

From Waste to Resource

A Sustainable Strategy for 2019

A report from Overview & Scrutiny

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Preface

By Cllr Victoria Quinn,
Sustainability O&S Committee

The way in which Birmingham manages its municipal waste is a visible constant challenge in itself.

As the 25-year contract with the current contractor comes to an end in 2019, this sets a new set of opportunities for the City to drive economic growth and environmental sustainability. It has never been more severe in our history.

This report has aimed to provide a clear context in order that the Council can make those decisions, but rather than a simple disposal ahead of its contract, it is a sustainable, innovative and cost-effective solution in the contexts and set against which it must also be ever more challenging.

Already within the evidence gathered from the nationally and environmentally focused committee members and the public, the two year inquiry process has identified the changes, providing a consistent and clear path forward.

	Recommendation	Responsibility	Completion Date
R04	<p>That a draft procurement plan to achieve the goals of the Waste Strategy is brought to the committee for discussion. This to include the following:</p> <ul style="list-style-type: none"> How income / financial efficiency will be maximised from the new approach; How flexibility in future contractual arrangements will be achieved; A statement on the role the Tyseley Energy from Waste (EfW) Plant will play and how opportunities to invest in Tyseley to improve both economic and environmental performance will be fully explored; How the City Council will be in a position to react to and employ new technologies in waste and recycling processing. 	Cabinet Member, Green,	

	Recommendation	Responsibility	Completion Date
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Glossary

AD	Anaerobic Digestion
BDP	Birmingham Development Plan
CD&E	Construction, Demolition and Excavation Waste
CHP	Combined Heat and Power
C&I	Commercial and Industrial
DCLG	Department for Communities and Local Government
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
EDOC	Electronic Duty of Care
EBRI	European Bioenergy Research Institute
EfW	Energy from Waste
ERDF	European Regional Development Fund
ERF	Energy Recovery Facility
HDPE	High-density polyethylene plastic
HRC	Household Recycling Centre
LGA	Local Government Association
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
ONS	Office for National Statistics
PET	Polyethylene terephthalate plastic
PCB/PCT	Polychlorinated Biphenyl/Polychlorinated Terphenyls
PFA	Pulverised Fuel Ash
PFI	Private Finance Initiative
RFID	Radio Frequency Identification
SLAs	Service Level Agreements
SRF	Solid Recovered Fuel
VESB	Veolia Environmental Services Birmingham

WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WEEE	Waste Electrical and Electronic Equipment
WFD	Waste Framework Directive
WRAP	Waste & Resources Action Programme
WRATE	Waste and Resources Assessment Tool for the Environment

Definitions of Waste

Municipal Waste

The council has the ambition to be the greenest city in the UK and will therefore need to consider the options not simply as a process for the replacement of the existing contract, but a commissioning exercise on how it proposes to deal with the management and treatment of waste as a whole in the future. This could lead to alternative treatment methods for waste.”

- 1.1.6 The purpose of this inquiry was therefore to explore all the available options for waste to resource; capturing and presenting these options alongside collective views on key principles and requirements for waste management, so that the Executive can appraise these in making appropriate decisions in the coming years.

1.2 Three Important Drivers of Policy

- 1.2.1 In undertaking this inquiry, the Committee did not start with a blank sheet of paper, but paid particular attention to external constraints, and the consequences and opportunities of evolving regulatory frameworks. These constraints and pressures are explored throughout the report, but it is worth highlighting three key drivers in waste management:

1. The Financial Context

Recognising that at the forefront of all considerations of new policies and strategies has to be the reality of the scale and severity of cuts to local authority controllable budgets over the coming years (including the period during which key decisions about the future waste strategy must be determined). The extent and nature of this challenge is explored in more depth in Chapter 2; however the impact and significance of the challenge runs throughout this report, and each option has been considered through this budgetary lens.

2. The Waste Hierarchy

Recognising that the options for disposing of waste are set out within the Waste Hierarchy (see Figure 1 below), which is “both a guide to sustainable waste management and a legal requirement of the revised EU Waste Framework Directive, enshrined in law through the Waste (England and Wales) Regulations 2011.”² Local authorities are encouraged to dispose of waste as high up the hierarchy as it is practically possible. Government guidance does however make clear that the waste hierarchy is not inflexible. Where there is the potential to evidence more optimal environmental outcomes, it is possible to depart from the hierarchy. Birmingham’s performance against the hierarchy is considered in Chapter 3 (section 3.4).

² Government Review of Waste Policy in England 2011

3. The Proximity Principle

Recognising that within the revised Waste Framework Directive (WFD), there is the principle of

most of its waste from landfill – will revert to City Council control, with potentially around 15 years of operating life remaining after 2019 (subject to a condition survey, not yet carried out).

- 1.3.3 There are many opportunities but the Committee also recognises the risks: the main lesson from the current contract is that any approach should be “future proof” and flexible – capable of not just absorbing change, but positively encouraging better, more efficient and sustainable approaches to waste disposal. It is a complex and fast moving area – in terms of legislation (some of it derived from European directives) which can restrict local authorities in responding to local imperatives or trends, or imposes new challenges upon local authorities in terms of waste collection methods, sustainability targets or funding opportunities. There are new technologies being developed that offer different, possibly more local, possibly cheaper, ways of disposing of waste – some being developed here in Birmingham. The numbers of households and volumes of waste involved will also change, as will householder attitudes to this waste – it is imperative to get this analysis right.

1.4 Conducting the Inquiry

- 1.4.1 The Committee invited people and organisations from across the city and beyond to send us their views through a public call for evidence, with public committee meetings held between November 2012 and September 2013. The key lines of enquiry discussed were:

What are the options for Birmingham in respect of waste/recyclate collection and disposal following the end of the Veolia waste disposal contract in 2019?

What are the environmental, planning, contractual, financial and social inclusion implications of these options?

What does Birmingham need to do to ensure our waste is a resource for the city and gains the most economic value?

What capacity is there for harnessing local talent, business and engagement in this process?

What can we learn from elsewhere in the UK, Europe and internationally in terms of waste to resource, sustainability and recyclate opportunities?

- 1.4.2 Throughout this year long evidence gathering period, the context of the inquiry evolved and the Committee has strived to capture changes and issues that have arisen.

1.5 The Report

- 1.5.1 This report therefore has brought together all of the different options to consider in the development of a future waste strategy, in terms of how realistic, cost-effective and beneficial to the city they would be. Core to this has been the need to consider the City Council’s role in championing “public interest” and social value. The potential is there for the city to catalyse improved individual responsibility for waste reduction, re-use and re-cycling whilst considering

potential benefits that could flow from this in terms of public realm, cheaper energy and job creation.

1.5.2 Chapter 2 sets out the challenges facing the city. Chapter 3 summarises where Birmingham is now with waste collection and disposal methodologies. Chapters 4 and 5 set out what the alternative options might be and what would be needed to make these suggested options possible, viable and sustainable. Chapter 6 sets out the conclusions and recommendations.

1.5.3

2 A Changing Landscape: The Challenges in Waste Management

2.1 Overview

2.1.1 The main area of challenge in undertaking this inquiry were the timescales involved when considering Birmingham's waste disposal need

2.2.7 These budgets for waste sit within the Place Directorate of the City Council, alongside those for parks and open spaces, highways, environmental health and local services. Waste disposal budgets are held centrally within the directorate (first and second columns in Figure 2); collection budgets are devolved down to the ten District Committees (third column). Currently these are held in Service Level Agreements (SLA) with the Fleet and Waste Management service. As devolved local governance by districts is further embedded between now and 2019 and beyond, the basis of these SLAs is likely to come under review. The effect of this will be to give each district greater control over the levels of service they provide. The challenges faced by District Committees will be to marry the local need with wider incentives and opportunities, but also taking into account reduced budgets across all services that do not respect district boundaries.

2.2.8 This inquiry therefore has to be “reality checked” in terms of three key financial considerations:

- The costs of operating the service;

- The opportunities to maximise income and get best value;

- The likely lack of capital available for any new infrastructure, and the sustainability and lifespan of any future investment (beyond 2015/16, after the completion of the investment of £63m in vehicles, bins and depots under the Wheeled Bin Programme).

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2.2.11 Since 2010/11 the City Council has responded to these challenges in the following ways;

Renegotiation of the waste disposal contract;

Modification of the terms and conditions of fleet and waste management operatives;

Introducing charges for bulky waste and green waste collections;

Removal of the provision of free black sacks;

Piloting and then introducing a wheelie bin collection.

2.2.12 In terms of waste collection costs, the Committee has heard that financial analysis indicates that the wheelie bin service future operating cost model is deliverable within the current approved cash limits of the City Council. However, a question

2.2.18 As a result, by 2019 waste treatment costs will comprise operating and maintenance costs net of revenue from the sale of electricity generated from the plant which should significantly reduce costs compared with current levels. This could give the Council flexibility to consider options which maximise the value of generated electricity, for example displacing existing energy costs or selling to the grid. The City Council could also benefit from higher electricity prices although this would be subject to the consequences of fluctuating prices.¹⁰

Maximising Income

2.2.19 There is also an opportunity ahead of 2019 with regards to realising the economic, as well as the environmental and social, values of our waste. Under the current waste contract, Veolia own the municipal waste and so take the costs and retain the income from recycle (with the main exception of paper and card which goes to the paper mill in Nechells run by Smurfit Kappa).

2.2.20 With the expiry of the current contract in January 2019, the City Council will regain control of the municipal waste and the costs and incomes associated with it. This therefore provides an opportunity for the City Council to further maximise income from waste. The caveat to this however is that with the potential to maximise income returns comes the exposure to the risk of unpredictable market forces and susceptibility to greater costs as a result.

Capacity at Tyseley EfW Plant

2.2.21 The Tyseley EfW plant is capable of processing 350,000 tonnes per annum of waste. With opportunities to increase recycle volumes, there is the potential for decreased amounts of residual waste to be sent to Tyseley EfW plant, and this may open opportunities to sell capacity at the plant and increase income.

2.2.22 In addition, a third waste stream could be installed at Tyseley and this can be achieved within the current site boundary. The third line would process around an additional 175,000 tonnes per year – and some of this capacity could be sold to other local authorities or other waste disposal markets. If this third stream is installed as a Combined Heat and Power (CHP) plant, then additional revenues could be generated from the export of heat as and when a suitable market develops. CHP is explored further in Chapter 4.

2.2.23 In 2005 VESB commissioned and built a new 5,000tonne per annum secure waste disposal facility for clinical waste. Waste comes to the site in enclosed receptacles and is controlled under VESB's Integrated Pollution Control licence. The gases produced by the process are fed into the main EfW plant system and therefore contribute to the energy recovery achieved on site.¹¹

Recyclates

2.2.24 There are opportunities to maximise income from recycle. In the Local Government Association (LGA) report *Wealth from Waste*, evidence from leading local authorities, key industry players, charities and Government agencies provided a detailed analysis and evaluation of the waste sector. It identified the opportunities, risks and challenges for local government and key requirements from Government, setting out ways in which local authorities can contribute to driving up the quality of recycle and increasing recycling volumes, and we return to some of these ideas below. Whilst it should be remembered that not all the LGA suggestions will be applicable in Birmingham, it is nevertheless worth noting that, in the view of the LGA, there is potential to obtain further value:

“Local authorities presently obtain a little over a quarter - approximately 28 per cent - of the total financial value of materials they collect, owing to how the supply chain has worked to date. An industry-wide discussion on how councils could be supported to deliver what the supply chain needs is timely and economically beneficial.

If councils obtained a greater share of revenue, for example by an increase to 40 per cent, to reflect the pivotal role that they and their residents play in increasing recycling rates, then additional revenue of over £820 million could be received by 2019/20.”¹²

2.2.25 Currently, recycling income is maximised through increasing volumes – particularly with the introduction of wheelie bins, which (the pilots show) could increase the amount of recycle material collected. However, exploration of how the City Council can obtain a greater share of revenue should play a part in any future contract negotiations.

Lifespan, Sustainability and Funding of Infrastructure

2.2.26 It is understandable that some may assume that a starting premise for a new waste to resource approach would be to look to new infrastructure, to give the city state of the art facilities with leading environmental performance and greater flexibility.

2.2.27 Indeed, there may be many advantages in this (see Chapter 4) – assuming that it is recognised that any waste infrastructure must be able to adapt to long term change and assist to drive waste up the hierarchy, not constrain it, particularly given the huge investment required. The use of new technologies also has the potential to deal with industrial and commercial waste, maximising their value.

¹² Wealth from waste: The LGA local waste review, Local Government Association, June 2013

2.2.28 The Waste Capacity Study (2010)¹³ identified that the city lacks recycling capacity/facilities. It stated that there is a shortage of Material Recycling Facilities (MRFs) within Birmingham, and over 27,000 tonnes of waste is being exported cross boundary to facilities outside Birmingham. The draft Birmingham Development Plan (see section 2.3.18) includes the statement that:

The expansion of existing or the development of new waste management facilities will be supported, providing that proposals satisfy the locational criteria set out in Policy TP15. Opportunities to improve the environmental performance of existing facilities will be explored.

2.2.29 However, again the financial realities for local government across the country mean that the availability of investment for new facilities is extremely restricted. It seems highly unlikely that Birmingham will receive extra investment from Government for building new waste facilities, as has happened with other local authorities in the past and in a different financial context. Moreover, the Department for Environment, Food and Rural Affairs (DEFRA) projections indicate that there will be sufficient residual waste treatment capacity in the country in 2020 to enable the UK to meet its EU landfill targets without additional measures being taken.¹⁴ The Government has no current plans to invest in waste projects.

2.2.30 It was for this reason – the belief that there is already sufficient residual waste treatment capacity in the country to meet EU targets – that the Government withdrew Private Finance Initiative (PFI) credits from some waste projects.

2.2.31 This included support for the proposed £250m Allerton Waste Recovery Park near Knaresborough and a £170m facility planned for Bradford in February. The four authorities behind the schemes, North Yorkshire, City of York, Bradford and Calderdale, considered challenging the decision but decided against doing so in January 2014.¹⁵ In addition, funding (£169 m) for a waste incinerator near King's Lynn was withdrawn from Norfolk County Council in October 2013. The scheme was finally terminated in April 2014 at an estimated cost of £30.26m.¹⁶

2.2.32 These examples serve to highlight the changed landscape with regard to Private Finance Initiative (PFI) for waste management infrastructure and presents additional financial challenges for local authorities in shouldering the risks of capital investments.

¹³ Waste Capacity Study 2010, Enviros Consulting Ltd for Birmingham City Council

¹⁴ Wealth from waste: The LGA local waste review, Local Government Association, June 2013

¹⁵ Yorkshire Post, 25th September 2013, <http://www.yorkshirepost.co.uk/news/main-topics/general-news/pulling-plug-on-two-incinerators-could-cost-10m-1-6081401>; <http://www.bbc.co.uk/news/uk-england-york-north-yorkshire-25777494>

¹⁶ <http://www.bbc.co.uk/news/uk-england-norfolk-24583756>; <http://www.bbc.co.uk/news/uk-england-norfolk-26925831>

2.2.33 As the LGA *Wealth from Waste* reports, the intention behind the withdrawal of this subsidy is to enable the market to develop infrastructure on a commercial basis creating a more sustainable industry. However they note:

“For the time being the change has left big waste infrastructure, including

2.3.9 The UK still sends around 49% of waste to landfill,

2.3.14 There are six key features of national policy:²²

1. The Waste Hierarchy (see Chapter 1);
2. Diversion of waste from landfill;
3. Hazardous Waste Disposal – with new waste laws governing how hazardous waste can be disposed of in England and Wales, including stipulations that larger amounts have to be disposed of in specially managed waste facilities, and prohibiting the disposal of hazardous liquid waste, batteries, whole and shredded tyres in landfills in the UK;
4. Increasing recycling – with national targets for the recycling of waste to meet European WFD requirements. The Government has stated that:

“Our current modelling indicates that we are on track to meet the revised Waste Framework Directive target to recycle 50 % of waste from households by 2020.” ²³

Crucially, this 50% target is a national one and will not be imposed on each local authority. However in order to meet national targets it is not unforeseeable that such targets for local authorities are introduced in the future.

5. Reduction of waste from the commercial sector – including new laws on producer responsibility, the Producer Responsibility Obligations (Packaging Waste) Regulations 2007, which require businesses to recover and recycle a certain amount of packaging. Further, they are required to design their products in such a way that encourages easy dismantling and recycling at the end of the life cycle. Producer responsibility laws also cover Waste Electrical and Electronic Equipment (WEEE– 2006) and End of Life Vehicles (2000);
6. Shared Responsibility – national policy operates on the basis of "shared responsibility." this equates to the premise that everyone generates some amount of waste, so everyone has a part to play in preventing further waste growth. All parts of society g a

To coordinate Birmingham's reduction of CO² emissions by 60% by 2027 from 1990 levels,

2.4.3 DEFRA's *Waste Management Plan for England* (2013)²⁷ sets out the current position in terms of waste generated in England and how those materials are managed.²⁸ The Plan identifies four types of waste:

Municipal waste – household waste and commercial waste similar to household waste;

Industrial (including agricultural) and commercial waste;

Construction and demolition waste;

Hazardous waste.

2.4.4

2.4.12 The Grounds Maintenance contract awarded in 2009 clarified that parks waste remains the property of the City Council. The Committee considered the issue of **parks waste** in some detail, both green waste and timber:

Green waste: comprises 3,000 to 4,000 tonnes per annum, and includes tree and shrub pruning, grass cuttings, leaves and old bedding plants. This is now transported to either Cofton or Bromford to be processed into a product that is used as a soil improver in the Council's parks and flower beds throughout the City. There is potential for this product to be sold commercially but it requires investment to do so (to meet external standards and gain certification);

Timber: sourced from both the city's highways contractor Amey or the non-highway providers
7er r

2.4.17 Businesses are expected to make their own arrangements for the collection, treatment and disposal of their waste (under the Environmental Protection Act 1990). This means that they must:

Ensure that a person or company that collects the waste is a registered waste carrier;

Have a Duty of Care Certificate (which must be retained for 2 years) containing the description of waste collected for disposal, how it is contained, quantity of waste and where the waste will finally be disposed of³¹;

If businesses 'self-dispose' of waste they must be able to prove they have done so lawfully.

Construction, Demolition and Excavation Waste (CD&E)

2.4.18 The construction, demolition and excavation sector generated 77.4 million tonnes of waste in 2010 (down from 81.4 million tonnes in 2008) and so is the largest contributing sector to the total waste generation.

2.4.19 In 2006/07 it was estimated that over 1.65 million tonnes of CD&E waste arose in Birmingham.³²

2.4.20 The Waste Management Plan reports that England and the UK are "already achieving an estimated 93% recovery rate of construction and demolition waste. This aligns with 2.4.18

Around 3.3 million tonnes of hazardous waste was generated in England in 2010;

3.9 million tonnes in 2011;

4 million tonnes in 2012.

2.4.22 This waste comes from six main sectors of industry: chemicals, oils, construction and demolition, waste and water treatment and general industry.

2.4.23

Birmingham has a population of 1,085,400 (2012 mid-year population estimate);

Since 2001 the population has increased by almost 100,000 and the Office for National Statistics (ONS) expect it to rise 85,800 to 1,160,100 between 2011 and 2021, an increase of 8%.³⁴

Collection

2.5.5 While the Council is committed to providing a weekly waste collection service, not least by its undertakings in the Weekly Waste Collection Scheme (see Chapter 3) to do so until December 2017, the national and local landscape by 2019 is unpredictable. Before that most householders in Birmingham will be using wheelie bins and the effects of this on arisings and recycling volumes are only predictions. National information on the frequency of collectio

3 Where We Are Now

3.1 Overview

3.1.1 This chapter outlines the arrangements for waste collection and disposal in Birmingham.

3.2 Responsibilities

Householders

3.2.1 Householders have a responsibility to ensure that household waste is properly disposed of (section 34(2A) of the Environmental Protection Act 1990).

Box 1: Statutory Duties: Waste Collection

Section 45 of the Environmental Protection Act 1990 provides that it is the duty of each Waste Collection

3.3 Waste Collection

Why Look at Collection Methods?

- 3.3.1 While this inquiry does not focus upon collection, it is vital that the challenges and opportunities of the collection service are factored into a future waste strategy as these will to some extent determine parameters for the period beyond 2019.
- 3.3.2 Collection methods are important because they influence both the volume and type of waste and recyclate collected. Frequency, capacity, separation and co-mingling are key to the interest of partners processing waste into resource, as was underlined in evidence to this Committee:

“The most important factor in our successful on-going partnership is the City Council’s ability to collect household papers separately from other recyclable material and deliver it direct to our mill. This means that the material is virtually uncontaminated, particularly by glass, which would cause enormous problems in our recycling process. We would strongly urge the City Council to continue separate kerbside collections of paper.” (Smurfit Kappa)

Waste and Recycling Collection in Birmingham - Kerbside

- 3.3.3 City Council plans to change from a black sack residual waste collection and container-based recyclate collection to a wheeled bin collection were backed and co-funded by a successful bid under the Department for Communities and Local Government’s (DCLG) Weekly Collection Support Scheme. This change was necessary for the city to be able to guarantee weekly residual waste collections for the next five years, for which Birmingham received £29.785m over three years.³⁶
- 3.3.4 This means that by 2019, all suitable households in Birmingham will have a kerbside wheelie bin collection for residual waste and recyclate (those deemed unsuitable properties for wheelie bin collection will remain on a sack collection). Green waste will also be collected in a wheelie bin on payment of a charge. Wheelie bins were introduced in two pilot wards of the city, with a phased roll-out across the rest of the city taking place during 2014 and 2015. Box 2 sets out the details.

³⁶ Cabinet Report of 16th September 2013

Box 2: Wheelie Bin Collection of Waste and Recycling in Birmingham

All properties are to be assessed against agreed criteria for their suitability to accommodate a wheelie bin collection service. Where a wheelie bin is deemed to be appropriate, the property will be issued with:

A 240 litre grey bin with blue lid containing a 55 litre insert pod for **recycling**. The bin is collected fortnightly. Households can request an additional bin for recycling:

The bin with the blue lid is for the disposal of **mixed materials (glass/cans/plastic bottles)**. The plastic collection recently expanded and now includes: Plastic bottles of all types; yoghurt pots, margarine tubs, ice cream tubs, plastic trays (e.g. from chocolate and biscuit boxes) that are not black in colour, trays from meat and fish, fruit and vegetable punnets, all bottle tops, lids and triggers, cream and custard pot, soup pots, instant noodle pots, tubs for dishwasher and laundry tablets (The following items are still not accepted: hard plastic items eg toys, washing-up bowls, tupperware lunchboxes etc; black plastic, plastic film or wrappers, plastic bags or black sacks, expanded polystyrene, food waste / general rubbish);

The pod is used for paper and card recycling.

A 180 litre wheelie bin (grey) for the disposal of **residual waste**. The bin is collected weekly. Larger sized residual waste wheelie bins will be available for larger households: households of six or more people can request a 240 litre residual waste wheelie bin; households of nine or more people may request a 360 litre residual waste wheelie bin. Residual waste not placed in the wheelie bin ("side waste") will not be collected except at Christmas and other similar

Waste and Recycling Collection in Birmingham - Other

Treatment and disposal of residual waste – mainly through the financing, operation and maintenance of the Tyseley EfW facility;

Marketing of the electricity generated at the Tyseley EfW plant;

Operation and maintenance of the council's five HRCs;

Operation and maintenance of the council's transfer stations (located at three of the HRCs);

Composting of green waste (*an amendment to the original contract*);

Processing and marketing of collected recyclable material (*an amendment to the original contract*);

Recycling of street sweepings (*an amendment to the original contract*);;

Miscellaneous other minor services.

- 3.4.2 After municipal waste is collected via the methods described in the previous section, it is taken to a waste transfer station or depot for bulking and transporting on to processing plants – these are owned and operated by Veolia. The vast majority of residual waste is transported to Tyseley EfW plant, where electricity is generated from incineration. Paper and card recyclate is transported directly to Smurfit Kappa's paper mill in Nechells where it is processed. Other recyclate is sent to a MRF near Wolverhampton for sorting and selling on.

How Birmingham Is Performing

- 3.4.3 The Waste Hierarchy, set out in Chapter 1, provides an effective measure against which to assess Birmingham's performance in regard to a waste to resource strategy.

Figure 5: Birmingham's Performance against the Waste Hierarchy 38

* Reuse and composting is included with

Waste Prevention

3.4.4 The concept of waste prevention focuses on generating less material likely to become waste, by

targets as a condition for funding: 27.3 tonnes in year one. These targets have been exceeded and for their first year trading (Feb 2013-Feb 2014), with 187 tonnes received, of which 57 tonnes have been re-used, 12 tonnes recycled, 19 tonnes disposed of and 99 tonnes remained on site.

Recycling

3.4.10 Recyclate is taken to waste transfer stations for bulking and onwards transportation to the relevant treatment/processing facility. Recyclate in Birmingham consists of three streams:

Paper and card – processed at the Smurfit Kappa paper mill in Nechells, which is a significant asset for the city in terms of contributing to local employment opportunities and underpinning the city's responsiveness to the proximity principle. The location of the plant, which celebrated its 150th anniversary in 2012, means that none of the paper collected for recycling travels more than 12 miles from collection point to processing, minimising the “carbon footprint” of paper recycling in Birmingham. In terms of local employment, there are 116 full time employees at the mill including four engineering apprentices at present (March 2014). Smurfit Kappa hope to start two new apprenticeships in September 2014. Additionally, the Birmingham collection depot employs 21 full time positions;

Mixed materials (glass, cans and plastic) – transported to Four Ashes Materials Recovery Facility, run by Veolia;

Garden waste – which goes to composting facilities near the city and is windrow composted on

- 3.4.12 The statistics on recycling performance in Birmingham up to 2012 provide useful indicative information on how Birmingham compares to other Core Cities and West Midlands Metropolitan Councils. Household waste arisings per head of population has fallen in Birmingham in 2009, when it was amongst the highest of all authorities, to being one of the lowest in 2012/13 (when only Manchester and Sheffield collected fewer kilograms of waste per head of population).
- 3.4.13 Whilst recycling rates within all large urban authorities tend to have lower than average recycling rates, Birmingham had the third lowest recycling rate amongst the core cities (with only Liverpool and Sheffield recycling a smaller proportion of their waste) and the lowest in the West Midlands Metropolitan region.
- 3.4.14 Please refer to Appendix 2 for further information on the performance and volumes of waste and recycling in the Districts and Wards.
- 3.4.15 Higher rates are undoubtedly achievable. Local authorities in Wales are now recycling more than it disposes of by other means – meeting the 2020 target seven years early. The European experience also shows that recycling high levels is achievable. Germany, Holland and Belgium all have around 60% recycling but also have 40% Energy Recovery Facility (ERF) treatment meaning landfill inputs are negligible. Sweden and Denmark recycle c.50% but also have 50% ERF treatment.
- 3.4.16 The European Environment Agency's 2013 report: *Managing Municipal Solid Waste (MSW) — a review of achievements in 32 European countries* key findings include:
- Five countries (Austria, Belgium, Germany, the Netherlands and Switzerland) have already reached the 50% recycling target.
 - Six countries (Ireland, Italy, Luxembourg, Slovenia, Sweden and UK) will achieve the 50% by 2020 if they can maintain the annual rate of increase in recycling that they recorded in 2001–2010.
- 3.4.17 The factors and initiatives for four of the top European countries that had already reached the 50% recycling target in 2010 are provided in Figure 7 below.

3.4.18 Understanding recycling performance in Birmingham is assisted by analysis of recycling

Other Recovery – Energy from Waste

3.4.25 The majority of residual waste collected in Birmingham goes to the Tyseley EfW Plant to be incinerated to generate electricity. The plant has an operating capacity of around 350,000 tonnes of waste per annum from which it generates about 25 mega-watts of electricity per annum. This is exported to the National Grid (providing the equivalent power for around 40,000 homes, which represents c.10% of Birmingham's housing stock). Veolia told us that:

“The environmental impacts of residual waste treatment are also important and it has been independently verified that Tyseley ERF saves 40,000 tonnes of carbon every year through avoiding landfill.”

3.4.26 The Tyseley EfW plant produces around 82,000 tonnes of bottom ash, the vast majority of which was re-processed at Castle Bromwich for road aggregate materials.⁴³ Tyseley EfW plant is located in Birmingham, thereby reducing the amount of transportation required (whereas currently the plastic, cans and glass recycling is transported to near Wolverhampton for sorting and then onto other destinations for treating and processing).

3.4.27 Tyseley dominates all discussion of waste disposal in Birmingham as the key element of Birmingham's waste disposal infrastructure. It is the reason for the low landfill rates the city currently enjoys. Moreover, the Tyseley facility reverts to City Council ownership with the expiry of the contract in 2019, potentially becoming an asset as it is expected to have a remaining lifespan of around 15 years (though this needs to be validated through a condition survey).

3.4.28 Furthermore, the Tyseley EfW plant contributes to the city's adherence to the proximity principle, as another local asset for waste to resource management. There is a reduction in transport costs and emissions, thus reducing the carbon footprint of Birmingham's waste. Tyseley also provides local employment (around 60 people at the Tyseley plant).

3.4.29 These benefits do not accrue only to the plant but to the area through the Tyseley Environmental Enterprise District (TEED – see Chapter 5). Veolia is also a significant local employer. Veolia employ close to 200 people as a business in Birmingham. They have a range of training and apprenticeship schemes currently running in the Group, and recruit a number of technical apprentices each year for a three year period to feed employment opportunities in the ERFs and other technical plants. They also employ 12 HRC apprentices in Birmingham – previously long term unemployed people and give them NVQ training over a three year period. Some of these are then recruited into full time jobs at the end of their apprenticeship and others are given assistance to find other employment. Veolia also has its own internal training facility (Veolia Campus in Staffordshire) where a significant amount of in house training is delivered direct to employees.

⁴³ Evidence from Fleet & Waste Management Service, November 2012; this site is threatened by the HS2 proposal for the new line to come through the site – Response to consultation on HS2 Formal Environmental Statement (Cabinet, 17th February 2014)

3.4.30 Whilst sitting relatively low in the waste hierarchy, it is worth underlining that the potential for heat capture and energy generation is widespread in European Member States with higher environmental performance than the UK (for example around 40% EfW in Germany, Holland and Belgium; up to 50% in Sweden and Denmark).

Landfill

3.4.31 The small percentage of Birmingham waste sent to landfill is managed by Veolia. Under the contract, Veolia makes its own landfill arrangements. At the time of writing, the following landfill sites were being used:

Linghall Landfill, Rugby;

4 The Options

4.1 Overview

4.1.1 This chapter considers the options for a future strategy, looking at:

What should be the focus of waste strategy post-2019?

What should be done with the infrastructure already in existence – the Tyseley issue;

What could the next phase of waste disposal and recycling operations look like?

What approach should be taken in terms of contracting with partners – commercial or otherwise?

4.2 A New Strategy for 2019

4.2.1 The opportunity afforded by the ending of the current waste disposal contract is that the city can reshape how waste is approached in the city. That means doing more than just refreshing the current Municipal Waste Strategy (due to expire in 2026 – see Chapter 3). A fresh debate is needed on the content and direction of the strategy, which pushes boundaries in order to accommodate future challenges when they can be planned for.

4.2.2 The evidence received from visiting Manchester's Waste Disposal Authority underlined this point. Before any contract negotiations started, Greater Manchester authorities agreed a strategy, with the political resolution to put "our aim is zero waste" at the heart of the strategy. Manchester's advice was that there should be a defining priority. This will drive the strategy and act as a governing principle when conflicting demands emerge.

4.2.3 Such guiding principles for Birmingham could relate to minimising waste, maximising environmental benefits or keeping costs down. Whilst the choice of an overriding principle is inherently political, there is a need to recognise that the decisions to be made are diverse and challenging. Setting this political set of guiding principles would ensure a coherent and transparent approach to any new waste disposal arrangements and provide a mechanism to negotiate the process.

4.2.4 It is not the purpose of this inquiry to determine those principles but the inquiry report does at least set out some options:

"Waste to Resource": the title of this inquiry sets out a challenge as to how we think about waste in strategic terms. The term "waste" carries a negative connotation, whereas "resource" suggests use, renewal and reward:

Progressively move away from existing technology in the medium to long term			
Strength	State of the art facilities Leading environmental performance Bespoke to current requirements Flexible (future proof) Security of known profit and loss Scaled to encourage adherence of waste hierarchy	Opportunity	Support businesses growth Income Energy security Holistic solution for public and private sector Community buy in
Weakness	Planning Possible gap Uptake if collection regime changes Capital intensive Long process (additional costs)	Threat	Planning Commissioning

Decommission the existing facility and start afresh with new technology			
Strength	State of the art facilities Leading environmental performance Bespoke to current requirements Flexible (future proof) Security of known profit and loss Scaled to encourage adherence of waste hierarchy	Opportunity	Support businesses growth Income Energy security Holistic solution for public and private sector Community buy in
Weakness	Planning Possible Service gap Uptake if collection regime changes Capital intensive	Threat	Planning Commissioning

Decommissioning Tyseley

- 4.3.4 The option to decommission Tyseley in some ways offers one route to improve Birmingham's performance against the waste hierarchy. New facilities would give the city state of the art facilities, with leading environmental performance and greater flexibility. New partners would be attracted to this "starting over" venture and the city would have perhaps the strongest position to ensure that its priorities were met by an interested market.
- 4.3.5 Some of the witnesses heard during the inquiry would support the decommissioning of Tyseley. There was concern that the need to "feed" the plant was a barrier to increasing recycling. Birmingham Friends of the Earth (FOE) gave a submission that described the benefits to the city that could be obtained by recovering the value of a much higher proportion of waste, through reuse, recycling and composting, instead of burning it. They:

look forward to its closure. If it becomes the City Council's property in 2018, we explain why it would be a liability rather than an asset"

- 4.3.6 This argument is forceful and logical when looking to a future waste strategy. The notion of simply "feeding" the machine and burning waste is an obvious environmental non-starter when looking to cleaner, greener objectives. FOE also questioned the value and appropriateness of energy from waste, with its contribution to carbon emissions and air pollution.
- 4.3.7 However, the Committee heard how clean and green-proofing can be part and parcel of energy from waste. In environmental terms, energy from waste is not the same as simple incineration, as electricity is generated from the process of incineration. As such energy from waste falls within the waste hierarchy as "recovery". Energy from Waste is a key part of the Government's waste strategy (see Box 4) below.
- 4.3.8 In Birmingham, there is the added advantage that Tyseley is within the city boundaries; and its location works in favour of other environmental concerns, such as helping to minimise transportation costs and emissions.

Retaining Tyseley

- 4.3.9 Options for retaining the Tyseley plant present persuasive economic arguments:

Avoidance of landfill: it is estimated that, by sending waste to Tyseley, the city avoids Landfill Tax of around £22.4 million per annum at 2012 rates;⁴⁵

In 2019, the Tyseley EfW Plant will revert to the Council with all capital costs paid off and may have around 15 years of life remaining (subject to a condition survey, not yet carried out). The remaining costs will relate only to operating and maintenance costs net of revenue. In this respect the City Council could choose to sell the resource or capitalise on it;

Retaining the facility presents the City Council with the flexibility to consider options which maximise the value of generated electricity. Examples of this could include displacing existing energy costs or selling to the grid.

- 4.3.10 Retaining the Tyseley EFW plant would, at worst, buy time for the City Council to progressively introduce newer technology and/or facilities to readdress the waste hierarchy. And as previously noted, within a fast-changing, technologically

from the business case in 2004 to the introduction of new facilities in 2012/13, took a total of eight years and took from a time of stable economic planning to the most challenging times for local authorities.

4.3.12 As it is just over five years to the end of the Veolia contract, we must be realistic about what can be achieved and when. It should also be noted that the draft BDP states that:

“Proposals that lead to the loss of such waste management facilities, without adequate provision to replace lost waste handling capacity, will be refused.”

4.3.13 Evidence from both waste management officers and Veolia was clear:

“We continue to believe that the ERF is the most appropriate and best solution for residual waste in Birmingham. The Tyseley ERF operates efficiently and compliantly and has an excellent availability record. It will continue to be available for many years to come as it has been maintained well over its current 16 year life. There are examples of other ERFs where they remain operational for more than 40 years. The Tyseley facility will be fully depreciated after the current contract term and hence costs will drop significantly once this happens.”

4.3.14 The evidence from Fleet and Waste Management generally supported that view, with caveats:

“Under the current contract, it is therefore in the financial interests of the Council to use the EfW capacity to its fullest extent. To date, this has not acted as a constraint to the Council’s waste management activities or decisions, but going forward this principle contrasts with the desire to move waste treatment up the waste hierarchy and to deal with waste in other, more sustainable ways.”

4.3.15 The Government generally supports EfW, stating:

“The Government supports efficient energy recovery from residual waste – of materials which cannot be reused or recycled - to deliver environmental benefits, reduce carbon impact and provide economic opportunities. Our aim is to get the most energy out of waste, not to get the most waste into energy recovery.”⁴⁶

4.3.16 Box 4 sets out some further detail.

⁴⁶ Government Review of Waste Policy 2011

Box 4: Energy From Waste (EfW) – the Government View

DEFRA's *Energy from Waste: A guide to the debate* (Feb 2014) states that EfW can contribute to our renewable energy targets, and help with the move towards a more secure fuel supply.

The Government is keen that the role of EfW is understood and valued by households, businesses and the public sector in the same way as reuse and recycling, and recovers from its historically poor image (largely stemming from the fact that early incinerators simply burned waste to reduce volume). Defra sets out some key statistics



4.3.17 The current view of the Executive is that Tyseley will feature strongly in any future strategy. The Green Paper⁴⁷ put forward plans to maximise the use of Tyseley by exploring the options for investing further.

4.3.18 As such, there are three options relating directly to the investment and expansion of the Tyseley plant (there are others relating to the site and the district, which we return to in section 4.4). These are:

Maximise any opportunity to access additional revenue from the spare incinerator capacity that

Box 5: Combined Heat and Power (CHP) and District Energy

CHP generates electricity whilst also capturing usable heat that is produced in this process.

It is most economic when there is a continuous heat demand, such as on industrial sites in continual operation, or through district heating systems in mixed-use community developments, such as offices, retail space and homes.

Many energy from waste plants are built 'CHP ready' but a lack of heat customers, due to location or the relative cost of alternatives, meaning they operate in the less efficient electricity-only mode.

District heating schemes comprise a network of insulated pipes used to deliver heat, in the form of hot water, to an end user.

District heating networks provide the means to transport heat efficiently. They can currently be built up to around 30km from generating plant and distribution networks can be hundreds of kilometres long. This is sufficient to carry heat across our cities, smaller communities and industrial areas. The distance a network can reach is also easily extended by simply adding more providers of heat, or 'heat sources', along the way.

This is of potential huge importance to Birmingham: The total energy consumed a year in Birmingham amounts to £2bn. Currently, there is a retrofitting agenda (Birmingham Energy Savers) but that will still leave a large number of homes in need of retrofitting. There are questions around how much energy can be generated locally, and a need to understand the grid infrastructure, where the heat demand is (e.g. swimming pools) and forthcoming development opportunities eg HS2 and Icknield Port Loop, and new build houses.⁴⁸

Case study: Veolia run a CHP plant in South East London (SELCHP). The plant was built in the early 1990's but due to various political legislation changes the district heat part of the project was shelved, only coming back on the agenda in 2008.

of Southwark a plan was conceived in 2001

Findings

2. Tyseley EfW plant is a key part of our waste disposal infrastructure and is not “broken”. It is the main contributor to assuring Birmingham’s low rates of landfill.
3. Retaining the plant will mean low capital costs for a further 15 years and would allow the City Council to progressively introduce newer technology and/or facilities to address the waste hierarchy, at a speed which could be most responsive to technological, environmental and municipal budget imperatives.
4. There are options to invest in Tyseley to maximise value. These should be explored fully.

4.4

4.4.5 They are a critical part of our waste infrastructure. Veolia told us that the HRCs are:
... are well used facilities which always score highly in terms of customer satisfaction when independently surveyed. The overall HRC recycling rate is over 60%, which is good for large, urban sites and the vast majority of the residual waste avoids landfill by being delivered to the ERF.

4.4.6

within Birmingham, this would lead to both participation, as householders would have less distance to travel, and increase in recycling rates at these sites.

- 4.4.9 Their number and positioning needs to be considered to secure the most efficient disposal options in a changing municipal waste service.
- 4.4.10 Since then the issue has become more acute: under the current plans for High Speed 2 (the new high speed rail line to be built between London and Birmingham, and then onto Manchester and Leeds), the line will run straight through the Castle Bromwich HRC (which is also a waste transfer site and houses the Bottom Ash Plant – see Chapter 3). The HRC will therefore need to close (construction is due to start in 2016, though this has been challenged by the City Council⁵¹) and be relocated, which will act as a catalyst for a review of HRC provision across the city. It was disappointing to note (as members of the Birmingham Economy & Jobs O&S Committee did in January 2014) that the draft Birmingham Development Plan did not mention new HRCs at all – this is a missed opportunity, especially as new housing requirements for the city have to factor in accessibility to waste disposal.

Sorting Waste and Recycling After Collection

- 4.4.11 In Birmingham, recyclate is collected separately from residual waste, so that some of the sorting is done by the householder. Where different recycling streams are collected together (as glass, cans and plastics are in Birmingham) then they are transported to a ‘clean’ Materials Recovery Facility (MRF – see Box 6 below) that sorts these materials ready to transport for processing.
- 4.4.12 Veolia currently transports these materials to the Four Ashes Materials Recovery Facility (MRF) near Wolverhampton. This can process up to 40,000 tonnes per year. As Veolia owns this plant, Birmingham’s access to this MRF will cease in 2019 unless new arrangements are made (unlike Tyseley EfW which will revert to City Council ownership).
- 4.4.13 Those new arrangements could be to continue to send materials to a MRF owned by a third party (whether Veolia or another waste contractor) or to consider a new facility in Birmingham. There could be solutions in neighbouring authorities which facilitate this. The draft BDP would facilitate the building of a MRF in Birmingham through the planning process. However, there is still cost, location and timing to consider.
- 4.4.14 There is a further consideration when looking at MRFs and which type to use. Most MRFs currently separate dry recyclables – glass, cans, plastic and sometimes card and paper. However, in some other MRFs, residual waste can be sorted to extract recyclable material. In Birmingham, anything put into the residual waste stream is sent to Tyseley or landfill and there is general recognition that a lot of recyclable material does go in the residual waste stream. As such, the use of a “dirty” MRF (as they are known) would present an opportunity to extract more of the valuable recycling

⁵¹ Birmingham City Council response to HS2 Consultation on the Formal Environmental Statement, Cabinet, 17th February 2014

material and help increase recycling rates further. A recent article in Resource magazine⁵² noted that Calderdale MBC made the biggest improvement in recycling rates of unitary and disposal authorities (in England, Wales and NI) in 2012/13, “mainly due to retrieving a significant amount of recyclable material from the residual waste stream at the Associated Waste Management MRF – on average, this site recycles approximately 36% of Calderdale’s black bag waste.”

- 4.4.15 It should be noted that this would not be a straightforward gain however, since quality may be compromised which would in turn affect the potential income generated.
- 4.4.16 An alternative to a “dirty” MRF is Mechanical Biological Treatment (MBT). This takes biodegradable residual waste and treats it via Anaerobic Digestion (AD) or composting (see next section). Manchester Waste Disposal Authority have built an MBT which takes residual waste, sorts it (removing metals) and separates it into fuel for the Combined Heat and Power Plant, fuel for the AD plant, and powers the only chlorine plant in the UK (through a long term deal).

Box 6: Materials Recovery Facility (MRF)

MRFs take a range of materials from kerbside collections or recycling centres. The materials are separated into their individual material streams, baled and sent on for reprocessing / prepared for sale in the commodity markets. Mostly this separation and preparation is done by machine though some (mainly older facilities) employ people to hand sort some waste.

Clean MRFs handle commingled or pre-separated recyclables from kerbside collections or household recycling centres.

Dirty MRFs process recyclables from a stream of raw solid waste.

Mechanical Biological Treatment (MBT)

MBT technologies are pre-treatment technologies which contribute to the diversion of municipal solid waste from landfill when operated as part of a wider integrated approach involving additional treatment stages.

MBT plant can incorporate a number of different processes in a variety of combinations including Materials Recovery Facilities (MRFs), composting or Anaerobic Digestion.

Recycling Processes

- 4.4.17 Under the current waste contract in Birmingham, Veolia transports collected plastic, cans and glass recyclates to the MRF near Wolverhampton, from where it is sorted and sold. The City Council has no involvement in this process and there is little information given to citizens, either on the website or elsewhere about the final destination of recycling (we return to this in Chapter 5). As such, there is considerable opportunity for building awareness of entrepreneurial opportunities and markets which could be developed.

⁵² Resource magazine, Spring 2014, Number 76

- 4.4.18 Most recycling is sold onto processing companies and larger companies have an advantage here in being able to absorb fluctuations in the market as they are able to trade with stable and large volumes. Local authorities tend not to have a direct input into these industries. The most common exception is for biodegradable waste.
- 4.4.19 Under Birmingham's current system of waste collection, food waste is not collected separately. This is the most obvious additional waste stream to consider in terms of driving recycling as it comprises the largest remaining recyclable element of residual waste in Birmingham. It is also especially unsuitable for landfill and incineration as it is generally wet, smelly and produces methane. Whilst many local authorities have begun to introduce recycling of food waste, either on its own or amongst garden waste, around 50% have not.⁵³
- 4.4.20 The separate collection and processing of food waste for Birmingham was considered in 2009, when WRAP produced a report 'Food Waste Collection Guidance'. This concluded from a number of trials that the amount of food waste collected per household provided with a separate food waste service could be expected to be between 1kg and 2.2kg per week.

In the Birmingham context, at the top end of this expectation, this would translate into an increase of (360,000 households x 2.2kg x 52 weeks) = 41,184 tonnes of food waste per year. Against total domestic waste arisings of 420,000 tonnes (2011/12) this would represent an increase in recycling of around 9.8%

4.4.23 In summary, there are two options which would be open to the Council in order to collect food waste: either collection of food waste alongside green waste or a separate collection of food waste. Both options were considered and costed in 2012 (before the introduction of wheelie bins and charging for green waste⁵⁵) and the results are set out in Figure 11.

4.4.24 The costs are significant, and as the City Council takes a minimal amount of waste to landfill then the cost savings associated with food waste collection are limited in comparison with other local authorities. The impact of separate collection should also be taken into account: the quantity of arisings may decrease as people realise how much they are wasting.

Figure 11: Options and Costings for Food Waste Collection ⁵⁶

	Option 1: Green and food waste combined	Option 2: Food waste
Tonnes	Food waste = 41,270	

Box 7: Biological Treatments

Anaerobic Digestion (AD) is a natural process where plant and animal materials (biomass) are broken down by micro-organisms in the absence of air. The AD process begins when biomass is put inside a sealed tank or digester. Naturally occurring micro-organisms digest the biomass, which releases a methane-rich gas (biogas), and leaves behind a material called digestate.

Biogas – a mixture of 60% methane, 40% carbon dioxide and traces of other contaminant gases – can be combusted to provide heat, electricity or both; or 'upgraded' to pure methane, often called biomethane, by removing other gases. This can then be injected into the mains gas grid or used as a road fuel. Digestate is rich in nutrients, so it can be used as a fertiliser and soil conditioner. It contains valuable plant nutrients like nitrogen and potassium. It can be used as a fertiliser.

The typical lifespan of AD facilities is 15 to 30 years.

The Waste Management Plan states that:

“The Government supports anaerobic digestion (AD) because of its value in dealing with organic waste and avoiding, by more efficient capture and treatment, the greenhouse gas emissions associated with its disposal to landfill. AD also recovers energy and produces valuable bio-fertilisers. The Government is committed to increasing the energy from waste produced through AD.”

To support an increase in the use of AD, the Government has produced Anaerobic Digestion Strategy and Action Plan 2011. This includes actions aimed at improving the dissemination of information and other actions related to developing best practice, providing an agreed framework for skills and training, and further work to deal with specific technical or regulatory barriers. Delivery and implementation of the Action Plan is monitored and reported by Defra.⁵⁷

Box 8: European Bioenergy Research Institute (EBRI), Aston University

The EBRI industry scale demonstrator facilities on the Aston University campus provide an example of the

6. There are many options for more environmentally advantageous ways of dealing with our waste. Recycling and disposal technologies are fast evolving and we cannot predict where these technologies will be in the next 5, 10, 20 years. The city needs to maximise the use of new technologies – but also be aware of how quickly these change, especially in order to protect the capital challenges this would involve.

4.5 Contractual Options

4.5.1 There has been an assumption amongst some during our evidence gathering that another long-term contract, outsourcing our waste disposal in a similar (but improved) arrangement to the current position, will be an inevitability, because it may be the only option feasible within the budget challenges faced by the City Council. Whilst this may be likely, the role of this inquiry is to have challenged assumptions and presented the different options, then to look at which would be suitable and which not.

4.5.2 In this section, we look at those options:

1. Procure another single long-term contract for all aspects of waste disposal;
2. Keep all waste operations in-house;
3. Parcelling up the components of the current contract into smaller, shorter, contracts:

Residual waste management

Household Recycling Centres (HRC) operation

Waste Transfer Station (WTS) operation (mTj /T8.76specth14 9n5ya0n4

hierarchy, although changes have been made throughout the period of the contract. As evidence from Fleet and Waste Management noted:

“The 1994 waste contract was originally primarily designed to be a contract for the treatment and disposal of residual waste, and did not contemplate the changes which have happened in waste collection arrangements in the intervening period. It also grants VESB exclusivity over the waste stream. These parameters have constrained th

Strengths, Weaknesses, Opportunities and Threats

A long term contract for all waste disposal			
<i>Strength</i>	<p>Provides degree of certainty to commercial partners which would be reflected in costs</p> <p>Transfers risk of operating the infrastructure,</p> <p>Experienced and qualified private sector companies are better placed to absorb and manage fluctuations in the recycle market, and have the expertise to operate complex plants and maximise performance</p>	<i>Opportunity</i>	<p>Build in change mechanisms, rather than commercial negotiation, and require that parties must work together to achieve the best outcome</p> <p>Build in different commercial options with performance incentives to drive the right outcomes</p> <p>Could have a “cradle to grave” contract incorporating waste collection and disposal</p>
<i>Weakness</i>	<p>Transfers control of a vital and prominent public service to a third party</p> <p>Constrains the ability to vary the contract – any change will come at a cost</p> <p>Likely to be large scale infrastructure, potentially reducing the likelihood of local facilities</p>	<i>Threat</i>	<p>Any inflexibility in the contract would inhibit the council’s ability to respond to the pace of financial, social, environmental, technological change</p> <p>Building in change mechanisms, rather than commercial negotiation, will come at a price</p> <p>Cost savings may be dependent on maintaining the volumes of waste – reducing flexibility</p> <p>Proximity principle may be threatened if the commercial partner has facilities elsewhere in the country</p>

Keeping it "in-house" 59

<p><i>Strength</i></p>	<p>Variation and flexibility without contractual penalties Any profits (and losses) would be retained by the Council Council would have full control over operation</p>	<p><i>Opportunity</i></p>	<p>Options include setting up a wholly owned company or engaging a management company to run major facilities such as Tyseley Increases opportunities to involve local businesses, communities and the third sector – keep value in the local area Access to funding not available to the private sector (e.g. prudential borrowing) which could be cheaper Could include smaller, locally based infrastructure</p>
<p><i>Weakness</i></p>	<p>Size and scale of the operation would be a major addition to the City Council's responsibilities Funding would have to be found for any new facilities/investment/repairs Lack of expertise: in running an EfW Plant within the City Council and in trading on the international commodities markets or electricity markets Additional workloads, closures etc would have to be managed and financed in-house</p>	<p><i>Threat</i></p>	<p>Potential lack of links with the industry to keep up with pace of technical development which is extremely rapid in this field Variations in recyclates and residual waste streams will have to be managed Fluctuations in the recyclate market would threaten operations and income No transfer of risk Need to find processing and treatment facilities e.g. a MRF and</p>

Multiple/ Shorter Contracts			
<i>Strength</i>	<p>Need not mean a stark choice between “contract out all waste disposal” or “keep it all in-house”</p> <p>Maximises flexibility</p> <p>Spreads risk with a number of commercial or third sector partners for different elements of the waste process</p>	<i>Opportunity</i>	<p>Operating contracts could be shorter than the infrastructure life to keep competitive tension with the operator⁶⁰</p> <p>Increases opportunities to involve local businesses, communities and the third sector – keep value in the local area</p> <p>Third sector will be able to access funding streams that local authorities cannot</p> <p>Could stimulate competition between service providers during the term of their contract, allowing companies to seek constant iterative or marginal improvements as well as the step-change improvements encouraged at contract renewal time</p> <p>Could incentivise the deployment of new technologies and greater efficiency</p>
<i>Weakness</i>	<p>Increases in the Council’s cost of contract administration associated with the management (and periodic re-procurement) of several contracts</p> <p>No transfer of risk / or on a smaller scale</p> <p>Limited opportunity for capital investment</p>	<i>Threat</i>	<p>Without a strong contract management function within the Council, the risk of non-compliance could increase</p> <p>Likely to be more expensive</p>

⁶⁰ For example Amey told us that they have a contract for the design and build of a facility with a 25-30 year life in Milton Keynes but only a 15 year operating contract. Performance related extensions will encourage the operator to remain focused throughout the contract life.

Jointly procuring with other Local Authorities			
<i>Strength</i>	Sharing of risk and responsibility/contract management Economies of scale to be had in joining together to procure services or build facilities (though Birmingham is large to begin with so this would be limited) – see example below (Box 9)	<i>Opportunity</i>	Access to funding not available to the private sector (e.g. prudential borrowing) which could be cheaper Increases the sources of waste from a range of locations/organisations to ensure capacity is used effectively and efficiently, and maintains local flexibility to increase recycling without resulting in local overcapacity
<i>Weakness</i>	Timescales of other LAs current contracts Need of other LA's – many have their own facilities / arrangements	<i>Threat</i>	Failure by partner Local Authorities to adhere to contractual provisions Partnering with other local authorities would mean a large scale contract that would limit number of potential business partners

Findings

7. Concepts of flexibility, scale and time are key to future waste to resource strategy and must inform the cost benefit rationale of any proposal.
8. Where changes are needed in response to financial, social or environmental imperatives, these should not be precluded or made difficult by the contract.
9. The future strategy should also be capable of making links with other agendas – such as energy generation, energy saving targets, housing plans or other waste collected in the city.

Box 9: Case Study: Improving the efficiency of waste management services across the Kent

5 The Next Steps

5.1 Overview

5.1.1 Having considered the key decisions facing the City Council in renewing its waste strategy, this chapter sets out some of the steps needed to be taken to help make those decisions most

advantages in engaging residents at an early stage. The householders in Birmingham will lead the way to

concerns about crews' treatment of recycled materials, particularly when residents have been asked to separate these before leaving them out for

5.2.25 In recent years Veolia has open

There was little difference in the overall preference between personal and communal incentive schemes with personal incentives being consistently marginally favoured as the preferred option;

Comprehensive marketing communications were noted across all of the schemes looked at regardless of scheme effectiveness;

Cost effectiveness was considered: the cost of the different incentive schemes was banded to three cost bands low, medium and high in accordance with the scheme costs of operation per participating household. The study showed that for medium cost schemes, costing £1.00-£2.00 per participating household, the cost of introducing such schemes come closest to being justified and recouped in diversion savings and recycling income. For high cost schemes, costing >£2.00 per participating household the investment in incentives schemes is unlikely to be recouped in diversion schemes and recycling income;

There is no data to demonstrate the long-term impacts of incentive schemes;

Research conducted on Pay As You Throw schemes point to an impressive increase in recycling rates, as well as overall waste prevention. Research suggests that weight and frequency-based schemes are the most effective.

5.2.29 Incentive schemes have been trialled in Birmingham recently:

“Veolia's view is that this has not had a significant impact on the additional tonnage of recyclate collected as rewards were not significant enough to modify behaviours. However such schemes should be considered as part of the suite of changes to increase recycling in the City.”

5.2.30 In the surveys carried out as part of the wheelie bin consultation, there was strong support for a Recycling Reward Scheme, providing it8>Tjham2ant iTHere .5(d)1.2(sug)-4.Hd i.2()5.5()]TJ -12.707 Tf e

projects such as a community resource centre, youth services and a local football club. The results of this pilot are not yet available, but the design points to another potential way for local people to see a tangible benefit for their efforts.”⁷¹

5.2.32 As part of the Weekly Collection Support Scheme (under which Birmingham received £29.785m over three years in order to co-fund the wheelie bin roll-out), the City Council undertook to introduce a Recycling Incentive Scheme. Details of that scheme are not yet available.

Findings

10. A people-centred engagement exercise, built on where behaviours and requirements are now and how far things can be changed, is needed to underpin the principles in the new strategy (as set out in Chapter 4), to involve the citizens of Birmingham in one of the local issues that concerns everyone.
11. Good customer services, education/information and communication are all important in driving up recycling rates.
12. Waste-specific communications are not being approached strategically in Birmingham. As a result, communication with residents about waste prevention, re-use and recycling as well as disposal options continues to be inconsistent and very unsatisfactory.
13. While we are mindful of resource constraints, not all improvements, for example improving web-based information, require a substantive budget beyond staff time. The quality of information on the website, and in and around places where people seek information about waste e.g. notices on bins, could all be improved. These improvements should not wait for 2019.
14. The diversity of Birmingham’s communities should be recognised, and a targeted approach recognising this is the most cost-effective way of increasing participation.
15. We also need to be better about telling the positive story of Birmingham’s waste collection service – how it increases recycling and benefits in the city in economic and environmental terms.

⁷¹ LGA Waste p29

5.3 Understanding Waste in Birmingham

5.3.1 If Birmingham is to plan for a new resource-efficient, low-waste economy and can only do so with improved data. In a city of Birmingham's size and diversity this is essential to ensure assumptions made about Birmingham's future needs are as accurate as possible. Having several years' real figures on which to base forecasts and plan services accordingly is important in preparing for Birmingham's waste needs post-2019.

5.3.2

skills and talent can be focused on the development of the growing renewables sector. The key to opening this opportunity fully in the local area is the nature and structure of the contracts between the council and waste service suppliers.”

Findings

16. There needs to be a clear evidence base to inform any new strategy. This should include analysis of the composition of residual waste carried out regularly and extended to recycling to enable both ongoing comparison and, most importantly, effective modelling of Birmingham’s waste arisings. Any new strategy cannot just be about “tweaking” current arrangements and so good information is crucial.
17. Any new contractual agreement needs goods governance processes to ensure that intelligence is absorbed as it becomes available. Data capture is critical here, including capturing interrelationships between population densities, housing and industrial requirements;
18. There is also a need to match the gap in market intelligence between private and academic sectors.

5.4 Maximising the Benefits for Birmingham’s Economy

- 5.4.1 Throughout this report, the value of waste has been discussed. In this section, the value of waste to the local economy is considered. Waste management is a source of economic growth and jobs if the domestic market is encouraged. The City Council should be looking to unlock this potential locally and seize the opportunity to consolidate social value and environmental returns too.
- 5.4.2 The LGA Wealth from Waste report found that, nationally, it has been estimated that 70% recycling would create an additional 51,400 jobs. When calculated on the basis of the value each of these jobs would add, this would provide an additional £2.9 billion gross value added contribution to the UK economy:

The simple fact is that taxpayers will be better off, the economy will benefit, and more people will have jobs if we grow our domestic market for collecting, sorting and reprocessing recycling.

Local government therefore needs to look beyond our role in simply ensuring the country meets its EU waste targets by 2020, and explore how councils can develop the waste and recycling sector to unlock its true potential, generating 51,400 jobs nationwide and expanding a vital revenue stream for council tax payers in a tight financial climate.

- 5.4.3 There are examples of how, on a smaller scale, a contribution to the local economy can be made. Jericho, at the Norris Way re-use centre, worked with the local job centre and targeted recruitment in the local area, employing four full time and one part time member of staff. They also had three volunteers, four apprenticeships and ten school placements in the reuse centre. Career progression is important and staff are trained to NVQ level 2. They would like to develop an NVQ for reuse.
- 5.4.4 There is a practical example of how waste can be used to generate economic growth in the Tyseley Environmental Enterprise District (TEED)

- 5.4.10 NISP has been described as “the best example of the low carbon economy in action today”. NISP has helped to create and safeguard 3125 West Midlands jobs, generating £330 million in sales and saving £195 million in costs in the region, since its formation in 2005.”
- 5.4.11 During the course of the inquiry, the Committee learned of a new biomass plant opening in the area – this was a missed opportunity in terms of working together with the private sector.

Box 12: Case study – Unlocking growth through investment in infrastructure on Teeside

The five local authorities of Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland and Stockton in the Tees Valley are proving that exceptional cooperation between local authorities and their Local Enterprise Partnership to create the highest standards of business support, can benefit industry, generate inward investment and bring jobs to an area. Seizing on their industrial heritage, existing skills in chemical and process industries and a location which is ideal for export and the distribution of goods to the rest of the UK, the area is driving the transition to more renewable forms of energy. One of the key new sectors is coming from investment in world leading waste to energy projects. Potential investors can take advantage of expertise the area’s local authorities have developed in handling complex planning requirements to facilitate major international investments. Local Enterprise Zones benefit from simplified planning, enhanced Capital Allowances and Business Rate relief. An innovative gasification project using local authority and commercial waste will provide renewable electricity for up to 50,000 homes whilst construction of an anaerobic digestion bio-gas plant and a large energy from waste plant is also confirmed. This will involve £600 million of planned and on-going investment amounts, which will provide 1,120 construction and 130 permanent jobs. By working together Tees Valley authorities are realising their aspirations to grow an internationally significant critical mass of major industry players, creating a true centre of excellence for the sector.

Box 13: Jericho – Case Study

This project is a partnership between Jericho, Veolia and the City Council. Whilst Jericho received some funding from WRAP, the short term nature of this 2 year contract is proving problematic when trying to bid for further funding i.e. the Green Bridge Programme.

The Reuse centre opened in February and after two weeks they were "bursting with stock". They have already hit their 2 year target in 7 months and currently report on the guidelines from WRAP who provided

6 Conclusions and Recommendations

6.1 Main Findings

6.1.1

principles would ensure a coherent and transparent approach to any new waste disposal arrangements and provide a mechanism to negotiate the process.

- 6.2.2 The report sets out the need to involve the citizens of Birmingham in this exercise, as a matter of good principle and to ensure “buy-in” (a requirement as householder engagement will be critical to the success of any strategy).
- 6.2.3 Any new strategy should also recognise that Tyseley EfW plant is a key part of our waste disposal infrastructure and is not “broken”. It is the main contributor to Birmingham’s low rates of landfill. Retaining the plant will mean low capital costs for a further 15 years and would allow the City Council to progressively introduce newer technology and/or facilities to address the waste hierarchy, at a speed which could be most responsive to technological, environmental and municipal budget imperatives. Furthermore, there are options to invest in Tyseley to maximise value, and these should be explored fully.
- 6.2.4 By continuing to use Tyseley, there is time to investigate the options for more environmentally advantageous ways of dealing with our waste. Recycling and disposal technologies are fast evolving and we cannot predict where these technologies will be in the next 5, 10, 20 years. The city needs to maximise the use of new technologies – but also be aware of how quickly these change, especially in order to protect the capital investment this would involve.
- 6.2.5 Linked to this is the need for the future strategy to be capable of making links with other agendas – such as energy generation, energy saving targets, housing plans or other waste collected in the city.
- 6.2.6 Finally, there needs to be a clear evidence base to inform any new strategy. This should include analysis of the composition of residual waste carried out regularly and extended to recycling to enable both ongoing comparison and, most importantly, effective modelling of Birmingham’s waste arisings. Any new strategy cannot just be about “tweaking” curren3e,ways of8Recy ta27.3(t)-43oif9 0 T

	Recommendation	Responsibility	Completion Date
R03	<p>That a new Waste Strategy for the city is put in place. This should include the following:</p> <ul style="list-style-type: none"> A guiding principle, or set of guiding principles, to ensure a coherent and transparent approach to any new waste disposal arrangements; A waste prevention plan for the city; A consideration of all waste streams in the city including a mechanism for reviewing and, where appropriate, including new technologies to maximise the efficiency and effectiveness. 	Cabinet Member, Green, Smart & Sustainable City	March 2016

	Recommendation	Responsibility	Completion Date
R04	<p>That a draft procurement plan to achieve the goals of the Waste Strategy is brought to the committee for discussion. This to include the following:</p> <ul style="list-style-type: none"> How income / financial efficiency will be maximised from the new approach; How flexibility in future contractual arrangements will be achieved; A statement on the role the Tyseley Energy from Waste (EfW) Plant will play and how opportunities to invest in Tyseley to improve both economic and environmental performance will be fully explored; How the City Council will be in a position to react to and employ new technologies 		

- 6.4.3 The diversity of Birmingham’s communities should be recognised, and a targeted approach should be undertaken, recognising that this is the most cost-effective way of increasing participation.
- 6.4.4 In addition, the role of local Councillors should be emphasised – they have a role in informing residents and ensuring that information reaches all communities.
- 6.4.5 In supporting the move to increase recycling rates, there needs to be better information about the treatment and destination of waste and recycling, and more information telling the positive story of Birmingham’s waste collection service – how it increases recycling and benefits in the city in economic and environmental terms.

	Recommendation	Responsibility	Completion Date
R06	<p>A revitalised waste communication plan is needed, taking into account the outcomes of the public engagement exercise in R01. This should include:</p> <ul style="list-style-type: none"> A range of communication options to ensure messages reach the widest possible audience; More user-friendly detail about the destination of waste and recycling on the website; Engaging with local Councillors to give them the resources to pass on key messages; Engaging with local community groups/spaces (including schools, places of worship, community centres) to give them the resources to pass on key messages; More information/explanation about why Birmingham has made the choices it has and the positive outcomes from that. 	Cabinet Member, Green, Smart & Sustainable City	September 2015

6.5 Household Recycling Centres

- 6.5.1 Serious consideration needs to be given to review the numbers and locations of HRC sites. Concerns with the operation of the five current sites were raised during the evidence-gathering, and Members’ own experiences supported these concerns.
- 6.5.2 A neighbourhood and district responsive position needs to be produced ahead of 2019. As a next step, the Committee will undertake some work in 2014/15 following presentation of a report from the Executive on the current position, and any work undertaken so far.

	Recommendation	Responsibility	Completion Date
R07	<p>That a report is brought to the Connectivity & Sustainability O&S Committee on Household Recycling Centres (HRCs), their future and the options, with a view to the Committee undertaking a short piece of work on new HRCs in the city.</p> <p>The Committee's work will consider options for improving access to current HRCs, including Opening hours; Actions to reduce queues and congestion Allow waste and recycling to be delivered on foot</p> <p>It should also address how the number of HRCs in the city might be increased, particularly with regard to smaller, more local, sites.</p>	Cabinet Member, Green, Smart & Sustainable City	September 2014

6.6 Implementation of Recommendations

6.6.1 To keep the Connectivity & Sustainability O&S Committee informed of progress in implementing the recommendations within this report, the Executive is recommended to report back on progress periodically.

	Recommendation	Responsibility	Completion Date
R08	Progress towards achievement of these recommendations should be reported to the Connectivity & Sustainability Overview and Scrutiny Committee no later than December 2014. Subsequent progress reports will be scheduled by the Committee thereafter, until all recommendations are implemented.	Cabinet Member, Green, Smart & Sustainable City	December 2014

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Tim Hughes, Principal Commercial Manager	SITA
Richard Kirkham, Technical Director	Veolia Environmental Services UK plc
Cllr James McKay, Cabinet Member, Green, Safe and Smart City	Birmingham City Council
Kevin Mitchell, Assistant Director, Fleet & Waste Management	Birmingham City Council
Steve Mitchell, Regional Director	Veolia ES Birmingham Ltd & Veolia ES Nottinghamshire Ltd
Michael Murray, Senior Development Surveyor	St Modwen
Bev Nash, Registrar	Birmingham City Council
Mark Saunders, Business Development Director	Amey Plc
Darren Share, Head of Parks	Birmingham City Council
Pete Smallwood, Social Enterprise Manager	The Jericho Foundation
Mike Smith, Head of Category, Special Projects, Corporate Procurement	Birmingham City Council
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Written Evidence Only

University of Birmingham (UoB)
European Bioenergy Research Institute (EBRI)
Birmingham Friends of the Earth (BFOE)
International Synergies

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Appendix 2: Performance and Volumes of Waste & Recycling

Waste Arisings by District & Wards

- 6.6.2 Fleet and Waste Management completed the roll out of Ward based working in June 2012 and have, since July 2012, been recording the tonnages collected by the main collection rounds for residual waste and recycling on a Ward basis.
- 6.6.3 There are, however specialised rounds, such as large container collections from flats and 'alleycat' rounds for difficult to access properties (narrow streets etc) where collections cross Ward boundaries or are mixed with trade waste collections and these collections are not included in the figures as it is not possible to associate tonnage with individual wards.
- 6.6.4 The collection of waste from flats in large containers will significantly impact upon the figures for those Wards with large numbers of flats.

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The collection of waste from flats in large containers will significantly impact upon the figures for those Wards with large numbers of flats.

	Residual (tonnes)	Green (tonnes)	Multi (tonnes)	Paper (tonnes)	Totals (tonnes)	% Recycled
Yardley	22,567.12	3,668.60	1,679.68	2,311.86	30,227.26	25.34%
Grand Total	194,952.84	39,126.24	16,572.95	22,207.61	272,859.64	28.55%
Totals rolling 12 Months July 2012 to June 2013						
Source: Fleet and Waste Management Ward Based Data, Briefing Note for Transport, Connectivity & Sustainability O&S Committee, 20 th September 2013						

Recycling by District & Wards

- 6.6.1 The diagram below provides the residual tonnages for the Wards from July 2012 to June 2013. Please note the caveats mentioned above.

Figure 13: Totals Residual Waste by Ward s (rolling 12 months July 2012 to June 2013)

Appendix 3: Recycling/Bring Banks

Aston	5	2	2	3	5	0	1
Bartley Green	11	0	3	6	5	3	2
Billesley	11	0	2	6	7	2	1
Bordesley Green	5	0	2	2	3	1	0
Bournville	10	0	5	2	6	1	1
Brandwood	10	0	5	4	8	1	0
Edgbaston	7	5	3	4	5	1	1
Erdington	9	0	4	4	8	2	1
Hall Green	8	0	5	6	7	4	0
Handsworth Wood	8	1	7	3	2	1	0
Harborne	15	0	7	11	9	3	0
Hodge Hill	9	0	4	8	7	7	1
Kings Norton	10	0	5	6	5	0	1
Kingstanding	10	0	3	2	5	0	1
Ladywood	10	5	9	7	6	1	0
Longbridge	11	0	6	7	5	4	2
Lozells & E. H'worth	13	0	9	2	4	3	2
Moseley & K. Heath	7	0	3	1	4	1	1
Nechells	20	6	5	9	10	0	2
Northfield	16	1	4	8	11	4	2
Oscott	11	0	4	7	5	0	0
Perry Barr	15	2	7	8	4	4	4
Quinton	9	0	6	7	6	2	2
Selly Oak	10	0	5	5	7	7	1
Shard End	11	0	7	8	7	7	0
Sheldon	12	1	4	8	7	5	0
Soho	6	0	3	1	2	0	1
South Yardley	14	0	7	8	8	3	1

