APPENDIX A

REVIEW OF REFUSE COLLECTION, RECYCLING AND STREET CLEANSING SERVICES (FINAL REPORT)

PREPARED FOR HERTSMERE BOROUGH COUNCIL BY GORDON MACKIE ASSOCIATES LTD
PROJECT RELEASE SHEET

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EXECUTIVE SUMMARY

Introduction

Hertsmere Borough Council (the Council) appointed Gordon Mackie Associates (GMA) to undertake a review of their Refuse collection, Recycling and Street Cleansing Services.

Review of Refuse, Organics and Recycling Rounds/Refuse collection re-structure

It was recommended that the collection rounds for refuse and organic material would be enhanced by introducing a system of material specific vehicles. This would enable a vehicle to collect only one material from each household on a fortnightly rotation. The collection rounds would be made up of a schedule of ten collection days.

A major benefit from this method of collection is a continuous flow of material being delivered to the transfer station or the disposal/treatment site which eases the management of these facilities.

In order to undertake a detailed review of the collection rounds it was essential that databases holding current operational information were as accurate as possible.

Recycling facilities for flats

The Council’s objective for flats was to incorporate recycling facilities wherever practicable. At present, the service provided to flats and other multi-occupancy residences conflicts with that provided through the ‘Additional Bin Collection’ (ABC) scheme to individual households.

In order to determine whether recycling could be introduced to flats, the following information was obtained:

- Location and number of individual properties;
- Current waste facilities provided (number/type of bins etc);
- Space available for future recycling facilities;
- Operational issues such as access problems etc.

As this data was not initially available, GMA and the Council undertook a detailed borough-wide assessment of the flats.

Following acquisition and interpolation of the above information into relevant data management systems, it was determined that all multi-occupancy properties could be added to the ‘ABC’ scheme, therefore removing any further need for weekly refuse collections. Interpolation of data into the ABC scheme began in terms of geographical location, starting with smaller conurbations and moving to larger conurbations.

The incorporation of flats and other multi-occupancy properties into the ABC scheme has resulted in the release of eight collection days of vehicle resources (Round 10 Monday to Friday and Friday work on Rounds 1, 4 and 5).

Street Cleansing Review

As was determined throughout the review of other services, baseline data concerning the street cleansing service had been scarcely available and considered insufficient for use in the development of a superior performance model.

Although primary focus had been around the development of a new street sweeping service model, other associated services, such as fly-tipping removal, graffiti removal, chewing gum removal, litterbin emptying and dog foul bin emptying were by no means excluded from the review.
Baseline data had been developed by GMA in conjunction with the area officers responsible for the management of the service. It was deemed most effective to apply the use of local knowledge from each officer along with guidance from the Code of Practice on Litter and Refuse (Section 89 - Environmental Protection Act 1990) in the development of three options for consideration.

The review of street cleansing performance data highlighted a need for a more robust Best Value Performance Indicator (BVPI) 199 management process. This matter has since been discussed with the Council but no further work has been undertaken as it falls outside the scope of this project.
1. **INTRODUCTION**

1.1 **Background to the Review**

Hertsmere Borough Council (the Council) requested Gordon Mackie Associates Ltd (GMA) to undertake a ‘Value for Money’ Review on the current provision of the refuse and recycling collection service.

In 2006 the Council introduced a borough-wide Additional Bin Collection (ABC) Scheme consisting of the following elements:

- Refuse collection using a black/grey 240 litre wheeled bin;
- Dry recycling collection using a twin box scheme – one for paper and one for plastics and cans;
- Garden waste, food waste and cardboard collection using a 240 litre green wheeled bin.

1.2 **Hertsmere**

Hertsmere is a local government district and borough situated in Hertfordshire in the East of England and covers an area of 101 km². It includes the towns of Borehamwood, Bushey, Elstree, Radlett and Potters Bar, as well as many surrounding villages with a total population of approximately 94,450 in around 40,830 households.

Hertsmere is surrounded by a motorway network, encompassing the M25, M1 and M11 within its boundary. As a result of this the borough is often subject to difficult traffic conditions when delivering material to a disposal or treatment facility or indeed undertaking the collection rounds. The borough’s treatment and disposal facilities are also situated outside of their boundary, which also adds to the travelling times.
1.3 **Aims of the Review and Methodology**

One of the key objectives of the review will be the development of revised ABC refuse and recycling rounds. This will provide further resource efficiency and vehicle utilisation without compromise on health and safety grounds.

It is intended that this key output will include:

- A review of the Council’s current ABC system in order to establish its efficiency and effectiveness;
- The development of revised waste and recycling collection rounds to ensure maximum efficiencies throughout the collection process;
- The joint input and ownership of all relevant parties of the collection authority with regard to the new collection rounds.

Other key objectives of this review include:

- A review of the Council’s recycling service/facilities to flats, including assistance with the implementation of such schemes as agreed with the Council;
- A review of the Council’s current street cleansing activities, including the provision of advice relating to service levels and BVPI 199a assessments;
- The production of a service standards/charter to reflect revised service levels, particularly in street cleansing, which may be developed jointly with the Council as the study progresses.

In order to obtain the items detailed above, it is anticipated that the review will be undertaken by addressing the key issues within the tasks outlined below:

- Review and, where necessary, identification of round changes to the Council’s current ABC system;
- Production of a Project Plan and provision of assistance in the implementation of recycling facilities to flats and other multi-occupancy properties;
- Detailed review of the current street cleansing activities and advice as to service levels required;
- Production of a service standards/charter.

1.4 **Additional Review Work**

In order to achieve the additional aims a number of tasks were also undertaken and these are summarised below. The information gathered is included within this report where appropriate;

- Obtaining baseline information regarding the current refuse collection rounds;
- Gathering baseline data on the flats, their location, facilities, property characteristics etc;
- Creation of baseline data for the street cleansing service, such as the determination of appropriate cleansing frequencies and road lengths.

All of the above data, following its acquisition, also required processing and assessment prior to its incorporation into the above project.
2. REVIEW OF REFUSE, RECYCLING & ORGANICS ROUNDS

2.1 Baseline Information

In order to undertake an assessment of these services, a detailed understanding of the current collection methodology was required. Information was obtained from the Local Land & Property Gazetteer (LLPG) database that supports the Customer Database. Following an initial assessment of this data it was identified that not all of the recent round changes had been inputted.

Following the acquisition of amended round data, the information was integrated into the LLPG database enabling a more accurate assessment of the current service level. In turn, the data was entered onto the GIS mapping system with a view to highlighting current collection inefficiencies.

In order to maximise collection efficiencies, a method of working known as ‘zoning’ would subsequently be applied. This involves the borough being split into daily collection zones.

2.1.1 Current Round Layout

The Council currently collects all materials on a weekly basis. The first week involves one fleet of vehicles collecting refuse alongside a separate fleet collecting plastic bottles and cans for recycling. The following week involves the same fleet collecting organic waste whilst the other fleet collects paper for recycling.

2.1.2 Services

Currently, all households receive an ABC method of collection as detailed in section 2.1.1 above. All flats and multi-occupancy properties receive a weekly collection of refuse and a limited recycling collection. The weekly collection is operated by one dedicated ‘flats’ collection round as well as a Friday collection service operated by three of the ABC collection vehicles on a weekly basis.

2.1.3 Tonnages

Table 2.1 below shows total material split collections for 2006/07 along with actual capacities within the current vehicle fleet (assuming collections to be within 10% of vehicle capacity on a daily basis over two collection loads).

<table>
<thead>
<tr>
<th>Table 2.1</th>
<th>Comparison of actual material collected and actual capacity within the collection fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residual waste</td>
</tr>
<tr>
<td>Actual tonnage 2006/07</td>
<td>17,872</td>
</tr>
<tr>
<td>Annual capacity for collection (2 loads per vehicle per day)</td>
<td>26,465</td>
</tr>
</tbody>
</table>
It can be seen from the table that the amount of organic waste collected is considerably less than the amount of refuse collected. Fewer vehicles in theory would therefore be required to collect the organic waste in order to provide an efficient service with respect to tonnages collected.

The ability for collection vehicles to undertake two loads per day also needs to be taken into consideration for the round review. For example, the volume required for plastics and cans to reach tonnage capacity within the vehicle is far greater than the volume of the actual collection vehicle. The opposite is true for organic waste, as the compacted material can often reach the maximum tonnage capacity before the volume of material has filled the vehicle.

2.1.4 Travelling Time

The borough comprises of a mixture of urban and rural collection areas, although it is predominantly urban. The time taken to collect the waste is by far comparable to the national average with regard to household collections as a kerbside collection policy is operated.

Problems with regard to the time taken for the transfer of the waste to the disposal point are often a cause for concern. As the major transport network routes for the Council are dictated by the flow of traffic on the major motorway routes that pass through the borough, these can impact on the time taken for travel considerably.

The majority of the vehicles operate with trackers present and therefore travel time and idle time can be monitored. The crews do not work to a ‘Task and Finish’ method of collection and operate over a standard working week of 36 hours with the availability of overtime. This method of working involves longer collection times in comparison to the ‘task and finish’ method employed in other authorities. The trackers are predominantly used to assist in the support of overtime and late finishing times with the vehicles.

2.1.5 Working Conditions

As already discussed above, the Council does not operate a ‘task and finish’ work rule. The Council also pays additional overtime on an ad hoc basis for the crews to complete their rounds. There is no limitation on the level of overtime paid to the crews.
2.1.6 **Vehicle types**

The refuse and dry recycling vehicles mainly consist of 26 tonne RCVs. Table 2.3 provides details of the current rounds, vehicle types and their capacity in tonnes (figures in brackets).

<table>
<thead>
<tr>
<th>Round</th>
<th>Type of vehicle (capacity in tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuse/Organic Waste</td>
<td></td>
</tr>
<tr>
<td>Round 1 (Flats - Friday)</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Round 2</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Round 3</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Round 4 (Flats - Friday)</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Round 5 (Flats - Friday)</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Round 6</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Round 7</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Round 8 Narrow Access; 3 days</td>
<td>18 tonne RCV (5.5t)</td>
</tr>
<tr>
<td>Round 10 (Flats Mon-Fri)</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Round 11</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Dry Recycling</td>
<td></td>
</tr>
<tr>
<td>Dry 1 *</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Dry 2</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Dry 3</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Dry 4</td>
<td>26 tonne RCV (11.7t)</td>
</tr>
<tr>
<td>Dry 5</td>
<td>7.5 tonne Cantor (3.3t)</td>
</tr>
</tbody>
</table>

* Currently Dry 1 is a hired vehicle.

2.1.7 **Hard to Reach Areas**

All difficult to access properties are collected on Round 8 Monday to Friday.

2.1.8 **Service Level Policies**

The Council has a Waste Collection Policy which includes the following:

- The number of receptacles each household is entitled to;
- How and when each receptacle will be collected;
- What is permitted within each receptacle;
- No additional (side) waste collections.

At present, there is no enforcement action being undertaken in respect to the number of receptacles, households can present at any one time.
3. **BEST VALUE COMPARATIVES**

3.1 **Benchmarking Exercise**

The benchmarking exercise will enable the Council to evaluate how their services compare to those undertaken by similar local authorities from across the UK. As far as was practicable, comparator authorities were chosen on a 'like for like' basis showing demonstration of similar physical and operational attributes to that of the Council.

3.2 **Comparator Authorities**

Comparator Authorities were identified based on similarities to the Council in terms of the following characteristics:

- Density of population (as stated in the Census figures for 2001) within the authority area (people per hectare);
- The Deprivation Index of the authority as determined by the Office of the Deputy Prime Minister, Indices of Deprivation 2004 (1 being the most deprived and 354 bring the least deprived);
- Comparative Performance Assessment (CPA) rating of "good" or "excellent" as determined by the Audit Commission.

The above set of criterions led to the identification of five potential comparator authorities based on similar topography, population density, roadway densities and being rated as ‘good’ in their CPA. These authorities were as follows:

- Bracknell Forest Borough Council (Berkshire);
- Dacorum Borough Council (Hertfordshire);
- Eastleigh Borough Council (Hampshire);
- Fareham Borough Council (Hampshire);
- Wokingham Borough Council (Berkshire).(Unitary)

*Although Welwyn Hatfield Borough Council only received a ‘fair’ rating in their most recent assessment, they were still considered a useful comparator in as much as they are a neighbouring authority with otherwise similar characteristics. Table 2.1 details the physical characteristics of each of the selected authorities:

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Hertsmere</th>
<th>Bracknell Forest</th>
<th>Dacorum</th>
<th>Eastleigh</th>
<th>Fareham</th>
<th>Wokingham</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>District</td>
<td>Unitary</td>
<td>District</td>
<td>District</td>
<td>District</td>
<td>Unitary</td>
</tr>
<tr>
<td>Density (people/ha)</td>
<td>9.34</td>
<td>10.02</td>
<td>6.49</td>
<td>14.56</td>
<td>14.54</td>
<td>8.39</td>
</tr>
<tr>
<td>Deprivation Index</td>
<td>260</td>
<td>319</td>
<td>306</td>
<td>311</td>
<td>330</td>
<td>352</td>
</tr>
<tr>
<td>CPA Rating</td>
<td>Fair</td>
<td>3 star</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>3 star</td>
</tr>
</tbody>
</table>

Figure 2.1 provides a geographical illustration of where these comparator authorities are located within the UK in relation to Hertsmere.
3.2.1 Suitable Comparator Authorities

3.2.1.1 Dacorum Borough Council

Dacorum is a district with borough status in the county of Hertfordshire in the East of England. Urban areas include Hemel Hempstead, Berkhamsted and Tring. Dacorum achieved a “good” status rating in its CPA assessment by the Audit commission in 2004.

Dacorum Council serves a greater population than Hertsmere but at a lower density. It also has several small towns and rural areas and as part of Hertfordshire is a good comparator authority. Dacorum also serves almost 50% more households than Hertsmere.

The Deprivation Indices for Dacorum at 306 is slightly higher than that of Hertsmere, currently standing at 260. Dacorum’s recycling and composting rate in 2006/07 was 43% and as a result, it was considered to be a suitable comparator authority. Dacorum runs an ABC service for green waste and refuse (since June 2003) and a weekly collection for recycling.
3.2.1.2 **Eastleigh Borough Council**

Eastleigh is a district with ‘borough’ status which borders Southampton and is located in Hampshire in the South East of England. Its largest town is Eastleigh. Other small towns and villages in the area include Bishopstoke, Hamble-le-Rice, Hedge End, Chandler’s Ford, Fair Oak, Horton Heath and West End.

The overall population of the Eastleigh area (116,169) is slightly higher than that of Hertsmere and given the smaller area, population density is also slightly higher. Eastleigh has almost 25% more households than Hertsmere.

The deprivation index (2004) showed Eastleigh to be rated at 311 compared to Hertsmere’s 260. Eastleigh was rated as “good” in the 2004 CPA performance assessment.

Eastleigh also run ABC for refuse and recycling services and reached a rate of 34.5% recycling and composting in 2006/07.

3.2.2 **Unsuitable Comparator Authorities**

A number of other authorities were short-listed but for various reasons were deemed unsuitable for benchmarking purposes:

- Bracknell Forest Borough Council;
- Fareham Borough Council;
- Wokingham Borough Council

3.2.3 **Comparative Service Operation Levels**

Following the decision on which comparator authorities would be used for the benchmarking exercise, more information was gathered from them with regard to their specific service delivery and associated costs. This was then used to compare all three local authorities (including Hertsmere).

3.2.3.1 **Key Issues**

In analysing the Service costs for the Council against those of the comparator authorities, the following key indicators have been compared:

- Population;
- Number of households;
- Size of the Authority.

Table 3.2 shows summary facts on population, numbers of households and geographical size of the comparator authorities.

<table>
<thead>
<tr>
<th>Authority</th>
<th>Number of Households</th>
<th>Population of Authority</th>
<th>Size of Authority (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertsmere</td>
<td>40,830</td>
<td>94,450</td>
<td>101</td>
</tr>
<tr>
<td>Dacorum</td>
<td>58,919</td>
<td>137,799</td>
<td>212</td>
</tr>
<tr>
<td>Eastleigh</td>
<td>50,000</td>
<td>116,169</td>
<td>80</td>
</tr>
</tbody>
</table>

Hertsmere has the lowest number of households and smallest population of the three comparator authorities. Physically, Hertsmere is only larger than Eastleigh in area.
3.2.3.2 Alternate Weekly Collections

Table 3.3 provides details about the comparator authorities’ current collection arrangements.

Table 3.3
Summary of Comparator Authorities ABC arrangements

<table>
<thead>
<tr>
<th>Authority</th>
<th>Date ABC commenced</th>
<th>% properties on ABC</th>
<th>Problems experienced with ABC</th>
<th>Side waste policy</th>
<th>Enforcement increased since ABC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertsmere</td>
<td>November 2006</td>
<td>81</td>
<td>Incorporating flats</td>
<td>Yes – not enforced</td>
<td>No</td>
</tr>
<tr>
<td>Dacorum</td>
<td>June 2003</td>
<td>95</td>
<td>Seasonal and additional round created</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Eastleigh</td>
<td>1996</td>
<td>100</td>
<td>No</td>
<td>Yes - since Oct 2005</td>
<td>No</td>
</tr>
</tbody>
</table>

Whilst all the local authorities have slightly different arrangements for refuse collection, those with ABC have all introduced no side-waste policies but have not had to increase enforcement as a consequence. Dacorum experienced problems with seasonality after the initial introduction of ABC and had to create an additional round in order to cope with this.

3.2.3.3 Recycling Collections from Flats

Table 3.4 explains how the comparator authorities service recycling collections from flats.

Table 3.4
Arrangements for collecting recycling from flats

<table>
<thead>
<tr>
<th>Authority</th>
<th>Collections from flats?</th>
<th>Integrated into rounds?</th>
<th>Containers used for flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertsmere</td>
<td>Y</td>
<td>N</td>
<td>1100 / 240 litre</td>
</tr>
<tr>
<td>Dacorum</td>
<td>Y</td>
<td>N</td>
<td>240 &amp; 360 litre</td>
</tr>
<tr>
<td>Eastleigh</td>
<td>Y</td>
<td>Y</td>
<td>1,280 litre</td>
</tr>
</tbody>
</table>

As can be seen from the table there is a range of solutions used to collect recyclable materials from flats. Dacorum have fully investigated all of their flats and have created their own collection rounds for the flats incorporating wheeled bins. Hertsmere operates a separate collection paper collection for 2,600 flats.

Eastleigh has managed to integrate the flats collections into the standard collection rounds by providing them with large wheeled bins.
### 3.2.3.4 Containers Used

Table 3.5 summarises what containers are provided by the comparator authorities for storage and presentation of different waste and recycling streams:

<table>
<thead>
<tr>
<th>Authority</th>
<th>Refuse</th>
<th>Recycling</th>
<th>Organic waste</th>
<th>Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertsmere</td>
<td>240 litre</td>
<td>2 x box</td>
<td>240 litre</td>
<td>1100 &amp; 240 litres</td>
</tr>
<tr>
<td>Dacorum</td>
<td>240 litre</td>
<td>2 x 40 litre</td>
<td>240 litre</td>
<td>240 &amp; 360 litre</td>
</tr>
<tr>
<td>Eastleigh</td>
<td>140 &amp; 240 litre</td>
<td>140 &amp; 240 litre</td>
<td>Bag</td>
<td>1,280 litre</td>
</tr>
</tbody>
</table>

Each authority is very different, although most use boxes for dry recycling. This will depend on what materials are collected and what arrangements have been made for sorting and storage (source segregated or co-mingled).

### 3.2.3.5 Number of Vehicles

Table 3.6 shows the number of vehicles used for each service by the specific authorities.

<table>
<thead>
<tr>
<th>Number of Households</th>
<th>Hertsmere</th>
<th>Dacorum</th>
<th>Eastleigh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuse</td>
<td>40,830</td>
<td>58,919</td>
<td>50,000</td>
</tr>
<tr>
<td>Organic</td>
<td>40,830</td>
<td>58,919</td>
<td>50,000</td>
</tr>
<tr>
<td>Recycling</td>
<td>40,830</td>
<td>58,919</td>
<td>50,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No of vehicles</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuse</td>
<td>9.5</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Organic</td>
<td>9.5</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Recycling</td>
<td>5</td>
<td>10**</td>
<td>4</td>
</tr>
</tbody>
</table>

** Kerbside sort vehicles on a weekly collection

| Refuse hh/vehicle/week | 4,298     | 5,892   | 5,556     |
| Organic hh/vehicle/week| 4,298     | 5,892   | 5,556     |
| Recycling hh/vehicle/week| 8,166    | 5,892   | 12,500    |

### 3.2.3.6 Cost of Collection per Household

Table 3.7 details the cost of collection in the comparator authorities for 2005/06 to the targets for 2007/08.

<table>
<thead>
<tr>
<th>Authority</th>
<th>2005/06</th>
<th>2006/07</th>
<th>2007/08 (target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertsmere</td>
<td>50.10</td>
<td>53.75</td>
<td>58.75</td>
</tr>
<tr>
<td>Dacorum</td>
<td>53.25</td>
<td>54.35</td>
<td>60.01</td>
</tr>
<tr>
<td>Eastleigh</td>
<td>49.45</td>
<td>49.45</td>
<td>49.45</td>
</tr>
</tbody>
</table>
3.2.3.7 Best Value Performance Indicator Figures 2006/07

Table 3.9 shows the BVPI figures for the comparator authorities for 2006/07.

<table>
<thead>
<tr>
<th>Authority</th>
<th>Hertsmere</th>
<th>Dacorum</th>
<th>Eastleigh</th>
</tr>
</thead>
<tbody>
<tr>
<td>82a (i) - % of household waste recycled</td>
<td>12.6</td>
<td>20.6</td>
<td>31.79</td>
</tr>
<tr>
<td>82b (i) - % of household waste composted</td>
<td>17.1</td>
<td>22.4</td>
<td>7</td>
</tr>
<tr>
<td>84a – Kg collected per head of population</td>
<td>430</td>
<td>430</td>
<td>360</td>
</tr>
<tr>
<td>86 – Cost of collection per household</td>
<td>53.75</td>
<td>54.35</td>
<td>49.45</td>
</tr>
</tbody>
</table>

As can be seen from the table, Hertsmere currently has the lowest dry recycling rate [82a (i)] but a higher than average composting rate [82b (i)]. The total waste collection figure per household in Hertsmere is comparable to the average, with Hertsmere at 430kg/hh and the average being 422.5kg/hh.
4. ROUND REVIEW AND ADJUSTMENT

4.1 Introduction

At present within Hertsmere the collection vehicles are split per materials per week. The black bin for refuse is collected one week with the black recycling box across the entire borough. The following week, the organic wheeled bin and the blue recycling box material is collected with the same vehicle fleet on the same collection rounds.

The proposal to change the collection service is to align the collection vehicles to a specific material, where a specific vehicle will only collect that material every week over a two week cycle, until that household has the same material collected again. This method of collection will only allow the required number of vehicles to be dedicated to any one particular material stream. At present, a significantly larger amount of refuse is collected in comparison to organic waste, although the same vehicle and staff resources are being used.

4.2 Options Proposed

In order to be able to assess the options available, an overview was taken of the collection service. Three options were considered for change

- Option 1: Keep the collection system as it currently operates;
- Option 2: Material Split collection. Separate refuse and organic vehicle fleets and retain a separate recyclable material split;
- Option 3: Material Split collection. Separate refuse and organic vehicle fleets with a co-mingled recyclate collection.

4.2.1 Option 1

Option 1 was to retain the service as it is currently managed with no operational changes.

4.2.2 Option 2

Option’s 2 and 3 are to separate the collection of the refuse (black bin) and the organic (green bin) waste on to separate vehicle fleets. This will allow for overall service level efficiencies as significantly more refuse is collected then organic waste.

Table 4.1 below details the tonnages collected in 2006/07 after ABC was introduced and in the first three quarters of 2007/08.

<table>
<thead>
<tr>
<th>Material Stream</th>
<th>2006/07 (Nov 06 to 31 Mar 07)</th>
<th>2007/08 (Q1 to Q3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuse</td>
<td>10,200</td>
<td>11,477</td>
</tr>
<tr>
<td>Organic waste</td>
<td>2,586</td>
<td>4,866</td>
</tr>
<tr>
<td>Black box (plastics and cans)</td>
<td>358</td>
<td>473</td>
</tr>
<tr>
<td>Blue Box (paper)</td>
<td>1,408</td>
<td>1,932</td>
</tr>
</tbody>
</table>

As can be seen from the table, more refuse is collected than organic waste. This is also the case for the differences in the tonnages collected for dry recyclate.
Vehicle configuration for this option is detailed in table 4.2 below.

<table>
<thead>
<tr>
<th>Table 4.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle configuration for Option 2</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Number of Vehicles</td>
</tr>
<tr>
<td>Refuse</td>
</tr>
<tr>
<td>Organic waste</td>
</tr>
<tr>
<td>Black box (plastics and cans)</td>
</tr>
<tr>
<td>Blue box (paper)</td>
</tr>
<tr>
<td>Hard to access Refuse &amp; Organic</td>
</tr>
<tr>
<td>Hard to access Black &amp; Blue</td>
</tr>
</tbody>
</table>

4.2.3 Option 3

Option 3 is the same as Option 2 for the refuse and organic waste stream. However it is proposed that additional service level improvements could be made if all the recyclables were to be collected together within one wheeled bin. This would increase the volume available to residents for the storage and presentation of recyclables as well as the time taken for collection as no kerbside separation would be necessary. This would also reduce the requirement within the fleet by at least another vehicle.

A disadvantage of this collection method would be the reduction in income from the recyclable material streams. At present the material is separated at source and each material provides an income. If the material were to be co-mingled, this would incur a gate fee, as well as a greater transportation cost, as there is no Material Recovery Facility (MRF) within the borough or nearby.

Gate fees are currently varied for this material between £12/tonne to £25/tonne and above. In comparison to the current income of £37.50/tonne for paper, this would affect the overall budget for the service and invalidate the savings made by reducing the fleet by one vehicle as well as supplying an additional wheeled bin to all households across the borough. As a result of these consequences it is determined that Option 3 doesn’t demonstrates any best value savings or efficiencies.

4.2.4 Assumptions Made

The following assumptions were made while undertaking a review of the service:

- Only one bin is presented per household for refuse and organic waste per collection/week;
- All households are provided with the same level of service;
- No additional/side waste is collected from any household;
- Contaminated waste is left at the household as not to affect the load and its ability to be accepted at its treatment facility;
- All waste policies are enforced;
- All crews operate as efficiently as possible (with the understanding that Hertsmere does not operate a task and finish collection method, therefore traditionally, productivity will be lower within the time given).
4.3 Specific Issues to Hertsmere

4.3.1 Travelling Times

As has been previously mentioned within this report, the Council can suffer particularly badly due to traffic congestion. In addition to this, the borough does not have any disposal or treatment facilities within its proximity. As a result, considerable time is consumed in travelling to the nearest facilities. This factor has to be considered when looking at the materials and tonnages being dealt with. For example, the organic waste has to be transported to Hillingdon, which consequently is often more than a two hour round trip.

4.3.2 Tonnage Capacities

Some material streams are not able to reach the tonnage capacity due to the travelling times to the disposal/treatment facilities. This is predominantly the case for the organic waste during peak season, when it may be difficult to exceed two loads within a day.

4.3.3 Development Plan

Within the current vehicle capacity of the fleet, greater tonnages could be collected. As a result of the revised options proposed to the Council, fewer collection vehicles would be necessary to complete the workload. It has been recommended that no more than four vehicles over a fortnightly basis are used for the collection of refuse, with an average household number of 40,000; this equates to an average collection rate of 1,000 bins per vehicle per day, well below normal industry standards.

As can be seen within the benchmarking authorities’ data in table 3.6, Hertsmere was significantly lower than other authorities in the number of households their vehicles visited per day.

In order to improve the level of efficiency within the fleet there is a need for a localised waste transfer/treatment facility within the borough. This will reduce the travel time and allow the vehicles to operate two full loads a day and, if required, three organic loads within peak seasons.

4.3.4 Changes to the Service

Of the 3 options considered Option 2 offers the best return in terms of savings and efficiencies.

4.4 Revised Round Information

The number of households that require servicing by the refuse and organic rounds are detailed in Appendix . Within this option, the organic crews mirror the refuse crews due to the travel time considerations that have been noted for the organic crews (in that they are unable to operate a two load per day collection within the time available), the recyclate collections will be made up of two full time vehicles per material stream, and one 7.5 tonne ‘Cantor’ vehicle that services the difficult to access properties. Each material stream will operate the same rounds over a 10 day cycle, collecting on an alternate weekly basis.

4.4.1 Future Growth

Within the previously mentioned options, there is still capacity for growth as the tonnage capacity within the vehicles is sufficient, as is the household numbers per round. The revised collection rounds are still operating below normal industry standards.
4.4.2 Seasonal Fluctuations

As a consequence of the material that is collected within the organic waste bin, the seasonal fluctuations are muted to a certain extent due to the underlying composition in the waste stream of food waste and card.

Tonnages collected on a weekly basis within 2007/08 have varied from a low of 301 tonnes in April to nearly 440 tonnes in June, although an excess of 400 tonnes in a week has only been achieved five times in 2006/07. Up to January 2008, the average collected tonnage over the period of a week was 340 tonnes. It should be noted that at present, the entire fleet collect all organic waste from the borough within one week. With the proposed changes, four vehicles will operate continuously collecting organic waste from half of the borough in any given week.
5. RECYCLING FACILITIES FOR FLATS

5.1 Current Provision

Recyclate collections currently operate under a similar regime to the refuse and organic collections, in that there is one fleet of vehicles that collect one stream of recyclate on one week and another the second week.

At present, a significant number of flats are still receiving a weekly refuse collection. The Council collects all refuse from multi-occupancy properties within the borough through the use of a dedicated refuse vehicle (Round 10) as well as three other ABC vehicles that only collect from such properties on Fridays (Round 1, 4 & 5). Approximately 2,600 of these properties also receive a fortnightly paper collection.

5.2 Data Required

In order to assess collection methods and phased integration of flats into the Council’s ABC scheme, the following baseline data was required:

- Number of flats in each block and the number of floors;
- Address point of block;
- Current refuse and recycling provisions;
- Bin store facilities – capacity measurement for more containers;
- Initial recommendation on site with regard to the potential introduction of ABC.

5.2.1 Assessment of Individual Properties

As this data was not currently available from the Council, GMA and the Council embarked on a joint survey of the borough’s multi-occupancy properties to compile a comprehensive set of data. The data was then processed to assist with the integration of flats to ABC.

5.3 Range of Solutions Available and Examined

Following the acquisition of relevant data concerning all multi-occupancy properties within the borough, each property block was assessed for ease of integration into the ABC scheme. Following completion of the initial assessment, properties were then assessed on their additional bin storage potential and material stream receptacle requirements.

It was concluded that there were in the region of 850 blocks of flats within the borough, some with more material separation than others. This was assessed and the number of additional containers was calculated.

Table 5.1
Recyclate containers currently in flats within the borough and additional resources required

<table>
<thead>
<tr>
<th></th>
<th>Paper</th>
<th>Plastic and Cans</th>
<th>Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of bins currently in situ</td>
<td>338</td>
<td>29</td>
<td>134</td>
</tr>
<tr>
<td>Number required in addition*</td>
<td>512</td>
<td>821</td>
<td>347**</td>
</tr>
</tbody>
</table>

* Assuming that there are 850 blocks and each block is to have a receptacle for the material to be collected
** Only half of the blocks will be suitable for organic waste collections
As can be seen from the table, in order to integrate flats into the ABC collection scheme, the minimum required number of receptacles is shown. It has been recommended that for paper collections, either 360 or 660 litre containers are installed and for co-mingled plastics and cans, 660 or 1100 litre containers due to the volume of the material. Having material specific slots on the lids of bins and the bin lids locked will limit the level of contamination within the bins.

5.4 Assigning Solutions

Following discussions with the Council it was concluded that all flats were to be integrated into the ABC scheme. Table 5.2 below, details the number of blocks within each town and the total number of individual properties within the flats.

<table>
<thead>
<tr>
<th>Town</th>
<th>Number of Blocks</th>
<th>Number of Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Mimms</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Aldenham</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>Shenley</td>
<td>15</td>
<td>158</td>
</tr>
<tr>
<td>Radlett</td>
<td>26</td>
<td>419</td>
</tr>
<tr>
<td>Potters Bar</td>
<td>117</td>
<td>1,205</td>
</tr>
<tr>
<td>Elstree</td>
<td>37</td>
<td>378</td>
</tr>
<tr>
<td>Borehamwood</td>
<td>269</td>
<td>3,213</td>
</tr>
<tr>
<td>Bushey</td>
<td>82</td>
<td>1,210</td>
</tr>
<tr>
<td>Bushey Heath</td>
<td>18</td>
<td>281</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>544</strong></td>
<td><strong>6,047</strong></td>
</tr>
<tr>
<td>Last phase</td>
<td>26</td>
<td>267</td>
</tr>
<tr>
<td>Separate Issues</td>
<td>14</td>
<td>313</td>
</tr>
<tr>
<td>Not Suitable</td>
<td>52</td>
<td>672</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>92</strong></td>
<td><strong>1,252</strong></td>
</tr>
<tr>
<td><strong>Overall Total</strong></td>
<td><strong>636</strong></td>
<td><strong>7,299</strong></td>
</tr>
</tbody>
</table>

The majority of flats can be integrated easily into the ABC scheme. There are however, some later categorisations with regard to ‘more difficult to integrate’ flats. These are classed as ‘Last Phase’, ‘Separate Issues’ and ‘Not suitable’. The categories are described in detail below:

- Last Phase – these are predominantly areas with initial issues with regard to the properties that require additional work, such as there is no initial area for an additional bin, i.e. they are situated above shops. Many of these are issues that can be overcome or resolved following an additional visit.

- Separate Issues – These are properties where there are more significant issues to be resolved prior to the introduction of the flats onto ABC, mainly refuse chutes and how to incorporate recycling into this style of development.
Not Suitable – These are the flats that when given their initial assessment by the Area Officer and GMA were assessed as not being suitable for introduction onto ABC initially. Reasons for these assessments include refuse chutes and currently being on a sack collection, again following a re-evaluation of these blocks, a further judgement can be made.

5.4.1 Appropriate Solutions

It is recommended that all flats are provided with a series of material stream bins within or near their current bin store. If the block is more than 2 to 3 storeys it is advisable that an additional ‘carry and storage facility’ is provided to the residents in order to encourage and facilitate recycling.

5.4.2 Integration into Normal Rounds and GIS Information

All flats to be integrated into the ABC scheme are to be added to current collection rounds in order that they can be collected from at the same time as the properties surrounding them.

5.5 Implementation of Flats Recycling

The implementation of flats into recycling rounds can be undertaken as soon as the changes to the rounds are applied. Following discussions with the Council it was decided that flats would be integrated into rounds area by area. This would assist with the communication process to residents in terms of the change of collection method and material as well as the changes that would be necessary on the collection rounds.
6. **STREET CLEANSING REVIEW**

6.1 **Current Situation**

The Council’s street cleansing service is currently administered on a reactive basis. The service has been designed in such a way to accommodate a combination of mechanical and manual sweeping methods and has achieved a “fair” performance rating through the Audit Commission’s Comprehensive Performance Assessment and a reasonable overall ‘Best Value’ cleanliness score of 20% for 2006/07.

The service, as with all other frontline waste management services, is provided by an internal direct service organisation (DSO) and is responsible for the upkeep of some 391 km of public highway.

In addition to street sweeping activities, the street cleansing service comprises of a range of other functions such as weed spraying, litter bin and dog foul bin emptying and the removal of fly-tipping, graffiti, chewing gum, dead animals and abandoned vehicles. Although these services have been considered throughout the review, the scope of the work has largely focussed around designing improvements to street sweeping operations.

6.1.1 **Current Monitoring Information**

The Council has an obligation to measure its street cleansing performance for Best Value Performance Indicator (BVPI) 199. Monitoring data pertaining to the performance of the street cleansing service was compiled and results concerning each street cleansing performance indicator for the year 2006/07 can be found below in table 6.1.

<table>
<thead>
<tr>
<th>PI Number</th>
<th>Description</th>
<th>1st Tranche Survey Result</th>
<th>2nd Tranche Survey Result</th>
<th>3rd Tranche Survey Result</th>
<th>Annual Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>BV199a</td>
<td>The proportion of land or highways that is assessed as having combined deposits of litter detritus across four categories of cleanliness.</td>
<td>17%</td>
<td>22%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>BV199b</td>
<td>The proportion of land or highways (expressed as a percentage) from which unacceptable levels of graffiti are visible.</td>
<td>9%</td>
<td>11%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>BV199c</td>
<td>The proportion of land or highways (expressed as a percentage) from which unacceptable levels of fly posting are visible.</td>
<td>0%</td>
<td>1%</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

It is understood that since the compilation of the above data, the authority had carried out another survey which resulted in a significantly improved score of 11%.
6.1.2 Provision of Service and Obstacles

The street cleansing service, in its current format, is provided largely on a reactive basis. Only town centre locations (Zone 1 areas) are cleaned seven days a week as per legal requirement under the Code of Practice on Litter & Refuse (Section 89, Environmental Protection Act 1990). Normal operational hours consist of 36 hours per week (Monday to Friday) and are parallel with other frontline waste management services. Service deployment is through a combination of mechanical and manual sweeping methods and covers a varying landscape from rural districts to town centre precincts.

The review brought about a number of obstacles to overcome which included:

- The gathering of baseline data in order to progress with the development of an enhanced service model;
- Determining the number of resources available for the new model as there appeared to be a cross-over between services in terms of resource use;
- Determining suitable cleansing frequency levels in conjunction with guidance from the Environmental Protection Act 1990;
- Determining suitable plant and deployment of resources to maximise efficiency and effectiveness.

Baseline data had been compiled with the assistance of the four area officers supervising the service who applied their use of local knowledge of the Borough in conjunction with guidance on cleanliness levels required from the Environmental Protection Act 1990, to determine the most suitable of cleansing frequencies for Hertsmere’s public highway.

Resource availability had been determined by the Council’s waste management team and used as an approximation for inclusion in revised service models.

The determination of plant suitability and resource deployment had been jointly examined by GMA and the Council. Whilst a decision has been formalised with regard to resource deployment, mechanised sweeping options are still under consideration and trials of certain machinery ongoing.

6.1.3 Cost of Service

Invariably, costs will be a significant factor to consider throughout this project and will ultimately dictate the level of service provision to the community. Table 6.2 overleaf provides a summary of the draft budget for 2007/08.

<table>
<thead>
<tr>
<th>Expenses</th>
<th>Approved 2006/07 budget (£)</th>
<th>Draft 2007/08 budget (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>565,090</td>
<td>678,300</td>
</tr>
<tr>
<td>Transport Related</td>
<td>184,360</td>
<td>185,250</td>
</tr>
<tr>
<td>Supplies &amp; Services</td>
<td>71,830</td>
<td>74,360</td>
</tr>
<tr>
<td>Agency &amp; Contracted</td>
<td>40,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Income</td>
<td>-20,000</td>
<td>-23,500</td>
</tr>
<tr>
<td>Total Budget</td>
<td>841,280</td>
<td>964,410</td>
</tr>
</tbody>
</table>
6.1.4 Existing Resources

The street cleansing service in its current format is administered through the combined use of mechanical and manual resources. Details concerning resource levels and deployment can be seen below.

6.1.4.1 Manpower

The Council has within its workforce, a total of 23 operatives employed within the street cleansing service consisting of 10 drivers and 13 manual staff.

6.1.4.2 Vehicles

The Council’s street cleansing service operates the following number and types of vehicles:

- 1 x HGV Mechanical Sweeper (Johnson 600);
- 3 x Compact Mechanical Sweepers (Scarab Minor);
- 3 x 3.5 tonne Tipper Vehicles;
- 3 x 7.5 tonne Tipper Vehicles.

6.1.4.3 Elements included in the Service

Table below shows the activities undertaken as part of the respective Street Cleansing services.

<table>
<thead>
<tr>
<th>Street Cleansing Activities Undertaken</th>
<th>Hertsmere</th>
</tr>
</thead>
<tbody>
<tr>
<td>Litter picking</td>
<td>Y</td>
</tr>
<tr>
<td>Removal of fly tips</td>
<td>Y</td>
</tr>
<tr>
<td>Emptying of litter bins</td>
<td>Y</td>
</tr>
<tr>
<td>Emptying dog bins</td>
<td>Y</td>
</tr>
<tr>
<td>Weed spraying</td>
<td>Y</td>
</tr>
<tr>
<td>Graffiti, flyposting and chewing gum removal</td>
<td>Y</td>
</tr>
<tr>
<td>Abandoned vehicles</td>
<td></td>
</tr>
<tr>
<td>▪ notification</td>
<td>Y</td>
</tr>
<tr>
<td>▪ removal</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>Seasonal leaf/blossom fall and removal of dead animals</td>
<td></td>
</tr>
</tbody>
</table>
6.2 Street Cleansing Service Design

Much has been said throughout the report with regard to ‘issues’ that needed to be addressed and that would ultimately, impact on the design of a street cleansing model.

Other factors, such as the maximum distance that manual operatives and mechanised sweepers could cover in a working day were also considered as they would have a profound effect on service design.

GMA and the Council had agreed that three service design models would be produced for consideration following the determination of baseline data and other obstacles removed. The options range from:

- ‘Idealistic’ (option one) in terms of exceptional coverage but expensive to produce;
- ‘Realistic’ (option two) in terms of good coverage at an affordable cost;
- ‘Budget’ (option three) in terms of being cheap to set up but average on performance.

Rationale for new design

6.2.1 Option One – ‘Idealistic’

This model was designed with six frequencies in mind and is the ideal choice of the four area officers. Breaking away from the rigid structure of the EPA Code of Practice Zones, the area officers wanted to design a service based on local knowledge hence the ‘ideal’ frequency levels associated with each road.

6.2.2 Option Two – ‘Realistic’

This model has been designed with a view to maintaining quite a good coverage of the borough but at the same time, reducing resource and cost levels.

For manual and precinct sweeping, the frequencies are:

- Daily (Monday to Sunday) – town centre locations;
- Daily (Monday to Friday) – shopping parade areas and outside schools;
- Every four weeks – predominantly residential areas; major roads and intersections
- Twice Yearly – rural roads.

As was the case with the previous model, it was felt that the level of mechanised sweeping for this option could be further reduced to those displayed in option three (see below) and still provide good coverage whilst at the same time proving cost effective.

6.2.3 Option Three – ‘Budget’

- This model produces a minimal level of manual sweeping throughout the borough. Although cheap to set up, it is not certain to offer much in the way of improvements.
6.2.4 Resource Requirements

Taking Option 3 as the most appropriate service design model for Hertsmere Borough Council, it was possible to determine the number and types of resources needed for service delivery. A total number of 23 staff was calculated as necessary to perform the demands of the service model and details of their deployment can be seen below.

For pavement and precinct sweeping, a four-way division of the Borough was created and will be managed by the four area officers.

Each area will contain:

- One compact mechanical sweeper for town centre and shopping parade areas;
- One barrow sweeper for three town centre areas (although Potters Bar will have two);
- One mobile crew- (although Borehamwood will have two) to deal with residential sweeping, fly-tipping removal, litter bin emptying, dog foul bin emptying, graffiti removal and chewing gum removal.

For mechanised channel sweeping, a two-way division of the Borough was created. Each area will contain one large mechanical sweeper.

6.2.5 Capital Requirements

Revenue costs can be contained within the overall budget for street cleansing 2008/09. Capital requirements for each plant type can be seen below.

- Large mechanical sweepers £80,000
- Compact precinct sweepers £45,000
- Transit tipper vehicles £25,000

6.2.6 Key outputs

Following implementation of the service design, the following key outputs should be notable.

- A fully auditable, structured and customer orientated street cleansing service;
- Increases in productivity levels;
- Improved BVPI 199 score.

Detailed planning of the service model has produced a number of record keeping systems that show justification for the level and types of resources needed as well as frequency levels of cleaning.

It is felt that the service will be more ‘customer orientated’ as the authority will be able to publicise its service delivery intentions that can be backed up by detailed information within the authority’s possession.

The planning of the service model has enabled GMA to maximise efficiency and productivity levels by acknowledging industry standards for all activities associated with the street cleansing service and tailoring them to the authority’s requirements.
The transition from a reactive service to a planned service coupled with the improvements that have been made throughout the project should produce an improved BVPI 199 score.