away. This issue is not a focus for this report. However the discussion on containers does throw up questions relating to it, and so the topic is returned to in Section 5.

Birmingham Context

- 9.12 Whilst this report aims to provide a full evaluation of containers for waste and recyclate, we must be mindful of the current situation that Birmingham is in now. Therefore, although this report contains a fair assessment of each container, the final recommendations will take full account of the fact that Birmingham currently has one scheme plastic sacks with plastic boxes for most recyclate and any change will entail transitional costs and require appropriate public engagement and education schemes.
- 9.13 Firstly, we must take into account the current roll-out of doorstep collections as outlined above. These are designed to achieve recycling targets as follows:
 - 2007/08: 23%;
 - 2011/12: 34%.
- 9.14 This represents a doubling of recycling over five years and they show a clear desire to increase recycling in the city a decision taken as a result of national pressure and local political will.
- 9.15 This political will to introduce recycling should not be taken for granted. As part of our evaluation we visited Sheffield, where they are working on an "environment strategy" rather than a "waste strategy". This means that they are considering the whole impact of collecting and disposing of recyclate. They are not currently convinced that collecting recyclate from doorsteps is always the most environmentally-friendly way to deal with waste where there is an Energy from Waste plant –



which they have in Sheffield. It is their belief that incinerating mixed glass and plastic makes more sense environmentally than collecting from door-steps separately and re-processing.¹⁰ The same is not true for paper, which they collect 4-weekly in 140-litre wheeled bins. Sheffield's recycling rates were above Birmingham's in 2005/06.¹¹

- 9.16 Birmingham has an Energy from Waste plant at Tyseley, and whilst the same view as Sheffield is not taken, it must be acknowledged that having the plant shapes the debate about recycling in Birmingham. This is not because, as is often claimed, the existence of an incinerator inhibits recycling,¹² but because with it we landfill significantly less waste than most other authorities. In 2005/06, 62% of municipal waste produced nationally was sent to landfill, in contrast to 18% of Birmingham's municipal waste (down to 17% in 2006/07).
- 9.17 This means that Birmingham does not face the same financial pressures to recycle as authorities who landfill the bulk of their residual waste. They are paying increasing disposal costs as Landfill Tax goes up. This also gives Birmingham tradeable allowances under the Landfill Allowance Trading Scheme, which puts Birmingham in a favourable position when considering the future.
- 9.18 In addition, Birmingham is a unitary authority for waste management i.e. the City Council is both the Waste Collection Authority (WCA) and Waste Disposal Authority (WDA) and so does not face the sometimes conflicting demands of having a joint WDA (as the Manchester authorities have) over smaller WCAs.

10 Findings: Operational and Financial Factors

Operational Factors

- 10.1 There are a number of operational factors that must be taken into account when considering containers for waste. These relate to:
 - The different waste streams and how they are collected and sorted;
 - Health and safety issues.
- There is a clear financial dimension to a number of operational factors. This makes for a complex picture of what it currently costs to provide services and what it might cost to provide different services. The following sections on capital and revenue costs explore these in more detail.
- 10.3 There are a number of waste streams within our domestic waste, the key ones being:
 - Paper and cardboard currently collected together in Birmingham;
 - Glass, plastic, cans currently collected together in Birmingham;

¹⁰ This view is challenged by WRAP.

¹¹ 2005/06 rates: Birmingham 17%, Sheffield 21%.

¹² European countries with high recycling rates also have high incineration rates, e.g. Sweden, Netherlands, Denmark, Belgium (http://www.dublinwastetoenergy.ie/html/waste_to_energy.html, 25 June 2007).



- Green waste i.e. grass and plant cuttings;
- Kitchen waste currently not collected separately in Birmingham, though other local authorities have started to do this.
- 10.4 How these are collected is an important issue as collection methods can impact on:
 - Participation rates if schemes are too complicated (e.g. too many different containers collected on different days) or prescriptive (e.g. Birmingham's success in collecting paper is in part due to the fact that Kappa will take all kinds of paper and cardboard, rather than insisting on office quality only as some schemes do) people are less inclined to use them;
 - Quality of recyclate some materials are more valuable when separated out, for example glass is more valuable if processed by colour rather than all mixed together. There is also an issue of cross-contamination, for example collecting glass and paper together risks damaging the paper processing plants so is rarely done; kitchen waste contaminates everything and is very difficult to sort so should always be collected separately (though it can be collected with green waste if that waste is processed in a closed system, due to the Animal By-Products legislation).¹³
- 10.5 There are a range of options for:
 - How the waste/ recyclate is to be collected in a single stream (i.e. one collection container
 per material to be recycled and one for residual waste) or co-mingled (whereby recyclate is
 collected mixed together and sorted elsewhere);
 - How the waste/ recyclate is to be sorted at the kerbside, at transfer stations or at a MRF?
- 10.6 A second, critical, operational factor is health and safety. Waste collection is a dangerous business: a HSE Report from 2001/02 stated that the overall accident rate for the waste industry is around 2,500 per 100,000 workers four times the national rate. The incidents predominantly occur to refuse/recycling collection workers who manually handle and sort waste.¹⁴
- The HSE report did not specify whether any one particular method of collection is inherently more dangerous than another. However, other local authorities we visited reported pressure from the Health and Safety Executive to move to wheeled bins when considering new methods of collecting waste and recyclate. This is principally a concern relating to the intensity of manual handling tasks. Boxes and sacks require more bending, lifting and twisting, whereas wheeled bins are lifted by machinery on the vehicle. There are of course dangers with wheeled bins too however: wrist injuries caused by pulling heavy bins, or the possibility of objects falling from the bin as it is lifted.

¹⁴ Mapping health and safety standards in the UK waste industry', Bomel Limited for HSE, 2001-02, http://www.hse.gov.uk/research/rrhtm/rr240.htm

¹³ The issue of cross-contamination of waste was highlighted in a Sunday Times article (June 03, 2007) which reported that some recyclate was being landfilled due to poor sorting or contamination.



- 10.8 Officers in Birmingham report that they have received no such pressure from the HSE – an inspection visit two years ago led to the installation of wash basins on vehicles but no pressure to change containers. Our research indicates that other factors are more important in controlling risk:
 - Using directly-employed staff: Staff must be properly trained, which is more difficult if large numbers of agency staff are used. Directly-employed staff provides for more consistent management and practice in safety;
 - Direct exposure to waste: This can be mitigated by safe systems of work and issue of appropriate personal protective equipment (PPE);
 - **Manual handling and lifting:** Again, this can be mitigated by safe systems of work and PPE.

Table 1: Summary of Issues relating to Operational Factors			
Container	Issue	Mitigating Measures / Policy Considerations	
Boxes	 Suitable for co-mingled or single waste stream collections Can easily separate contents at the kerbside Some specific risks, including: Manual handling: bending, lifting and weight of boxes Sorting recyclate by hand (sharps) 	 There are specific recommendations from the Health and Safety Executive regarding box design and PPE, e.g. with regard to handles Adherence to safe systems of work can mitigate risks 	
Disposable Plastic Sacks	 Suitable for co-mingled or single waste stream collections Can separate contents at the kerbside but with difficulty Sacks must be separated from recyclate otherwise is a contaminate e.g. green waste There are more sharps injuries than with other ways of collecting residual waste More manual handling risks than other container types due to range of movement 	 If collecting recyclate, separate at transfer station or MRF (but sack must be opened and disposed of) Sharps injuries are generally a low component in injuries at work Adherence to safe systems of work can mitigate risks 	
Re-usable Sacks and Bags	 Suitable for co-mingled or single waste stream collections Can separate contents at the kerbside but with difficulty Some specific risks, including: Manual handling: Bending, lifting and weight of boxes Sorting recyclate by hand (sharps) 	Adherence to safe systems of work can mitigate risks	



Container	Issue	Mitigating Measures / Policy Considerations
Wheeled Bins	 Suitable for co-mingled or single waste stream collections Cannot separate contents at the kerbside Some specific manual handling risks, including wrist injuries, objects falling 	 If collecting recyclate, separate at transfer station or MRF Adherence to safe systems of work can mitigate risks

Capital Costs

- 10.9 Capital costs are largely tied up in the containers and vehicles needed for the collection rounds. Factors affecting these are:
 - Ownership of vehicles and the degree to which this is flexible i.e. can vehicles be changed or altered if necessary to accommodate new collection methods;
 - Cost of container ranging from around £2 for a box to £13-20 for a wheeled bin;
 - Replacement rates for containers currently at 10% for boxes, other local authorities allow 5% for wheeled bins.
- 10.10 The majority of vehicles currently owned and run by the City Council are of course designed to collect waste in black sacks, although some do have lifting equipment for larger bins and others would be capable of conversion for use with wheeled bins. The key is to have a mixed fleet capable of meeting all needs and this includes the need to collect bulky waste (currently the same vehicles are used for bulky collection as for sack collection this would not be possible if all vehicles were converted for use with wheeled bins).
- 10.11 There are various ways in which capital money for containers could be identified:
 - i. A successful bid in the Council's Capital Programme;
 - ii. Use of capital receipts from the sale of assets such as property or land;
 - iii. A Private Finance Initiative (PFI), either for the capital asset itself or the capital asset and management of the asset or service;
 - iv. Prudential Borrowing, where the Council is able to afford the revenue consequences of that borrowing;
 - v. Leasing the containers at an affordable rate;
 - vi. Obtaining a successful bid for external resources, such as Government funding.
- 10.12 Some of these methods are more appropriate for the portfolio whilst others are more theoretical. In the event that the Council were to decide to consider such an approach, it would require more detailed appraisal of the capital options.
- 10.13 Considering a significant capital purchase for containers must also take place alongside other competing capital priorities in the portfolio. Significant capital money is also needed for transfer



stations or Materials Recycling Facility (MRF), and the eventual disposal of waste. However, these are required regardless of collection methods.

Table 2: Summary of Issues Relating to Capital Costs

Container	Issue	Mitigating Measures / Policy Considerations
Boxes	 Current rate of replacement: 10% Require low loading-height vehicles to reduce lifts from manual handling 	Households can request extra boxes and replacement boxes
Disposable Plastic Sacks	 No need to replace the container per se, but sacks are presently provided (cost £11k per 10,000 households - £1.10 per household, per annum) Require low loading-height vehicles to reduce lifts from manual handling 	 Current policy is that the householder chooses whether to provide their own container for the waste Additional sacks are provided at the expense of the householder
Re-usable Sacks and Bags	Can blow away	Encourage crew to return sacks to a secure position
Wheeled Bins	 Large initial capital outlay (between £13-£20 per 240-litre bin) Require lifting machinery and high loading-height vehicles that the City Council does not currently own Would require more vehicles (as more rounds would be needed) 	 There are different means by which containers/vehicles could be provided: Purchase Lease / hire Provided as part of a collection or collection / disposal contract Require householder to provide container Attach lifting equipment to existing fleet

Revenue Costs

- 10.14 Revenue costs are dependent on a number of factors as outlined in the operational factors section:
 - Frequency of collection affects the basic number of collections to be made;
 - Efficiency / size of rounds;
 - Staffing: crew sizes, absence levels, training and spare cover ratios; terms and conditions
 under which staff are employed, including the number of days per week that staff work,
 qualification for bonus, and the level of overtime built into rotas for cover; ratios of
 management and supervisory staff to collection staff;
 - Fuel prices, which relate to the number of vehicles used;
 - Publicity undertaken to promote services initially and on an on-going basis.
- 10.15 A key factor in controlling revenue costs is of course efficiency. Disposable sacks are considered more efficient in the sense that, because collection is quicker, more households can be covered in a round (10,000 in Birmingham compared to around 7,500 if wheeled bins were to be used).



However, wheeled bin rounds require smaller crews and so savings are made that way. If sorting of recyclate is done at the kerbside, this slows collection and so reduces efficiency (though without this, sorting must be done elsewhere – so the costs are simply transferred to later in the process).

10.16 It is also necessary to take into account the mix of housing types in a round – flats, terraced housing, detached houses – and the routes vehicles may take – larger vehicles needed for wheeled bins may not be able to get down narrower roads. For example, in Liverpool wheeled bins were given to 185,000 households, predominantly semi-detached houses or terraced housing with 9' alley ways. Terraced housing with 4' entrance ways (c. 20,000 households) still receives a black sack collection. Different schemes are being piloted in terraced areas for recycling.

Table 3: Summary of Issues relating to Revenue Costs

Container	Issue	Mitigating Measures / Policy Considerations
Boxes	 Collection speeds are slow, especially where there is manual sorting of recyclate by collection staff Tend to be smaller so limited volume collected Could use for kerbside separation – better quality recyclate 	 Co-mingled collections Use of "slave bins" (bins which fit onto the vehicle for lifting and into which other containers can be emptied) Allow householders more than one box Encourage use of Bring Sites
Disposable Plastic Sacks	 Faster collection Larger crew sizes to enable one to run ahead to group sacks for collection Crew can work as above even when vehicle returning to depot to unload 	
Re-usable Sacks and Bags	Same as boxes	
Wheeled Bins	 Collection speeds can be slower than sack collection, possibly resulting in smaller rounds Smaller crew sizes (typically driver + 2) Collection cannot continue when vehicle returning to depot Large vehicles may be unable to access certain small roads 	 Utilise a mixed fleet, including smaller vehicles Not all houses need have wheeled bins Vehicles can be hired, although this may prove considerably more expensive in the long term The size and age of the City Council's vehicle fleet should mean that any change of vehicle type is possible over time

Cost Models

10.17 Cost models based on 2006/07 costs for domestic sack collections and the four recycling collections currently being operated in Birmingham are shown in **Appendix 2**. However, due to this number of variables as outlined above, it is not possible to either produce a direct comparison of the cost of waste collection across different authorities.



- 10.18 In terms of comparing different containers, again the wide range of different factors means it is not possible to state definitively which would be a cheaper or more efficient method of collecting waste or recyclate. However, we have produced estimated costs for introducing and operating wheeled bins as a comparison, shown in **Appendix 3**. These estimates are for
 - i. Residual waste, collected in a 240-litre wheeled bin;
 - ii. Green waste, collected in a 240-litre wheeled bin; and
 - iii. Multi-materials, collected in a 140-litre wheeled bin.
- 10.19 The estimate is based on a number of assumptions, as set out in Appendix 3. Two critical assumptions in cost terms concern round size and the unit cost of a wheeled bin.
- 10.20 With regard to round size, a round size of 7,500 properties per week appears achievable based upon:
 - Comparable authorities looking at the other Core Cities indicates that 7,500 households in a round is at the higher end of the scale but within what is being achieved elsewhere (see Table 4);
 - Estimates provided previously by Fleet and Waste Management in 2004. 15

Table 4: Core City Round Sizes (where information available)

Table 4: Core City Round Sizes (where information available)		
Leeds	6,400 (6 day week)	
Liverpool	6,000 - 7,500 (5 day week)	
Manchester	7,500 – 10,000 (5 day week)	
Newcastle	7,000 – 7,500 (5 day week)	
Nottingham	6,250 (5 day week)	
Sheffield	6,000 – 6,500 (5 day week)	

- 10.21 All present collection rounds in Birmingham are of 10,000 households. On this basis, four wheeled bin rounds would be needed to replace three sack collection rounds.
- 10.22 The unit cost per wheeled bin used in the estimate is a conservative one at £15.00 per 240-litre bin. This is based on the rate paid by Liverpool City Council (£13.19 / £13.50 per bin), plus an approximate extra 10% on the basis that if bins are purchased in smaller quantities the Council will not get as competitive a rate as Liverpool. Conversely, if larger quantities are purchased then the

¹⁵ Decision taken by Cabinet, 17 May 2004: Future Waste Management in Birmingham and the Introduction of a Pilot Green Waste Recycling Scheme Using Wheeled Bins.



- unit cost would be lower. In the case of 140-litre bins, the estimate is based on the £11.69 per bin paid by Liverpool, which reflects of the smaller quantities in which they are purchased.
- 10.23 However, our estimate supports the statements from other local authorities (e.g. Rochdale and Sheffield) that a waste collection system using wheeled bins is more efficient in the sense that the ongoing revenue cost per household is lower. This is largely due to the fact that, although more rounds and vehicles would be needed (as fewer houses can be covered in one round as collection times with wheeled bins are longer than with plastic sacks), those rounds require smaller crews. A plastic sack round employs five people per round, whereas with wheeled bins only three are needed.
- 10.24 That of course does not take into account the initial capital outlay required to purchase the bins in the first place. We have therefore produced a "year 1" (with the cost of buying the bins included) and "year 2" costs (with a 5% replacement cost inbuilt). We have excluded the costs of capital (e.g. interest paid on borrowing) from our calculation, on the basis that there are a number of different capital options that would need to be considered (see 3.11).
- 10.25 In summary therefore, it seems fair to say that in general, wheeled bins are significantly more expensive than sacks to introduce. However, once that initial outlay has been made, revenue costs can be expected to reduce.

11 Environmental Factors

'Carbon Footprint'

- One question we were asked to examine was the relative carbon impact of different waste collection schemes.
- 11.2 The Environment Agency has prepared a tool (called WRATE) that quantifies the carbon impacts of changes in various waste handling options. The tool can be used for all recycling scenarios but a licence costs £2,000 and therefore we have not used it as part of this evaluation. However, the tool is available should the City Council decide to undertake such an assessment.
- Our enquiries suggest that the estimated differential in carbon impact between different containers would be negligible. The thing that would make the greatest difference is how well the system is implemented. For example, in looking at plastic sacks versus wheeled bins there are pros and cons on both sides:
 - A re-usable container avoids the need to continually burn sacks;
 - However, people continue to use refuse sacks within wheeled bins, so these would not be eliminated;
 - Wheeled bin collection vehicles do more mechanical lifting and are slower therefore spending more time on the road, plus more vehicles are needed (although they would cover roughly the same number of miles).

Street Environment

- 11.4 The state of the street environment and street cleanliness is another factor in waste collection.

 Part of the issue relating to impact on the street environment is about the containment of waste:
 - With plastic sacks, the risk of animals getting into rubbish and scattering it across streets or gardens, or rats making a home in piles of waste is increased;
 - Boxes without lids risk allowing recyclate to blow out;
 - Bins left out look untidy and are a potential obstruction.
- 11.5 Related to this is the argument that wheeled bins as enclosed containers would reduce the incidence of rats. In truth, evidence is impossible to come by mainly as the actual number of rats is not known. The only hard data available is "requests for assistance" (RFAs) received by local authorities. However, a direct comparison of RFAs before and after the introduction of wheeled bins is complicated by the fact that:
 - Most authorities introduced wheeled bins for residual waste over 10 years ago, so data is not available;
 - Other factors have a bigger impact on request for assistance figures in particular whether or not an authority charges for the pest control service. Birmingham does not.
- However, keeping waste in closed containers undoubtedly limits the ability of any animals to spread or live in rubbish. Views from other local authorities tended to support the view that wheeled bins improve street cleanliness and reduce the rat problem though not all agreed. Liverpool stated that they had experienced better street cleanliness due to less spillage after the introduction of wheeled bins. Stockport agreed with this assessment, saying that if they were to move to wheeled bins, street cleanliness would be one of the motivating factors. Officers in Rochdale believed that introducing wheeled bins did reduce the rat problem, though Manchester's officers did not agree (though this was largely related to the fact that they allow side waste and it is this that causes the problem. Rochdale does not allow side waste).
- 11.7 Some further anecdotal evidence was gathered as part of the Aston Pride Streetcare Project (part of Aston Pride). Here, some (non-wheeled) bins were provided to residents and these were warmly received, although there is no hard evidence on the impact this specifically had on street environment because of the number of other complicating factors.

Anti-Social Behaviour

- 11.8 Anti-social behaviour is closely associated with all kinds of rubbish (littering, fly-tipping, abandoned vehicles) as concentrations of rubbish and abandoned vehicles quite often attract misbehaviour, especially arson. Specifically with regard to containers, the issues tend to be:
 - Theft of container;
 - Misuse of container;



- Advancement of waste;
- Householders do not retrieve their container after refuse collection.
- 11.9 Mitigating measures for the latter two problems centre upon communication with householders, for example reminding them that they must not leave their container on the street. Policies regarding enforcement and penalising those that persistently leave their container on the street can also be considered, as Sheffield is planning to do.
- 11.10 There is no evidence that any one kind of container attracts more anti-social behaviour any more than another kind even plastic sacks are vulnerable to theft when rolls are left out for householders. Quite simply, as with rats, the data is not available to assess this. With regard to arson, the West Midland Fire Service states that it does not record information in a way that allows the identification of arson relating to fires in rubbish or waste containers.

Table 4: Summary of Issues relating to Environmental Factors and anti-social behaviour

Container	Issue	Mitigating Measures / Policy Considerations
Boxes / Re- usable Sacks and Bags	 Risk of spillage / wind blowing rubbish about Risk of attracting vermin Advancement of waste – increases risk of spillage and vermin 	 Lids for boxes Crews required to clean spillage Street Cleansing teams scheduled to follow refuse collection Communication to householders regarding rinsing cans, bottles etc Communication to householders Enforcement policy for persistent problems
Disposable Plastic Sacks	 Split sacks and spillage are a common problem Risk of attracting vermin Advancement of waste – increases risk of spillage and vermin 	 Crews required to clean spillage Street Cleansing teams scheduled to follow refuse collection Communication to householders regarding safe storage Make dustbins available to those who want one Communication to householders Enforcement of policy for persistent problems Inferior sacks are more likely to split – the Council provides higher quality sacks
Wheeled Bins	 Risk of attracting vermin Advancement of waste – wheeled bins blocking footpaths 	 Side waste can attract vermin so have 'no side waste' policy and 'lid down' policy Communication to householders Enforcement of policy for persistent problems



12 Waste Volumes and Recycling Rates

- 12.1 As already noted in the Introduction, there is real political will to increase recycling rates in Birmingham and any containers must support this goal. However, an equally important part of the equation is waste minimisation the top of the waste hierarchy so working to minimise the amount of waste put out in the first place is as important a consideration as the percentage of it recycled.
- 12.2 There is evidence from other local authorities is that introducing wheeled bins leads to an increase in the volume of waste collected, and is therefore a risk in introducing for residual waste: 240-litre wheeled bins have a greater capacity than conventional dustbins (which hold one sack: 75 80 litres capacity, maximum 90 litres). However, there are options to introduce smaller bins: 140-litre capacity, for example.
- 12.3 The same does not apply to recyclate it would be worth examining Sheffield's operation in more detail, as they only collect paper from the kerbside (apart from one small community-run multimaterial collection scheme) but have achieved higher recycling rates than Birmingham as large volumes of paper are collected in 140-litre wheeled bins once every four weeks.
- 12.4 Green waste is also a popular choice for wheeled bins although there is an argument in this case that wheeled bins could restrict volume at peak time (unless side waste is accepted). Currently, those on the green collection scheme in Birmingham can put out as many bin bags as they like, and all will be taken. This is more flexible for the customer, as they can then put out more bags after a sunny bank holiday weekend, say, than having to put out the same container every week/fortnight regardless of volume.
- 12.5 Boxes potentially restrict the volume of recyclate to be put out although people can have more than one plastic box for multi-material recyclate or paper, in fact many will have difficulty storing many boxes. Stackable boxes would allow people to store these more easily.
- 12.6 It may be that a mix of methods is necessary, and this can be expected to change over time. As recycling increases, containers and collection means must keep pace and we must take account of this strategically by ensuring that there is sufficient capacity to accommodate the shift.

Table 5: Summary of Issues relating to Recycling rates

Container	Issue	Mitigating Measures / Policy Considerations
Boxes	 Only suitable for dry recyclate (cans, glass, plastic, paper and cardboard) Smaller volumes Smaller containers are better for households with waste storage problems 	Allow householders more than one box to increase recycling volumes



Container	Issue	Mitigating Measures / Policy Considerations
Disposable Plastic Sacks	 Suitable for all recyclate and residual waste There is no limit on the amount of waste or recyclate that householders can put out Flexible – can put out as many sacks as need to 	 Difficult to limit residual waste without an identifiable container for each household from which refuse is collected – "ownership" of waste is crucial here Use opaque sacks so crews can see any significant contamination
Re-usable Sacks and Bags	 Only suitable for dry recyclate (cans, glass, plastic, paper and cardboard) Smaller volumes Smaller containers are better for households with waste storage problems 	Allow householders more than one box to increase recycling volumes
Wheeled Bins	 Suitable for all recyclate and residual waste 240-litre bins have a large capacity and have led to increases in residual waste but are also good for high volume recyclate e.g. green waste or paper 	 Use smaller capacity bins (e.g. 140-litre) Reduce collection frequency alongside improved kerbside recycling service Restrict larger capacity bins to households who demonstrate that they are recycling and/or have a certain number within the household Enforced 'No side waste' policy Enforced 'Lid down' policy

Fortnightly Collections and Charging for Waste

- 12.7 Increasing volumes of recyclate collected is only one way to increase recycling rates. We may also in the future need to think about restricting the amount of residual waste collected. This is the thinking behind recent moves by many local authorities to fortnightly collection of residual waste (including Rochdale, one of the authorities we visited) and the Government's suggestion that Council's could charge for the collection of residual waste.
- 12.8 Birmingham has a history of taking any waste that people put out (firstly because it's impossible to tell which household has put more than one sack out and secondly because it's better collected than dumped elsewhere). The City Council has made its position clear on the matter of both fortnightly and charging for waste collection neither will happen and this was reinforced in a vote at the City Council meeting in June 2007.
- 12.9 In the case of charging for waste, this is the idea that individuals should be responsible for their own volumes directly. This is something that, even if it were to be considered, is a long-way off for Birmingham as there is no way of telling which plastic sack belongs to which household. This lack of "ownership" makes introducing a billing mechanism extremely difficult, if not impossible.
- 12.10 Introducing fortnightly collections is increasingly seen as akin to political suicide given the coverage of the last two local elections (2006 and 2007). There was certainly no appetite for the change in Liverpool, Manchester or Stockport.



- 12.11 However, there are two, contrasting, stories from within Greater Manchester:
 - Bolton: Labour lost overall control of Bolton Council in 2003, and in 2004 the Liberal Democrats became the largest party and formed an administration. In 2005/06, fortnightly collection was rolled out across the Borough. Both Labour and Conservative parties fought the 2006 local election promising to return to weekly collections: the Liberal Democrats lost 6 seats (4 to Labour, 2 to Conservatives). Re-emphasising their support for weekly collection, Labour gained a further two seats in 2007 and Conservatives another one both to the detriment of Liberal Democrats who now have only 12 seats out of 60.
 - Rochdale: the Liberal Democrats became the largest party on Rochdale Council in 2004 and formed an administration. Fortnightly collection was introduced in part of the borough in the last municipal year, and it is planned to roll this out across the whole Borough. Cross party support was received for this move. In the 2007 election, Liberal Democrats took overall control of the Council.
- 12.12 The lesson seems to be that political consensus is the key to success if such schemes are to be introduced.

13 Public Views

- 13.1 Two surveys have recently measured Birmingham residents' views of waste collection in the city:
 - The Best Value Performance Indicator Survey 2006/07, which asks about a range of Council services including waste collection;
 - A People's Panel Survey on recycling conducted in November 2006.

BVPI Survey¹⁶

13.2 Overall s

- Overall satisfaction with waste collection in Birmingham is high: the BVPI survey reported that close to three quarters of respondents (74%) were either very or fairly satisfied with household waste collection, with 16% expressing a level of dissatisfaction. Over a third (36%) feel the household waste collection service has improved over the last three years, and less than one in ten (9%) feel it has got worse.
- Overall satisfaction with Birmingham City Council waste collection services is below average for metropolitan borough councils and below average for core cities Bristol has the lowest. Satisfaction with waste collection has declined in Birmingham since 2003 (by 4% in comparable face to face surveys), roughly twice the national average decline.

¹⁶ Birmingham City Council General BVPI Survey 2007, BMG Birmingham.



- 13.4 Respondents were also asked to rate their satisfaction with specific aspects of the household waste collection service:
 - The bag provided for general household waste: 69% were satisfied though a quarter (25%) of respondents expressed dissatisfaction;
 - Doorstep recycling collection: two thirds (63%) of respondents reported satisfaction, and a quarter (25%) reported that they were either very or fairly dissatisfied.
- 13.5 With regards to the latter, results are particularly positive amongst respondents in Edgbaston, Yardley and Hall Green Constituencies. In contrast, it is respondents in Selly Oak and Hodge Hill who express the lowest levels of satisfaction with the council in relation to the doorstep recycling collection.

People's Panel Survey

- 13.6 This survey measured satisfaction with:
 - The range of recycling services;
 - · How recycling services are delivered;
 - Satisfaction with and preferences for containers for recycling services.
- 13.7 In relation to containers used for waste, the People's Panel survey indicated that:
 - 72.3% were satisfied¹⁷ with the bags they were given for green waste recycling;
 - 56.8% were satisfied with the container / bag that they had been provided with for paper recycling;
 - 68.1% were satisfied with the box they were given for multi-material recycling (cans, plastics, glass).
- 13.8 Respondents were also asked about their preferred containers for each type of waste:
 - **Paper**: the majority of respondents prefer a *plastic box* (44.0%) or *plastic bag* (24.1%) although respondents in Ladywood put plastic sacks as their second choice (19%). In Yardley, respondents were split equally between plastic box (31%) and plastic bag (32%).
 - **Green waste**: the two most favoured options were *plastic sack* (43.9%) and *wheeled bin* (25.7%), although more respondents in Selly Oak preferred plastic bags (26%) to wheeled bins (18%). Those most in favour of wheeled bins were in Erdington (37%), Sutton Coldfield (34%) and Ladywood (30%).
 - **Glass, plastic and tins**: respondents preferred plastic box (58.3%) and wheeled bin (23.9%), with those in Erdington most in favour of wheeled bins (33%) and those in Edgbaston least in favour (15%).

-

¹⁷ Responding as 'Fairly satisfied' or 'Very satisfied'. It should be noted that the proportions are based on different sample sizes, according to whether the appropriate recycling collection service was available.



- 13.9 It is noticeable that, in each case, respondents prefer the system already in use for that waste stream. The type of housing respondents lived in also had little impact though generally those in detached and semi-detached housing were more in favour of wheeled bins than those in terraced housing.
- 13.10 The survey also indicated that:
 - The three key factors in encouraging people to use recycling services more were a reliable collection (54.3%), consistent collection (43.9%) and providing an improved bag / container (37.1%);
 - Satisfaction with the frequency of collection for recyclables was:

Green waste: 67.6%;

Paper: 80.3%;

Multi-material (cans, plastics, glass): 72.3%.

- 57.6% disagreed that it would be acceptable for the council to reduce the frequency of general household waste collection if the recycling service was improved.
- 13.11 We did identify a number of key factors in relation to public opinion on the subject of how waste is collected:
 - Length of time that systems have been in place. Individuals are likely to be conservative about change resistant in the short term, but accepting and approving in the longer term.
 - Constant communication is essential, especially as part of tackling low participation rates. This needs to be constantly innovative, energetic, enthusiastic and genuinely two-way.
 - Communication is a critical part of preparing householders for changes to collection.

14 Communication

- 14.1 It is noticeable in the above section that communication plays a significant role in achieving satisfaction rates. Indeed, this echoes what MORI (the company who undertook earlier surveys for the City Council) have said for many years, that local authorities that communicate well with their citizens are better regarded, even where services are not of a consistently high standard.
- 14.2 The importance of clear and regular communication with residents in encouraging higher participation in recycling schemes was emphasised in each of the local authorities we visited:
 - Liverpool places a high priority on face-to-face communication, including having an Education and Promotion Officer within the Waste Management team and attempting to contact in person every household affected by the change in recycling collection;
 - Manchester has a Waste and Recycling Communications team of five posts in place since the roll-out of the twin bin scheme in 2004;



- Rochdale secured WRAP funding for a communications officer and a number of road-shows across the Borough;
- In Sheffield, Veolia (the contractor running the waste collection and disposal services) undertakes all promotional activity, including having a mobile information unit.
- Stockport employs Community Recycling Officers in areas where participation is low, to door-knock to find out why people are not taking part. In addition road shows, the Council's free paper, adverts and editorials are used to communicate recycling messages.
- 14.3 Recently, Birmingham City Council was successful in gaining funding from WRAP to undertake a series of promotional and investigatory activities. These include:
 - Studies on participation rates, put-out rates and attitudinal research;
 - The employment of a full-time Recycling Communications Officer for 12 months, part of whose remit it is to design a range of publicity material, including posters and question and answer leaflets, as well as running 12 road shows across the city.
- 14.4 There are currently three recycling officers (a Waste Minimisation and Recycling Officer with two assistants), although the Waste Management team is currently undergoing a restructuring.

15 Summary

- 15.1 It is clear that Birmingham City Council has made great strides in increasing recycling in recent years and that we are well-positioned for the future. With increasing recycling rates and a very low landfill percentage, the immediate future is promising.
- 15.2 The roll-out of multi-material collections is still on-going and work to include flats has yet to come to fruition. It is important that these changes are given time to bed down and for participation to increase. It is a simple, easy to understand system¹⁸ and will cover the majority of Birmingham households by this time next year, so the case that recycling rates over the next five years will be met by these activities is credible.
- 15.3 However, this first 30% or so of recycling is the easiest to collect. Increasing our rates to 40% and beyond is the real challenge facing the Council over the next ten years. The policy options will then become harder with tougher and possibly unpopular decisions.
- 15.4 In terms of containers, there is nothing to suggest one container is "the answer" or the best option for Birmingham either for residual waste or recycling. We have seen nothing which justifies a conclusive view for or against any one container. It is true that different containers do different things better for example, plastic sacks allow larger round sizes, boxes are easy for people to store, wheeled bins ensure waste is contained and so protects the street environment better.

¹⁸ Mostly recycling collections and residual collections take place on the same day of the week – though there are areas of the city where this is not the case.



- 15.5 It is of course for the City Council/Cabinet Member to set the priorities what the key principles are to govern waste management and these will determine what container, or mix of containers, will work best in Birmingham. This consideration of containers should be alongside the consideration of other factors, such as:
 - Enhanced recycling whether through more frequent collections, or larger containers to increase volumes;
 - Greater use of enforcement powers;
 - Charging for residual waste collection;
 - Alternate weekly collection;
 - Providing smaller containers (e.g. 140-litre wheeled bins) with a lid down and no side waste policy.
- 15.6 If the Council is to realise the potential of its position, it is too early to definitively rule anything in or out. Keeping an open mind on the options is essential if we are to meet the higher recycling targets set in the Waste Strategy.



Appendix 1: Core Cities and Greater Manchester Authorities

The following tables provide a comparison between the authorities on the basis of:

- Population and housing statistics;
- Political composition;
- Recycling performance and targets;
- Collection methodologies Tables A3 and A4.

Tables A1 and A2



	Birmingham	Bristol	Leeds	Liverpool	Manchester	Newcastle	Nottingham	Sheffield
Population*	1,001,200	398,300	723,100	447,500	441,200	276,400	278,700	520,700
Pop. density p/km²	3706	3,482	1,299	3,947	3,652	2,294	3,619	1,392
Non working*	16.00%	16.10%	17.50%	16.80%	13.70%	17.30%	14.90%	18.60%
BME residents**	29.7%	8.2%	8.2%	5.7%	19.0%	6.7%	15.1%	8.8%
FT students **	3.03%	3.78%	3.60%	3.41%	4.44%	3.81%	4.00%	3.26%
Number of households**	390,792	162,090	301,614	187,865	167,451	111,243	116,112	217,622
- detached	10.99%	%8£'9	14.74%	%06'9	4.26%	7.54%	15.35%	14.07%
- semi-detached	34.91%	29.00%	38.84%	28.47%	32.23%	34.75%	32.34%	37.33%
- terraced	31.26%	36.59%	27.94%	45.85%	36.01%	27.43%	31.20%	29.92%
– purpose built flats/tenements	17.86%	14.63%	14.14%	12.32%	20.39%	24.06%	15.40%	15.35%
– other flats	4.94%	13.28%	4.20%	6.41%	7.02%	6.19%	2.65%	3.28%
- Caravan/other temp.	0.04%	0.13%	0.12%	0.04%	0.1%	0.03%	%90.0	%90:0
Recycling and composting of household waste	household wast	a e						
2003/04 target	10%	18%	14%	%8	2%	10%	%8	10%
2003/04 actual	12.9%	13%	15%	4%	%8	10%	%6	12%
2004/05 actual	14.9%	12.4%	19.6%	%9'.	15.3%	13.9%	14.0%	17.1%
2005/06 target	18%	27%	21%	15%	70%	18%	18%	18%
2005/06 actual	17%	17.5%	21.3%	10.7%	19%	16.6%	18.6%	21.2%
2007/08 target	20%	72%	21%	%02	20%	70%	%02	70%
Households≡>2 recvclables	12.2%	%26	90.1%	91.8%	83%	93.5%	32.2%	20.7%



Table A2: Greater Manchester	ester								
	Bolton	Bury	Manchester	Oldham	Rochdale	Salford	Stockport	Tameside	Trafford
Population*	265,400	183,500	441,200	219,200	206,400	216,400	281,600	214,100	213,200
Pop. density p/km²	1,871p/km2	1,823	3,652	1,535	1,305	2,224	2,246	2,063	1,978
Non working*	17.50%	17.80%	13.70%	17.10%	16.80%	18.10%	19.90%	17.80%	18.70%
BME residents**	10.9%	8.1%	19.0%	13.7%	11.4%	3.4%	4.3%	5.4%	8.4%
FT students **	2.46%	2.13%	4.44%	2.14%	2.15%	2.99%	2.38%	1.97%	2.46%
Number of households**	108,085	74,335	167,451	87,824	83,452	94,238	120,456	89,981	89,313
- detached	15.98%	18.21%	4.26%	11.53%	14.93%	8.62%	21.38%	11.12%	15.37%
- semi-detached	35.30%	38.89%	32.23%	33.6%	33.27%	37.00%	42.25%	38.61%	44.83%
- terraced	37.11%	31.01%	36.01%	41.92%	38.56%	32.52%	22.20%	37.13	22.30%
- purpose built	9.61%	%29.6	20.39%	11.29%	11.18%	19.02%	11.38%	10.96%	13.22%
flats/tenements									
- other flats	1.89%	2.17%	7.02%	1.61%	1.93%	2.71%	2.72%	2.07%	4.24%
- Caravan/other temp.	0.11%	0.05%	0.1%	%90.0	0.13%	0.28%	0.08%	0.11%	0.05%
Structure Recycling and Composting									
2003/04 target	8%	8%	2%	8%	2%	8%	20%	%8	8%
2003/04 actual	8%	%6	8%	%9	%9	10%	25%	%6	8%
2004/05 actual	13.1%	18.7%	15.3%	10.8%	11.7%	12.8%	30.9%	12.5%	10.5%
2005/06 target	20%	70%	20%	20%	20%	20%	30%	20%	20%
2005/06 actual	24.9%	23%	19%	16.3%	16.2%	18%	31.6%	20.8%	24.1%
2007/08 target	20%	20%	20%	20%	20%	20%	30%	20%	20%
Households=>2 recyclables	%6.96	67.3%	83%	85%	94.2%	99.5%	94.7%	89.1%	%98
C **	0 100								

* 2005 Mid-year estimates ** 2001 Census



Table A3: Core Cities - Recycling Collections

Table As. Co	re Cities - Ro	ecycling Col	lections	Glass	Tins /			
	Residual	Paper	Card	bottles/ jars	Cans	Plastic	Green	Other
Birmingham	Weekly Plastic Sacks		ightly /Box		Fortnightly Box		Fortnightly/ 4-Wkly Plastic Sack	
Bristol	Fortnightly Wheeled Bin	Weekly Box	Weekly No Container		Weekly Box		Weekly Wheeled Bin	Kitchen (Weekly, 25L WB) Clothes, Blankets & Material; Shoes; Alum. Foil & Containers; Household Batteries, Incl Rechargeabl e; Spectacles; Aerosol Cans
Leeds	Weekly Wheeled Bin/Bin Bags		ightly r Bag	-		iightly Or Bag	Pilot – 5 Areas	
Liverpool	Weekly 240l Wheeled Bin (82%) Bags (17%)	Fortnightly Bag	Fortnightly Bag		Fortnightly - Box / Bin		Fortnightly Wheeled Bin / Bag	
Manchester	Weekly Wheeled Bins	4-Weekly Bin Or Box	-		Veekly -		4-Weekly Wheeled Bin	Clothes, Shoes, Textiles
Newcastle	Weekly Wheeled Bin	Fortnightly Box	-		Fortnightly Box		Trial: 5000 Households In 5 Areas	
Nottingham	Weekly/ Fortnightly Wheeled Bin	C	Bin (New) or 66% Of City)		Wheeled	Bin (New)	Wheeled Bin (4600 Props)	
Sheffield	Weekly Wheeled Bin (240L/140L Or 360L if household can demonstrate is recycling)	Every 4 Wheel	Weeks ed Bin	-	-	-	Fortnightly (Summer) Every 4 Weeks Wheeled Bin 45,000 Households	



Table A4: Greater Manchester - Recycling Collections

Table A4: Gr	eater Manch	ester - Recy	ching Coneci	10115	T		T	
	Residual	Paper	Card	Glass bottles/ jars	Tins / Cans	Plastic	Green	Other
Bolton	Weekly Wheeled Bin		ekly ag		Fortnightly Box		Fortnightly Wheeled Bin	
Bury	Weekly Wheeled Bin	Fortnightly Bag	-		Fortnightly Bin		Fortnightly Bin	
Oldham	Weekly Wheeled Bin	Fortnightly Bag	-		Fortnightly Box		Fortnightly Wheelie Bin	Foil
Rochdale	Weekly (25% AWC) Wheeled Bin		ightly ag	Fortnightly Box		Fortnightly Wheelie Bin		
Salford	Weekly Wheeled Bin	Weekly Sack			ekly ox		Fortnightly Wheelie Bin	Plastic Carrier Bags, Foil, Textiles
Stockport	Weekly Plastic Sack		ightly n Sack		ightly ox		Fortnightly Wheelie Bin	
Tameside	Weekly Wheeled Bin	8 Weekly Wheeled Bin	-		4 Weekly Wheeled Bin		Fortnightly Wheelie Bin	
Trafford	Weekly Wheeled Bin	Fortnightly Sack	-		ightly ox	-	Fortnightly Wheelie Bin	



Appendix 2: Birmingham Kerbside Collection Cost Models

	Domestic sack collection	Green waste	Green waste ¹⁹	Paper	Multi materials	Combined paper & multi- materials
Crew size	5	4	4	3	4	4
Households covered	10k - Wkly	20k - 2wkly	40k - 4wkly	40k - 2wkly	20k - 2 wkly	20k - 2wkly
No. of crews	1	1	1	1	1	1
Labour (£k)	£243	£195	£195	£147	£195	£195
Adjustment re. peak demand (£k)		£20				£20
Vehicle (£k)	£45	£45	£45	£45	£45	£51
Adjustment re. peak demand (£k)		£5				£5
Management / Supervision (£k)	£18	£4	£4	£10	£4	£9
	£306	£269	£244	£202	£244	£280
Sacks (£k)	£11	£106	£106			
Box replacement ²⁰ (£k)				£8	£4	£8
Leaflets/publicity (£k)		£3	£6	£6	£3	£3
Net extra disposal cost ²¹ (£k)		£-1	£-1		£24	£23
	£317	£377	£355	£216	£275	£314

Source: Financial Services, Fleet and Waste Management

All costs are based on 2006/07 prices and are in £'000.

The above costs represent the ongoing revenue expenditure of kerbside collection. The models exclude capital expenditure and other one-off costs (such as initial publicity and boxes).

¹⁹ Green waste is collected 2 weekly during the growing season and 4 weekly during winter. These models are for 12 months and 4 weekly is shown for completeness.

²⁰ Box replacement rate of 10% p.a. assumed.

²¹ Waste disposal costs relate to extra transport and treatment costs, and avoided landfill tax, where applicable.



Appendix 3: Estimated Cost Models

The following estimations of cost are for the elements not presently carried out in the city – those related to wheeled bin collections. The estimations are based on the cost models provided by Fleet and Waste Management for existing collection methods, with assumptions as follows:

- 1. We have estimated these on the basis of what is currently provided, i.e. weekly residual domestic waste collections and fortnightly / four-weekly green waste collections.
- 2. Estimations have not been done for multi-material wheeled bin collections on the basis that a comingled collection would require a Materials Recycling Facility.
- 3. For wheeled bins, a round size of 7,500 properties per week appears achievable compared with both other authorities and estimates provided previously. On this basis, four wheeled bin rounds would be needed to replace three sack collection rounds.
- 4. Base staff costs may be affected as a result of implementation of the Single Status agreement. However, since this will affect all collection methods we have treated this as a constant at current rates. This also provides a comparison with current costs as a baseline.
- 5. Staff costs are based on average costs per crew member, as in the cost models supplied by the department, varied according to different crew sizes.
- 6. Costs of provision of containers are calculated as follows:
 - 240-litre wheeled bins are taken at £15.00 per bin. This is based on the rate paid by Liverpool
 City Council (£13.19 / £13.50 per bin), plus an approximate extra 10% on the basis that if bins
 are purchased in smaller quantities the Council will not get as competitive a rate as Liverpool;
 - For boxes, the current rate paid by the Council is assumed £2.11 per box;
 - For 140-litre bins, the estimate is based on the £11.69 per bin paid by Liverpool, which reflects of the smaller quantities in which they are purchased.
- 7. A replacement rate of 5% per annum is assumed for bins. This is broadly in line with the budgeted levels used by Liverpool and Manchester.
- 8. Additional disposal costs for green waste are included as a separate line of optional cost, depending on whether bins were used for collecting green waste. For multi-materials, disposal costs have been inflated by 250% to reflect the increased capacity of a 140-litre wheeled bin, compared to a box.
- 9. The cost of the additional vehicles that would be required for wheeled bin rounds is £134k for one additional vehicle and £25k each to convert three vehicles (£75k). For the 'Per Crew' estimates these have been averaged across all four crews that would be needed.
- 10. Capital costs for the initial purchase of bins and vehicle have not been included. There are different potential ways that this could be done (see 10.11).



- 11. Management and supervisory costs have been assumed to be the same for simplicity, although in practice it could in some cases be possible to reduce this on the basis that wheeled bins would require fewer staff (three less staff for every four rounds).
- 12. Capital purchases are not reflected in Year Two and subsequent costs. Replacement bins are included as an ongoing revenue cost. Capital costs are calculated at a baseline rate and do not include inflation.



Residual Domestic Waste Collections

	Per C	Crew	Per 30,000 H	louseholds
	Sacks	Wheeled Bin	Sacks	Wheeled Bin
Revenue:				
Crew size	5	3	15	12
Households covered	10,000	7,500	30,000	30,000
Frequency	Weekly	Weekly	Weekly	Weekly
No. of crews	1	1	3	4
Labour (£k)	£243	£145.8	£729	£583.2
Adj. re peak demand			£0	£0
Vehicle (£k)	£45	£45	£135	£180
Adj. re peak demand			0	0
Management / Supervision (£k)	£18	£18	£54	£72
Sacks (£k)	£11		£33	
Bin replacement @ 5% (£k)		£5.625		£22.5
Total Revenue Costs (£k)	£317	£214.425	£951	£857.7
Capital:		1		
Wheeled Bins (£k)		£112.5		£450
Additional Vehicles (£k)		£52.25		£209
Total Capital Costs (£k)	0	£164.75	0	£681.5
Total Year 1 Cost (£k)	£317	£379.175	£951	£1,516.70
Cost per Household	£ 31.70	£ 50.56	£ 31.70	£ 50.56
Total Year 2 Cost (£k)	£317	£214	£951	£858
Cost per Household	£ 31.70	£ 28.59	£ 31.70	£ 28.59



Green Waste Collection

		Per (Crew		P	er 30,000	Household	s
	Sacks	Sacks	Wheeled Bin	Wheeled Bin	Sacks	Sacks	Wheeled Bin	Wheeled Bin
Revenue:								
Crew size	4	4	3	3	12	12	12	12
Households covered	20,000	40,000	15,000	30,000	60,000	120,000	60,000	120,000
Frequency	2 Weekly	4 Weekly	2 Weekly	4 Weekly	2 Weekly	4 Weekly	2 Weekly	4 Weekly
No. of crews	1	1	1	1	3	3	4	4
Labour (£k)	£195	£195	£146.25	£146.25	£585	£585	£585	£585
Adj. re peak demand (£k)	£20		£15		£60	0	£60	0
Vehicle (£k)	£45	£45	£45	£45	£135	£135	£180	£180
Adj. re peak demand (£k)	£5		£5		£15	0	£20	0
Management / Supervision (£k)	£4	£4	£4	£4	£12	£12	£16	£16
Sacks (£k)	£106	106			£318	£318		
Bin replacement @ 5% (£k)			£11.25	£22.5			£45	£90
Leaflets/publicity (£k)	£3	£6	£2.25	£2.25	£9	£18	£9	£9
Net extra disposal cost (£k)	£-1	£-1	£-0.75	£-0.75	£-3	£-3	£-3	£-3
Total Revenue Costs (£k)	£377	£355	£228	£219	£1,131	£1,065	£912	£877
Capital:								
Wheeled Bins (£k)			£225	£450			£900	£1800
Additional Vehicles (£k)			£52.25	£52.25			£209	£209
Total Capital Costs (£k)	0	0	£277.25	£502.25	0	0	£1,109	£2,009
Total Year 1 Cost (£k)	£377	£355	£505.25	£721.5	£1,131	£1,065	£ 2,021	£2,886
Cost per Household	£ 18.85	£ 8.88	£ 33.68	£ 24.05	£ 18.85	£ 8.88	£ 33.68	£ 24.05
Total Year 2 Cost (£k)	£377	£355	£228	£219	£1,131	£1,065	£912	£877
Cost per Household	£ 18.85	£ 8.88	£ 15.20	£ 7.31	£ 18.85	£ 8.88	£ 15.20	£ 7.31



Multi-Material Collections (Glass, Plastic, Cans)

		Per Crew		Per 3	0,000 Housel	nolds
	Boxes	Wheeled Bin	Wheeled Bin	Boxes	Wheeled Bin	Wheeled Bin
Revenue:						
Crew size	4	3	3	12	12	12
Households covered	20,000	15,000	30,000	60,000	60,000	120,000
Frequency	2 Weekly	2 Weekly	4 Weekly	2 Weekly	2 Weekly	4 Weekly
No. of crews	1	1	1	3	4	4
Labour (£k)	£195	£146.25	£146.25	£585	£585	£585
Vehicle (£k)	£45	£45	£45	£135	£180	£180
Management / Supervision (£k)	£4	£4	£4	£12	£16	£16
Box replacement @ 10% (£k)	£4.22			£12.66		
Bin replacement @ 5% (£k)		£8.77	£17.54		£35.07	£70.14
Leaflets/publicity (£k)	£3	£2.25	£2.25	£9	£9	£9
Net extra disposal cost (£k)	£24	£45	£45	£72	£180	£180
Total Revenue Costs (£k)	£275	£251	£260	£826	£1,005	£1,040
Capital:	<u>, </u>					
Box Provision (£k)	£42.2			£126.6		
Wheeled Bins (£k)		£175.35	£350.7		£701.4	£1,402.8
Additional Vehicles (£k)		£52.25	£52.25		£134	£134
Total Capital Costs (£k)	£42.2	£227.60	£402.95	£126.6	£910.4	£1,612
Total Year 1 Cost (£k)	£317.42	£487.87	£662.99	£952	£1,915.5	£2,651
Cost per Household	£ 15.87	£31.92	£22.10	£15.87	£31.92	£22.10
Total Year 2 Cost (£k)	£317	£260	£278	£952	£1,040	£1,110
Cost per Household	£13.76	£16.75	£8.67	£13.76	£16.75	£8.67