

# Update to Waste Capacity Study

BIRMINGHAM CITY COUNCIL

## Addendum

JW30400 | Final

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## Summary of Key Findings

The total waste arising for LACW, C&I, CD&E and hazardous waste streams in Birmingham are estimated to be 2.9 million tonnes in 2012/13. By 2025/26 the total waste forecast is estimated to be between 3.3 – 3.6 million tonnes, rising to 3.46 – 3.76 million tonnes by 2030/31. The 2010 Waste Capacity Study forecast 2025/26 waste arisings of between 3.1 – 3.2 million tonnes, the key increase in projections can mainly be attributed to the revised CD&E figures. At the time of the 2010 Waste Capacity Study the construction industry was experiencing a sharp decline in activity and the recovery time was expected to be slow.

Based on EA data, there has been a decrease in waste facilities from 106 in 2007 to 87 facilities in 2012. The most notable decline from 36 to 20 facilities has been in A11 - Household, Commercial & Industrial waste transfer stations, whereas there has been a notable increase in A19a – ELV facilities from 19 to 31 facilities. The decrease in waste facilities over the period 2007 – 2012 is potentially due to the recession. The estimated capacity at permitted and exempt facilities and accredited reprocessors remain in the range of the 2010 Waste Capacity study at 4 – 4.5 million tonnes per annum, of which around 1.3 million tonnes is waste transfer capacity.

Data from the 2012 EA returns suggests that of the 1.57 million tonnes of waste received at permitted facilities in Birmingham in 2012, 570,000 tonnes could be identified as originating from Birmingham and a further 650,000 tonnes from across the West Midlands region. In terms of waste originating in Birmingham, 1.2 million tonnes of waste was identified as being accepted at permitted facilities across the country, as above 570,000 tonnes was handled at facilities in Birmingham and a further 550,000 tonnes handled at facilities in the West Midlands but outside of Birmingham.

On the basis of the above and consistent with the 2010 Waste Capacity Study, data suggests that Birmingham is achieving the 'equivalent self sufficiency' principle. However, as Birmingham does not have any landfill sites and given its urban nature is unlikely to do so, there is a need to consider the reliance on export of waste from Birmingham to landfill sites outside of the authority area and the remaining life of these facilities. Data also suggests that waste is expected to grow over the period up to 2030/31 by around 20%. In line with government policy and the importance of moving waste up the waste hierarchy, this highlights the opportunities for increased management of wastes within Birmingham and that this is reflected in the nature of future facilities required.

As highlighted in the 2010 Waste Capacity Study, it is therefore important that future planning policy reflect the relevant importance of providing opportunities for the development or expansion of waste facilities which provide for the reuse, recycling and recovery of energy from waste where possible.

## Important note about your report

The sole purpose of this report and the associated services performed by Jacobs is to update the 2010 Waste Capacity Study in accordance with the scope of services set out in the contract between Jacobs and the Client. That scope of services, as described in this report, was developed with the Client.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

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## 1. Introduction

The original Waste Capacity Study was commissioned to form part of the waste evidence base for the then emerging Birmingham Core Strategy and its conclusions were reflected in the draft Core Strategy published for consultation in 2010. Since 2010, circumstances have changed including:

- an extension to the plan period from 2026 to 2031
- the abolition of the Regional Spatial Strategy (RSS) and the growth requirements it contained
- the introduction of the National Planning Policy Framework (NPPF)
- more recent population and household projections show higher levels of growth than previously expected
- proposals for development in the green belt following consultation (in 2012/13) on options for providing higher levels of housing and employment development within Birmingham including the potential for development of housing/employment on greenbelt sites to the north of Sutton Coldfield.
- the DCLG consultation on draft revisions to national guidance on waste.
- the introduction of a 'Duty to Co-operate' under which local planning authorities are expected to work together to address cross-boundary issues.

These changes have necessitated revisions to the Birmingham Development Plan (BDP) and the need to update the evidence base that supports the BDP including the Waste Capacity Study.

This addendum therefore:

- summarises key revisions to waste and planning policy
- updates waste forecasts
- updates the assessment of existing waste management facilities
- assesses the future treatment requirements
- identifies active aggregate recycling facilities
- assesses significant waste flows across Birmingham's boundary.

## 2. Policy Update

### 2.1 Key changes to planning policy

The planning context at a national level is in a state of transition since the publication of the National Planning Policy Framework under the current coalition government. The key documents are currently:

- Waste Management Plan for England (See Section 2.2.2)
- National Planning Policy Framework (NPPF)
- Draft Updated National Waste Planning Policy: Planning for Sustainable Waste Management
- Planning Policy Statement 10 (PPS10): Planning and Sustainable Waste Management (July 2005)

#### 2.1.1 National Planning Policy Framework (NPPF)

The NPPF was published in March 2012 and sets out the Government's planning policies for England and how these are expected to be applied. Although it does not contain any specific waste policies, the NPPF is still a material consideration in the determination of planning applications for waste management facilities. It anticipates national guidance being produced specific to waste developments. The majority of the preceding national planning policy advice became redundant following the publication of the NPPF with the exception of PPS 10.

The NPPF advocates a presumption in favour of sustainable development. For decision-making, this means approving development proposals that accord with the development plan without delay.

The NPPF is based on 12 core planning principles. Of key relevance to waste projects is the need to ensure high quality design and a good standard of amenity in developments for all existing and future occupants, to conserve and enhance the natural environment and reduce pollution, to encourage the re-use of previously developed land, to conserve heritage assets, to drive and support sustainable economic development and to support local strategies to improve health, social and cultural wellbeing for all.

#### 2.1.2 Draft Updated National Waste Planning Policy: Planning for Sustainable Waste Management

The 'Updated National Waste Planning Policy: Planning for Sustainable Waste Management' when adopted, will replace the existing PPS10 and will sit alongside the Waste Management Plan for England. Consultation on the draft updated planning policy ended on 23rd September 2013 and adoption is expected sometime in 2014.

The consultation draft continues to focus on moving waste up the waste hierarchy by moving away from traditional landfill towards more sustainable options for waste management. In determining planning applications for waste management development, the updated policy makes the following key provisions:

- The quantitative or market need for new or enhanced waste management facilities should only be taken into account where proposals are not consistent with an up-to-date local plan;
- Planning permission should be refused where a proposal is not in line with the local plan unless the applicants can demonstrate that the facility will not undermine the local waste planning strategy through prejudicing movement up the waste hierarchy;
- The impact on the local environment and on amenity and the locational implications of any advice on health from the relevant health bodies should be considered; and
- Waste management facilities should be well-designed so as to contribute positively to the character and quality of the area in which they are located.

#### 2.1.3 PPS 10: Planning and Sustainable Waste Management (July 2005)

Until it is replaced by the emerging National Waste Planning Policy document, National waste planning policy guidance is set out in Planning Policy Statement 10: Planning for Sustainable Waste Management (PPS10).



### 2.1.4 Regional Plans and Localism Act

As part of the planning reforms introduced by the Coalition Government the regional tier of planning was abolished. After a delay due to a challenge over legalities of the process the West Midlands Regional Spatial Strategy was formally revoked by Statutory Order SI2013/933. This was laid in Parliament on 24th April 2013 and came into effect on 20th May 2013. The West Midlands Regional Spatial Strategy no longer forms part of the statutory development plan for Birmingham.

To help counter concerns regarding the need for local authorities to consult one another over strategic development and infrastructure the 'duty to cooperate' was created in the Localism Act 2011, and amends the Planning and Compulsory Purchase Act 2004. It places a legal duty on local planning authorities, county councils in England and public bodies to engage constructively, actively and on an ongoing basis to maximise the effectiveness of Local Plan preparation in the context of strategic cross boundary matters.

The duty to cooperate is not a duty to agree; but local planning authorities should make every effort to secure the necessary cooperation on strategic cross boundary matters before they submit their Local Plans for examination.

## 2.2 Key changes to waste management policy

### 2.2.1 Government Review of Waste Policy in England 2011

In June 2010, the Government announced a full review of waste policy in England. The review findings were published in June 2011<sup>1</sup> alongside a detailed action plan. The review document identifies a number of principal commitments that would form part of a sustainable approach to the use of materials, namely to:

- Prioritise efforts to manage waste in line with the waste hierarchy and reduce the carbon impact of waste;
- Develop a range of measures to encourage waste prevention and reuse, supporting greater resource efficiency;
- Develop voluntary approaches to cutting waste, increasing recycling and improving the quality of recycle material;
- Consult on the case for higher packaging recovery targets for some key materials;
- Support energy from waste where waste cannot be recycled;
- Work to increase the energy from waste provided by Anaerobic Digestion
- Consult on a wood waste landfill restriction and the case for other material landfill restrictions.

Further commitments relate to improving the service to householders and business and include:

- Supporting initiatives which reward and recognise people who do the right thing to reduce, reuse and recycle waste;
- Work with councils to increase the frequency and quality of rubbish collections and make it easier to recycle;
- Encourage councils to sign up to the new Recycling & Waste Services Commitment, setting out the principles they will follow in delivering local services;
- Protect civil liberties by stopping councils from criminalising householders for trivial bin offences whilst ensuring that stronger powers existing for tackling fly tipping;
- Support councils and the waste industry in improving the collection of waste from smaller businesses;
- Reduce the burden of regulation and enforcement on legitimate business but target those who persistently break the law.

<sup>1</sup> <https://www.gov.uk/government/publications/government-review-of-waste-policy-in-england-2011>

The accompanying action plan was divided into key areas for activity and included:

- Responsibility deals with business – including developing a MRF code of practice, voluntary responsibility deals on paper, packaging, for the hospitality sector and voluntary actions on textiles.
- Preventing waste - developing a National Waste Prevention Programme, creating a Waste Prevention Load Fund, launching a Zero Waste Award, exploring reuse collection facilities at HWRCs, and introducing minimum mandatory standards for the design of products.
- Helping and rewarding those who ‘do the right thing’ – produce a local authority Recycling and Waste Services Commitment, funding reward and recognition scheme trials, increasing knowledge of ‘recycling on the go’ and various support to food waste initiatives.
- Energy from waste – produce an anaerobic digestion strategy, publish an EfW guidance document, and capture more methane from landfill.
- Modernising waste regulation and enforcement – review bio-waste policy and regulatory framework, replace the Controlled Waste Regulations 1992, end LATS, reduce the burdens of WasteDataFlow, consider restrictions on wood waste to landfill, general streamlining of regulatory enforcement powers and responsibilities.
- Public Sector leading by example – develop a carbon metric, a waste partnerships road map, EA to publish data on waste infrastructure, improve procurement skills, reduce food waste in the public sector and include waste prevention in government buying standards.

Defra also committed to produce a National Waste Management Plan for England by 2013, to replace the Waste Strategy for England 2007, which would be compliant with Article 28 of the Waste Framework Directive.

**Comment:** It is important that Waste Planning Authorities plan for a range of waste management facilities that move waste up the waste management hierarchy and recover energy from waste where appropriate.

### 2.2.2 Waste Management Plan for England (December 2013)

The Waste Management Plan for England was published in December 2013. It is a high level document that provides an analysis of the current waste management situation in England, and sets how government policy will support the implementation the revised WFD. It contains

- an analysis of the current waste management situation in England;
- a summary of the type, quantity and source of waste generated in England and the existing waste collection schemes and major disposal and recovery installations;
- an assessment of the need for new collection schemes and additional waste infrastructure; and
- sets out measures to implementation of the objectives and provisions of the revised WFD, including:
  - the application of the waste hierarchy
  - the promotion of high quality recycling including the setting up of separate collections of waste where technically, environmentally and economically practicable
  - encouraging the separate collection of bio-waste with a view to the composting and digestion of bio-waste
  - to ensure that by 2020 at least 50% by weight of waste from households is prepared for re-use or recycled and at least 70% by weight of construction and demolition waste is recovered

**Comment:** The Plan does not contain any new policies on waste management, instead bringing together a list of current activities and does not shows where the Government intends resource management in England to go beyond 2020.

### 2.2.3 Other policy/regulatory changes since 2010

#### Definition of Municipal Waste

The UK has revised its interpretation of the definition of municipal waste. The new approach to municipal waste is based on the EU list of wastes or ‘European Waste Catalogue’. It will include all waste that is coded under

Chapter 20 – which is entitled “Municipal Waste (household waste and similar commercial, industrial and institutional wastes)”. It will also include some waste coded under Chapter 19 which covers waste that has been through some form of treatment process (for example material that has been through an Mechanical Biological Treatment (MBT) plant that ends up in landfill).

In practice this will mean that the amount of waste counted as municipal waste will increase significantly and the baseline on which the landfill diversion targets are set have changed for 2013/2020.

In February 2011, Defra issued clarification to remove ambiguity, which stated that future references to ‘municipal waste’ will refer to the new definition and that:

- Local Authority Collected Municipal Waste (LACMW) refers to the previous ‘municipal’ element of the waste collected by local authorities. That is household waste and business waste where collected by the local authority and which is similar in nature and composition as required by the Landfill Directive.
- Local Authority Collected Waste (LACW) – This is all waste collected by the local authority and is a slightly broader concept than LACMW as it would include both this [LACMW] and non-municipal fractions such as construction and demolition waste. LACW is the definition that will be used in statistical publications, which was previously referred to as municipal waste.

### **The Waste (England and Wales) Regulations 2011 (as amended)**

These Regulations implemented various aspects of the revised Waste Framework Directive, including the need to apply the waste hierarchy in the management of waste<sup>2</sup> and the requirement to separately collect at least paper, metals, plastics and glass by 2015.

**Comment:** The requirement to separately collect four key recyclables has the potential to increase the reprocessing capacity requirements to manage the recyclable waste generated. Although, the recycling capacities identified for in the 2010 Waste Capacity Study would have taken account of the recovery of these materials particularly under the scenarios that considered 50% recycling.

### **Removal of the Landfill Allowance Trading Scheme**

As part of the Government’s review of waste policy in England in June 2011, it announced that LATS scheme in England would end at the end of the 2012/13 scheme year. This was because while LATS had been effective in kick starting significant efforts to divert waste away from landfill, the rising level of Landfill Tax means it is now by far the more significant driver. The Waste and Emissions Trading Act 2003 (Amendment etc.) Regulations 2013 brought the landfill allowances trading scheme to an end in England.

### **Landfill Tax**

Landfill tax remains an important economic instrument to reduce the amount of waste landfilled. Landfill tax for active wastes has been increasing at £8/tonne/yr over the last few years, for 2014/15 the rate of landfill tax is £80/tonne. HMTreasury announced in the Budget in March 2014<sup>3</sup> that from April 2015, landfill tax will rise with inflation.

**Comment:** Landfill tax will continue to be a driver for organisations to move waste up the waste hierarchy including increased waste prevention, increased reuse and recycling and looking at alternative options for the treatment of wastes.

### **EU Targets Review Project**

European Commission is currently undertaking a review of EU waste policy and legislation, which is commonly referred to as the Target Review Project. The Target Review Project includes a scheduled review of waste management targets within the Waste Framework, Landfill and Packaging & Packaging Waste Directives, which could result in new targets beyond 2020. The Commission are due to bring forward proposals in autumn 2014, the proposals could include increasing the recycling targets for municipal/household waste to 60% and a requirement for the segregation of bio-waste along with a bio-waste recycling target.

<sup>2</sup> Defra published guidance in June 2011 entitled “Guidance on applying the Waste Hierarchy”

<sup>3</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/293759/37630\\_Budget\\_2014\\_Web\\_Accessible.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/293759/37630_Budget_2014_Web_Accessible.pdf)

## 2.3 Summary

Whilst there have been an number of notable changes over the last four years, the changes have not had a material impact on the assumption associated with estimating Birmingham's future waste capacity needs. Although the EU Targets Review Project could increase future national recycling targets, which could increase the expectation on the levels of recycling that should be achieved in Birmingham. However the outcome of the EU Targets Review Project will not be known until 2015 and are likely to only affect targets beyond 2020.

### 3. Review of Waste Forecasts

#### 3.1 Local Authority Collected Waste

##### 3.1.1 Historical LACW Arisings

Since the 2010 Waste Capacity Study the definition of municipal waste has been refined to reflect the European Commission's interpretation of municipal waste and the definition of municipal waste used in the UK for the reporting of waste statistics by local authorities. The term local authority collected waste (LACW) refers to all waste collected by the local authority including household waste, trade waste collected by the local authority and other municipal wastes collected by the local authority (e.g. parks and gardens waste, fly tipping etc.) plus non-municipal fractions such as construction and demolition waste and is the definition that used in Defra statistical publications, which was previously referred to as municipal waste<sup>4</sup>.

The 2010 Waste Capacity Study highlighted the general decrease in the amount of household waste generated per person over the period 2000/01 to 2008/09. Since 2009 the trend in household waste has continue to show a general decrease in the amount of waste generated per household from 1.09 tonnes/household/yr in 2008/09 to 0.94 tonnes/household/yr in 2012/13, as highlighted in Table 1.

The decrease in household waste since 2008/09 can be explained to some degree by the economic downturn, which may explain why in 2012/13, as the economy is starting to pick up, levels of household waste have increased by around 1%. However, other factors influencing levels of household arising since 2000/01 includes local authority waste prevention activity, the lightweighting of packaging, weather (that has impacted on the amounts of green waste) and the number of Easter Bank Holidays within a financial year, for example there was no Easter in the 2005/06 financial year.

**Table 1: LACW waste arisings in Birmingham between 2000 and 2012 (Source: Defra)**

Year	Total household waste (tonnes)	Total non-household waste (tonnes)	Total LACW (tonnes)	LACW annual growth	Dwelling Stock <sup>5</sup>	Waste per household (tonnes/household/yr)
2000/01	450,492	85,863	536,355		403,200	1.12
2001/02	465,807	82,773	548,580	2.3%	404,630	1.15
2002/03	470,465	63,720	534,185	-2.6%	405,850	1.16
2003/04	452,587	98,855	551,442	3.2%	407,610	1.11
2004/05	467,600	101,063	568,663	3.1%	410,230	1.14
2005/06	457,621	102,834	560,455	-1.4%	413,550	1.11
2006/07	466,618	103,973	570,591	1.8%	415,560	1.12
2007/08	471,415	94,132	565,547	-0.9%	418,720	1.13
2008/09	459,418	84,227	543,645	-3.9%	421,360	1.09
2009/10	439,545	84,981	526,215	-3.2%	422,470	1.04
2010/11	420,595	88,484	509,080	-3.3%	423,630	0.99
2011/12	398,124	84,687	482,810	-5.2%	424,820	0.94
2012/13	401,440	86,480	487,920	1.1%	426,190	0.94

<sup>4</sup> <https://www.gov.uk/local-authority-collected-waste-definition-of-terms> accessed 07/05/14

<sup>5</sup> <https://www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants> accessed 24/03/14

### 3.1.2 Future LACW Arisings

The 2010 Waste Capacity Study assumed a number of waste growth scenarios, some of which referenced three housing growth options considered at the time in the development of the Birmingham City Council Core Strategy<sup>6</sup> and an additional housing growth option recommended by the panel for the RSS. Since 2009, housing growth projections have been updated in the Birmingham Development Plan forecasting 51,100 homes over the period 2011 - 2031, policy TP28 provides the following housing trajectory<sup>7</sup>:

- 1,300 dwellings per annum (2011/2012 - 2013/2014)
- 1,900 dwellings per annum (2014/2015 - 2015/2016)
- 2,500 dwellings per annum (2016/2017 - 2020/2021)
- 3,090 dwellings per annum (2021/2022 - 2030/2031)

These housing growth figures were used to update the LACW forecast scenarios from the 2010 Waste Capacity Study on the following basis:

- **Scenario 1** - No change in waste arising/household/year from 2008/09 levels and non-household waste levels remain constant, as per 2010 Waste Capacity Study
- **Scenario 2** - Variation over time in level of waste arising/household/year based on the historical trend with non-household waste levels remaining constant, an update on the 2010 Waste Capacity Study as an additional four years of waste arising figures have been factored in. Due to the significant decrease in arisings over the last four years, the trend was changed from a linear to logarithmic trend to reflect the fact waste is not likely to continue to decrease at the same rates experienced with the economic downturn.
- **Scenario 3** - Levels of household waste growth as per targets in Birmingham City Council's Municipal Waste Management Strategy (which is based on anticipated household growth) and with non-household levels remain constant, as per the 2010 Waste Capacity Study.
- **Scenario 4** – additional scenario with no change in waste arising/household/year from 2012/13 levels and non-household waste levels remain constant, an update from the 2010 Waste Capacity Study which used 2008/09 levels

The previous nine waste growth projections for LACW in the 2010 Waste Capacity Study have been reduced to four, as per Table 2.

**Table 2: LACW waste growth projection scenarios**

Scenario		Assumption	
1	No change in waste arising/hhld/yr from 2008/09 levels	Household waste: 1.09 tonnes/hhld/yr	
2	Variation with time in waste arisings/hhld/yr following logarithmic trend in historic waste arisings/ hhld/yr from 2000/01.	Household waste: logarithmic trend $y = -0.068(\ln)x + 1.197$ (where x is year)	
3	Birmingham Waste Strategy Targets	Year	Household waste growth rate
		2013/14 - 2015/16	1.00%
		2016/17 - 2026/27	0.50%
4	No change in waste arising/hhld/yr from 2012/13 levels	Household waste: 0.94 tonnes/hhld/yr (as per household generation levels in 2012/13)	
<b>Note:</b> Non household waste was assumed to be constant across all scenarios and years at 86,500 tonnes/annum (as there has been little change in the non household waste stream over the last five years)			

<sup>6</sup> The Birmingham Plan Core Strategy Issues and Options, Birmingham City Council (September 2008).

<sup>7</sup> Birmingham Plan 2031 - The Birmingham Development Plan Pre Submission Version Planning for Sustainable Growth, Birmingham City Council (December 2013)



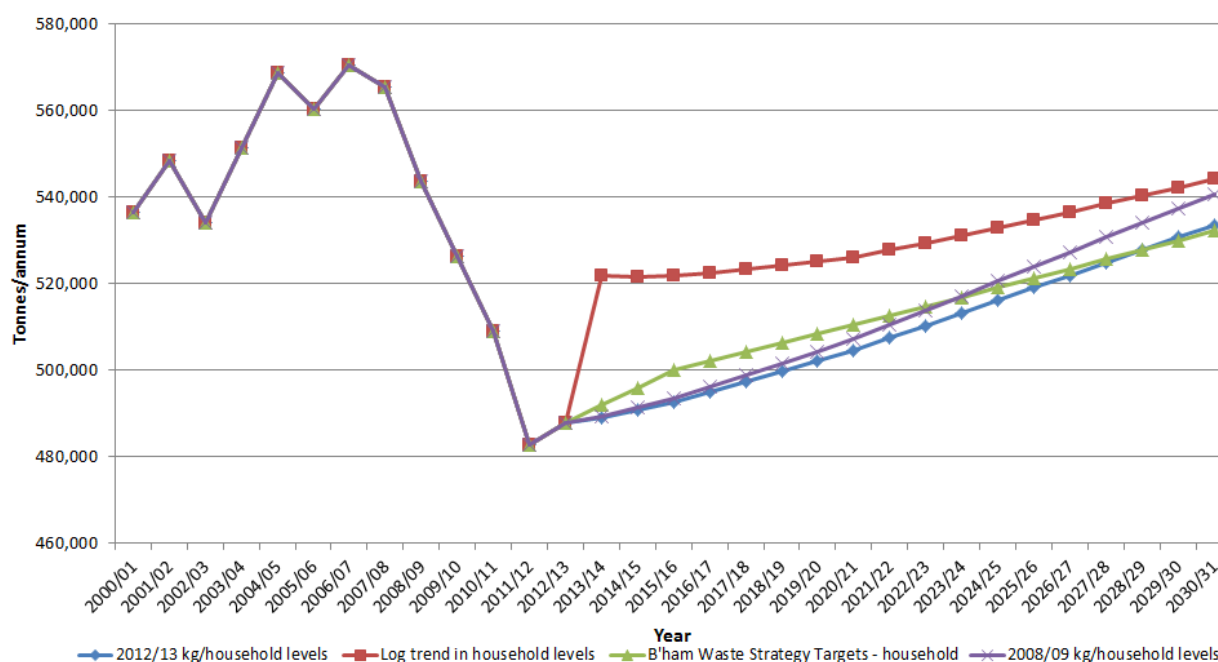
Based on the growth rates applied in Table 2, LACW is expected to grow from 488,000 tonnes in 2012/13 to between **532,200** and **544,200** by 2030/31, see Figure 1. This represents an increase of between 9.4 – 11.5% over the period 2012/13 to 2030/31. The 2010 Waste Capacity Study predicted LACW arisings in 2025/26 to between 544,700 – 614,900 tonnes/annum, Table 3 shows current projections for 2025/26 are between 519,100 and 534,800 tonnes/annum. The decrease in projected arisings is mainly due to the significant reduction (over 10%) in LACW arisings from 2008/09 to 2012/13, for reasons highlighted in Section 3.1.1 and revisions to the housing projections up to 2031.

**Table 3: LACW projections 2012/13 – 2030/31 for different scenarios**

Scenario	Tonnes/annum					% increase 12/13 – 30/31
	2012/13	2014/15	2019/20	2025/26	2030/31	
Scenario 1	487,900	491,400	501,700	524,000	540,800	10.8%
Scenario 2	487,900	490,900	524,200	534,800	544,200	11.5%
Scenario 3	487,900	521,700	506,300	521,200	532,200	9.1%
Scenario 4	487,900	496,000	499,800	519,100	533,600	9.4%

**Note:** Figures rounded to the nearest 100 tonnes

**Figure 1: LACW projections (2000/01 – 2030/31) all scenarios**



## 3.2 Commercial and Industrial Waste

Data on commercial and industrial (C&I) waste arisings in Birmingham in the 2010 Waste Capacity Study was taken from the national C&I study for the East of England Regional Assembly<sup>8</sup>, where it was estimated in 2006/07 that 968,000 tonnes of C&I waste arose in Birmingham. Since the 2010 Waste Capacity Study, Defra published the results of a national C&I survey<sup>9</sup>, however this only provides data at the West Midlands level. The East of England Regional Assembly national study estimated around 6.29 million tonnes of C&I waste across the West Midlands (based on 2006/07) compared to 5.25 million tonnes of C&I waste across the West Midlands (based on 2009) in the Defra study. It should be noted that the differences in arisings of around 17% are likely to some degree due to the survey methodology rather than just the 3 year time difference between the survey.

<sup>8</sup> Study into Commercial and Industrial Waste Arisings. Report for the East of England Regional Assembly, April 2009 (ADAS)

<sup>9</sup> Defra - Commercial and Industrial Waste Survey 2009 Final Report, May 2011 (Jacobs)

Two scenarios for future growth of commercial and industrial (C&I) waste were considered in the 2010 Waste Capacity Study. Scenario 1 took data on waste per employee by sector from the East of England Regional Assembly study and combined this with employment data from local economic forecasting models (LEFM). As Scenario 1 LEFM forecasts were linked to the recession and a second scenario took more optimistic employment forecasts from the RSS. The two scenarios projected C&I waste arisings in 2025/26 would be in the region of 853,000 tonnes per annum (Scenario 1) to 1.112 million tonnes per annum (Scenario 2).

Taking updated employment forecast, used for the development of the 2031 Birmingham Plan, it is estimated that between 2011 and 2031 110,149 new jobs will be created within Birmingham, see Table 4. These predictions take the economic forecasts from the Cambridge Econometrics LEFM as a starting point and then substitute with assumptions based on additional sources of evidence for particular sectors where appropriate<sup>10</sup>.

**Table 4: Employment forecasts for Birmingham - 2011 – 2031<sup>110</sup>**

	Number of estimated new jobs
Retail	10,000
Office	32,039
Industrial	18,909
*Other Sectors	41,072
Peddimore	8,129
<b>Total</b>	<b>110,149</b>

Taking the updated employment forecast figures and applying these against the original waste per employee by sector figures, C&I waste arisings are predicted to be 1.054 million tonnes per annum by 2025/26 and 1.106 million tonnes per annum by 2030/31, see Table 5. The 2025/26 forecast is towards the upper end of the forecasted band provided in the 2010 Waste Capacity Study but suggest that they still remain valid for planning purposes.

**Table 5: C&I arisings by sector based on revised employment forecasts**

Sector	Tonnes by sector				
	2006/07	2014/15	2019/20	2025/26	2030/31
Food, drink & tobacco	32,500	30,022	32,321	35,312	37,893
Textiles/ wood/ paper/ publishing	33,700	29,861	31,937	34,485	36,629
Power & Utilities	3,400	6,004	6,174	6,377	6,547
Chemical/ non-metallic minerals	76,400	63,258	67,606	72,171	75,721
Metal manufacturing	109,100	97,073	104,200	113,249	120,982
Machinery & equipment (other manufacturing)	83,000	72,581	77,404	82,859	87,279
Retail & wholesale	227,900	201,560	208,637	217,130	224,207
Other services <sup>a</sup>	316,400	346,942	367,774	392,773	413,605
Public sector	85,300	90,709	94,742	99,582	103,615
<b>Total</b>	<b>967,700</b>	<b>938,011</b>	<b>990,796</b>	<b>1,053,939</b>	<b>1,106,479</b>

a: Other Services includes waste arising from hotels and catering, air transport, communications, land and other transport, water transport, finance, business services (computer related, labour recruitment, security and cleaning, other including call centres, research and development, technical testing, real estate and renting, other tradeable

<sup>10</sup> Internal Report - Estimated Job Creation within Birmingham between 2012 and 2031 (Birmingham City Council)



### 3.3 Construction, Demolition and Excavation Waste

The 2010 Waste Capacity Study estimated construction, demolition and excavation (CD&E) waste to be 1.65 million tonnes in Birmingham. Since the last study WRAP produced a report to provide estimates of the levels of arisings, use and disposal of the full range of construction, demolition and excavation wastes in England in 2008 which involved an analysis of existing data along with some original survey research<sup>11</sup>. However, the WRAP report looked at national level arisings rather than individual WPA or regions in England and therefore no published updated baseline figure from that used in 2010 Waste Capacity Study is available as due to the number of exemptions likely to be generating CD&E waste the EA waste data interrogator (which does not have data on exemptions) is not likely to produce an accurate picture.

In the 2010 Waste Capacity Study, a number of assumptions regarding growth rates in the CD&E sector were made based on current market news and information. As arisings of CD&E waste are likely to be strongly related to the amount of construction outputs, reference was made to the office of national statistics (ONS) historic construction outputs to update the baseline position, these estimates of arisings for the period 2006/07 – 2012/13 are summarised in Table 6.

**Table 6: Estimate of CD&E arisings (2006/07 – 2012/13) based on actual construction outputs by year**

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Output £ (Millions) <sup>12</sup>	128,187	124,932	108,346	117,385	120,097	110,275	111,513
% change in output		-2.54%	-13%	8%	2%	-8%	1%
<b>Tonnes</b>	<b>1,655,700</b>	<b>1,613,600</b>	<b>1,403,900</b>	<b>1,516,200</b>	<b>1,546,500</b>	<b>1,422,800</b>	<b>1,437,000</b>

Future projections on construction outputs, see Table 7, were then used to estimate the range of waste arisings for CD&E waste up to the period 2031, Table 8. The 2010 Waste Capacity Study projected CD&E arisings to be in the region of 1.5 – 1.7 million tonnes per annum by 2025/26. At the time of the 2010 Waste Capacity Study the construction industry was experiencing a sharp decline in activity and the recovery time was expected to be slow. Updated forecasts for 2025/26 estimates forecast in 2025/26 to be between 1.7 and 1.9 million tonnes per annum, reaching between 1.8 and 2.0 million tonnes per annum in Birmingham by 2030/31.

**Table 7: Growth Projections for Construction Output<sup>13</sup>**

Growth Projections		2015	2020	2025	2025 - 31*
Low	5 year growth	-3.80%	7.80%	8%	
	Assumed annual growth	-0.8%	1.6%	1.6%	1%
Medium	5 year growth	2.10%	8.30%	7.50%	
	Assumed annual growth	0.4%	1.7%	1.5%	1%
High	5 year growth	8.00%	8.80%	7.10%	
	Assumed annual growth	1.6%	1.8%	1.4%	1%

\*assumed rate of annual growth beyond 2025 as projections for construction outputs from ONS are only available up to 2025

<sup>11</sup> CON900-001: Final Report Construction, demolition and excavation waste arisings, use and disposal for England 2008, WRAP (2010)

<sup>12</sup> Output in the Construction Industry: March and Q1 2014 - Table 2a: Chained volume measure of construction output in Great Britain: 2010 prices, seasonally adjusted - by sector, ONS (May 2014)

<sup>13</sup> A Long-Term Projection of Construction Output and Analysis of the Current Level of Capacity Utilisation for Construction Product Manufacturing, Construction 2025 Industrial Strategy, Construction Products Association (April 2014)

**Table 8: CD&E waste arisings projections**

Growth Projections	2006/07	2014/15	2019/20	2025/26	2030/31
Low	1,655,700	1,456,500	1,539,600	1,683,400	1,769,300
Medium		1,546,700	1,682,800	1,840,000	1,933,900
High		1,641,400	1,794,600	1,943,000	2,042,100

**Note:** Figures rounded to the nearest 100 tonnes

### 3.4 Hazardous waste

#### 3.4.1 Hazardous Waste Arisings and Deposits 2000 to 2012

The 2010 Waste Capacity Study forecasted that during the recession hazardous waste arisings would be in the range 41,000 to 58,000 tonnes, with tonnages returning to a range of 49,000 to 72,000 tonnes as the economy recovered. Figure 2 shows the trend in the hazardous<sup>14</sup> waste arisings in Birmingham between 2000 and 2012 and that the arisings since 2009 have been within the forecasted band.

**Figure 2: Trend in hazardous waste arisings in Birmingham between 2000 and 2012**  
(Source: Environment Agency)

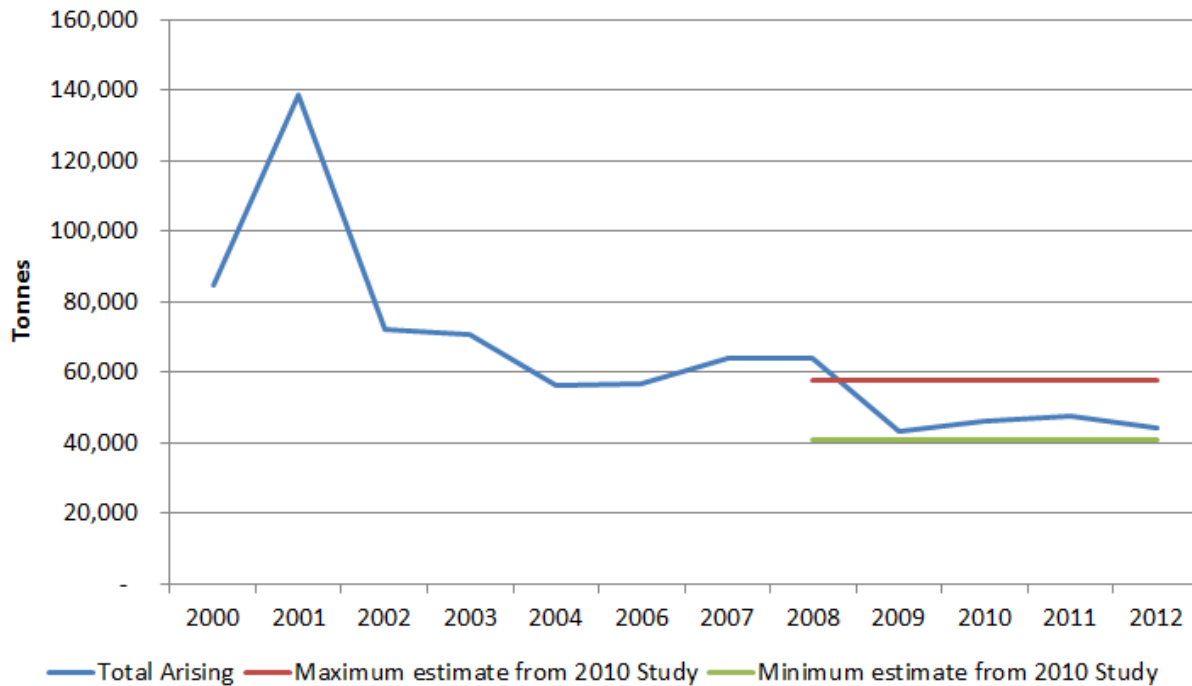


Table 9: provides a breakdown of the arisings over the same period by European Waste Catalogue (EWC) Chapter Headings.

<sup>14</sup> Prior to 2005, the term "special wastes" was used to describe hazardous waste. In 2005, the definition changed from special to hazardous waste. In this addendum, hazardous waste is used to cover both special waste pre-2005 and hazardous waste post-2005. It should be noted that there is no data available for 2005 due to the change in the definition from special to hazardous waste.

**Table 9: Breakdown of hazardous waste arisings in Birmingham between 2000 and 2012 ('000s tonnes)**  
(Source: Environment Agency)

EWC Chapter Headings	2000	2001	2002	2003	2004	2006	2007	2008	2009	2010	2011	2012
01: Mining and Minerals	-	-	-	-	0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
02: Agricultural and Food Production	<0.1	0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-
03: Wood and Paper Production	<0.1	0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	<0.1	-	-
04: Leather and Textile Production	<0.1	<0.1	-	-	<0.1	-	-	-	-	<0.1	-	-
05: Petrol, Gas and Coal Refining/Treatment	0.1	0.6	<0.1	<0.1	<0.1	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1
06: Inorganic Chemical Processes	12.6	12.4	5.4	4.8	4.4	2.2	0.6	0.3	0.4	0.6	0.8	0.5
07: Organic Chemical Processes	2.2	15.3	1.7	0.9	0.9	0.4	0.3	0.1	0.1	<0.1	0.1	<0.1
08: MFSU Paints, Varnish, Adhesive and Inks	5.9	4.5	2.8	3.2	1.6	1.5	1.1	1.4	1.0	1.0	0.9	0.8
09: Photographic Industry	<0.1	0.4	<0.1	<0.1	<0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.1
10: Thermal Process Waste (inorganic)	9.3	10.3	8.2	1.5	1.5	2.3	1.5	1.6	1.6	1.8	2.4	2.3
11: Metal Treatment and Coating Processes	4.8	13.8	3.7	4.3	4.9	3.1	4.9	3.8	3.0	2.7	3.0	5.0
12: Shaping/Treatment of Metals and Plastics	7.4	8.6	5.7	6.6	4.0	2.9	3.8	3.7	1.6	1.6	1.7	1.7
13: Oil and Oil/Water Mixtures	18.2	24.1	13.4	10.8	9.9	12.5	10.4	8.6	6.8	5.8	6.5	6.5
14: Solvents	0.2	0.4	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.2
15: Packaging, Cloths, Filter Materials	2.7	2.9	1.9	2.5	2.9	0.8	0.8	0.8	0.6	0.8	1.0	1.0
16: Not Otherwise Specified	3.7	4.4	3.2	6.0	4.7	4.4	4.5	9.3	4.6	6.3	7.0	5.3
17: CD&E Waste and Asbestos	10.1	14.2	12.1	12.2	10.4	9.2	17.0	16.3	5.3	6.4	6.9	4.8
18: Healthcare	0.1	0.5	0.1	<0.1	<0.1	5.0	5.0	4.9	5.9	6.8	5.3	5.3
19: Waste/Water Treatment and Water Industry	5.0	19.9	9.3	8.9	5.2	9.7	10.8	9.6	9.6	10.2	9.8	9.1
20: Municipal and Similar Commercial Wastes	0.8	0.8	1.0	0.5	0.5	2.3	2.7	2.8	2.4	1.6	2.0	1.5
99: Unclassified	1.7	5.3	3.4	8.1	4.9	-	-	-	-	-	-	-
<b>Total</b>	<b>84.8</b>	<b>138.6</b>	<b>72.3</b>	<b>70.7</b>	<b>56.2</b>	<b>56.9</b>	<b>64.0</b>	<b>63.9</b>	<b>43.2</b>	<b>46.0</b>	<b>47.7</b>	<b>44.3</b>

Table 10 provides the breakdown of the generic waste management methods used to manage the hazardous waste arising in Birmingham in 2012 by region of deposit. The figures show that the majority of hazardous waste was managed in the West Midlands and the North West, and while this is consistent with the 2010 Study<sup>15</sup> the proportion managed in these two regions has reduced from 86% to 68%. More hazardous waste (both tonnage and by percentage) is managed in the East Midlands and Wales, with these two regions account for 15% of deposits compared to 7% in 2007.

<sup>15</sup> 2010 Study reported hazardous waste data for 2007

In terms of waste management methods, there has been a notable reduction in the proportion landfilled, 5% in 2012 compared to 24% in 2007. The amount of hazardous waste recovered has increased from 14% in 2007 to 23% in 2012

**Table 10: Breakdown of generic waste management methods by region of deposit for hazardous waste arisings in Birmingham in 2012 (Source: Environment Agency)**

Region of Deposit	Incineration with energy recovery	Incineration without energy recovery	Landfill	Long term storage	Recovery	Transfer (D)	Transfer (R)	Treatment	Total
East Midlands	28	-	177	-	1,082	137	1,980	106	3,508
East of England	-	2	159	-	60	64	27	139	452
London	-	-	-	-	20	8	62	-	90
North East	-	-	204	-	514	33	106	-	856
North West	-	74	4	7,904	756	176	229	3,249	12,393
South East	-	0	27	-	185	6	50	41	309
South West	7	28	13	-	146	54	5	15	268
Wales	-	-	-	-	2,158	1,144	3	26	3,331
West Midlands	926	627	1,549	-	4,737	3,480	3,016	7,977	22,313
Yorkshire & Humber	184	<1	40	-	391	12	45	94	765
<b>Total</b>	<b>1,145</b>	<b>732</b>	<b>2,173</b>	<b>7,904</b>	<b>10,048</b>	<b>5,112</b>	<b>5,523</b>	<b>11,647</b>	<b>44,284</b>

Table 11 provides the breakdown of hazardous waste which was deposited in Birmingham in 2012 by EWC code. The figures show that Birmingham is now a net importer of hazardous waste, with just less than 51,000 tonnes of hazardous waste being deposited in Birmingham, compared to arisings of just over 44,000 tonnes. This is a significant change since 2007, with the amount of hazardous waste deposited in Birmingham doubling from 24,640 tonnes to 50,930 tonnes in 2012. The main cause of this change is the quantity managed at treatment facilities increasing from 2,650 tonnes to 29,200 tonnes. Table 12 shows the breakdown by region of where waste deposited in Birmingham in 2012 originated from, whilst 17,500 tonnes originates from the West Midlands the data also shows that over 10,000 tonnes of hazardous waste was received from both the East of England and South East of England.

### 3.4.2 Future Hazardous Waste Arisings

Based on the updated analysis, it would suggest that the forecasted arisings used in the 2010 Waste Capacity Study, suggesting a range of 49,000 to 72,000 tonnes per annum of hazardous waste arisings, still provide a good basis for planning purposes.

**Table 11: Breakdown of generic waste management methods for hazardous waste deposited in Birmingham in 2012 (Source: Environment Agency)**

EWC Chapter Headings	Incineration with energy recovery	Incineration without energy recovery	Other Fate	Recovery	Rejected	Transfer (D)	Transfer (R)	Treatment	Total
01: Mining and Minerals	-	-	-	-	-	-	-	-	-
02: Agricultural and Food Production	-	-	-	-	-	-	-	-	-
03: Wood and Paper Production	-	-	-	-	-	-	-	-	-
04: Leather and Textile Production	-	-	-	-	-	-	-	-	-
05: Petrol, Gas and Coal Refining/Treatment	-	-	-	-	-	64	-	-	64
06: Inorganic Chemical Processes	-	-	-	-	25	1	-	8,953	8,979
07: Organic Chemical Processes	384	-	-	-	21	-	-	6,677	7,082
08: MFSU Paints, Varnish, Adhesive and Inks	-	-	-	70	-	16	8	91	185
09: Photographic Industry	-	-	-	-	-	16	-	-	16
10: Thermal Process Waste (inorganic)	-	-	-	-	-	-	0	-	0
11: Metal Treatment and Coating Processes	-	-	-	55	-	-	604	-	659
12: Shaping/Treatment of Metals and Plastics	-	-	-	1	-	192	2	-	195
13: Oil and Oil/Water Mixtures	-	-	-	-	26	609	16	7,663	8,314
14: Solvents	-	-	-	80	-	14	14	6	113
15: Packaging, Cloths, Filter Materials	149	-	-	25	-	20	181	-	375
16: Not Otherwise Specified	188	-	17	911	-	7	11,679	1,726	14,527
17: CD&E Waste and Asbestos	-	-	-	-	-	181	65	-	247
18: Healthcare	3,453	135	-	-	-	1,046	-	1,663	6,297
19: Waste/Water Treatment and Water Industry	-	-	-	1	98	<1	1	2,458	2,558
20: Municipal and Similar Commercial Wastes	4	-	-	1,230	-	5	80	-	1,319
<b>Total</b>	<b>4,179</b>	<b>135</b>	<b>17</b>	<b>2,372</b>	<b>171</b>	<b>2,171</b>	<b>12,651</b>	<b>29,236</b>	<b>50,931</b>

**Table 12: Breakdown of generic waste management methods by region arising for hazardous waste deposited in Birmingham in 2012 (Source: Environment Agency)**

Region Arising	Incineration with energy recovery	Incineration without energy recovery	Other Fate	Recovery	Rejected	Transfer (D)	Transfer (R)	Treatment	Total
(Unknown)	5		1			3	<1	2	11
East Midlands	222	1	2	275	71	316	292	2,830	4,009
East of England	288		1	86	25	60	555	9,197	10,212
London	177			79		122	439		817
N Ireland							<1		<1
North East	161			16		<1	109	947	1,233
North West	582			9		30	246	739	1,606
Scotland	522			1	21	<1	8	862	1,414
South East	326	1	2	138		89	8,620	1,171	10,346
South West	51		3	140		74	469	66	803
Wales	20	<1	1	70		2	235	104	433
West Midlands	1,132	133	7	1,451	26	1,470	1,032	12,183	17,435
Yorks & Humber	694	<1		105	27	4	645	1,136	2,611
<b>Total</b>	<b>4,179</b>	<b>135</b>	<b>17</b>	<b>2,372</b>	<b>171</b>	<b>2,171</b>	<b>12,651</b>	<b>29,236</b>	<b>50,931</b>

## 4. Update of Waste Management Facilities

### 4.1 Permitted facilities

The 2010 Waste Capacity Study assessed the permitted waste facilities within Birmingham and looked at the location, type of facility e.g. transfer station and the permitted capacity and actual throughput. Data was taken from the Environment Agency's Waste Data Interrogator 2012 in order to review the changes, from the 2010 Waste Capacity Study which was based on 2007 EA data, in both number and type of permitted waste facilities in Birmingham along with the capacity throughput. Table 13 shows there has been a decrease in waste facilities from 106 (based on 2007 EA data) to 87 facilities based on 2012 EA data. The most notable decline has been in A11 - Household, Commercial & Industrial waste transfer stations, whereas there has been a notable increase in A19a – ELV facilities. The decrease in waste facilities over the period 2007 – 2012 is potentially due to the recession. This decline in facilities can be seen in the tonnage throughput in Table 14, which shows that 1.57 million tonnes was handled at permitted facilities in Birmingham in 2012, which is equivalent to 50% of the theoretical permitted capacity. A decrease from the 2010 Waste Capacity Study which, based on 2007 EA returns, suggested 2.3 million tonnes of waste was managed at permitted waste facilities equivalent to utilising 67% of permitted capacity.

**Table 13: Number of operational permitted waste facilities by site category in Birmingham based on 2007 and 2012 EA data**

Permit Site Type	Site Category	2012 No. Of facilities	2007 No. Of facilities
A9 : Haz Waste Transfer Station	Transfer	6	8
A11 : Household, Commercial & Industrial Waste T Stn	Transfer	20	36
A12 : Clinical Waste Transfer Station	Transfer	3	3
A14 : Transfer Station taking Non-Biodegradable Wastes	Transfer	2	2
A15 : Material Recycling Treatment Facility	Treatment	4	3
A16 : Physical Treatment Facility	Treatment	2	1
A17 : Physico-Chemical Treatment Facility	Treatment	1	1
A19 : Metal Recycling Site (Vehicle Dismantler)	MRS	2	5
A19a : ELV Facility	MRS	19	31
A20 : Metal Recycling Site (mixed MRS's)	MRS	6	7
A21 : Chemical Treatment Facility	Treatment	2	2
A22 : Composting Facility	Treatment	1	2
A23 : Biological Treatment Facility	Treatment	1	1
S0809 : Asbestos Waste Transfer Station	Transfer	1	
S0813 : Non-hazardous & hazardous HWA Site	Transfer	1	
S0820 : Vehicle depollution facility	MRS	5	1
S0821 : Metal recycling site	MRS	1	
S0823 : WEEE treatment facility	Treatment	1	
S0824 : Clinical Waste Transfer Station	Transfer	1	
SR2011 No3: Vehicle Depollution Facility <5000 tps	MRS	6	
SR2011 No4: Treatment of waste wood <75000 tps	Treatment	1	
Incinerator		1	1
Treatment Sites with Permits for waste installations			2
<b>Total</b>		<b>87</b>	<b>106</b>

**Table 14: Tonnage throughput at facilities based on 2012 EA waste returns**

Permit Site Type	No. of facilities	Actual throughput		Permitted Tonnage		Theoretical % of capacity used
		Total by Facility Type	Average Tonnage/facility	Total by facility type	Average tonnage/facility	
A9 : Haz Waste Transfer Station	6	94,305	15,718	261,173	43,529	36%
A11 : Household, Commercial & Industrial Waste T Stn	20	781,921	39,096	904,986	45,249	86%
A12 : Clinical Waste Transfer Station	3	2,801	934	32,498	10,833	9%
A14 : Transfer Station taking Non-Biodegradable Wastes	2	9,139	4,570	79,998	39,999	11%
A15 : Material Recycling Treatment Facility	4	6,172	1,543	19,997	4,999	31%
A16 : Physical Treatment Facility	2	14,676	7,338	19,999	10,000	73%
A17 : Physico-Chemical Treatment Facility	1	4,544	4,544	10,000	10,000	45%
A19 : Metal Recycling Site (Vehicle Dismantler)	2	99	50	9,998	4,999	1%
A19a : ELV Facility	19	7,423	391	50,232	2,644	15%
A20 : Metal Recycling Site (mixed MRS's)	6	281,699	46,950	514,997	85,833	55%
A21 : Chemical Treatment Facility	2	8,589	4,295	29,998	14,999	29%
A22 : Composting Facility	1	459	459	4,999	4,999	9%
A23 : Biological Treatment Facility	1	297,583	297,583	714,400	714,400	42%
S0809 : Asbestos Waste Transfer Station	1	23	23	50	50	46%
S0813 : Non-hazardous & hazardous HWA Site	1	8,791	8,791	24,999	24,999	35%
S0820 : Vehicle depollution facility	5	22,593	4,519	97,698	19,540	23%
S0821 : Metal recycling site	1	2,528	2,528	5,000	5,000	51%
S0823 : WEEE treatment facility	1	1,158	1,158	24,999	24,999	5%
S0824 : Clinical Waste Transfer Station	1	18	18	50	50	36%
SR2011 No3: Vehicle Depollution Facility <5000 tps	6	286	48	6,099	1,017	5%
SR2011 No4: Treatment of waste wood <75000 tps	1	22,222	22,222	37,500	37,500	59%
Incinerator	1	362,926	362,926	400,000	400,000	91%
<b>Total</b>	<b>87</b>	<b>1,567,029</b>		<b>3,249,670</b>		



## 4.2 Exempt facilities

A waste exemption is a waste operation that is exempt from needing an environmental permit. Exemptions can involve the use, treatment, disposal and storage of waste. However since the 2010 Study, there has been a significant change to the waste exemptions system with exemptions being redefined with greater clarity over the types and quantities of waste that can be used under each exemption.

The introduction of the new waste exemption definitions meant that the old style exemption are no longer valid, and all exempt operations needed to re-register under the new definition. Unlike the old system, each registration lasts three years, after which period there is a need to re-register the exemptions if an operator wants to continue to use the exemption. This should result in a “cleaner” data set because under the old system there was no requirement to remove an exemption from the register once an operation had ceased. However, there is no requirement for an exemption that is completed within the three registration period to be removed from the register. This has implications for estimating capacity for exemption related to construction activities, which would not normally accept waste for the full three years.

The changes to the exemption system also means that some of the assumptions used in the 2010 Study are not directly applicable for estimating the capacity available at exemption facilities. Exemptions are now split into four groups:

- Using waste;
- Treating waste;
- Disposing of waste; and
- Storing waste.

Between April 2011 and March 2014, there were 919 exempt activities registered in Birmingham, of which 118 applied to agricultural waste only and are therefore outside the scope of the waste capacity study.

Summarised in Appendix A are the assumption about whether an exemption makes a notable contribution to the available capacity along with the estimated capacity/throughput at exemption facilities for the purpose of assessing capacity in Birmingham. The data was cleansed to combine multiple entries for individual sites and to remove activities that are assumed not to make a notable contribution to the available capacity.

In addition, exemptions associated with U1 (Use of Waste in Construction) are likely to be transient activities with waste used during the construction period. As most construction activities are completed within 12 months, the number of sites registered in 2013/14 was used to estimate the potential capacity in a given year.

Table 15 summarises the number of registered exemption for the activities that could make a notable contribution to the available capacity along with an estimate of the potential annual throughput based on the assumptions in Appendix A. The capacity which is available for the management of waste produced in Birmingham is estimated to be in the region of 850,000 tonnes per annum

**Table 15: Number of notable exemptions by activity and estimated capacity (Source: Environment Agency)**

Description	Number	Estimated annum capacity
U1 - Use of Waste in Construction	33 sites in 2013/14	16,500
T1 - Cleaning, washing, spraying or coating relevant waste	3	15,000
T2 - Recovery of textiles	5	12,500
T4 - Preparatory treatments (baling, sorting, shredding etc)	35	285,000
T5 - Screening and blending of waste	11	19,250
T6 - Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising	19	47,500
T8 - Mechanical treatment of end-of-life tyres	2	1,000
T9 - Recovery of scrap metal	44	440,000
T10 - Sorting mixed waste	12	3,000
T11 - Repair or refurbishment of WEEE	10	5,000
T12 - Manual treatment of waste	10	500
T16 - Treatment of waste toner cartridges/waste ink cartridges by sorting, dismantling, cleaning or refilling	4	2,000
T23 - Aerobic composting and associated prior treatment	2	8,000
<b>Total</b>	<b>190</b>	<b>855,250</b>

### 4.3 Planning consents

In addition to existing waste facilities there are currently five planning consents associated with the provision of waste facilities. Information presented in Table 16 suggests if all the planning consents became operational there would be up to an additional 700,000 tonnes per annum of capacity, around 325,000 tonnes of which is waste treatment capacity and 380,000 tonnes waste transfer capacity.

**Table 16: Approved planning applications for waste facilities<sup>16</sup>**

Reference	Location	Capacity (tonnes)	Facility Type
2010/02828/PA 21/10/2010	Ebury Road, Kings Norton	75,000 tons pa (EA permit)	Waste Transfer Station (Existing)
2010/04966/PA 03/02/2011 2013/07277/PA 04/12/2013	Hay Hall Road, Tyseley, South Yardley	130,000 tonnes. The energy recovered to be used for the generation of electricity. Generating capacity of the ERF would be sufficient to power approximately 28,000 households in Birmingham.	Energy recovery facility. 3 buildings to process residual waste from vehicle shredding, metals recovery and recycling operations.
2011/05297/PA 03/11/2011	Fmr.DHL Parcel Depot, Landor Street, Nechells	Up to 200,000 Tonnes from Commercial/Industrial independent contractors and 100,000 tonnes of municipal waste a year	Change of Use from B2/B8 to waste management incl. Resource Recovery centre, Waste Transfer Station, Solid Recovered Fuel facility e.g. plastics, paper and biodegradable wastes; and Material Recycling (MRF)
2012/05409/PA 23/11/2012	Washwood Heath sidings. Heartlands Spine Road north, Common Lane, Nechells	128,000 tonnes of solid waste p.a. & 2 mw anaerobic digestion; 67,000 tonnes of green waste p.a Total 195,000 tonnes p.a	Advanced Conversion Technology & Anaerobic Digestion Facility
2012/05728/PA 06/12/2012	Adjacent to railway Aston Church Road, Washwood Heath	Output of 4,000 tonnes p.a.	Waste Transfer Station

<sup>16</sup> Information from Birmingham City Council Planning Department (April 2014)

## 5. Assessment of waste flows (into and out of Birmingham)

### 5.1 Waste Originating from Birmingham

There is approximately 1.2 million tonnes of waste identified in the EA waste return data as originating from within Birmingham (2012). This is an increase from the 825,000 tonnes identified in the 2010 Waste Capacity Study based on 2007 EA waste return data and is likely due to better recording of origins of waste by facility operators. The type and location of the facilities receiving waste from Birmingham is summarised in Table 17, with a more detailed breakdown by WPA across the West Midlands region provided in Appendix B.

**Table 17: Breakdown by facility type of waste originating from Birmingham in 2012 (Source: Environment Agency)**

Type of Facility	Location of receiving facility						Total Waste Tonnes
	Birmingham		West Midlands (excluding Birmingham)		Other Regions		
	Tonnes	%	Tonnes	%	Tonnes	%	
Biological Treatment	42	9%	73	15%	364	76%	479
CA Site	8,791	100%	-	0%	-	0%	8,791
Car Breaker	-	0%	719	23%	2,407	77%	3,125
Chemical Treatment	3,713	85%	-	0%	634	15%	4,346
Clinical Waste Transfer	1,389	35%	2,558	64%	24	1%	3,971
Composting	459	1%	58,219	97%	1,637	3%	60,315
Construction	-	0%	2	0%	1,251	100%	1,253
Deposit of waste to land (recovery)	-	0%	16,258	100%	-	0%	16,258
Haz Waste Transfer	40,979	81%	8,923	18%	950	2%	50,852
Haz Waste Transfer / Treatment	-	0%	1	0%	5,961	100%	5,962
Hazardous Merchant LF	-	0%	-	0%	11,919	100%	11,919
Hazardous Restricted LF	-	0%	-	0%	114	100%	114
Inert Waste Transfer	8,194	100%	-	0%	12	0%	8,206
Inert Waste Transfer / Treatment	-	0%	261,560	100%	-	0%	261,560
Material Recycling Facility	10	0%	28,201	68%	13,016	32%	41,227
Metal Recycling	8,447	15%	37,649	68%	9,445	17%	55,541
Non Haz (SNRHW) LF	-	0%	26,391	98%	490	2%	26,881
Non Hazardous LF	-	0%	43,354	91%	4,410	9%	47,765
Non-Haz Waste Transfer	459,014	96%	11,334	2%	6,458	1%	476,807
Non-Haz Waste Transfer / Treatment	-	0%	1,100	17%	5,467	83%	6,567
Physical Treatment	32,756	57%	16,576	29%	8,539	15%	57,870
Physical-Chemical Treatment	1,439	5%	13,017	48%	12,522	46%	26,977
Reclamation	-	0%	12,330	100%	-	0%	12,330
Timber Manufacturing	-	0%	7,439	97%	224	3%	7,662
Vehicle Depollution Facility	1	0%	214	70%	92	30%	308
WEEE treatment facility	1,107	31%	143	4%	2,350	65%	3,599
<b>TOTAL</b>	<b>566,340</b>	<b>47%</b>	<b>546,061</b>	<b>45%</b>	<b>88,285</b>	<b>7%</b>	<b>1,200,686</b>

NB: The data does not include waste received at Tyseley Energy from Waste facility

A breakdown of waste received by different regions across England show that the West Midlands is handling nearly 93% of waste originating from Birmingham, an increase from the 2010 Waste Capacity Study of 86.5%. This does not take account of exempt or non-codeable waste in EA waste returns. The percentage of waste originating from Birmingham and handled in Birmingham is 47%, which is a decrease from the 58% in the 2010 Waste Capacity Study but some of this may be explained by more accurate recording of the origins of waste by facility operators rather than Birmingham exporting more waste from the WPA. The more detailed breakdown by WPA across the West Midlands region provided in Appendix B, shows that facilities in other West Midlands WPAs receiving waste from Birmingham include:

- around 260,000 tonnes of material going to inert waste transfer/treatment facilities in Warwickshire and Sandwell (15% of material accepted at these facilities is subsequently landfilled in the West Midlands, although this is not necessary specifically the waste accepted from Birmingham. It is reasonable to assume the remaining material has been treated on site and used as aggregate on construction )
- 51,500 tonnes going to composting facility/ies in Sandwell
- 42,500 tonnes going to non-hazardous landfill in Worcestershire.

**Table 18: Percentage breakdown by Government Office Region of waste received from Birmingham (Source: Environment Agency)**

Region	% of Birmingham waste received
East Midlands	3.2%
East of England	0.2%
London	0.0%
North East	0.1%
North West	1.2%
South East	0.0%
South West	0.5%
Wales	0.5%
West Midlands	92.6%
Yorkshire & Humber	1.6%
<b>Total</b>	<b>100%</b>
<i>Birmingham</i>	<i>47%</i>

## 5.2 Waste received at facilities in Birmingham

Information from the EA interrogator suggested 1.57 million tonnes of waste was received at facilities in Birmingham in 2012, of which 78% could be identified as originating from the West Midlands and 36% specifically from Birmingham. This is an increase from the 2010 Waste Capacity Study where 60% was identified as originating from the West Midlands and 28% of the total originating from Birmingham. A more detailed breakdown of which WPAs across the West Midlands waste was received from is provided in Appendix C, however 50% of the tonnage was not code able down to the WPA level.

**Table 19: Breakdown by facility type of waste received into permitted waste facilities in Birmingham in 2012**  
(Source: Environment Agency)

Type of Facility	Waste received from								Total Waste
	Birmingham		West Midlands (incl Birmingham)		Other Regions		Not code able		
	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes
Biological Treatment	42	0.01%	264,632	89%	32,950	11%			297,583
CA Site	8,791	100%	8,791	100%	-	0%			8,791
Car Breaker	-		3,374	45%	1,427	19%	2,721	36%	7,522
Chemical Treatment	3,713	43%	4,383	51%	4,203	49%	13		8,599
Clinical Waste Transfer	1,389	49%	1,983	70%	834	30%			2,818
Composting	459	100%	459	100%	-	0%			459
Construction									-
Deposit of waste to land (recovery)									-
Haz Waste Transfer	40,979	43%	94,318	100%	9	0%			94,327
Haz Waste Transfer / Treatment									-
Hazardous Merchant LF									-
Hazardous Restricted LF									-
Inert Waste Transfer	8,194	90%	9,139	100%	-	0%			9,139
Inert Waste Transfer / Treatment									-
Material Recycling Facility	10	0%	4,433	72%	1,739	28%			6,172
Metal Recycling	8,447	3%	34,779	12%	967	0%	248,480	87%	284,226
Non Haz (SNRHW) LF									-
Non Hazardous LF									-
Non-Haz Waste Transfer	459,014	59%	753,046	96%	10,751	1%	18,124	2%	781,921
Non-Haz Waste Transfer / Treatment									-
Physical Treatment	32,756	89%	36,758	100%	140	0%			36,898
Physical-Chemical Treatment	1,439	32%	3,694	81%	850	19%			4,544
Reclamation									-
Timber Manufacturing									-
Vehicle Depollution Facility	1	0%	396	2%	4	0%	22,479	98%	22,879
WEEE treatment facility	1,107	96%	1,110	96%	48	4%			1,158
<b>TOTAL</b>	<b>566,340</b>	<b>36%</b>	<b>1,221,294</b>	<b>78%</b>	<b>53,923</b>	<b>3%</b>	<b>291,818</b>	<b>19%</b>	<b>1,567,035</b>

NB: The data does not include waste received at Tyseley Energy from Waste facility

## 6. Recycled and Secondary Aggregates

The 2010 Waste Capacity Study highlighted a number of 6 digit EWC codes which could be suitable for use in construction projects, and identified 1.35 million tonnes of material which was received at waste facilities in Birmingham and surrounding local authorities which matched the selected EWC codes as suitable for use in construction. Table 20 provides an updated breakdown based on 2012 returns, by waste planning authority area, of the quantities of waste by facility type and identifies 3.5 million tonnes of potentially suitable waste across the West Midlands region, when this is narrowed down to the WPA areas surrounding Birmingham highlighted in the 2010 Waste Capacity Study the amount of waste drops to 970,000 tonnes. This decrease from the 2010 Waste Capacity Study, which was based on 2007 EA returns, is likely due to the decrease in construction activity and industrial activity during the recession.

The suitability of the material for use as a recycled/secondary aggregate will depend on the previous use of the material. Based on information on WRAP's Aggregain website 70% of the material (2.4 million tonnes) was estimated to be suitable for potential aggregate use<sup>17</sup>.

An updated breakdown of the tonnages of material identified as potentially suitable for use in construction, by EWC code is provided in Table 21, highlighting a high proportion of EWC chapter 17 waste and in particular soils (EWC 17 05). However, as noted in the 2010 Waste Capacity Study, the actual use of the material in construction projects would be very dependent on the specific uses of the material in construction e.g. concrete, capping.

Based on the assumptions used for forecasting CDE&E waste provided in Section 3.3, the potential tonnage of material for use in aggregate is forecast to increase from 3.5 million tonnes in 2012 to between 4.2 and 4.4 million tonnes by 2030/31.

**Table 20 Potential tonnage of material suitable for use as aggregate in construction, 2012 returns (Source: Environment Agency)**

Local authority area	Transfer*	MRS	Treatment	Landfill	Total (tonnes)	Assuming 70% of material suitable for use in construction
Birmingham City WPA	337,616	-	1,135	-	338,752	237,126
Coventry WPA	96,557	-	31,852	42,633	171,042	119,729
Dudley WPA	22,194	-	-	15,047	37,242	26,069
Herefordshire WPA	6,451	-	53,257	-	59,708	41,796
Sandwell WPA	25,375	-	185,533	-	210,908	147,635
Shropshire WPA	233,746	588	24,911	53,610	312,855	218,998
Solihull WPA	5,511	-	30,967	-	36,478	25,534
Staffordshire WPA	80,255	-	105,107	566,316	751,679	526,175
Stoke-on-Trent City WPA	-112	-	22,429	144,616	166,933	116,853
Telford and Wrekin WPA	92,479	-	3,326	288,089	383,894	268,726
Walsall WPA	58,924	-	307	73,641	132,872	93,010
Warwickshire WPA	42,288	-	248,275	281,806	572,369	400,658
Wolverhampton WPA	12,067	-	29,243	-	41,310	28,917
Worcestershire WPA	111,279	-	65,758	95,974	273,011	191,108
<b>TOTAL</b>	<b>1,124,630</b>	<b>588</b>	<b>802,101</b>	<b>1,561,731</b>	<b>3,489,052</b>	<b>2,442,336</b>

\* Waste from transfer stations which was subsequently landfilled has been removed from the transfer station total to avoid double counting

<sup>17</sup> <http://aggregain.wrap.org.uk/specifier/> 70% based on average across all materials of deemed suitability for use as aggregate

**Table 21 Breakdown of tonnage (>1,000 tonnes) by EWC code**

EWC 4 digit code	Description	Landfill	Transfer	Treatment	TOTAL
01 01	Wastes from mineral excavation	59	-2	2,221	2,278
01 04	Wastes from physical and chemical processing of non-metalliferous minerals	3	6	1,027	1,035
10 01	Wastes from power stations and other combustion plants (except 19)	69,484	35	5	69,523
10 03	Wastes from aluminium thermal metallurgy	10,463	-	-	10,463
10 09	Wastes from casting of ferrous pieces	28,710	4,707	-	33,418
10 10	Wastes from casting of non-ferrous pieces	1,525	1	-	1,526
10 12	Wastes from manufacture of ceramic goods, bricks, tiles and construction products	496	3,840	1	4,337
10 13	Wastes from manufacture of cement, lime and plaster and articles and products made from them	994	43	57	1,093
17 01	Concrete, bricks, tiles and ceramics	110,443	142,038	289,469	541,950
17 05	Soil (including excavated soil from contaminated sites), stones and dredging spoil	1,251,751	194,578	368,999	1,815,328
17 09	Other construction and demolition wastes	21,571	614,844	102,791	739,207
19 01	Wastes from incineration or pyrolysis of waste	56,671	74,242	22,963	153,875
19 03	Stabilised/solidified wastes (4)	3,755	-	-	3,755
20 01	Separately collected fractions (except 15 01)	105	12,620	43	12,768
20 02	Garden and park wastes (including cemetery waste)	5,320	77,350	13,996	96,666
<b>Total</b>		<b>1,561,350</b>	<b>1,124,301</b>	<b>801,573</b>	<b>3,487,224</b>

Note: Figures not adjusted for 70% suitability

## 6.1 Active aggregate recycling facilities

A review of the aggregate recycling facilities provided in the 2010 Waste Capacity Study suggest that based on desk based research all except Armoury Demolition still have facilities within Birmingham. In addition, information from WRAP's Aggregain website suggest the following additional facilities in the Birmingham area, presented in Table 22.



**Table 22 Additional aggregate recycling facilities in the Birmingham area**

Company	Address	Material accepted	Material sold	EA Interrogator data 2012	
				Input (tonnes)	Permitted Capacity (tonnes)
T&T Aggregates	34 Redfern Road, Tyseley, Birmingham, B11 2BH	1. Muck away 2. Demolition Hardcore Away 3. Rubbish removal 4. Green waste	1. 6F2 Graded Crushed Concrete & Brick Capping (Grading Available) 2. MOT Type One Graded Crushed Concrete & Brick Sub-Base (Grading Available) 3. 10mm Washed Recycled Pipe Bedding 4. 20mm Washed Recycled Pipe Bedding 5. 75-40mm Crushed Concrete & Brick 6. Concrete Fines	24,604	75,000
Weir Waste Services Ltd	Doris Road, Bordesley Green, Birmingham, B9 4SJ		General Fill, Capping, Aggregates for Concrete, Sub-base	78,755	75,000
Get Aggregates	251 Bordesley Green Road, Bordesley Green, Birmingham, B8 1BY	Asphalt, Brick, Used foundry sand, Mixed CD & EW, Concrete, Whole tyre	Capping, Sub-base, Aggregates for Concrete, Pipe bedding	n/a	n/a
Coleman & Company Ltd	43 Station Road, Stechford, Birmingham, B33 9AX	Mixed CD & EW	Sub-base (Type 1), Capping (6F2), Capping (6F3), General Fill, Soil, construction aggregates	n/a	n/a
Midland Aggregates	Dunton's Wharf, Lichfield Road, Curdworth, Sutton Coldfield, B76 9EN		Capping (6F2), Sub-base (Type 1)	n/a	n/a
KSD Recycled Aggregates Ltd	Former Dunton Quarry, Lichfield Road, Curdworth, Sutton Coldfield, B76 0BB	Asphalt, Brick, concrete, construction & demolition waste, unbound stone	Sub-base (Type 1), Capping (6F2, 6F3 and 6F5), sand, pipe bedding	n/a	n/a
Shropshire Recycling Services Ltd	Oldfields, Off Corngreaves Road, Cradley Heath, Birmingham B64 6BS	Brick, Mixed CD & EW, Unbound stone, Concrete,	General Fill, Capping, Aggregates for Concrete, Sub-base	n/a	n/a



## 7. Review of Future Waste Treatment Requirements

### 7.1 Local Authority Collected Waste and Commercial & Industrial Waste

#### 7.1.1 Local Authority Collected Waste

Since the 2010 Waste Capacity Study, no further specific waste strategy targets have been set other than to meet the requirements of the EU Framework Directive, targets include to recycle 50% of waste by 2019/20 and in the future this may increase to recycling levels of 60%. On this basis 3 recycling bands were considered to update recycling targets proposed in the 2010 Waste Capacity Study and include:

- Recycling:
  - Birmingham meets waste framework directive recycling target of 50% recycling by 2019/20 and assumed to increase recycling levels to 60% by 2030/31
  - Birmingham is 15% below waste framework directive recycling target at 35% recycling by 2019/20 and increases at 1% per annum after 2019/20.
  - Birmingham increases recycling at 2% per annum, reaching 50% recycling by 2023/24 and increases at 1% per annum thereafter
- Landfill:
  - Minimum – Birmingham maintains 5% landfill rate as per 2012/13
  - Maximum – Landfill rates at 10% to reflect potential changes to waste treatment etc.
- Energy from waste (EfW)
  - Remaining waste not recycled or landfilled sent to EfW facility.

The likely future waste treatment capacity requirements to handle Birmingham's LACW waste is summarised in Table 23. Despite there having been a significant drop in LACW arisings since the last study, the increased recycling rates assumed beyond 2019/20 mean that by 2025/26 the recycling levels are broadly within the range in the 2010 Waste Capacity Study which assumed between 183,000 and 291,000 tonnes per annum of recycling and composting will be required by 2025/26. Landfill rates are at the lower end of what was predicted in the 2010 Waste Capacity Study, which predicted 55,000 – 120,000 tonnes per annum compared to 26,000 to 54,000 tonnes per annum in the revised projections for 2025/26. The 2010 Waste Capacity Study predicted tonnes per annum to EfW in 2025/25 of between 123,000 and 346,000 tonnes, which means the 166,000 to 296,000 tonnes per annum in the revised projections are still considered realistic.

**Table 23 Future waste treatment requirements LACW**

Method of Management	2012/13 (actual)	2014/15	2019/20	2025/26	2030/31
<i>Tonnage LACW</i>					
Minimum	487,920	490,900	502,100	519,100	532,200
Maximum		521,700	525,100	534,800	544,200
<i>Recycling Band - Household</i>					
Minimum	28%	30%	35%	41%	46%
Maximum		34%	50%	56%	60%
Minimum recycling (tonnes)	136,618	147,300	175,800	212,800	244,800
Maximum recycling (tonnes)		177,400	262,600	299,500	326,500
Landfill - Minimum	5%	5%	5%	5%	5%
Landfill - Maximum	5%	10%	10%	10%	10%
Minimum landfill (tonnes)	28,082	24,500	25,100	26,000	26,600
Maximum landfill (tonnes)	28,082	52,200	52,500	53,500	54,400
EfW - Remaining tonnage after landfill and recycling targets					
Minimum EfW (tonnes)	346,189	261,400	187,100	166,100	151,300
Maximum EfW (tonnes)		349,900	324,300	296,000	272,700

### 7.1.2 Commercial & Industrial Waste

The future waste treatment requirements for C&I waste were updated to reflect the EU Waste Framework Directive Targets of recycling rates of 50% of waste by 2019/20 and the assumption that in the future this may increase to recycling levels of 60% by 2030, with remaining landfill rates adjusted accordingly. The second scenario assumed rates as per the 2010 Waste Capacity Study reaching 37% recycling by 2019/20 but then an assumed a 2% increase in recycling rates by 2025/26 and a further 2% by 2030/31.

As noted in Section 3.2, whilst the revised C&I projections fall within the range of the 2010 Waste Capacity Study, the most notable difference when comparing the figures in Table 24 with the figures in the 2010 Waste Capacity Study is the shift in estimated tonnage from landfill to recycling. Treatment requirements for recycling have increased by around 80,000 tonnes and landfill have decreased by around 50,000 tonnes per annum by 2025/26.

**Table 24 Future waste treatment requirements C&I Waste**

Method of management	2014/15	2019/20	2025/26	2030/31
Tonnage C&I				
Minimum tonnes	938,000	990,800	1,053,900	1,106,500
Re-use	9%	8%	8%	8%
Minimum reuse (tonnes)	84,400	79,300	84,300	88,500
<i>Recycling</i>				
Maximum – Waste Framework Directive Target	49%	50%	56%	60%
Minimum	35%	37%	39%	41%
Minimum recycling (tonnes)	328,300	366,600	411,000	453,700
Maximum recycling (tonnes)	459,600	495,400	590,200	663,900
Thermal	6%	6%	6%	6%
Minimum thermal (tonnes)	56,300	59,400	63,200	66,400
Maximum thermal (tonnes)	56,300	59,400	63,200	66,400
Treatment	7%	7%	7%	7%
Minimum treatment (tonnes)	56,300	59,400	63,200	66,400
Maximum treatment (tonnes)	65,700	69,400	73,800	77,500
<i>Landfill</i>				
Minimum	37%	37%	32%	27%
Maximum	47%	47%	45%	43%
Minimum landfill (tonnes)	347,100	366,600	337,300	298,700
Maximum landfill (tonnes)	440,900	465,700	474,300	475,800
* totals add up to more than 100% due to residues from some processes going to landfill				

### 7.1.3 Future capacity need for municipal and commercial & industrial waste

Combining the capacity need for LACW and C&I waste and comparing with the 2010 Waste Capacity Study, suggests that all treatments facility requirements are within the range of the 2010 Waste Capacity Study, the notable exception to this is recycling where the capacity need in 2025/26 at the upper end is around 70,000 tonnes per annum higher in the revised estimates, see Table 25.

**Table 25 Combined future waste treatment requirements LACW and C&I waste**

Method of management	2014/15	2019/20	2025/26	2030/31
Total LACW and C&I waste Tonnage				
Minimum	1,428,911	1,492,896	1,573,039	1,638,679
Maximum	1,459,711	1,515,896	1,588,739	1,650,679
Reuse	84,400	79,300	84,300	88,500
<i>Recycling</i>				
Minimum recycling (tonnes)	475,600	542,400	623,800	698,500
Maximum recycling (tonnes)	637,000	758,000	889,700	990,400
Thermal				
Minimum thermal (tonnes)	317,700	246,500	229,300	217,700
Maximum thermal (tonnes)	406,200	383,700	359,200	339,100
<i>Treatment</i>	56,300	59,400	63,200	66,400
<i>Landfill</i>				
Minimum landfill (tonnes)	371,600	391,700	363,300	325,300
Maximum landfill (tonnes)	493,100	518,200	527,800	530,200

## 7.2 Construction, Demolition & Excavation Waste

Two sets of management methods were considered for the management of CD&E waste, one as per the 2010 Waste Capacity Study which was based on the 2005 CLG survey split for the West Midlands and the second considered the split (at national level) based on the figures in the WRAP report published in 2010<sup>18</sup> and presented in Table 26.

**Table 26 Treatment split based on WRAP 2008 data<sup>18</sup>**

2008 WRAP report	Tonnes (millions)	Approximate Split
Recycled aggregate & soil	53.55	62%
Material used for landfill engineering or restoration	10.6	12%
Material used to backfill quarry voids		0%
Material used at exempt sites	10.98	13%
Material disposed of at landfills	11.8	14%
<b>Total</b>	<b>86.93</b>	

Table 27 provides an indication of the breakdown of the tonnages by management method to handle the range of CD&E arisings in Birmingham. Comparing these figures with those in the 2010 Waste Capacity Study for 2025/26:

- Recycling –the 2010 Waste Capacity Study estimated around 1.4 million tonnes of recycling capacity compared to an revised estimate of around 1.7 million tonnes by 2025/26

<sup>18</sup>CON900-001: Final Report Construction, demolition and excavation waste arisings, use and disposal for England 2008, WRAP (2010)

- Use on exempt sites and for landfill restoration – the 2010 Waste Capacity Study estimated 433,000 – 582,000 tonnes of capacity for the use of CD&E waste at exempt sites for use in restoration, compared to a revised estimate of 418,00 – 738,000 tonnes.
- Landfill – the 2010 Waste Capacity Study estimated 92,000 - 154,000 tonnes of landfill required in 2025/26, compared to a revised estimate of 94,000 – 117,000 tonnes

These differences are as a result of revised projections, as the 2010 Waste Capacity Study was at a time of great economic uncertainty and updated management methods for CD&E waste.

**Table 27 Future waste treatment requirements C,D&E Waste**

Methods of management	2006/07	2014/15	2019/20	2025/26	2030/31
Tonnage CD&E					
Minimum tonnes	1,655,700	1,456,500	1,539,600	1,683,400	1,769,300
Maximum tonnes		1,641,400	1,794,600	1,943,000	2,042,100
Recycling - Annual Capacity Required					
Minimum	1,456,300	1,331,600	1,446,900	1,582,100	1,662,800
Maximum		1,526,200	1,694,500	1,834,700	1,928,300
Use on exempt sites and for engineering & land restoration - Annual Capacity Required					
Minimum	628,800	361,600	382,200	417,900	439,200
Maximum		623,400	681,600	738,000	775,600
Landfill Disposal					
Minimum	199,400	102,000	85,800	93,800	98,600
Maximum		140,700	107,700	116,600	122,500

## Appendix A. Summary of exempt operations and associated assumptions

### A.1 Use of waste exemptions

Exemption	Quantity	Period	Comment and assumption
<b>U1 - Use of Waste in Construction</b> This exemption allows the use of suitable wastes for small scale construction instead of using virgin raw materials.	5,000 tonnes of mainly inert materials for general construction	In total	This is a transient exemption which is limited by the length of the construction activity. Most construction activities are completed within 12 months.  Therefore the capacity in any one year is estimated using the number of exemptions registered in the last year (to reflect the improving economic climate) and an assumed use of waste at each exemption being 500 tonnes
	1,000 tonnes of soil, stone etc plus wood chip for paths, bridleways or car parks	In total	
	50,000 tonnes of soil, stone and road plannings for road construction	In total	
<b>U2 - Use of baled end-of-life tyres in construction</b> This exemption enables the use a small number of baled end-of-life tyres (tyre bales) in construction projects.	50 tonnes of baled end-of-life tyres only	In total	Given the limit tonnage involved assumed not to contribute to the capacity assessment
<b>U3 - Use of waste in the construction of entertainment or educational installations etc</b>	20 tonnes	At any one time	Example activities include: <ul style="list-style-type: none"> <li>- creating a sculpture from metal during an art class;</li> <li>- demonstrating something in a school project using waste textiles;</li> <li>- building a theatrical set using recycled wood and bricks.</li> </ul> Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>U4 - Burning of waste as a fuel in a small appliance</b> To allow the use of waste as a fuel to produce heat or power.	10 tonnes	At any one time	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>U5 - Use of waste-derived biodiesel as fuel -</b> To enable businesses to store and use waste-derived biodiesel as a fuel in portable generators and vehicles.	5000 Litres	At any one time	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>U6 - Use of sludge for the purposes of re-seeding a waste water treatment plant</b>	1,000 cubic metres	At any one time	Given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>U7 - Use of effluent to clean a highway gravel bed</b> To allow effluent from water and waste water treatment plants to be used for cleaning highway gravel beds	24 cubic metres	24 hours	Given the nature of the exemption, assumed not to contribute to the capacity assessment

Exemption	Quantity	Period	Comment and assumption
<b>U8 - Use of waste for a specified purpose</b> To allow waste to be used, where it is suitable for use without treatment	Varying quantities for specific uses	At any one time	A range of direct uses for waste without treatment e.g. granulated rubber for horse ménages, crushed glass for ornamental purposes. Therefore not primary treatment capacity and excluded from the capacity assessment
<b>U9 - Use of waste to manufacture finished goods-</b> To use waste in place of raw materials in the manufacture to produce a finished product.	Varying quantities for specific uses, with notable tonnages for glass (5,000 tonnes) and paper and cardboard (15,000 tonnes)	At any one time	A range of use for waste that may have already been treated in some way e.g. granulated rubber for horse ménages, crushed glass for ornamental purposes. Therefore not primary treatment capacity and the majority excluded from the capacity assessment with the exception of the use of glass and paper and cardboard, for which exempt facilities will be surveyed.
<b>U10 - Spreading waste on agricultural land to confer benefit -</b> To allow specified wastes to be spread on agricultural land to replace manufactured fertilisers or virgin materials	Quantities generally range from 200 – 1250 tones in a 12 month period and mainly for waste from food production and arising from treatment exemption	12 month period	Given the nature of the exemption, assumed not to contribute to the capacity assessment.
<b>U11 - Spreading waste on non-agricultural land to confer benefit</b> To allow the spreading of a number of different wastes on non-agricultural land to replace manufactured fertilisers or virgin materials.	Quantities generally range from 200 – 1250 tones in a 12 month period and mainly for waste from food production and arising from treatment exemption	Per 12 months	Given the nature of the exemption, assumed not to contribute to the capacity assessment.
<b>U12 - Use of Mulch</b> To allow landscapers and farmers to spread mulch as a protective covering onto land around trees, bushes, or plants	100 tonnes of untreated wood and plant matter	Per month	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>U13 - Spreading of plant matter to confer benefit</b> Allows spread cut plants at the place of production for weed suppression or to provide nutrients to the soil	50 tonnes per hectare	Per 12 months	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>U14 - Incorporation of ash into soil</b> Allows ash from the burning of plant tissues to be incorporated back into the soil return of nutrients to the soil.	10 tonnes per hectare	Not specified	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>U15 - Pig and poultry ash</b> Allow ash to be mixed with slurry and/or manure and spread on farmland to provide the soil with nutrients	150kg per hectare	Per 12 months	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>U16 - Use of depolluted end-of-life vehicles for vehicle parts</b> Allows the parts from depolluted end-of-life vehicles to be re-used in other vehicles.	Two depolluted ELVs and 5 cubic metres of non-hazardous components	At any one time	Given the limit tonnage and the nature of the exemption and it is not a primary treatment process and excluded from the capacity assessment

## A.2 Treatment of waste exemptions

Exemption	Quantity	Period	Comment and assumption
<b>T1 - Cleaning, washing, spraying or coating relevant waste</b> To treat waste packaging so that it can be reused in its original form	Total of 300 tonnes of packaging materials	Over any 7 day period	Maximum capacity 15,000 tonnes per annum Assume average of 5,000 tonnes per annum, but confirm via survey
<b>T2 Recovery of textiles</b> Laundering or clean waste clothes and textiles to recover them for reuse	Total of 20,000 tonnes of textiles and clothes materials	At any one time	Assume average of 2,500 tonnes per annum
<b>T4 Preparatory treatments (baling, sorting, shredding etc)</b> Treatment of waste to reduce its volume	500 tonnes of cans and foils only 3,000 tonnes of food and drink cartons only 5,000 tonnes of glass 3,000 tonnes of paper and cardboard (excluding food and drink cartons) 3,000 tonnes of plastic 3,000 tonnes of textiles and clothes	Per week	Maximum annual capacity: 26,000 tonnes of cans and foils 156,000 tonnes of food and drink cartons 260,000 tonnes of glass 156,00 tonnes of paper and cardboard) 156,00 tonnes of plastic 156,00 tonnes of textiles and clothes Capacities in 2010 Study ranged from 1,000 to 120,000 tonnes, with 180,000 tonnes of the 186,000 tonnes capacity being associated with two sites (Kiely Bros Ltd and Smurfit Kappa UK Ltd). Both of these facilities are still registered and therefore same throughput as 2010 assumed. For the remained 3,000 tonnes per annual has been assumed based on the previous survey,
<b>T5 - Screening and blending of waste</b> Allows temporary small-scale treatment of wastes to produce an aggregate or a soil	5,000 tonnes of materials for aggregate/soil production Except for manufacture of road stone where limit is 50,000 tonnes	Over 3 year period	Assumed throughput 1,750 tonnes per annum
<b>T6 - Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising</b> Allows waste wood and waste plant matter to be chipped, shredded, cut or pulverised to make it easier to store and transport, or to convert it into a suitable form for use.	500 tonnes of plant tissue waste and wood	Over any 7 day period	Maximum capacity 26,000 tonnes per annum Assumed throughput 2,500 tonnes per annum
<b>T8 - Mechanical treatment of end-of-life tyres</b> To treat small amounts of waste end-of-life tyres by means of baling, shredding, peeling, shaving or granulating, to ensure they can be recovered.	Up to 60 tonnes of tyres	Over any 7 day period	Maximum capacity 3,120 tonnes per annum Assumed throughput 500 tonnes per annum



Exemption	Quantity	Period	Comment and assumption
<b>T9 - Recovery of scrap metal</b> To treat scrap metal by sorting, grading, shearing by manual feed, baling, crushing or cutting it with hand-held equipment to make it easier to handle and to help with its recovery.	1,000 tonnes of metal	At any one time	Assumed throughput 10,000 tonnes per annum
<b>T10 - Sorting mixed waste</b> Allows small organisations, such as charities, to sort out separate recyclable wastes so that they can be recovered.	10 tonnes of recyclable materials	Over any 7 day period	Maximum capacity 520 tonnes per annum Assumed throughput 250 tonnes per annum
<b>T11 - Repair or refurbishment of WEEE</b> Allows repair, refurbish or dismantle various types of WEEE so that the whole WEEE item or any dismantled parts can be reused for their original purpose or dismantled parts can go for recovery.	1,000 tonnes of WEEE	Over any 12 months period	Assumed throughput 500 tonnes per annum
<b>T12 - Manual treatment of waste</b> Allows waste to be sorted, repaired or refurbished where possible for reuse and, where this is not possible, to be sorted and dismantled for recovery	Various materials generally up to 100 tonnes	At any one time	Given the waste types and the nature of the exemption and the fact that most operation are unlikely to deal with multiple waste types throughputs are likely to be limited Assumed throughput 50 tonnes per annum
<b>T13 - Treatment of waste food</b> Allows the recovery of food waste by decanting it or unwrapping it and recovering the packaging	30 tonnes of food waste	At any one time	The activity is related to the separation of food from packaging and as a result is not a primary treatment process and therefore assumed not to contribute to the capacity assessment
<b>T14 - Crushing and emptying vehicle waste oil filters</b> To recover oil and reduce the size of the oil filters to aid transport for the purpose of recovery	1 tonne of oil filters	At any one time	Only applies at the place of production and is therefore not a primary treatment process
<b>T15 - Treatment of waste aerosol cans</b> To treat aerosol cans, by puncturing or crushing them using aerosol cans treatment equipment designed for that purpose, so that the metal can be recovered.	Up to 3,000 cans	Over any 12 months period	Only applies at the place of production and also given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T16 - Treatment of waste toner cartridges and waste ink cartridges by sorting, dismantling, cleaning or refilling</b> To treat waste toner or ink cartridges, by sorting, cleaning, dismantling or refilling them.	50,000 cartridges	At any one time	Assumed throughput 500 tonnes per annum
<b>T17 -Crushing waste fluorescent tubes</b> Crushing waste fluorescent tubes prior to collection for recovery.	3 tonnes fluorescent tubes	Over any 24 hour period	Only applies at the place of production and also given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment

Exemption	Quantity	Period	Comment and assumption
<b>T18 - Dewatering using flocculants</b> To treat waste by using flocculants to dewater it so that clay or water-based paints can be recovered	30,000 litres of clay effluent from manufacture of ceramics and water based paint wash waters	At any one time	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T19 - Physical and chemical treatment of waste edible oil and fat to produce biodiesel</b> Allows small-scale physical and chemical treatment of waste edible oils and fats produce a fuel.	5,000 litres of edible oil and fat	At any one time	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T20 - Treatment of waste at a water treatment works</b> Allows the treatment of certain water treatment works waste at a water treatment works to reduce the volume for transport	10,000 cubic metres of water treatment sludges	Over any 12 months period	Given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T21 - Recovery of waste at a waste water treatment works -</b> Allows recovery of wastes, such as sludge from a septic tank or cess pool, which need further treatment at a waste water treatment work	100,000 cubic metres water treatment and septic tank sludges	Over any 12 months period	Given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T23 - Aerobic composting and associated prior treatment</b> Allows composting of small volumes of vegetation, cardboard and food wastes to produce a compost that can be spread on land to provide benefit.	60 tonnes of plant tissue and biodegradable waste	At any one time	Maximum throughput approximately 400 tonnes per annum (assuming an 8 week composting period)
<b>T24 - Anaerobic digestion at premises used for agriculture and burning of resultant biogas</b> Allows farmers to anaerobically digest manures, slurries and vegetation on their farms to produce digestate that can be used as a fertiliser or soil conditioner.	1,250 cubic metres of plant tissue waste and horse and farmyard manure, slurry only	At any one time	Given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T25 - Anaerobic digestion at premises not used for agriculture and burning of resultant biogas</b> Allows the treatment of food and other biodegradable wastes by anaerobic digestion to produce a digestate which can be used to provide benefit to land. The gas produced must be used for generating energy.	50 cubic metres of plant tissue waste, horse and farmyard manure, slurry only, biodegradable kitchen and canteen waste etc	At any one time	Given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T26 - Treatment of kitchen waste in a wormery</b> Allows very small scale treatment of waste from kitchens using a wormery to produce a compost.	6 tonnes of biodegradable kitchen and canteen waste and paper and cardboard	Over any 12 months period	Given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T27 - Treatment of sheep dip using organophosphate-degrading enzyme</b> Allows organophosphate (O-P) sheep dip to be treated with an approved O-P degrading enzyme	8,000 litres of sheep dip	Over any 24 hour period	Only applies at the place of production and also given the nature of the exemption, assumed not to contribute to the capacity assessment

Exemption	Quantity	Period	Comment and assumption
<b>T28 - Sorting and denaturing of controlled drugs for disposal</b> Enables pharmacies and other similar places to comply with the requirements of the Misuse of Drugs Regulations 2001 by denaturing controlled drugs.	1 cubic metres of medicines	At any one time	Only applies at the place of production and also given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T29 - Treatment of non-hazardous pesticide washings by carbon filtration for disposal</b> Allows the treatment of non-hazardous pesticide washings prior to their disposal to land.	8,000 litres of pesticide	Over any 24 hour period	Only applies at the place of production and also given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T30 - Recovery of silver-</b> To recover silver from waste produced in connection with printing or photographic processes	1,000 litres of photographic wastes	At any one time	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T31 - Recovery of monopropylene glycol from aircraft antifreeze fluids</b> Allows airports to treat waste antifreeze to recover monopropylene glycol	250 cubic metres of antifreeze	Over any 7 day period	Only applies at the place of production and also given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T32 Treatment of waste in a biobed or biofilter</b> Allows the treatment of non-hazardous pesticides washings where they are generated, for example on farms and other places such as golf courses or parks	1,000 litres of non-hazardous pesticide washings	Over any 12 months period	Only applies at the place of production and also given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>T33 Recovery of central heating oil by filtration</b> Allows the filtering of central heating oil so that it can be reused	1,000 litres of central heating oil	Over any 7 day period	Given the nature of the exemption, assumed not to contribute to the capacity assessment

### A.3 Disposal of waste

Exemption	Quantity	Period	Comment and assumption
<b>D1 - Deposit of waste from dredging of inland waters</b> Allows the deposit of dredging spoil (dredgings) on the banks of the waters it was dredged from and to treat it by screening and dewatering	50 cubic metres of dredging spoil per metre of land	Over any 12 months period	The management of a specific waste stream and only applies at the place of production and also given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>D2 - Deposit of waste from a railway sanitary convenience</b> Some older rolling stock, for example forming part of a vintage steam train, has not been or cannot be fitted with appropriate collection facilities. This exemption allows those rolling stock to deposit waste onto the track.	25 litres per discharge	n/a	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment

Exemption	Quantity	Period	Comment and assumption
<b>D3 Deposit of waste from a portable sanitary convenience</b> Allows the burying of waste from a portable toilet to avoid small quantities having to be transported long distances to sewage treatment works	1 cubic metre of waste	Over any 12 months period	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>D4 "Deposit of agricultural waste consisting of plant tissue under a Plant Health Notice"</b> Allows the deposit of diseased crops, where they were grown, when a Plant Health Notice has been issued requiring the deposit in order to prevent the spread of plant disease and pests.	250 tonnes of plant tissue wasted	n/a	Only applies to agricultural waste and the deposit requires a Public Health notice, therefore assumed not to contribute to the capacity assessment
<b>D5 - Depositing samples of waste for the purposes of testing or analysing them</b> Allows the deposit and storage of waste samples, where these are required to comply with or enforce specified regulations, or before testing and analysis for research purposes.	10 tonnes	Over any 12 months period	Given the limit tonnage and the nature of the exemption, assumed not to contribute to the capacity assessment
<b>D6 - Disposal by incineration</b> Allows the disposal of small amounts of waste that have been produced on a site in an incinerator.	5 tonnes of plant tissue and wood wastes	At any one time	The incineration must be carried out by the person producing the waste e.g. joinery firm produces off-cuts of clean, untreated wood waste. Therefore, given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>D7 - Burning waste in the open</b> Allows the burning plant tissue and untreated wood wastes in the open	10 tonnes of plant tissue and wood wastes	Over any 24 hour period	Historic exemption allowing organisations such as landscape gardeners to burn hedge trimmings, branches etc on a bonfire at the places of production. Therefore, given the nature of the exemption, assumed not to contribute to the capacity assessment
<b>D8 - Burning waste at a port under a Plant Health Notice</b> Allows the burning of plant tissue waste and wood packaging and packing materials at a port, when a Plant Health notice has been served to prevent the spread of plant disease.	10 tonnes of plant tissue and wood packaging wastes	Over any 24 hour period	Only applies to waste from ships and the deposit requires a Public Health notice. Therefore, given the nature of the exemption, assumed not to contribute to the capacity assessment

#### A.4 Storage of waste

Exemption	Quantity	Period	Comment and assumption
<b>S1 - Storage of waste in secure containers</b> Allows the storage of specific waste streams in secure containers at a different place to where the waste was produced, before the waste is transported to another site for recovery.	400 cubic metres (per material) of the main recyclable materials or 3 cubic metres (per material) of the oil/oil filters or absorbents, filter and wiping clothes recyclable materials	At any one time but number of containers at any location limited to 20	Temporary storage prior to recovery, therefore, assumed not to contribute to the capacity assessment

Exemption	Quantity	Period	Comment and assumption
<b>S2 - Storage of waste in a secure place</b> Allows the storage of specific waste streams at a secure place at a different place to where the waste was produced, before the waste is transported to another site for recovery.	Varying quantities for a wide range of materials	Varying periods between 3 and 12 months	Temporary storage prior to recovery, therefore, assumed not to contribute to the capacity assessment
<b>S3 - Storage of sludge</b> Allows the storage of sludge at a place where it is to be used in accordance with the Sludge (Use in Agriculture) Regulations 1989.	1250 tonnes of residual sludge from sewage plants and septic tanks	At any one time	Specific temporary storage prior to recovery, therefore, assumed not to contribute to the capacity assessment

## **Appendix B. Breakdown by facility type across West Midlands WPAs of waste originating from Birmingham (2012)**

Type of Facility	Birmingham City WPA	Coventry WPA	Dudley WPA	Herefordshire WPA	Sandwell WPA	Solihull WPA	Staffordshire WPA	Stoke-on-Trent City WPA	Telford and Wrekin WPA	Walsall WPA	Warwickshire WPA	Wolverhampton WPA	Worcestershire WPA	Grand Total
Biological Treatment	42			73										115
CA Site	8,791													8,791
Car Breaker							6						712	719
Chemical Treatment	3,713													3,713
Clinical Waste Transfer	1,389						2,558	0						3,947
Composting	459					51,599	4,140		236		2,245			58,678
Construction									2					2
Deposit of waste to land (recovery)						9,660	6,598							16,258
Haz Waste Transfer	40,979		220		1,897		590	2,999	1,210	1,976	5		27	49,902
Haz Waste Transfer / Treatment				1										1
Inert Waste Transfer	8,194													8,194
Inert Waste Transfer / Treatment					149,431		51				112,078			261,560
Material Recycling Facility	10				11,452		16,166			575	9			28,211
Metal Recycling	8,447		5,536		18,818		2		3				13,290	46,096
Non Haz (SNRHW) LF			7,779						9,078		9,534			26,391
Non Hazardous LF		276					401			225			42,453	43,354
Non-Haz Waste Transfer	459,014				6		1,542			9,787				470,348
Non-Haz Waste Transfer / Treatment							1,100							1,100
Physical Treatment	32,756		255		8						16,313			49,331
Physical-Chemical Treatment	1,439				8,858		1,082			2,928		148		14,456
Reclamation						12,330								12,330
Timber Manufacturing						7,439								7,439
Vehicle Depollution Facility	1		178						35				1	215
WEEE treatment facility	1,107				2		14		14	113				1,250
<b>Grand Total</b>	<b>566,340</b>	<b>276</b>	<b>13,968</b>	<b>74</b>	<b>190,471</b>	<b>81,027</b>	<b>34,250</b>	<b>2,999</b>	<b>10,577</b>	<b>15,603</b>	<b>140,183</b>	<b>148</b>	<b>56,484</b>	<b>1,112,401</b>
% of total	50.9%	0.0%	1.3%	0.0%	17.1%	7.3%	3.1%	0.3%	1.0%	1.4%	12.6%	0.0%	5.1%	100.0%

## **Appendix C. Breakdown by facility type of waste received in Birmingham from other West Midlands WPAs (2012)**



Type of Facility	Birmingham City	Coventry	Dudley	Herefordshire UA	Sandwell	Shropshire	Solihull	Staffordshire	Stoke-on-Trent UA	Telford & Wrekin UA	Walsall	Warwickshire	Wolverhampton	Worcestershire	WPA not code able (West Midlands)	Total
Biological Treatment	42	3,098	-	-	-	84	-	6,305	-	-	-	18,845	-	6,402	229,857	264,632
CA Site	8,791															8,791
Car Breaker								2					9	12	3,351	3,374
Chemical Treatment	3,713	62	0	1	-	13	1	134	16	18	2	77	162	13	171	4,383
Clinical Waste Transfer	1,389	54				51		206		0		6			277	1,983
Composting	459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	459
Construction																
Deposit of waste to land (recovery)																
Haz Waste Transfer	40,979		2			0	4	2	1	4		3	0	2	53,320	94,318
Haz Waste Transfer / Treatment																
Hazardous Merchant LF																
Hazardous Restricted LF																
Inert Waste Transfer	8,194														945	9,139
Inert Waste Transfer / Treatment																
Material Recycling Facility	10	-	-	-	1	-	1	5	-	-	-	0	-	0	4,416	4,433
Metal Recycling	8,447	18	56		48	8	62	216	15	5	180	43	139	123	25,419	34,779
Non Haz (SNRHW) LF																
Non Hazardous LF																
Non-Haz Waste Transfer	459,014						3,256	208				29			290,539	753,046
Non-Haz Waste Transfer / Treatment																
Physical Treatment	32,756	-	-	-	-	-	-	-	-	-	-	-	176	-	3,826	36,758
Physical-Chemical Treatment	1,439	133	-	-	-	438	-	1,318	-	243	12	0	108	3	-	3,694
Reclamation																
Timber Manufacturing																
Vehicle Depollution Facility	1												8		387	396
WEEE treatment facility	1,107	0	-	-	-	0	0	-	0	-	-	1	-	1	0	1,110
<b>Total</b>	<b>566,340</b>	<b>3,366</b>	<b>58</b>	<b>1</b>	<b>48</b>	<b>594</b>	<b>3,323</b>	<b>8,396</b>	<b>32</b>	<b>271</b>	<b>194</b>	<b>19,004</b>	<b>603</b>	<b>6,557</b>	<b>612,508</b>	<b>1,221,294</b>
% of total	46%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	2%	0%	1%	50%	100%

