

# Scrutiny Services

## RECYCLING REVIEW COMPARISON OF SOURCE SEPERATED AND CO-MINGLED COLLECTION METHODS IN HARINGEY



**SCRUTINY REVIEW – RECYCLING – COMPARISON OF SOURCE SEPARATED & CO-MINGLED COLLECTION METHODS IN HARINGEY**

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## **RECYCLING REVIEW – COMPARISON OF SOURCE SEPERATED AND CO-MINGLED COLLECTION METHODS IN HARINGEY**

### **1.0 Background and Terms of Reference**

1.1 A Scrutiny review into Waste, Recycling, Collection and Disposal was completed in April 2008. The review made a number of recommendations on a range of issues aimed at improving performance across various waste management activities within the Service. The Cabinet responded to the recommendations on 15<sup>th</sup> July 2008 and commented that the Council's own comparison of source-separated and mixed material collection methodologies demonstrated that the latter [mixed, co-mingled] was more cost effective for Haringey when this issue was examined in detail in 2006.

1.2 One of the recommendations of the 2008 review related to the different types of collection methodologies as follows:

“The Council should look at the conclusions of the Welsh Review into co-mingled and source-separated collections, in terms of value for money, overall environmental impact, employment considerations and the quality of the recycling. If the conclusions were to lead the Council to consider the possibility of developing the recycling service to become source-separated in the future, this should be taken into account when purchasing new collection trucks”

1.3 The Welsh Review entitled “Survey of Funding of Municipal Waste Management Kerbside Collection” considered the performance of Welsh Local authorities in the context of expenditure, income and future targets. The overall aim was to assess the current funding and future need for waste management operations in Wales, in order to meet recycling, composting and landfill diversion targets.

1.4 At the first meeting Panel Members discussed the recommendation and the merits of extending this review to cover wider issues such as the environmental impact of the various collection methods, they suggested that the terms of reference should be expanded to incorporate such issues as CO2 emission; the environment; resources; quality and destination of materials. These concerns were acknowledged together with the fact that a major recycling scrutiny has already been undertaken and Urban Environment Directorate is yet to report on implementing the recommendations contained therein. The Chair of Overview and Scrutiny Committee and the Chair of the Review Panel concurred that this review should remain a short focussed research exercise. Panel Members were also of the view that the Welsh Review had little relevance to Haringey and that a more appropriate comparison should be considered focussing on the merits of the two collection methods. The following terms of reference were agreed:

### **1.5 Terms of reference**

“To consider the overall impact of recycling by co-mingled and source separate collection methods to include resources issues, quality of recycling and value for money”

## 2.0 THE REVIEW

2.1 The Panel learned that the Recycling Strategy for Haringey was approved by the Cabinet in January 2007. The Strategy outlined the objectives and key actions for improving Haringey's performance on recycling and waste reduction. In addition an appraisal of the future of the service was also carried out and the following three options were considered:

	<b>Options</b>	<b>Financial implications</b>
1	A 'do nothing approach where existing services would remain unchanged	£1,252,000 revenue and £0 capital expenditure
2	Wider range of materials collected through the co-mingled system	£1,277,000 revenue and £1,485,000 capital
3	Wider range of materials collected through source separated system	£,255,000 revenue and £3,030,000 capital

2.2 The <sup>1</sup>Cabinet elected to pursue Option 2, namely to employ a borough-wide co-mingled collection system for recycling. This would apply to kerbside services as well as facilities for flats and estates.

2.3 Urban Environment Directorate outlined the advantages of co-mingled collection to all kerbside properties as follows:

- The service would offer the best value for money overall
- The service received by all residents would be equitable
- A wider range of materials would be captured.
- The Council would be in a better position to meet locally set recycling targets and the targets set out by the North London Joint Waste Strategy.
- The service could be easily specified within the new Integrated Waste Management and Transport contract.
- Communications with residents would be much easier due to the consistent service levels across the borough and
- The Service can be adapted to use wheelie bins.

2.4 It was anticipated that this option would provide the potential for achieving a recycling rate of between 28% and 30%.

2.5 Urban Environment Directorate made a comparison between the three options in terms of the environmental impact CO2 emissions for each of the collection services. The table below shows the estimated level of CO2 emissions created by all three options.

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<sup>1</sup> Recycling Strategy Report 23 Jan 2007

	Option 1	Option 2	Option 3
Estimated CO2 emissions	526 tonnes per annum	796 tonnes per annum	995 tonnes per annum

2.6 The two options capable of delivering higher rates of recycling, CO2 emissions under option 2 are 25% lower than that for option 3. This is due to the higher number of vehicles deployed to provide the hand sorted service. The number of vehicles that would be used under option 3 would also increase the level of congestion in Haringey.



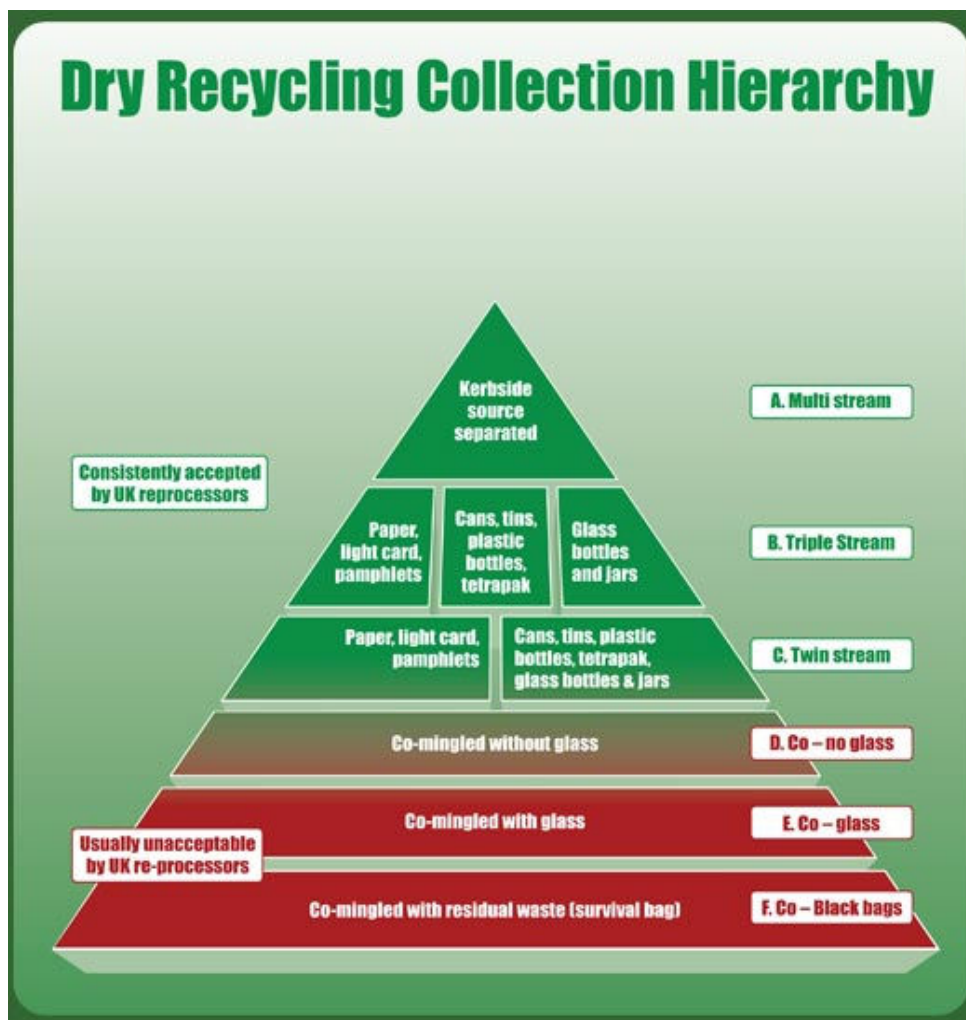
The number and types of collection vehicles used would have an impact on CO2 emissions.

2.7 Panel Members queried the wisdom of undertaking a review at this time when the Cabinet had already made the decision to implement a co-mingled collection system in Haringey. They therefore raised the following issues:

- The timescale for the current review.
- The timescale for awarding the new Waste Management contract [originally scheduled for Dec 09].
- Proposals to incorporate the recommendations from the Recycling review into the Recycling Strategy
- How does the review relate to the Recycling Strategy?

### 3.0 SOURCE SEPERATED COLLECTION METHOD

- 3.1 A representative from The Campaign for Real Recycling was invited to address the Panel. Members heard that Real Recycling wants central government and local authorities to act urgently to improve the quality of materials collected for recycling in the UK. Their main concern is that collection systems that gather a range of different materials in one bag or bin could permanently undermine the environmental and financial benefits of recycling. Their primary aim is to influence local authority policy and practice, and build consensus within the UK of the economic and environmental importance of high quality separated collections.
- 3.2 According to Real Recycling, the recyclate collection <sup>2</sup>hierarchy [demonstrated below] focuses on the most commonly used collection systems currently practiced in the UK. The Hierarchy provides guidance on what the materials re-processing industries consider the best [and worse] collection systems currently being used. It also focuses on doorstep collection services. Bring sites have consistently provided very good quality materials but from a local authority perspective can only provide part of the recycling solution.



Dry recyclate collection hierarchy

<sup>2</sup> Produced by The Campaign for Real Recycling

- 3.3 This means that residents have one or more separate boxes for different 'dry' recyclable materials and another for 'wet' materials such as kitchen waste. These materials are collected in a way that maintains this separation, usually by placing the materials into different containers on the collection vehicle. UK reprocessors of paper and glass, clothes and aluminium prefer [and often pay higher price for] source separated materials. The improved price for materials collected can be used to offset collection costs.
- 3.4 According to Real Recycling during 2006-2007 local authorities reported a total of 89,000 tonnes collected for recycling from household sources as rejected for disposal at a Materials Recycling Facility [MRF] and a further 32,000 tonnes that were rejected at the gate of a recycling processor. These statistics are based on data reported by local authorities to Waste Dataflow. Expressed as a percentage, of the 1.3 million tonnes of municipal waste sent to sorting facilities, this means that over 9% of materials set out for recycling doesn't actually get recycled – however, it does not specify how much of these materials are recyclable but which are collected anyway.

### **3.5 Advantages of source separation**

- Increased revenue from the sale of materials from higher quality materials.
- Reduced carbon footprint – recycling into like for like materials within the UK or Europe reduces greenhouse gas emissions.
- More flexible additional markets such as batteries, textiles, etc can easily be added to the range collected.
- Better public relations - people have greater confidence that source separated waste will be recycled efficiently.

## 4.0 CO-MINGLED COLLECTION METHOD

- 4.1 Critics of co-mingled collections claim that co-mingled materials tend to be more contaminated, and that inefficient Materials Recycling Facility [MRF] processing leads to lower output quality and therefore higher rejection rates by reprocessors.
- 4.2 In order to make a comparison between co-mingled and source separated collection methods, the Panel invited the London Representative [who is employed by Westminster City Council] of Local Authority Recycling Advisory Committee, [LARAC] for a discussion and learned that as an officer-led organization within local government, LARAC's main purpose is to provide information and networking service and develop and disseminate good practice among its members. They are also advocates - making the voice of waste practitioners heard and ensuring that its views are taken into account when decisions are taken, regulations made and laws passed by the Government.
- 4.3 This role has become more important as the rate of environmental policy making has increased and Europe has become more prominent. It has become increasingly obvious that, even though trust is placed in the professional judgment and good common sense of leading Executive Committee Members, common and understood positions on matters of waste policy are needed to ensure that LARAC's message continues to be consistent, environmentally sound and representative of its membership



Types of materials likely to be seen in a co-mingled collection bag

- 4.4 It was stressed that as far as recycling is concerned, the most important issues are quality and fitness of purpose. Although LARAC does not seek to prescribe what systems or processes should be used to achieve quality, LARAC will work with its members, contractors, recyclers and Waste & Resources Action Programme [WRAP] to develop appropriate specifications and promote good practice. It is LARAC's view that there are no prescribed methods of collection and a local solution was necessary to suit local needs - Whatever fits locally.
- 4.5 It was also stated that co-mingled collection method was likely to be the most convenient for areas with a high percentage of flats in addition to also providing bring banks sites. For example. Westminster has 87% high rise plus 200 bring bank systems this is a flexible method created to meet resident's needs.



- 4.6 It was acknowledged that the mix of collection and sorting methods across all authorities will always be necessary to some extent due to the rural/suburban split across authorities. Co-mingling was better suited to the complexity of people living in built-up cities whereas kerbside collection would best suit those living in more leafy suburbs with enough space for separating and sorting recyclables.
- 4.7 Co-mingled collections are simpler for recyclers to use, encourage higher participation, are easier and safer to operate, produce greater recyclable recovery rates, and are as cost-effective as alternative methods. Used in the right place and in the right way, at home or in the workplace, co-mingling could dramatically improve the country's recycling record.
- 4.8 Co-mingled collections can be single stream collection (all in one wheeled bin) or dual stream, where paper is usually collected separately from containers. If recycling is simple and takes up no more space than traditional waste disposal containers, then it's well received.
- 4.9 Whatever the collection method, all recyclables ultimately go to a materials recycling facility (MRF), where they are separated and cleaned for sale for reprocessing and remanufacture by the paper, plastics, metal and glass industries.

#### 4.10 **Co-Mingled Collection Benefits Identified**

- Single container.
- High recovery rate
- Flexibility of materials that can be recovered
- Standard collection vehicle
- Lower collection costs and faster pick up times.

#### 4.11 **North London Waste Authority**

- 4.12 Within the North London Waste Authority there are a range of dry recycling collection systems operating in North London. For example Barnet, Hackney and Waltham Forest provide a source separated collection service, whereby a range of dry recyclables are collected from householders and then the individual materials are sorted into different compartments on the collection vehicle at the kerbside. Materials are then bulked up or directly transferred to the reprocessors. It should be noted that Hackney offers a co-mingled collection service for estates and Waltham Forest are in the process of trailing co-mingled collection service in parts of the borough.
- 4.13 The other four boroughs Camden, Enfield, Haringey and Islington provide a co-mingled service whereby the materials collected from householders are mixed together and then taken to a materials recovery for sorting into the constituent materials and from there are sent to reprocessors.
- 4.14 The third variant is for a three stream recycling collection whereby all the co-mingled materials, except for paper, are collected together as and then taken to a MRF for sorting. The paper is separated and then taken direct via bulking facilities to the reprocessors, with biodegradable waste being the third stream.

## **5.0 RECYCLING COLLECTIONS IN HARINGEY**

- 5.1 Officers informed the Panel that Haringey currently provides a complete waste collection service and a comprehensive weekly recycling service for residents. The council faces challenging recycling targets – including 45% by 2015 – which it is working towards through introduction of more recycling services, extra communications and waste reduction projects.
- 5.2 Haringey's mixed recycling collection boxes and containers can be used to recycle paper, cardboard, plastic bottles, tins and cans, and glass bottles and jars. All are put together in the same container.
- 5.3 Over 65,000 properties receive a regular collection of food and green garden waste on a weekly basis as part of the mixed recycling service, which will be extended to remaining 'kerbside' households during 2009.
- 5.4 The recycling bank network in Haringey has been converted to co-mingled facilities. Panel Members suggested that Haringey should consider retaining separate paper and glass banks in some parts of the borough to preserve the quality of the recycling and achieve a better market value. The Panel also suggested that the council should consider options other than co-mingled.
- 5.5 Officers stated that the recycling banks are now part of an expanded network of recycling facilities for estates, blocks of flats and schools. It is not cost-effective to operate these separately, so the recycling banks have been converted to co-mingled so that the same vehicles can serve all sites. This has also allowed plastic bottles and cardboard to be collected, improving the service for residents living in flats above shops.
- 5.6 The Panel also learned that Haringey would continue to operate its existing recycling fleet for the next few years. However, a four-stream collection system could be looked at when the new waste contract is in place, as the refuse fleet could be replaced with split-bodied vehicles.

## **5.7 Transport And Waste Management Contract**

- 5.8 Haringey's procurement work programme aims to optimise the way in which waste disposal authority and waste collection authority services are structured, so that the best overall solution in terms of collection and disposal and what is best for council tax payers, is selected. This is in relation to net costs as well as net environmental impact. Common modelling work is currently underway to assist this assessment. The Panel felt that there was a need to consider recycling in the wider context for the future, including ensuring that reprocessors are designed to fit collection systems

## **6.0 THE CAMDEN REPORT - CARBON FOOTPRINT.**

- 6.1 Carbon footprint depends on the number of vehicles needed, the fuel used, and the location of bulking facilities and end processors. Recycling into like for like materials within the UK or Europe reduces the greenhouse gas emissions.
- 6.2 The Panel learned that the London Borough of Camden commissioned an energy audit of their current [2006/7] co-mingled weekly collection service for dry recyclables that are transported for sorting to a materials recycling facility, with their previous [2005/6] system of kerbside sorting on the collection vehicles.
- 6.3 The energy audit compared the overall energy, CO2 footprint and the efficiency of collection as measured by distance covered, against the functional unit of tonne of dry recyclable collected.
- 6.4 The <sup>3</sup>audit also compared commingled and separated kerbside collections - and recommended that rather than collecting co-mingled materials paper and card should be collected separately from glass, tins and cans and plastic bottles.
- 6.5 The audit gave Camden a detailed picture of how the Council could improve service. Camden's residents are recycling more of their waste and the Council is committed to providing the service that residents deserve such as improving the quality of recyclables by separating out paper from cardboard.
- 6.6 The WRAP report 'The Energy Audit of Kerbside Recycling Services' which concluded that the carbon footprint of the collection service within the borough [Camden] was 32% smaller for the co-mingled service; however the advantage is reduced to 19% when the transport to the MRF is added. The carbon footprint of the co-mingled collection system, transfer and MRF is 77% greater than for the kerbside sorted waste collection.
- 6.7 It was further noted that Camden have now taken the decision to introduce a 'four stream' system whereby residents will get a collection of:
- Residual waste/refuse
  - Commingled [tins/cans, glass, plastic bottles]
  - Separate paper/cardboard collections
  - Organic waste [food and garden waste]
- 6.8 Camden residents will have an improved recycling service with anew separate paper and cardboard pick-up and a borough wide food and green waste collection.
- 6.9 The new waste collection agreement - to be rolled out from April 2010 - was approved by Camden Council's Executive on 25 February.

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<sup>3</sup> Camden – go ahead for improved recycling service March 09

6.10 The improved service includes:

- Twice weekly domestic refuse collection.
- Weekly mixed paper/cardboard and mixed recycling doorstep collection.
- Weekly borough-wide doorstep food/green waste collection.
- Individual colour glass collections from recycling bring sites.
- Weekly borough-wide communal food waste/green waste collections from housing estates and mansion blocks.
- More schools recycling.

6.11 The changes are a result of when Camden became one of the first councils nationally to release a comprehensive report on the environmental effects of the way it collects materials for recycling at the kerbside.

"We are absolutely committed to tackling climate change and improving the environment for future generations. Getting the right solution for our recycling service means we can target our resources where they will have the most impact in meeting this important aim." –

Camden's Executive Member for Environment

## 7.0 VISIT TO BYWATERS WASTE MANAGEMENT AND RECYCLING SERVICES

- 7.1 Members of the Panel visited the recycling facilities at Bywaters in East London and saw first hand the operation of the new Materials Recycling Facility [MRF]. The MRF has been designed to process a wide range of co-mingled office and commercial dry recyclables. Bywater has developed recycling and waste management solutions for a wide range of business sectors. They own and operate two sites, a 9.2 acre Recycling and Recovery Centre in Bow where they have invested £7 million installing a cutting-edge MRF, the largest undercover dry recyclable MRF in London with a capacity of 250,000 tonnes per annum.
- 7.2 The MRF is mainly automated to maximize efficiency and recovery rates and uses state of the art technology to recover a different material at every point of the process, generating fifteen different material streams for recycling. It is Bywater's aim to become the leading supplier of recycling and waste management services to London and the South East by making recycling easy. Bywaters state of the art MRF sort co-mingled material to the highest specifications and therefore had continuous markets for the high grade material produced.
- 7.3 John Glover, Bywaters Managing Director says: "In the current difficult market conditions Bywaters continues to produce high quality recovered recycled products, products that remain in continuous demand in the UK, Europe and Asia. More than 95% of all material delivered to Bywaters at Bow is recycled and therefore diverted away from landfill".



Recycling at Bywaters

## 8.0 OTHER ISSUES CONSIDERED

### Plastics

- 8.1 The report 'Local Authority Plastics Collection Survey 2008' was produced by Valpak Consulting in conjunction with Recoup (Recycling of Used Plastics) following a commission from WRAP, and is the fourteenth such survey to be produced. Approximately 182,000 tonnes of plastic bottles were collected in the UK in 2007, which is equivalent to 4,525 million plastic bottles, according to WRAP. This means that around 35% of bottles in the household waste stream are now being collected for recycling compared to only 3% in 2001.



- 8.2 The 2007<sup>4</sup> tonnage was also a hefty 68% up on the 2006 total of approximately 108,000 tonnes. Bring systems still play an important role with 19% of tonnages coming from that source in 2007. Tonnages for bring sites were up by just over 9,000 tonnes when compared to the previous survey covering 2006.

### **Underground recycling systems and other Innovations.**

- 8.3 The panel discussed underground recycling systems, used in some authorities. Some systems were installed at high-rise/high density multi-occupancy council flats to encourage local residents to separate at source, certain items from their general household refuse, into the recycling stream and away from Landfill.
- 8.4 For example in Stockton the systems will be used for the safe and secure storage of paper, glass, tins, cans and plastics leading to increased recycling statistics on behalf of the local Borough. By storing the containers underground, Service Stockton aim to reduce local noise when glass items are deposited, and provide a more discreet and aesthetically pleasing recycling storage solution to the local community at the same time, remove the containers and their contents from potential vandalism to a more secure location. Waist high surface level receptors are shaped for the appropriate recycling materials being discarded and which will prevent general refuse from being deposited, making the systems more user friendly to the elderly and disabled persons.
- 8.5 The Panel felt that new major building developments in Haringey give the Council the perfect opportunity to incorporate Section 106 planning agreement to build-in underground facilities or other innovations.

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<sup>4</sup> WRAP survey on collection of plastics by local authorities

## **9.0 FINANCIAL COMMENTS**

- 9.1 Recommendations agreed by the Overview and Scrutiny Committee will be considered by the Cabinet. Some of the recommendations will have financial implications for the Council, possibly involving significant additional resources. These will need to be costed so that additional funding requirements are clearly identified either from existing approved budgets or from external bidding opportunities where appropriate, or through the Council's business and budget planning framework.
- 9.2 Recommendations will also have implications for the development of a new waste management contract. The Urban Environment Directorate will need to ensure it obtains best value for the Council from any new arrangements eventually agreed for delivering waste management services.

## **10.0 CONCLUSIONS**

- 10.1 The debate about which of the two methods is better is ongoing. Haringey provide co-mingled services where the materials are collected from households and then taken to a Materials Recovery Facility [MRF] for sorting into constituent materials and from there are sent to the reprocessors. Some authorities operate the two systems side by side. Hackney has been running co-mingled collections systems on housing estates where there are communal collection containers and then source-separated collections for individual low rise properties.
- 10.2 The aim is to make recycling easier for the average householder. The view is that co-mingled collections [where all dry recyclables are placed by householders into just one bag ready for collection] are the way forward, as oppose to source separated collections [where householders are expected to separate their recycling at home for refuse workers, working "kerbside" to then put these sorted materials by hand into separate containers on their vehicles, which some believe are less efficient, both environmentally and economically. The traditional argument against co-mingled is that it gets more contaminated than kerbside. Due to advances in technology the situation has improved. Nine of the ten best performing local authorities, when it comes to recycling rates, use co-mingled collection methods and reporting up to 20% increase in recycling rates.
- 10.3 One of the main issues regarding the co-mingled verses source separated collections debate is the level of contamination in co-mingled collections and the reject rates from the MRFs as well as the quality of the recyclate from the MRFs and the markets for the material resulting. Some UK reprocessors are reluctant to take material that has been collected from a co-mingled service. Levels of contamination are higher for co-mingled collections compared to source separated services. However there is a need to future proof design of MRFs to take account of advancement in technology.

10.4 The review was considered in line with the Council's Community Strategy - Environmentally Sustainable Future and the Council's aim to tackle climate change and manage its environmental resources more effectively, increase levels of recycling, improve and promote sustainable transport and create sustainable and energy efficient homes and buildings and to reduce the borough's environmental footprint.

## **11.0 RECOMMENDATIONS**

1. The Panel recommends that the council explores the option of collecting paper and glass separately from one another on its recycling services.
2. The Panel recommends that the council should consider retaining the paper and glass banks in Haringey.
3. The Panel recommends that the council commission a report on co-mingled and source separation collection methods as part of the procurement process for the new Waste Services Contract. The report should consider the costs and benefits, environmental impacts and carbon dioxide emissions of both collection systems.
4. The Panel recommends that a report is produced on the impact of the North London Waste Authority's procurement process on Haringey, with regard to co-mingled and source separated collection methods. The report should include analysis of the impact of a crash in the recycle markets owing to the global economic crisis.



Membership of the Review Panel

Councillor Gina Adamou - Chair  
 Councillor Ray Dodds  
 Councillor Lyn Weber  
 Councillor Laura Edge

The Panel wish to thank all individuals who participated in the review.

<b>Participants in the Review</b>	
Cllr Haley	Cabinet Member – Urban Environment
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Jon Hastings	Communications & Engagement Manager Environmental Resources Team
Phillip Robson,	London Representative of Local Authority Recycling Advisory Committee , [LARAC]
Andy Moore	Campaign Co-ordinator, Real Recycling
Cllr Sheik Thompson	Haringey Council
Sarah Mitchell	Green Party