



# WASTE CAPACITY REPORT

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## GLOSSARY

Abbreviation	Definition
BCC	Birmingham City Council
BLP	Birmingham Local Plan
C&D	Construction and Demolition
C&I	Commercial and Industrial
DRS	Deposit Return Scheme
DtC	Duty to Cooperate
EA	Environment Agency
EPR	Extended Producer Responsibility
EWC	European Waste Catalogue
GDP	Gross Domestic Product
kt	Thousand Tonnes
LAA	Local Aggregates Assessment
LACW	Local Authority Contract Waste
MRF	Material Recycling Facility
MRS	Metal Recycling Site
Mt	Million Tonnes
NPPF	National Planning Policy Framework
SEWPAG	South East Waste Planning Advisory Group
WDF	Waste Data Flow
WDI	Waste Data Interrogator
WMAWP	West Midlands Aggregates Working Party
WMRTAB	West Midlands Resource Technical Advisory Body
WPA	Waste Planning Authority

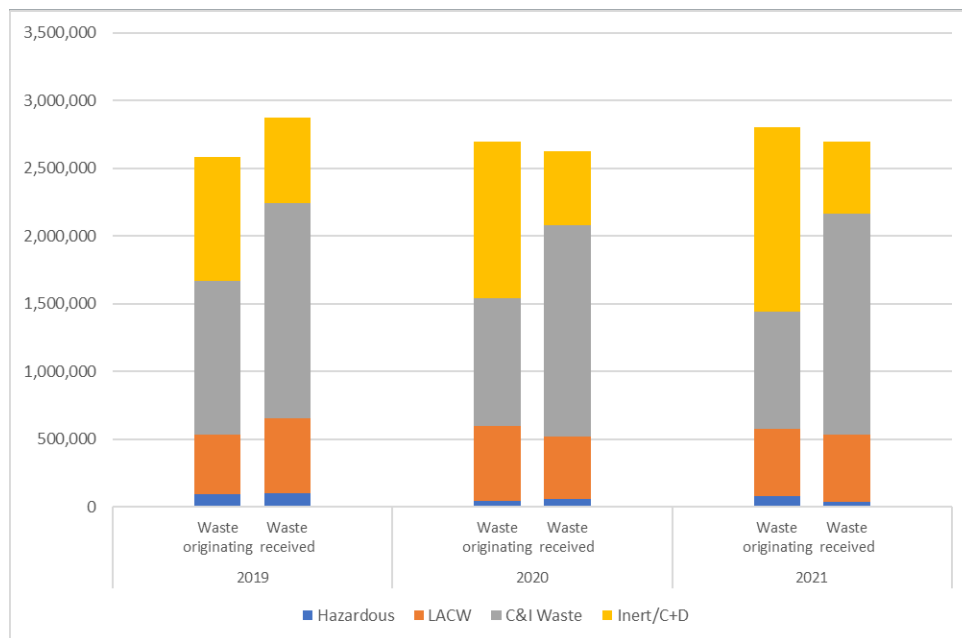
## EXECUTIVE SUMMARY

Ricardo was commissioned by Birmingham City Council (BCC) to provide technical support to their update of the Birmingham Local Plan (BLP), through providing an assessment of the available waste management capacity in the area. This Capacity Gap study is conducted in two parts; a review of current and forecast waste arisings over the planning period and an assessment of waste capacity requirements to meet those needs. The analysis considers trends in wastes arising and handled within the Birmingham City area, but not necessarily managed by BCC.

Primarily through use of the Environment Agency's (EA) Waste Data Interrogator (WDI), an assessment of wastes originating in and managed within the Birmingham City area was analysed over the past three years of available data (calendar years 2019-2021, at time of study commencement) to provide an assessment of the current situation. The review found that around 2.80 million tonnes (Mt) of waste was reported as being generated by Birmingham in 2021, with nearly half of this value attributed to Inert/Construction and Demolition (C&D) waste. Overall tonnage has steadily increased from 2019, though there has been a notable decline in Commercial and Industrial (C&I) waste over the period. The vast majority of Birmingham City's waste is managed in Birmingham and the West Midlands area, with a large proportion sent for recovery (i.e., to a Material Recycling Facility (MRF), Metal Recycling Site (MRS) or car breaker). Approximately 20% of the total waste reported as generated in Birmingham was sent to landfill in 2021.

Around 2.70 Mt of waste were received by facilities in Birmingham in 2021, which shows the area is currently managing around 100,000 tonnes less than it produced in 2021, equating to around 4%. However, this only represents a snapshot as the reverse was true in 2019, as shown in Figure ES-1. Around 85% of waste managed in Birmingham originated from within the West Midlands (approximately 57% from Birmingham itself), with approximately 70% of the waste managed through recovery operations i.e. recycling, composting or energy recovery. While the city managed far less Inert/C&D waste than it produced (around 60%), nearly double the amount of C&I waste generated was managed at permitted sites within the City.

Figure ES-1 Comparison of waste generated and managed by Birmingham by basic waste category 2019-2021

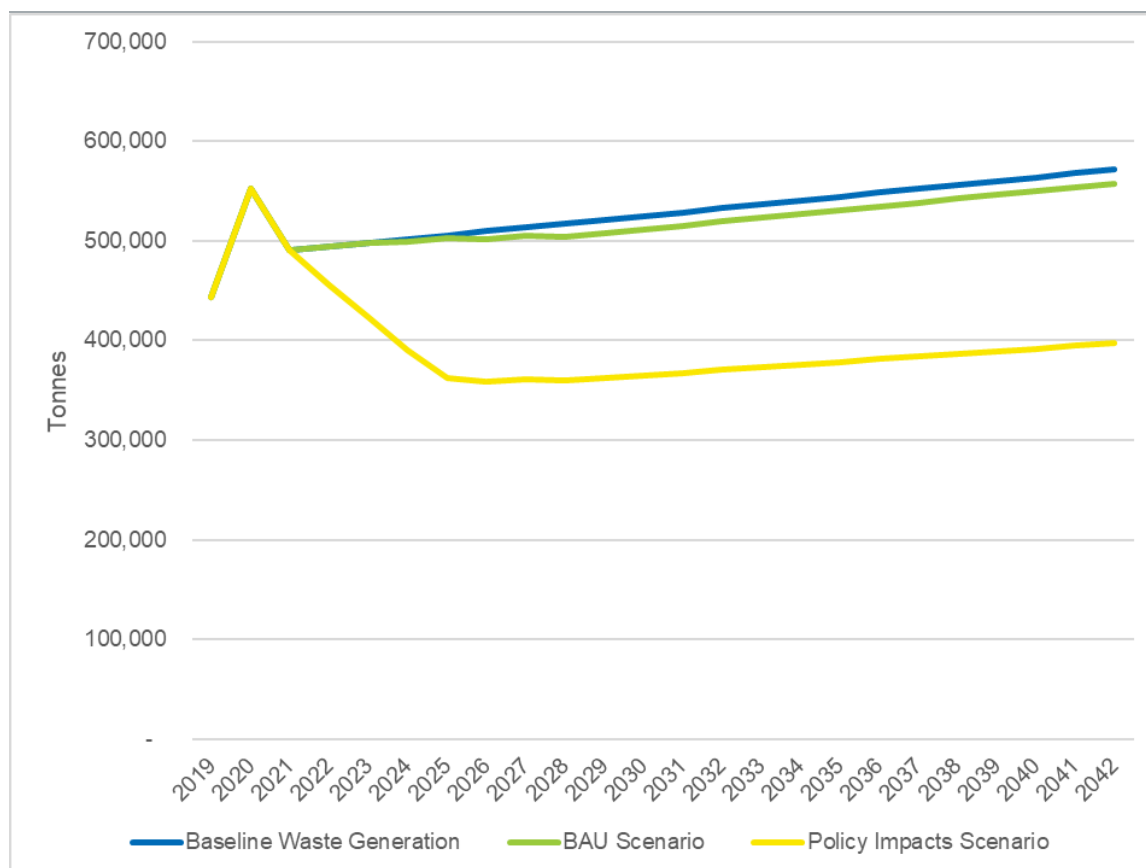


Growth in waste arisings across the planning period is estimated using projections of household growth (as per BCC's 2016 Base household projections tool) for Local Authority Collected Waste (LACW) tonnages, the impacts of GDP growth (as per ONS statistics) for the C&I and Hazardous waste sectors and assuming static growth within the Inert/C&D sector. Forecasting waste generation based solely on these growth factors results in an increase of total waste tonnage produced by Birmingham from 2.58 Mt in 2019 to 3.15 Mt by 2042.

An assessment of future waste arisings compares two scenarios; one representing a 'business as usual' (BAU) scenario whereby waste growth to 2042 is modelled alongside government-wide strategies such as DRS and EPR, and the other implementing waste growth, DRS and EPR alongside the Council's targets for recycling

rate increase, landfill diversion and reduced waste generation per person. The BAU scenario, which includes the impacts of DRS and EPR, reduces the waste generation to 3.11 Mt. The policy impacts scenario, which includes the impact of introducing DRS, EPR and the Council's target for 10% waste reduction per person by 2025<sup>1</sup>, reduces this estimate further, producing a forecast arising tonnage of 2.96 Mt by 2042. The impacts are most prominent within the (LACW) stream which is specifically targeted by these policies, as shown in ES-2. It should be noted that we have not applied any impacts of DRS and EPR on the C&I sector for this study: whilst we acknowledge these will realistically have impact there, no reliable composition data to model the impact of DRS or EPR on the C&I sector is available.

Figure ES-2 Forecast LACW waste arisings comparing 'business as usual' scenario against policy impacts scenario

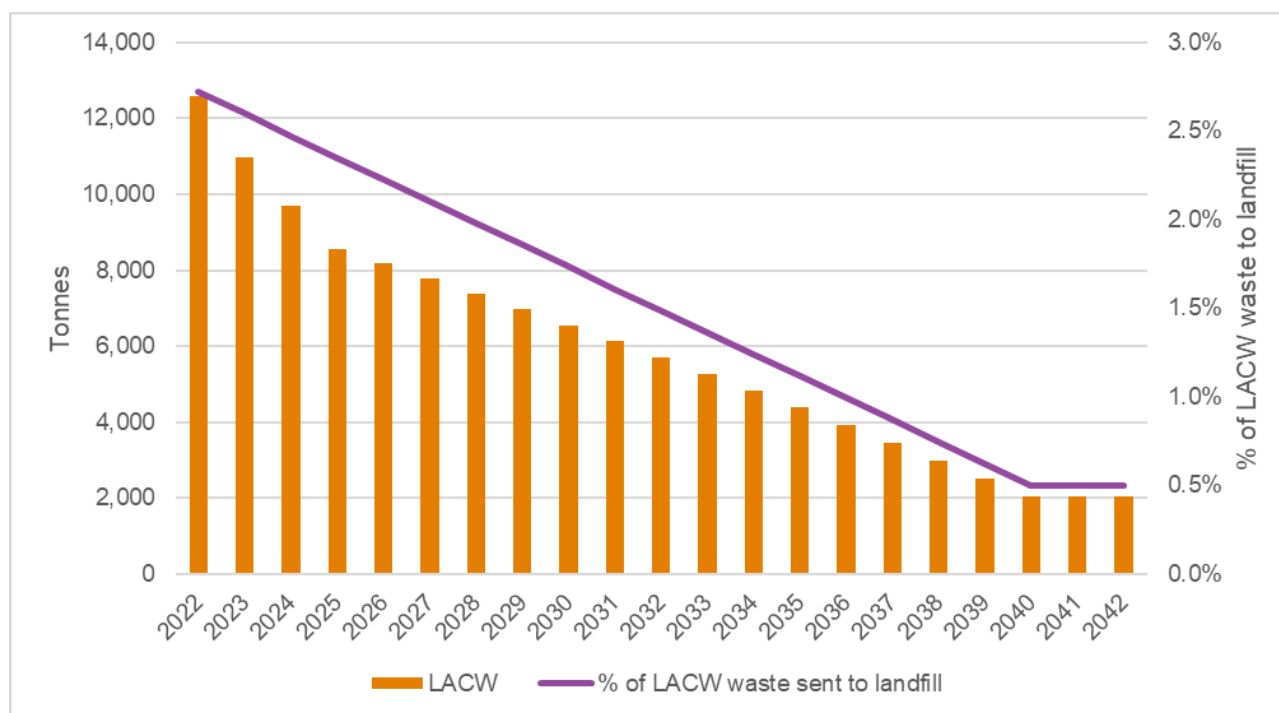


The Council also has a target of 0% waste sent to landfill in 2040. 2021-22 saw 2.72% of LACW arisings (or 12.6 Kt) sent to landfill. In order to achieve the Council's target (taken to be 0.5% of total arisings by 2040), the proportion of waste sent to landfill must decrease by 0.1% each year, as demonstrated in ES-2.

BCC's recycling rate in 2021-22 was reported as 23.9%. As a result, it would be extremely challenging for BCC to reach the government's national targets for municipal waste recycling, which are 55% recycling by 2025, 60% by 2030 and 65% by 2035. In order to meet the final target of 65% by 2035, the recycling rate must increase by 3.2% on average per year.

<sup>1</sup> Birmingham City Council (2017). Waste Strategy 2017 – 2040. Available online: <https://www.birmingham.gov.uk/blog/birmingham-blog/post/11/waste-strategy-2017-2040-why-we-need-to-change>

Figure ES-2 Target waste tonnage to landfill



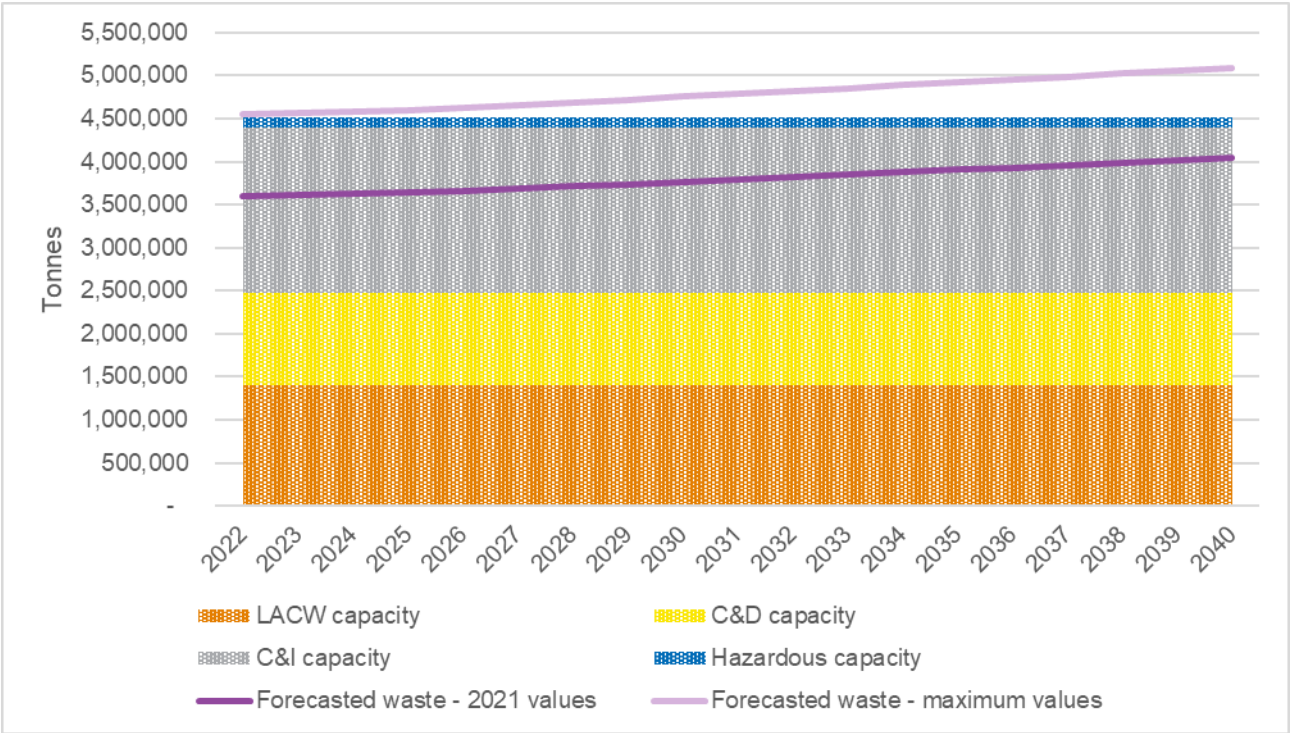
It is estimated that Birmingham's waste management facilities currently have around 60% available capacity for hazardous waste, 40% capacity available for C&D/Inert waste, and 24% available for LACW/ C&I waste. This is estimated by comparing the peak throughput of waste at sites in the past three years compared to waste actually received at permitted sites in Birmingham City in 2021. Around 50% of the waste managed in Birmingham is undertaken at five sites: Tyseley EfW Plant, EMR Birmingham, Perry Barr Waste Transfer Station and Household Recycling Centre (HRC) and Nechells Paper Mill. Tyseley Energy from Waste (EfW) facility currently receives the largest single tonnage of waste within Birmingham City.

Forecast waste arisings were used to estimate the expected tonnage of waste handled by Birmingham City permitted management facilities between 2022 and 2040. Using maximum 2019-2021 values as a baseline for future forecasting, the review indicates that Birmingham's available capacity (as it is currently) could be exceeded by 579 kt by 2042 without further planned developments. This provides the worst-case scenario, as demonstrated in ES-3. By taking the arisings from the managed waste tonnages reported as having been received at Birmingham's permitted waste management facilities in 2021 and applying the rate of growth per waste stream, Birmingham's available capacity, as it is currently, is predicted to decline from around 20% in 2022 to 10% (469 kt available) in 2040, providing a more measured estimation of future capacity requirements.

The most pressing need is for additional capacity to manage LACW and C&I waste. While policies to minimise municipal waste may alleviate some capacity requirement, it is likely that available capacity will be exceeded before the end of the forecast period. Conversely, it is projected that there will be a surplus in available capacity for the management of both C&D waste and hazardous waste throughout the forecast period despite growth projections. This highlights the potential for Birmingham to treat more of these wastes through its own facilities, rather than exporting for treatment outside of the region. Otherwise it indicates that net self-sufficiency would be maintained throughout the Plan period for these waste streams.



Figure ES-3 Capacity gap assessment comparison using maximum projected values (2019-2021) and 2021 projected values



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# 1. INTRODUCTION

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Ricardo was commissioned by Birmingham City Council (BCC) to provide technical support to their update of the Birmingham Local Plan (BLP). This included providing an evidence base on the available waste management capacity in Birmingham City and forecasts of future waste quantities. Ultimately, the evidence base will inform BCC in the identification of waste infrastructure requirements which the updated Local Plan may need to provide.

As a first step, Ricardo undertook a review of the Council's Waste Capacity Study from 2014<sup>2</sup> to assess the robustness of the original modelled baseline. The review found that due to the age of the data, the changing policy environment and substantial changes in Birmingham's waste management situation since the original assessment, a new Capacity Study should be undertaken.

As part of this technical support, Ricardo have produced the following:

- a baseline of current waste arisings within Birmingham City.
- a forecast of waste arisings to the BLP's milestone year, 2042.
- An assessment of how Birmingham City's waste is being managed and how existing waste management capacity is being used, including imports and exports of waste;
- an assessment of waste management capacity required to deal with forecast arisings during the plan period, identifying any existing and predicted gaps by particular waste streams.

This report sets out the approach used and the results. The review also considers the possible effects of existing and emerging local policies and performance targets and national legislative changes, to understand the impact of local and national policy/legislation on Birmingham City's future waste management needs.

## 2. ASSESSMENT OF CURRENT WASTE FLOWS

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### 2.1 APPROACH AND ASSUMPTIONS

The analysis considers trends in wastes arising and handled within the Birmingham City area, but not necessarily managed by BCC.

A waste flow model developed at the start of the project established the waste types and quantities passing through each facility in Birmingham City in 2020. This was undertaken by combining datasets from the Environment Agency's (EA) Waste Data Interrogator<sup>3</sup> (WDI), Hazardous Waste Interrogator<sup>4</sup>, and Ricardo's MAGPIE database which utilises information from WasteDataFlow<sup>5</sup> (WDF). Due to the COVID-19 pandemic potentially distorting arisings and flows, two additional years (calendar years 2019 and 2021) have been added to the original baseline data year (2020) to provide a more robust assessment of the current situation<sup>6</sup>. The results of this update are presented in Sections 2.2 and 2.3.

The model quantifies the management of Construction & Demolition (C&D) / Inert waste, Commercial and Industrial (C&I) waste, Local Authority Collected Waste (LACW) and Hazardous waste (Haz) by facilities as determined by the European Waste Catalogue (EWC) code. The analysis identifies the quantities of these wastes originating within Birmingham, managed both within and outside of the city's boundaries, and those wastes originating outside of Birmingham managed within the city. High level information is provided on the origin and destination of the wastes which is typically at a Waste Planning Authority (WPA) or regional level (e.g., West Midlands). In the case of exported wastes, the high-level fate is also provided such as landfill, recovery, incineration, treatment and transfer.

All EWC Chapter 19 waste defined as 'wastewater' (including leachate) have been removed from the figures below and are therefore not included in the analysis as wastewater is not part of this scope.

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<sup>2</sup> Jacobs, 2014, Update to Waste Capacity Study: Birmingham City Council (Addendum)

<sup>3</sup> Environment Agency, [Waste Data Interrogator 2020](#)

<sup>4</sup> Environment Agency, [Hazardous Waste Data Interrogator 2020](#)

<sup>5</sup> [WasteDataFlow](#)

<sup>6</sup> These represent the latest available data at time of study commencement, although it is noted that Waste Data Interrogator 2022 was available at time of report issue.

As waste can travel significant distances, care has been taken to ensure total waste quantities are not overestimated through double counting. Waste can pass through several facilities before reaching its final destination. Therefore, analysis of waste flows into and out of particular sites was undertaken to provide more detail on the ongoing robustness of the waste flows and validate the data findings.

Note that not all waste movements in and out of Birmingham City have been captured in the figures below as sites that operate under an exemption from the environmental permitting regime are not obliged to report on the amount of waste they manage. An assessment of waste management facility capacity not included within the figures below has been undertaken, and results presented in Section 4.3.

### 2.1.1 Waste Originating from Birmingham City

The baseline was produced using information contained within the 2019, 2020 and 2021 Environment Agency WDIs<sup>7</sup> to assess current waste arisings from within the Birmingham City area. The WDI was used to determine the tonnes of waste produced, its basic waste category (Hazardous, Local Authority Collected Waste, Commercial & Industrial or Construction & Demolition/Inert waste) and its fate (Incineration, Landfill, Recovery, Transfer or Treatment).

The destination for waste produced within Birmingham City was also identified by receiving WPA. To identify the destinations upon which Birmingham is most reliant, the following thresholds were applied:

- 100 tonnes per annum of Hazardous waste,
- 5,000 tonnes per annum for Household/Commercial & Industrial waste and
- 10,000 tonnes per annum for Construction & Demolition waste.

These threshold values proposed are used by other planning authorities elsewhere in England<sup>8</sup> and have been acknowledged as a guideline by the West Midlands Resource Technical Advisory Body (WMRTAB). These thresholds are a simple way of screening out movements that are not considered to be strategic under Duty to Cooperate (DtC) arrangements, although in reality the values themselves are just a guide.

### 2.1.2 Waste managed by facilities in Birmingham City

Data from the WDI was used to determine the amount of waste received by each individual facility within Birmingham City during 2019, 2020 and 2021, regardless of origin. The WDI was also used to give a breakdown for types of waste received, its origin and the ultimate fate of the waste (where known).

### 2.1.3 Provision for Double Counting

An issue with using the WDI is that it may count the same waste twice i.e. double count, when it passes through intermediate facilities such as waste transfer stations. For example, the WDI will count waste received at Tyseley Waste transfer station as well as waste received by Tyseley Energy from Waste (EfW) Facility even though it is effectively the same waste being passed from one facility to another. Additionally, some facilities classified by the WDI as transfer facilities undertake some waste processing resulting in diversion from the reported waste management system, whereas others will simply transfer all the waste with no processing. Some facilities may undertake a combination of both, dependent on waste stream received. This means that the challenge of dealing with double counting is more complex than simply discounting all waste received by intermediate sites such as transfer stations.

To address this issue, each transfer facility within Birmingham City was analysed on a case-by-case basis using data from the WDI on wastes received and waste removed. By comparing the tonnes of each EWC code received and removed by each facility it is possible to determine how much of the waste received is directly transferred (same EWC code) and therefore double counted and how much is being processed on site, visible by change in EWC code or fewer tonnes removed than received. The tonnes of the waste directly transferred was then subtracted from the waste received totals to avoid double counting.

### 2.1.4 Provision for Non-codeable West Midlands Waste

Some waste managed within the West Midlands is not coded in a way that allows the origin WPA of the waste to be directly attributed. This is due to the data quality of the WDI relying on operators of permitted sites

<sup>7</sup> 2019, 2020 & 2021 Waste Data Interrogator

<sup>8</sup>For example, the South East Waste Planning Advisory Group (SEWPAG)

reporting inputs, and a number of such sites reporting some or all of their waste deliveries at regional level only. This means that there is a potential for an underestimation of waste arisings in Birmingham City that is not attributed down to the city in the WDI. For instance, the 2020 WDI reported nearly 5 Mt of waste attributed to the West Midlands, a large unknown proportion of which potentially originates from Birmingham City.

The proportion of the West Midlands waste produced within Birmingham City was estimated via a site-by-site analysis of the largest 25 sites receiving non-coded West Midlands waste. A detailed breakdown of this estimate is provided in the Beyond Waste Advice Note in Appendix 1. The following results include the estimates of unattributed waste based on this methodology to provide a more realistic overview of waste tonnages originating from Birmingham City.

### 2.1.5 LACW and C&I Split Methodology

Unlike Hazardous and Inert/C&D waste material the WDI does not provide a split of LACW and C&I waste, with both grouped together in the “Household/ Industrial/ Commercial” category. Splitting LACW from C&I waste requires comparing WDF data, which shows tonnages of LACW by destination facility (but not EWC code), with the EWC sub chapters and EWC waste descriptions for the Household/ Industrial/ Commercial category waste in WDI.

To extricate LACW tonnages from C&I waste reported in the WDI a number of assumptions need to be made. Firstly, all waste within the Household/ Industrial/ Commercial category with an EWC code other than chapter 20 (municipal wastes) was assumed to be C&I waste, as waste from these chapters nearly always correspond to some industrial, manufacturing or non-municipal activity. It is therefore assumed all LACW will fall under chapter 20. Note, that this method does not account for the fraction of non-C&I waste which may be categorised under Chapter 19 codes such as mixed waste code 19 12 12 (other wastes from mechanical treatment of wastes).

All EWC chapter 20 sub chapter waste descriptions from WDI were then analysed on a case-by-case basis. For example, some EWC sub chapter waste descriptions such as street cleaning residues were considered to be 100% LACW, so all waste falling under this in WDI was classed as LACW. Some sub chapter descriptions such as food waste and markets waste are considered to be 100% C&I waste so all waste corresponding to these sub chapters in WDI was assumed to be C&I waste. Food waste has been classed as entirely C&I due to the fact there are no separate household food waste collections currently in Birmingham City.

For waste originating in Birmingham City, the remaining EWC sub chapters which are partially LACW and partially C&I were split applying WDF data. Waste descriptions in WDF usually match the descriptions reported by WDI in EWC sub-chapters. As waste in WDF is reported solely by local authorities, it was assumed the total waste originating from Birmingham City from WDF is LACW, with the remaining amount from the total waste reported in WDI (minus the double counted transfer site waste corresponding to the specific sub chapter) accounting for C&I waste arisings. This method was applied to each of the sub-chapters within Chapter 20 with an assumed mix of LACW and C&I waste.

In addition, the same methodology for splitting LACW and C&I waste was applied to the non-coded West Midlands waste estimated to be from Birmingham City and added to the total.

The waste received by Birmingham's permitted waste management facilities required an alternative solution as WDF data only shows the waste arising from within Birmingham City itself and not waste received by facilities in Birmingham with an origin outside Birmingham. In instances where waste was received with EWC sub chapters which are partially LACW and partially C&I a 50/50 split of the WDI data between the two was assumed.

## 2.2 WASTE ORIGINATING FROM BIRMINGHAM CITY

Figure 1 shows the breakdown of waste by type, produced in Birmingham City ascertained through the above exercise in 2019, 2020 and 2021. In 2019, approximately 2.58 million tonnes (Mt) of waste was produced, increasing to 2.70 Mt in 2020 and then to 2.80 Mt in 2021. The primary waste type in 2019, C&I waste, saw a reduction from 44% (1.15 Mt) of total waste produced to 31% (871 thousand tonnes (kt)) by 2021. This trend is contrary to national figures for England as reported by Defra which show a gradual increase for tonnage of this stream over the past few years<sup>9</sup>, though it is noted that Birmingham is a large city and therefore likely to produce a larger proportion of C&I waste than the national average. There is however likely to be some

<sup>9</sup> Defra, 2023, [Official Statistics: UK statistics on waste](#)

overestimation of this type of waste within these figures due to the method of categorisation of C&I waste, which includes all EWC Chapters (except for Chapter 20) categorised as Household/ Industrial/ Commercial category. Inert/C&D waste has meanwhile risen significantly from 35% of waste produced in 2019 (913 kt) to 49% (1.36 Mt) in 2021. Despite a slight increase in 2020, LACW has remained around 17% of total waste while hazardous waste has remained around 3%.

Figure 1 Breakdown of waste produced by Birmingham City by basic waste category. [Waste type, tonnes, percentage]

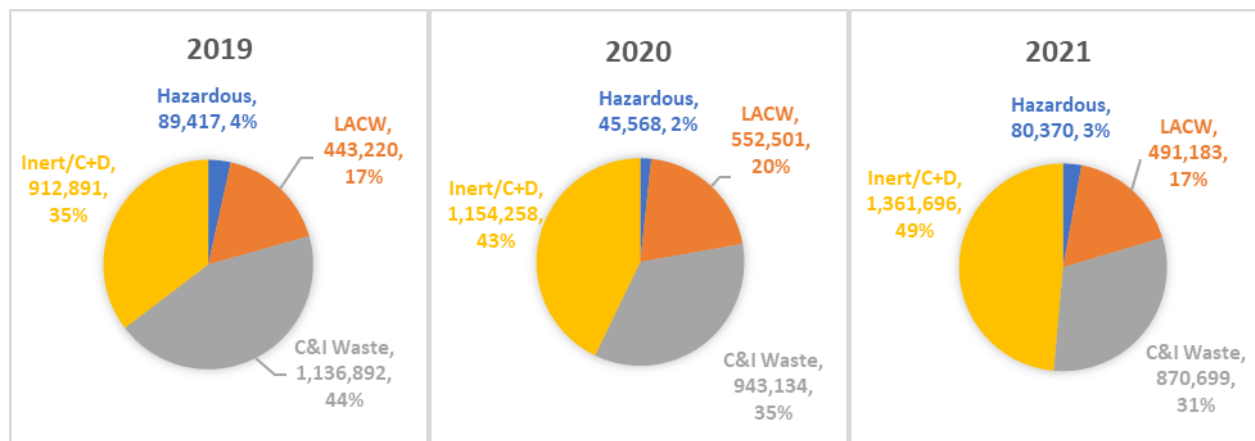


Figure 2 displays the final destination of all waste originating from Birmingham City as reported in the WDI in 2019, 2020 and 2021 and includes the non-coded West Midlands's waste that is likely to have arisen from Birmingham City. The Landfill fraction refers to waste that ultimately ends up in a landfill whereas incineration is either municipal waste that is sent for energy recovery in a EfW or hazardous waste sent for incineration via HTI. The amount of waste sent to landfill rose from 579kt in 2019 to 649kt in 2020<sup>10</sup>, or 22% to 24% of total, but fell to 20% (555 Kt) in 2021. Of the incineration fraction originating from Birmingham City, the vast majority is sent to EfW with less than 1% bound for hazardous waste incineration facilities. Recovery in this instance means the waste is sent to a facility implementing some form of mechanical recycling for material recovery such as a MRF, MRS or car breaker, or inert waste sent to recovery to land operations. In 2021, the majority of waste (55%, 1.6 Mt) was sent to this fate. Treatment covers waste that was sent for either chemical, biological, or physical treatment (which may result in outputs going to recovery) and Transfer refers to waste bound for a transfer site. Many transfer sites treat some waste on site via one of the previously mentioned methods (so might be allocated to these) although this fraction also refers to some waste either transferred outside England or to an unrecorded and unknown destination.

Figure 2 Breakdown of waste produced in Birmingham City by fate [Waste fate, tonnes, percentage]

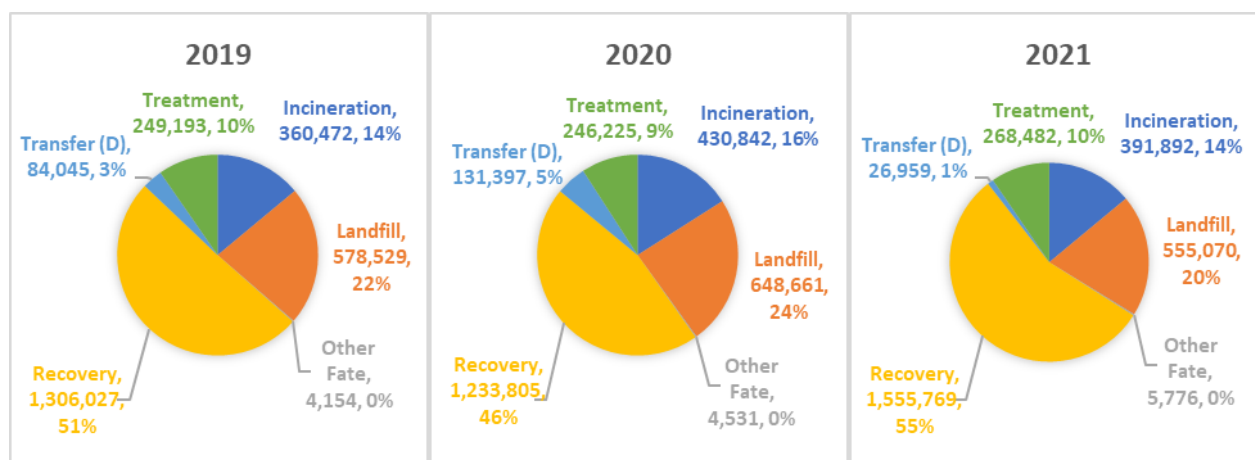


Figure 3 provides a breakdown of the waste originating in Birmingham bound for landfill by type. It indicates the majority of landfill waste Birmingham generates is C&D/Inert waste bound for backfilling and restoration at

<sup>10</sup> This is likely owing to the impacts of Covid-19 on waste management activities.

landfill/ old quarry sites outside of Birmingham City rather than waste bound for municipal or hazardous landfills.

Figure 3 Breakdown of tonnes of waste originating in Birmingham City bound for landfill by type per year

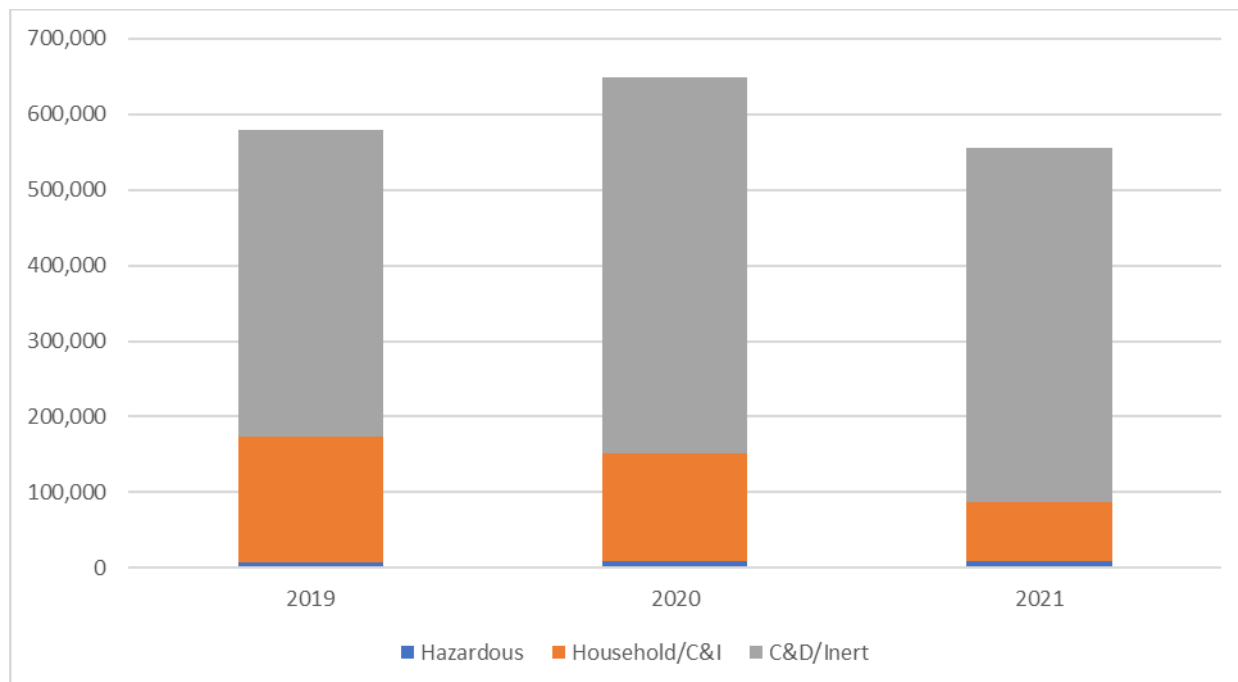
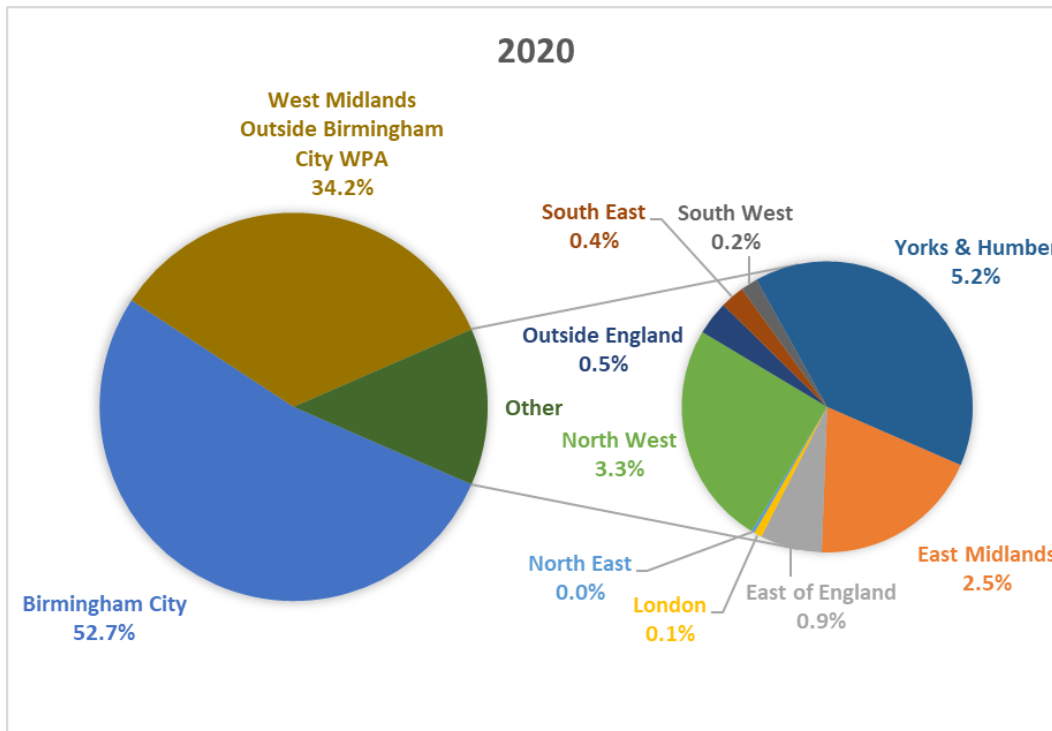
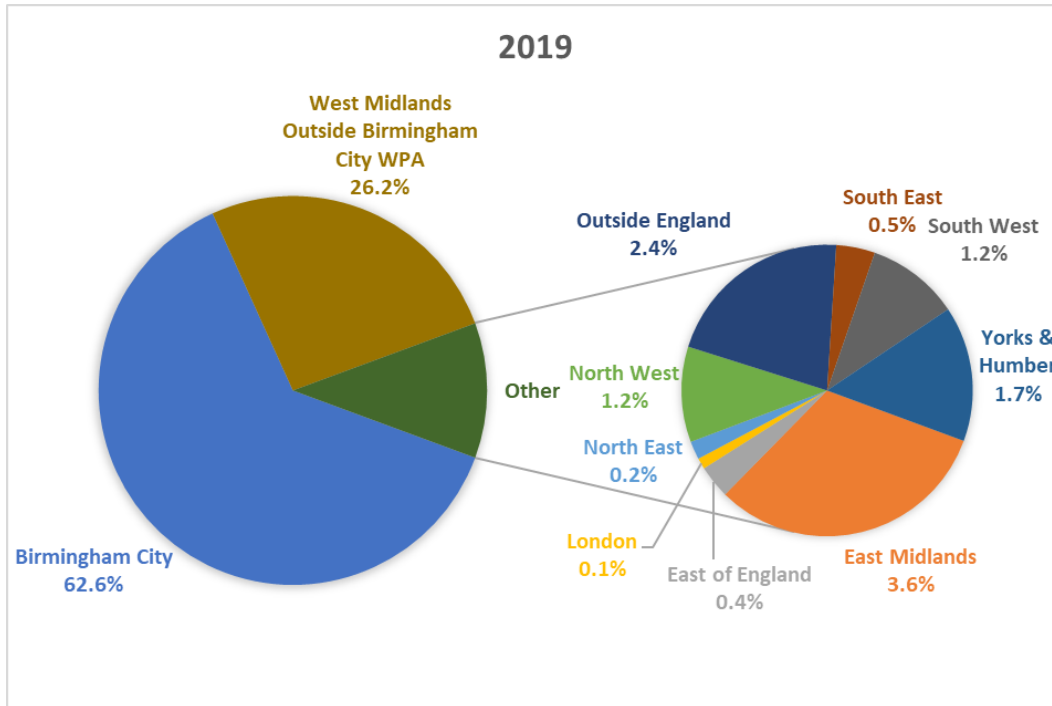
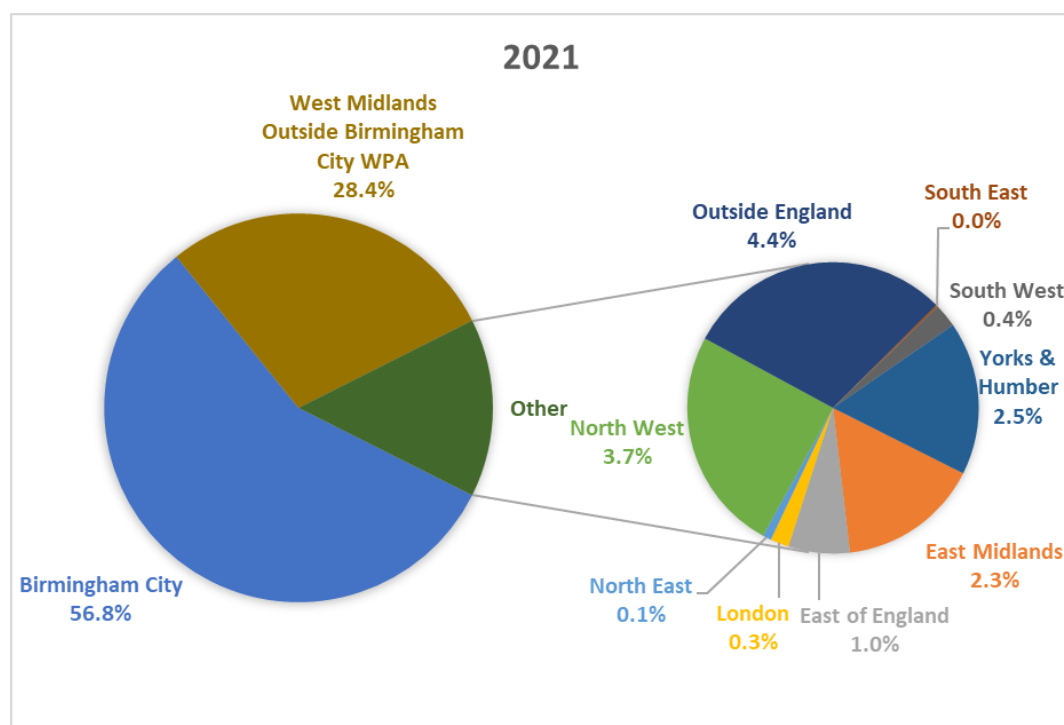


Figure 4 shows the end destinations of waste originating in Birmingham City in 2019, 2020 and 2021. The vast majority (87-89%) of Birmingham City's waste is treated locally either within Birmingham City (around two-thirds) or in the West Midlands. Figure 4 also shows a detailed breakdown of the destination of the remaining 11-13% of waste. In 2021, 4.4% of waste was sent outside England, a significant increase from previous years. The majority of this waste sent outside England (89%) was bound for destinations outside the UK. Of waste sent elsewhere in the UK the largest fraction was sent to Wales (9%) with only very small amounts bound for Scotland or Northern Ireland. The North-West, Yorkshire and Humber and East Midlands are the next largest recipients of Birmingham City's waste outside the West Midlands.



Figure 4 Breakdown of the destination of waste originating from Birmingham City





An important reason to consider the end destination of Birmingham City's waste is that, if over a threshold amount of a specific waste is sent to a single WPA, these movements would not be considered to be strategic under DtC arrangements. This would thereby reduce the number of requests that need to be issued to the receiving WPAs.

In the past three years, a total of 35 WPAs received over the 100 tonnes per annum threshold of Hazardous waste (30 within 2021 alone). 18 WPAs received over the Household/C&I threshold of 5,000 tonnes per annum (16 in 2021) and 13 WPAs received C&D/Inert waste over the 10,000 tonnes per annum threshold (12 in 2021). A summary of all WPAs receiving above threshold quantities of waste and the individual facilities within those WPA areas receiving above threshold amounts of waste are presented in [Table 1](#), [Table 2](#) and [Table 3](#) below.

The information in the below tables indicates a large proportion of waste sent to WPAs outside Birmingham is sent to landfill sites, no surprise given Birmingham City's lack of landfill.

**Table 1 WPAs receiving Hazardous waste over 100tpa Threshold**

WPA over threshold	Individual facilities in WPA receiving above threshold amounts of waste	Total tonnes of Hazardous waste received by WPA 2019	Total tonnes of Hazardous waste received by WPA 2020	Total tonnes of Hazardous waste received by WPA 2021
Bexley	<ul style="list-style-type: none"> <li>Albion Yard</li> </ul>	2,632	1,982	2,811
Bristol City	<ul style="list-style-type: none"> <li>E Recycling Ltd</li> <li>Augean Waste Treatment Plant</li> </ul>	n/a	n/a	319
Cambridgeshire	<ul style="list-style-type: none"> <li>Mepal Soil and Waste Treatment Centre</li> <li>Vetspeed, Thriplow</li> </ul>	243	225	n/a
Cheshire East	<ul style="list-style-type: none"> <li>Brooks Lane Organics</li> </ul>	n/a	n/a	186
Cheshire West and Chester	<ul style="list-style-type: none"> <li>Winsford Rock Salt Mine Waste Disposal Facility,</li> <li>Ellesmere Port Transformer Oil Regeneration Plant</li> </ul>	4,379	n/a	n/a

WPA over threshold	Individual facilities in WPA receiving above threshold amounts of waste	Total tonnes of Hazardous waste received by WPA	Total tonnes of Hazardous waste received by WPA	Total tonnes of Hazardous waste received by WPA
Derbyshire	<ul style="list-style-type: none"> <li>Ilkeston Waste Treatment and Transfer Facility</li> <li>Erin Landfill</li> <li>Norwood Recycling Centre</li> </ul>	782	632	829
Dudley	<ul style="list-style-type: none"> <li>Himley Quarry Landfill,</li> <li>Midland Oil Refinery</li> </ul>	398	989	313
Gloucestershire	<ul style="list-style-type: none"> <li>Wingmoor Farm</li> </ul>	n/a	n/a	337
Kent	<ul style="list-style-type: none"> <li>H Ripley &amp; Co</li> </ul>	963	794	1,134
Kirklees	<ul style="list-style-type: none"> <li>Matrix-Direct-Recycle</li> <li>Bradley Park Landfill</li> </ul>	627	285	253
Lancashire	<ul style="list-style-type: none"> <li>Recycling Lives Recycling Park</li> </ul>	146	155	318
Leeds	<ul style="list-style-type: none"> <li>Knostrop Waste Treatment Facility</li> </ul>	451	171	112
Leicestershire	<ul style="list-style-type: none"> <li>No specific sites over threshold</li> </ul>	118	115	n/a
Lincolnshire	<ul style="list-style-type: none"> <li>Canwick Waste Treatment Centre</li> </ul>	135	n/a	138
Liverpool	<ul style="list-style-type: none"> <li>No specific site over threshold</li> </ul>	n/a	n/a	108
North East Lincolnshire	<ul style="list-style-type: none"> <li>Immingham Materials Recycling Facility</li> </ul>	384	298	325
Northamptonshire	<ul style="list-style-type: none"> <li>East Northants Resource Management Facility</li> <li>Earls Barton Fridge Recycling Facility</li> </ul>	31,434	1,912	14,769
Northumberland	<ul style="list-style-type: none"> <li>Berwick upon Tweed Chemical Works</li> </ul>	186	n/a	n/a
Nottinghamshire	<ul style="list-style-type: none"> <li>Bilthorpe Oil Treatment Plant</li> </ul>	663	421	266
Peterborough	<ul style="list-style-type: none"> <li>Thornhaugh Landfill Site</li> <li>Other sites (no specific site over threshold)</li> </ul>	548	204	n/a
Redcar and Cleveland	<ul style="list-style-type: none"> <li>ICI No 3 Teesport</li> </ul>	n/a	n/a	372
Rotherham	<ul style="list-style-type: none"> <li>The New Depot</li> <li>M L B Autospares Limited</li> <li>Safety Keen Dinnington</li> </ul>	302	602	607
Salford	<ul style="list-style-type: none"> <li>CSG Lanstar (Cadishead),</li> <li>Worsley Waste Transfer Facility</li> </ul>	1,309	1,874	1,332
Sandwell	<ul style="list-style-type: none"> <li>MTB (Midlands) - Cradley Heath</li> <li>ERQ – STC</li> <li>Wednesbury WM Resource Centre</li> <li>Bullock Street</li> <li>Tipton Waste Oil Transfer Facility</li> <li>Mighty Trading Ltd</li> <li>Safety Kleen UK</li> <li>Haz Waste Services Ltd</li> </ul>	6,528	9,241	19,280
Sheffield	<ul style="list-style-type: none"> <li>No specific sites over threshold</li> </ul>	n/a	n/a	137
Shropshire	<ul style="list-style-type: none"> <li>Bridgnorth I W M F</li> </ul>	232	171	168
Staffordshire	<ul style="list-style-type: none"> <li>Unit 4a</li> <li>Aqua Force Special Waste</li> <li>Blancomet Recycling</li> <li>Stone Technologies Ltd</li> <li>PRM Green Technologies Ltd</li> </ul>	406	1,128	1,726

WPA over threshold	Individual facilities in WPA receiving above threshold amounts of waste	Total tonnes of Hazardous waste received by WPA	Total tonnes of Hazardous waste received by WPA	Total tonnes of Hazardous waste received by WPA
Stockton-on-Tees	<ul style="list-style-type: none"> <li>• Billingham Treatment Plant</li> <li>• Port Clarence Landfill Site</li> </ul>	3,406	602	607
Stoke-on-Trent City	<ul style="list-style-type: none"> <li>• Sneyd Hill Transfer and Treatment Centre</li> </ul>	1,976	1,161	1,597
Tameside	<ul style="list-style-type: none"> <li>• Sims Group UK</li> </ul>	n/a	n/a	192
Walsall	<ul style="list-style-type: none"> <li>• Empire Treatment Works</li> <li>• Brownhills Environmental Management Facility</li> <li>• Walsall Oil Treatment Plant</li> <li>• Watling Waste Services</li> <li>• The Flatts</li> </ul>	21,776	10,680	9,242
Warwickshire	<ul style="list-style-type: none"> <li>• Ling Hall Landfill,</li> <li>• CSG Coventry Treatment Plant</li> </ul>	1,750	822	1,790
Wiltshire	<ul style="list-style-type: none"> <li>• Parkgate Farm Hazardous Waste Landfill</li> </ul>	104	n/a	108
Wolverhampton	<ul style="list-style-type: none"> <li>• Horseley Field Waste Treatment Facility</li> <li>• Wolverhampton Waste Facility</li> <li>• Unit 4a</li> </ul>	12,945	5,480	28,127
Worcestershire	<ul style="list-style-type: none"> <li>• Stourport Oil Treatment Plant</li> </ul>	546	583	614

Table 2 WPAs receiving Household/C&amp;I over 5,000tpa Threshold

WPA over threshold	Individual facilities in WPA receiving above threshold amount of waste	Total tonnes of Household/C&I waste received by WPA 2019	Total tonnes of Household/C&I waste received by WPA 2020	Total tonnes of Household/C&I waste received by WPA 2021
Bristol City	<ul style="list-style-type: none"> <li>• Sims Avonmouth</li> </ul>	28,907	n/a	n/a
Dudley	<ul style="list-style-type: none"> <li>• Himley Quarry Landfill</li> </ul>	17,709	7,332	11,286
Doncaster	<ul style="list-style-type: none"> <li>• Bankwood Lane</li> </ul>	n/a	8,371	8,725
Halton	<ul style="list-style-type: none"> <li>• Runcorn Energy From Waste Facility</li> </ul>	n/a	24,297	46,273
Hertfordshire	<ul style="list-style-type: none"> <li>• Wallace Way Metal Recycling Facility</li> </ul>	n/a	n/a	5,395
Kent	<ul style="list-style-type: none"> <li>• Snodland Paper Mill</li> </ul>	11,443	6,178	7,543
Leicestershire	<ul style="list-style-type: none"> <li>• Cotesbach Landfill</li> </ul>	n/a	10,859	7,083
Lincolnshire	<ul style="list-style-type: none"> <li>• BW Riddle A T F And Scrap Yard</li> </ul>	8,768	7,205	9,770
Norfolk	<ul style="list-style-type: none"> <li>• Saddlebow Paper Mill</li> </ul>	5,950	n/a	6,689
North East Lincolnshire	<ul style="list-style-type: none"> <li>• Ad FDS Seaways Plc</li> </ul>	5,640	n/a	n/a
Nottinghamshire	<ul style="list-style-type: none"> <li>• Sandy Lane Plastics Reprocessor</li> </ul>	20,342	12,680	35,491
Sandwell	<ul style="list-style-type: none"> <li>• Rabone Lane</li> </ul>	29,273	11,688	5,224

WPA over threshold	Individual facilities in WPA receiving above threshold amount of waste	Total tonnes of Household/C&I waste received by WPA	Total tonnes of Household/C&I waste received by WPA	Total tonnes of Household/C&I waste received by WPA
Staffordshire	<ul style="list-style-type: none"> <li>Four Ashes M R F,</li> <li>Walleys Quarry Landfill Site</li> <li>Staffordshire Energy Recovery Facility</li> <li>Roundhill Anaerobic Digestion Plant</li> </ul>	44,277	76,191	63,324
Solihull	<ul style="list-style-type: none"> <li>Meriden Quarry Landfill Site,</li> <li>Berkswell Quarry Landfill Site</li> <li>Berkswell Composting Site</li> <li>Arden Wood Shavings</li> </ul>	75,900	56,277	56,619
Wakefield	<ul style="list-style-type: none"> <li>Ferrybridge 2</li> </ul>	15,872	49,057	49,287
Walsall	<ul style="list-style-type: none"> <li>Aldridge Waste Transfer Station</li> </ul>	8,453	9,739	12,000
Warrington	<ul style="list-style-type: none"> <li>Latchford Locks Works</li> </ul>	8,842	8,828	13,158
Warwickshire	<ul style="list-style-type: none"> <li>Ling Hall Landfill</li> <li>Coleshill Roadsweepings Separation Plant</li> <li>Coleshill Anaerobic Digestion Plant</li> <li>Ettington Materials Recycling Facility</li> </ul>	119,831	87,780	75,103

Table 3 WPAs receiving C&amp;D/Inert over 10,000 tpa Threshold

WPA over threshold	Individual facilities in WPA receiving above threshold amount of waste	Total tonnes of C&D/Inert waste received by WPA	Total tonnes of C&D/Inert waste received by WPA	Total tonnes of C&D/Inert waste received by WPA
		2019	2020	2021
Cheshire East	<ul style="list-style-type: none"> <li>Curzon Alloys Ltd</li> </ul>	n/a	n/a	31,752
Cheshire West and Chester	<ul style="list-style-type: none"> <li>Manisty Wharf</li> </ul>	n/a	11,427	10,390
Dudley	<ul style="list-style-type: none"> <li>Pegasus Grab Hire Limited</li> <li>Oak Farm Quarry Landfill</li> </ul>	29,464	n/a	16,914
Leicestershire	<ul style="list-style-type: none"> <li>Bardon Hill Quarry</li> </ul>	19,829	n/a	14,126
North Somerset	<ul style="list-style-type: none"> <li>Gypsum Recycling Facility</li> </ul>	n/a	n/a	10,210
Nottinghamshire	<ul style="list-style-type: none"> <li>No specific site over threshold</li> </ul>	10,697	n/a	n/a
Sandwell	<ul style="list-style-type: none"> <li>Edwin Richards Landfill Site</li> </ul>	33,589	73,039	145,376
Solihull	<ul style="list-style-type: none"> <li>Meriden Quarry Landfill Site Area G</li> <li>Berkswell Quarry</li> </ul>	321,213	557,384	528,602

WPA over threshold	Individual facilities in WPA receiving above threshold amount of waste	Total tonnes of C&D/Inert waste received by WPA	Total tonnes of C&D/Inert waste received by WPA	Total tonnes of C&D/Inert waste received by WPA
	<ul style="list-style-type: none"> <li>Meriden Quarry</li> </ul>			
Staffordshire	<ul style="list-style-type: none"> <li>Campions Wood Quarry</li> <li>Shire Oak Quarry</li> </ul>	29,464	n/a	25,150
Thurrock	<ul style="list-style-type: none"> <li>URM (UK) Limited</li> </ul>	n/a	n/a	12,980
Walsall	<ul style="list-style-type: none"> <li>Interserve Site Services</li> </ul>	15,523	n/a	10,124
Warwickshire	<ul style="list-style-type: none"> <li>Dunton Recycling Centre</li> <li>Ling Hall Landfill</li> </ul>	65,598	82,003	54,500
Worcestershire	<ul style="list-style-type: none"> <li>Pinches 3 Landfill</li> </ul>	24,523	n/a	11,671

## 2.3 WASTE RECEIVED AT FACILITIES IN BIRMINGHAM CITY

Figure 5 shows the breakdown of waste, by type, managed in Birmingham City in 2019, 2020 and 2021. Approximately 2.87 Mt of waste was received by Birmingham City permitted waste management facilities in 2019. This figure has declined slightly in the years following, with 2.63 Mt received in 2020 and 2.70 Mt received in 2021.

Figure 5 Breakdown of waste received by Birmingham City facilities by basic waste category. [Waste type, tonnes, percentage]

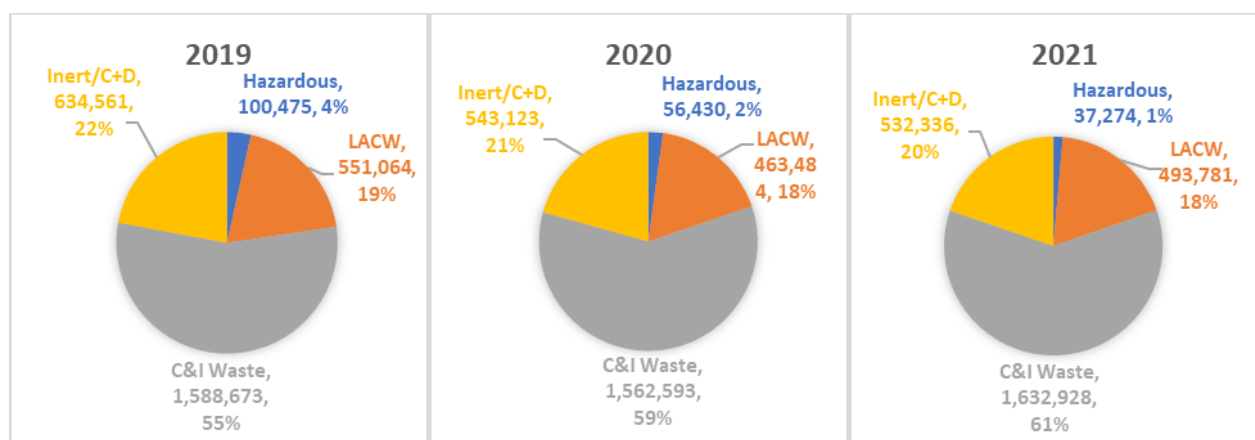


Figure 6 directly compares waste originating and waste managed at Birmingham City by type in 2019, 2020 and 2021. In 2019, Birmingham waste management facilities received just over 10% more waste (292 kt) than it produced. In 2021, Birmingham City received 4% less waste (108 kt) than it produced indicating a marginal shortfall in waste management capacity. While the City receives far less Inert/C&D waste than it produces (around 60%), it receives nearly double the amount of C&I waste it generates. The data used in this study does not provide context as to the reasons why the City is currently achieving net self-sufficiency in management capacity overall, but it should be acknowledged that this is a simplified conclusion and in reality, a more detailed breakdown would include factors such as contract procurement and specific waste types which require treatment that is not available within the area.



Figure 6 Comparison by basic waste category for waste originating from and received by Birmingham City

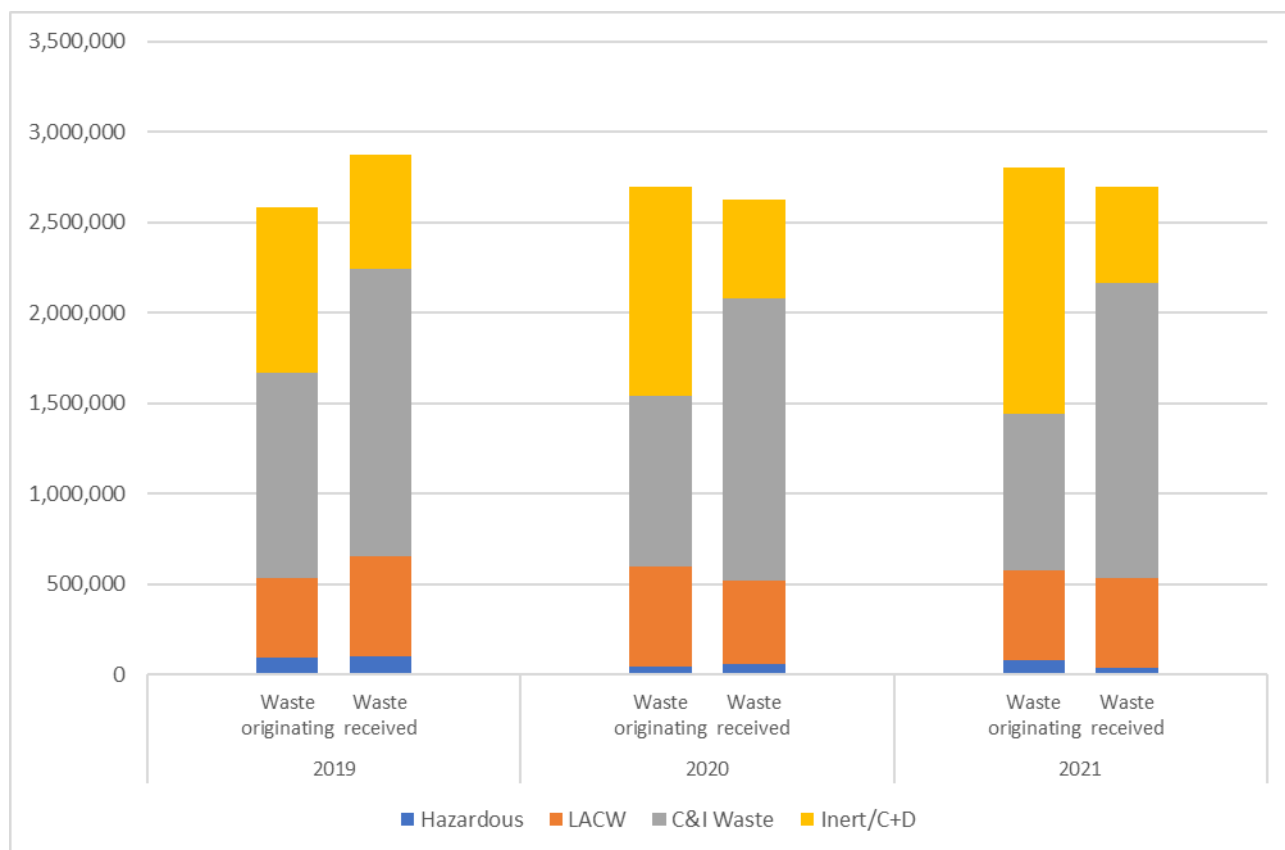


Figure 7 shows that around 70% (1.88 Mt) of waste managed in Birmingham City is sent for recovery<sup>11</sup>.

Figure 7 Breakdown of total waste received by Birmingham City by waste end fate [Waste fate, tonnes, percentage]

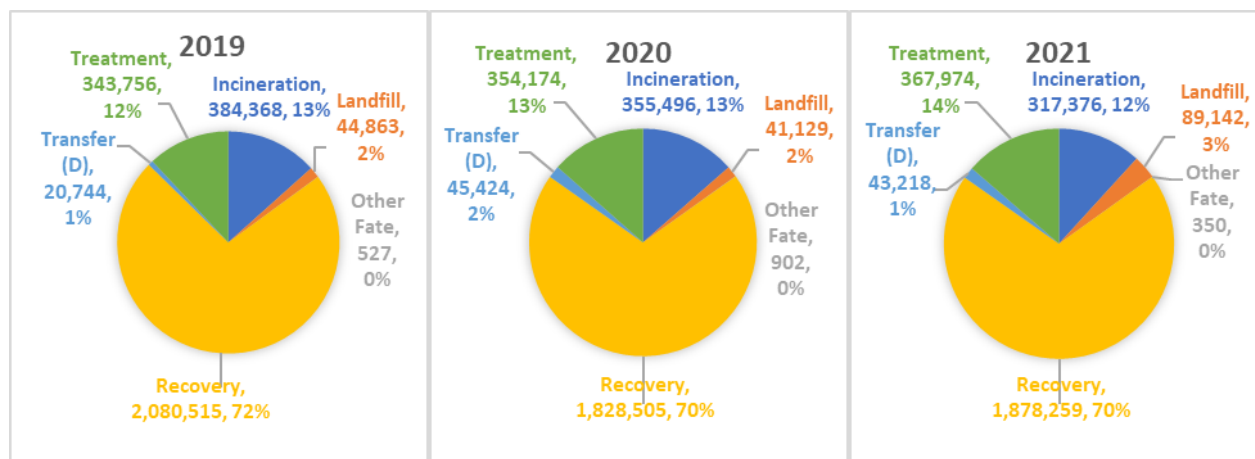
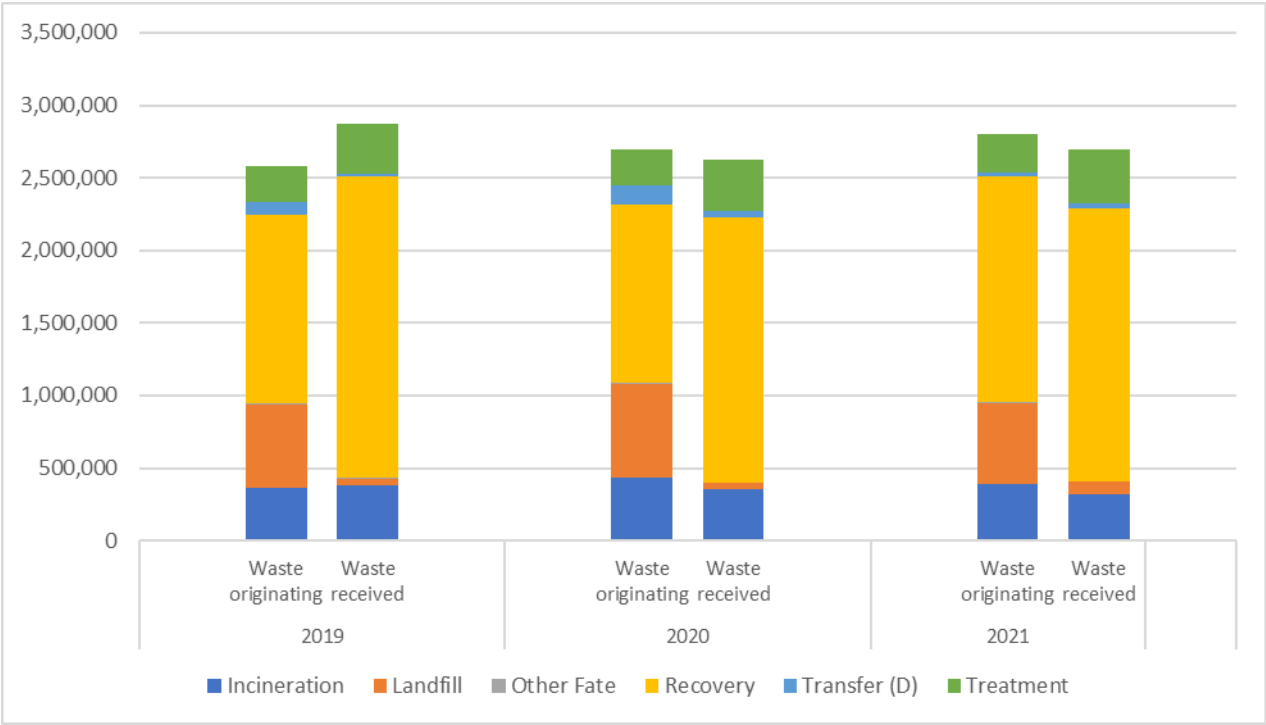


Figure 8 shows that Birmingham's waste management facilities receive around 20% more waste (322 Kt) for recovery than Birmingham City itself generates. Additionally, Figure 8 indicates that there's very little landfill capacity within Birmingham compared to the amount of landfill waste the city generates, which is of no surprise given there are no landfills within the Birmingham City area. 98% of Birmingham's waste bound for landfill was managed at sites within the West Midlands as of 2021, with Meriden Quarry Landfill in Solihull (58%), Edwin Richards Landfill Site in Sandwell (23%) and Himley Quarry Landfill in Dudley (11%) being the chief destinations.

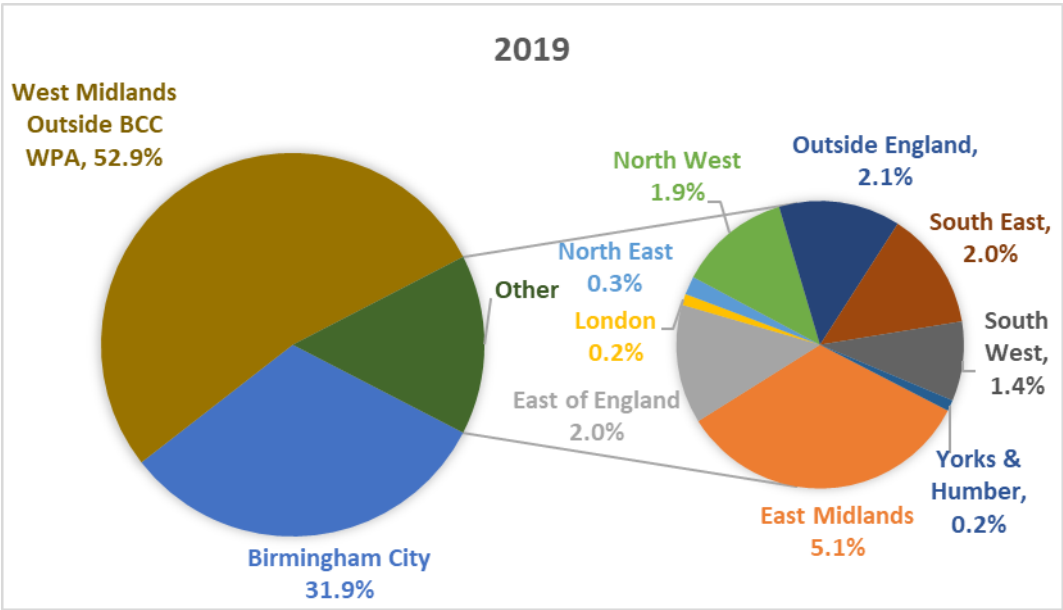
<sup>11</sup> Much like in Figure 2, the vast majority of waste received for incineration goes to EfW facilities rather than Hazardous Waste incineration facilities, with only 60 tonnes received by City Hospital bound for Hazardous Waste Incineration.

Figure 8 Comparison by waste end fate for waste originating from and received by Birmingham City



The origin of all waste received by Birmingham facilities in 2019, 2020, 2021 is highlighted in Figure 9, which shows that a large proportion (85%) of waste handled in Birmingham City originates from within the West Midlands. Notably these results suggest Birmingham accepts more waste from elsewhere in the West Midlands than from Birmingham City itself. Figure 9 also gives a breakdown of the recorded origin of the remaining 15-16% of waste, with the largest proportion originating from the nearby East Midlands and North-West regions. Around 1.7% of waste originates from outside England, the majority of which is from Scotland.

Figure 9 Breakdown of recorded origin of all waste handled within Birmingham City



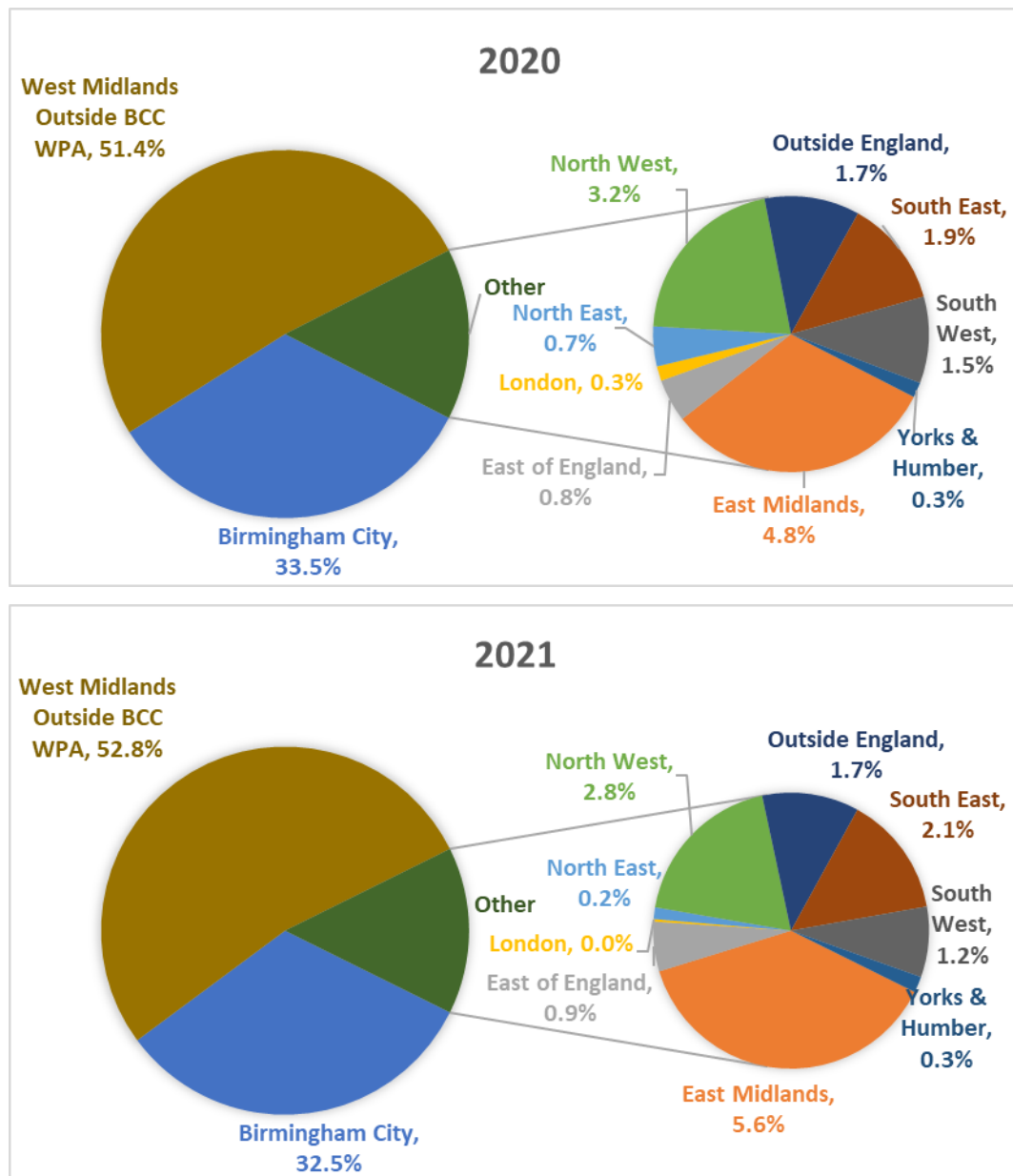
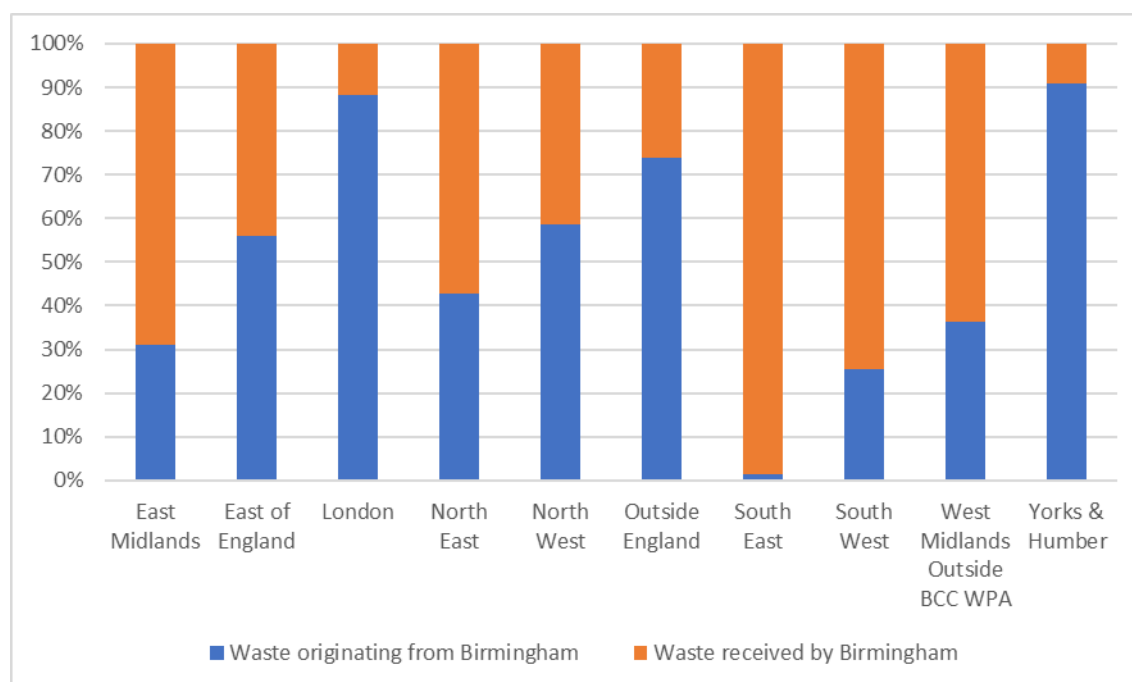


Figure 10 provides a comparison between the origin of waste handled in Birmingham and the end destination of waste generated by the city in 2021. It shows that Birmingham sent far more of its waste to London and Yorkshire & Humberside than it received from these regions. Birmingham meanwhile received more waste from the South-East, South-West and East Midlands than it exported to those regions.

**Figure 10 Comparison of destination of waste originating from and origin of waste handled in Birmingham in 2021**

### 2.3.1 Construction and Demolition Waste Arisings Comparison to previous aggregates studies

The West Midlands Metropolitan Area: Joint Local Aggregate Assessment (LAA) 2015<sup>12</sup> identified the operational facilities within Birmingham that were accepting aggregate C&D waste in 2013. A comparison with the number of operational facilities in 2021 accepting aggregates from this study is provided in Table 4 below.

**Table 4 Operational facilities accepting aggregate C&D waste in Birmingham in 2013 (source: West Midlands Metropolitan Area: Joint LAA 2015)**

Facility Type	Number of Operational Facilities in Birmingham 31 <sup>st</sup> December 2013	Number of Operational Facilities Accepting Aggregates in Birmingham 2021	Number of Operational Facilities Accepting Any C&D Material in Birmingham 2021
Recycling/ Recovery at Quarries	0	0	0
Recycling/ Recovery at Coating and Cement RMX Plants	1	2	2
Recycling/ Recovery by Demolition and Engineering Contractors	6	8	12
Recycling/ Recovery at Waste Facilities	3	4	7
<b>Total</b>	<b>10</b>	<b>14</b>	<b>21</b>

The figures for 2021 have been provided both as the operational facilities that have accepted C&D material suitable to be converted into recycled aggregates as a direct comparison to the 2013 data and for the total number of facilities in Birmingham City that have recycled any amount of C&D material of any type in 2021. The table shows the number of facilities accepting aggregates has increased over the past decade. This figure

<sup>12</sup> West Midlands Aggregates Working Party, 2015, [West Midlands Metropolitan Area: Joint Local Aggregate Assessment \(LAA\) 2015](#)

does not include waste transfer sites within Birmingham City that do not appear to be undertaking any recycling or processing of C&D material on site.

The table also shows how there are several C&D sites in Birmingham City that are accepting non aggregate inert materials such as soils, glass, and metals.

The LAA 2015 also reports that the West Midlands Metropolitan Area (WMMA) as a whole had higher C&D inputs than outputs in every year from 2007 to 2013. It also indicated that C&D inputs were roughly constant year on year whereas outputs were decreasing every year. No breakdown of this data was provided by WPA making it slightly misleading due to the Meriden Quarry landfill site in Solihull and Ketley Quarry in Dudley accepting large quantities of C&D material with minimal outputs indicating that it has been converted into a recycled aggregate product (and has ceased to be waste). Since tonnage provided is for the WMMA as a whole this data does not indicate if there has been an upward trend in C&D material accepted by Birmingham since 2007 or not. This is because the LAA does not provide a sub breakdown of this trend by WPA therefore no hard data exists for Birmingham City, though it is highly likely it followed the regional trend over the time period in question.

The type of waste entering permitted sites by type in the WMMA in 2013 was also recorded in the aggregates study. Comparing this to the data for Birmingham City in 2021 indicates that Birmingham facilities accept a slightly higher proportion of concrete, bricks and ceramics and slightly lower fractions of soil, stone and metals waste.

The waste received by all waste sites in the WMMA in 2013 split by basic waste category compared to the data from Birmingham City received in 2021 indicates Birmingham City is accepting a higher proportion of household waste compared to C&D and hazardous waste. The higher tonnage figures in 2013 compared to 2021 is due to the fact the aggregates report covers the entirety of WMMA rather than just Birmingham.

**Figure 11 Waste entering permitted waste sites in 2013 by basic waste category [Source: West Midlands Metropolitan Area: Joint Local Aggregate Assessment (LAA) 2015]**

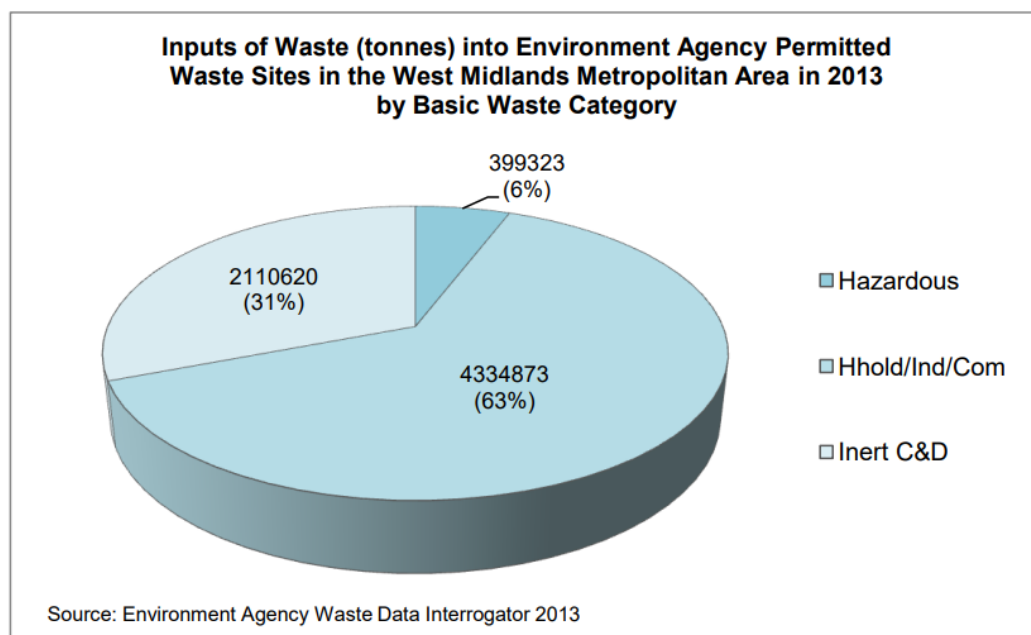
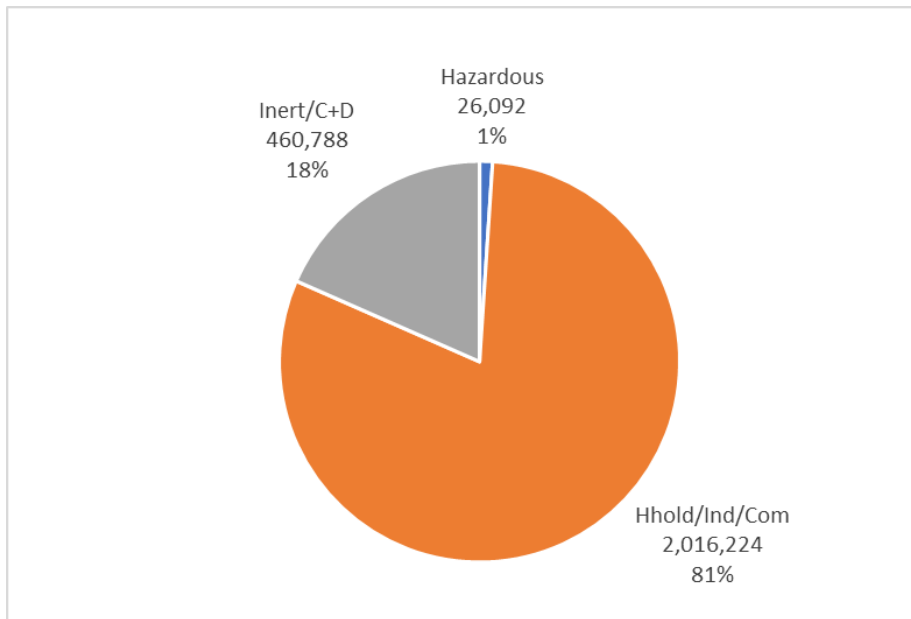


Figure 12 Waste received by type in Birmingham in 2021



The type of waste entering permitted sites by type in the WMMA in 2013 was also recorded in the aggregates study. Comparing this to the data for Birmingham City in 2021 indicates that Birmingham facilities accept a slightly higher proportion of concrete, bricks and ceramics and slightly lower fractions of soil, stone and metals waste.

Figure 13 Waste entering permitted waste sites in 2013 by type [Source: West Midlands Metropolitan Area: Joint Local Aggregate Assessment (LAA) 2015]

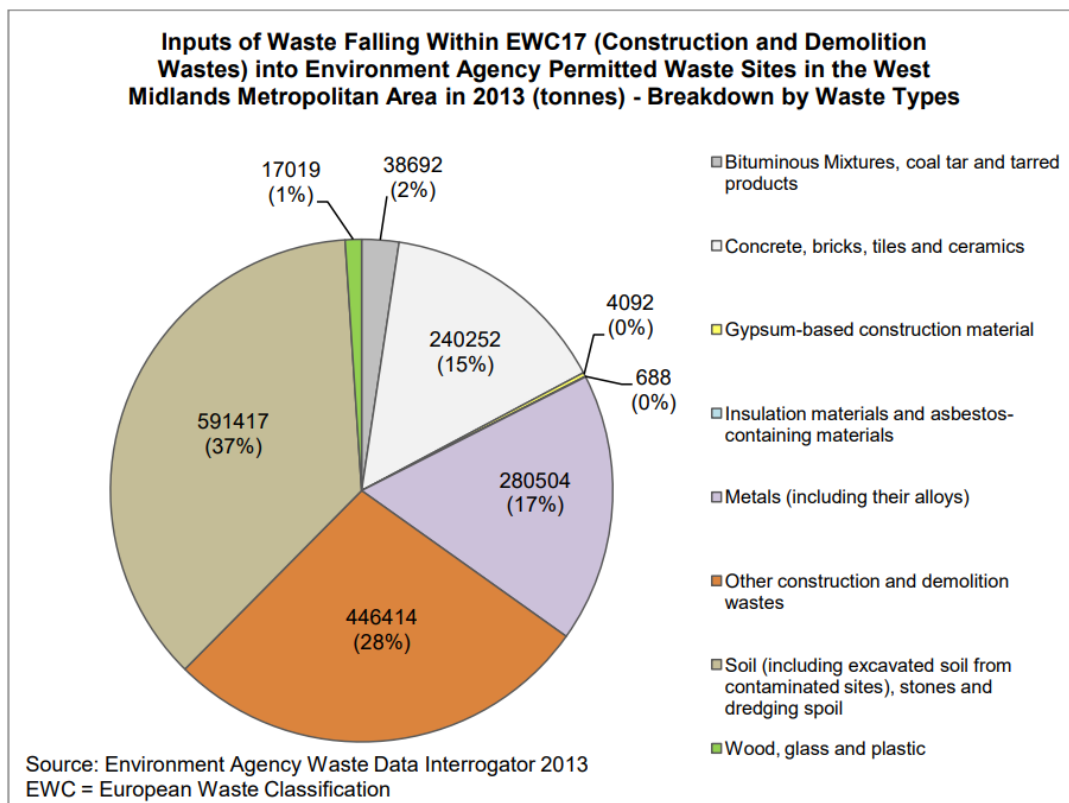
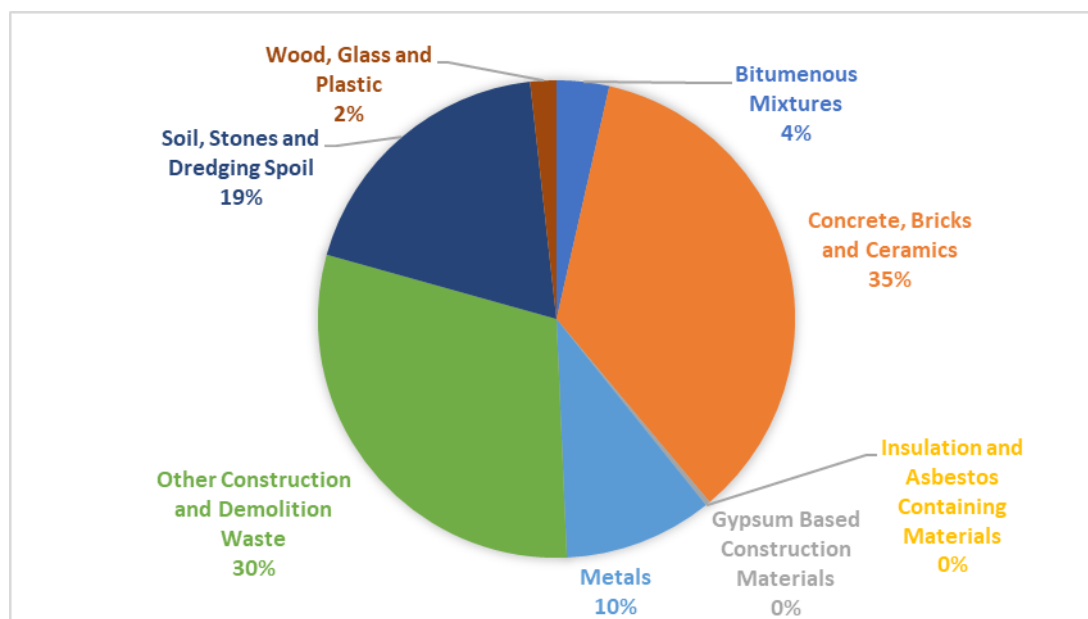




Figure 14 Inputs of EWC code 17 waste into permitted sites in 2021



The report makes note of the unsuitability of the Waste Data Interrogator database to accurately estimate C&D arisings. This is due to WDI only including data for C&D waste received by permitted waste facilities and does not capture inert waste that is managed outside the permitting system under exemptions. Provision for these exempt arisings have been made in Section 5.4.

Finally, the LAA study notes that the best locations for expanding the WMMA's aggregates processing capacity are the various quarry sites as these have spare land available, have dust mitigation measures in place and are far enough away from sensitive receptors such as housing to not pose a major noise risk. As none of these quarry sites are in Birmingham City itself there are not many obvious places on which static facilities to increase Birmingham's aggregates processing capacity might be located. It is however possible for mobile crushing and screening plant to be deployed on or adjacent to construction sites themselves to allow suitable material to be converted into recycled aggregate and either used onsite or supplied offsite. Recycled aggregate production is preferred if the material is suitable (i.e. demolition waste). The study makes note of the challenges of building new aggregates processing facilities due to the limited land available and challenges getting planning permission in built up areas. The report also makes note that there may not be a need to significantly increase the recycling capacity of inert material in WMMA due to the need for fill material at derelict mine sites which are prevalent in the Black Country. It may therefore be worth exploring the possibility that any excess inert waste (namely excavation waste) produced by Birmingham be used for backfilling mine shafts rather than exported outside the West Midlands.

The West Midlands Aggregates Working Party Annual Monitoring Report (WMAWP) 2021, states that primary aggregate production in the West Midlands has increased since 2019. The report briefly reviews WDI data from across the West Midlands and shows that in 2019 the West Midlands managed more waste than it produced. The 2019 data reviewed in this report goes against this overall trend showing more C&D was produced in Birmingham City than managed there.

Finally, the WMAWP makes note of major construction projects that may impact aggregate waste production in the West Midlands and therefore produce large quantities of C&D/Inert waste. Projects that cover Birmingham City or neighbouring WPAs are summarised in the table below.

Table 5 Construction projects in Birmingham City and neighbouring WPAs as recorded by WMAWP

Project	WPA	Proposed Timescale as of 2021	Status
Wednesbury to Brierley Hill Metro Extension	Dudley and Sandwell	2020-2023	Works in progress

Project	WPA	Proposed Timescale as of 2021	Status
HS2 Phase 1	Birmingham and Warwickshire	2021-2029	Works in progress
M6 Junction 10 Improvements	Walsall	2020-2024	Works in progress
Black Country Living Museum Expansion	Dudley	2020-2023	Works in progress

## 3. FORECASTING WASTE ARISING OVER THE PLAN PERIOD

### 3.1 APPROACH AND ASSUMPTIONS

#### 3.1.1 General assumptions

Understanding of how waste quantities and composition could change in the coming years will help to inform Local Plans on the waste infrastructure required to meet those needs. Using the baseline model, projections of future waste arisings have been forecasted up to the BLP milestone year, 2042. The modelling takes into consideration estimated growth in housing for LACW, and gross domestic product for C&I waste, while considering key policy and legislation around waste management to understand the stress points within the system and when they occur.

The results (as presented in Section 3.2) compare two scenarios;

- **The 'business as usual' (BAU) scenario** where waste growth to 2042 is modelled with the inclusion of government-wide strategies such as DRS and EPR.
- **The 'policy-impacts' scenario** represents waste growth, the inclusion of DRS and EPR, and the Council's targets for recycling rate increase, landfill diversion and reduced waste generation per person according to their Waste Strategy<sup>13</sup>, as set out in the table below and in Section 3.2.

Table 6 Local policy targets derived from BCC's Waste Strategy 2017-2040

Assumption	Target	By When?
Recycling Rate	55%	2025
	60%	2030
	65%	2035
Landfill Diversion	100%	2040
Waste Generation per person	-10% on 2014/15 figures	2025

The following sections define the assumptions used to generate forecasts for each waste stream.

#### 3.1.2 Waste growth projections

Waste growth in the LACW stream is forecast using household growth rate, as defined use of BCC's 2016 Base household projections tool<sup>14</sup>. On average, household numbers are expected to grow by 0.7% each year.

Growth in C&I waste and hazardous waste has been forecast by using ONS statistics<sup>15</sup> for Gross Domestic Product (GDP) for the years 2011 to 2021 and applying an Exponential Smoothing (ETS) algorithm to project values to 2042. From 2022 onwards, the C&I stream is forecast to grow by an average of 2.1% each year, while the hazardous waste stream is forecast to grow by an average of 1.2% each year.

As per the guidance for waste in the government's National Planning Policy Framework (NPPF)<sup>16</sup>, future arisings for Inert/C&D waste is assumed to remain static through the time period due to a reduced evidence base for forecasting this data. It should therefore be noted that there is potential for future growth in this waste stream to be underestimated within the forecast and capacity review.

#### 3.1.3 DRS and EPR impacts on waste growth projections

Both the BAU and 'policy-impacts' scenarios forecast the impacts of DRS and EPR on LACW growth projections for Birmingham City. It should be noted that the introduction of DRS and EPR schemes is likely to have some impact on the C&I waste stream forecast due to the composition of municipal waste from non-household sources being similar to LACW (i.e. including packaging materials affected by these initiatives).

<sup>13</sup> Birmingham City Council, 2017, [Waste Strategy 2019-2040](#)

<sup>14</sup> [Birmingham City Council, 2016 Base household projections tool](#)

<sup>15</sup> ONS, 2023, [Gross Domestic Product: chained volume measures: Seasonally adjusted £m](#)

<sup>16</sup> Department for Levelling Up, Housing and Communities, 2015, [Guidance: Waste](#),

However, as there is a lack of data to accurately replicate the composition of this waste stream, this analysis does not attempt to model the impacts of introducing such schemes specifically.

The forecast estimates a diversion of drinks containers in scope of DRS from LACW using national composition estimates of kerbside residual waste and recycling<sup>17</sup>. Based on guidance by Defra, an 85% capture rate of these items in the LACW stream is applied from 2028 onwards, with levels of engagement in the scheme expected to gradually increase to this rate from proposed implementation date of 2025.

Table 7 DRS assumptions for LACW projections

DRS Assumptions	DRS Eligibility	DRS Capture Rate	Overall DRS Reduction estimate %	Overall DRS Reduction estimate %	Overall DRS Reduction estimate %
		DRS Policy implementation dates	2025	2027	2028
<b>Household Residual</b>					
Plastic bottles	53%	85%			
Ferrous cans	4%	85%	-0.3%	-0.6%	-1.0%
Non-ferrous cans	27%	85%			
<b>Household Dry Recycling</b>					
Plastic bottles	49%	85%			
Ferrous cans	10%	85%	-1.3%	-2.7%	-4.1%
Non-ferrous cans	85%	85%			

The forecast estimates yield changes to packaging materials in scope of EPR within the LACW waste stream using national composition estimates of kerbside residual waste and recycling<sup>18</sup>. Anticipated engagement is forecast to progressively increase between 2024 and 2028.

Table 8 EPR assumptions for LACW projections

EPR Assumptions	Estimated yield changes due to EPR	Estimated yield changes due to EPR	Estimated yield changes due to EPR
EPR Policy implementation dates	2024	2026	2028
Recyclable paper	1%	2%	5%
Recyclable card & cardboard	1%	2%	5%
Plastic films	-2%	-5%	-10%
Plastic bottles	-2%	-5%	-10%
PTTs	-2%	-5%	-10%
Recyclable glass	-2%	-5%	-10%
Ferrous	-2%	-5%	-10%
Non Ferrous	-2%	-5%	-10%
WEEE	-2%	-5%	-10%
<b>Household Residual</b>	<b>-0.3%</b>	<b>-0.7%</b>	<b>-1.3%</b>
<b>Household Dry Recycling</b>	<b>-0.2%</b>	<b>-0.9%</b>	<b>-1.2%</b>

<sup>17</sup> WRAP, 2019, [National Household Waste Composition 2017](#), prepared by Eunomia Research & Consulting Ltd.

<sup>18</sup> WRAP, 2019, [National Household Waste Composition 2017](#), prepared by Eunomia Research & Consulting Ltd.

### 3.1.4 Local policy targets

In addition to the assumptions summarised above, the 'policy impacts' scenario also includes the following local minimisation target.

- **Waste generation (per person) targets:** Using population growth assumptions<sup>19</sup>, this has been calculated as the reduction in household waste required to meet 10% reduction per person by 2025 (based on 2014/15 data of 345kg per person). This is defined as a reduction of 7.9% LACW per annum from 2022 to 2025.

The following targets have not been included as part of the waste arisings forecast comparison with BAU, but have been explored in more detail within Sections 3.2.3 and 3.2.4.

- **Landfill diversion targets:** In 2021-22, BCC reported 12.6 kt (2.72%) of LACW arisings were sent to landfill<sup>20</sup>. In order to meet the target of 0% waste to landfill by 2040, the proportion of LACW waste sent to landfill must decline by 0.1% on average each year. Note that the modelling uses a target of 0.5% waste to landfill by 2040 to account for waste types such as asbestos which may not be disposed of by alternative means.
- **Recycling rate increase:** In 2021-22, BCC reported a LACW municipal recycling rate of 23.9%<sup>21</sup>. In 2020, the UK reaffirmed its commitment to the targets outlined in the EU Circular Economy Package<sup>22</sup> in which targets for recycling and reuse of municipal waste were set at 55% by 2025, 60% by 2030 and 65% by 2035. In order to meet the final target of 65% by 2035, the recycling rate must increase by 3.2% on average per year.

## 3.2 RESULTS

### 3.2.1 Overall waste arisings

Figure 15 demonstrates the forecast waste arisings to 2042 comparing baseline waste generation (i.e. only accounting for growth), the BAU scenario (applying the impacts of DRS and EPR policies to the baseline) and total impact of all policies (including DRS, EPR and targets to reduce waste generation per person by 2025). Table 9 provides the detailed results. The first three years (2019-2021) represent actual data reported, while tonnage growth in the years 2022 onwards are calculated using the growth forecasts described in the section above.

The effect of household growth on forecast LACW tonnages, plus the impacts of GDP growth in the C&I and Hazardous waste stream, shows total waste tonnage is expected to increase from 2.58 Mt in 2019 to 3.15 Mt by 2042. Applying both the impacts of EPR from 2024 and DRS from 2025 (i.e. the BAU scenario), results in a net reduction of 43 kt by 2042, with total waste of 3.11 Mt. This represents the diversion of drinks containers via DRS and packaging via EPR from the LACW stream as a result of these schemes being implemented. Applying a reduction of 0.2% LACW per annum from 2022, the amount required to reach a 10% reduction from 2014/15 in waste generated per person by 2025, results in a net reduction of 191 kt from the baseline by 2042, with total waste of 2.96 Mt.

<sup>19</sup> ONS, 2018, [Subnational population projections for England: 2018-based](#)

<sup>20</sup> Data provided by BCC. Landfill figures excluding any post incineration materials, including recycling rejects sent landfill.

<sup>21</sup> [Provided by BCC. This is the percentage of total LACW municipal waste sent for recycling, including IBA metals but excluding IBA.](#)

<sup>22</sup> GOV.UK, 2020, [Policy Paper: Circular Economy Package Policy statement.](#)

Figure 15 Overall waste arisings comparison under different scenarios

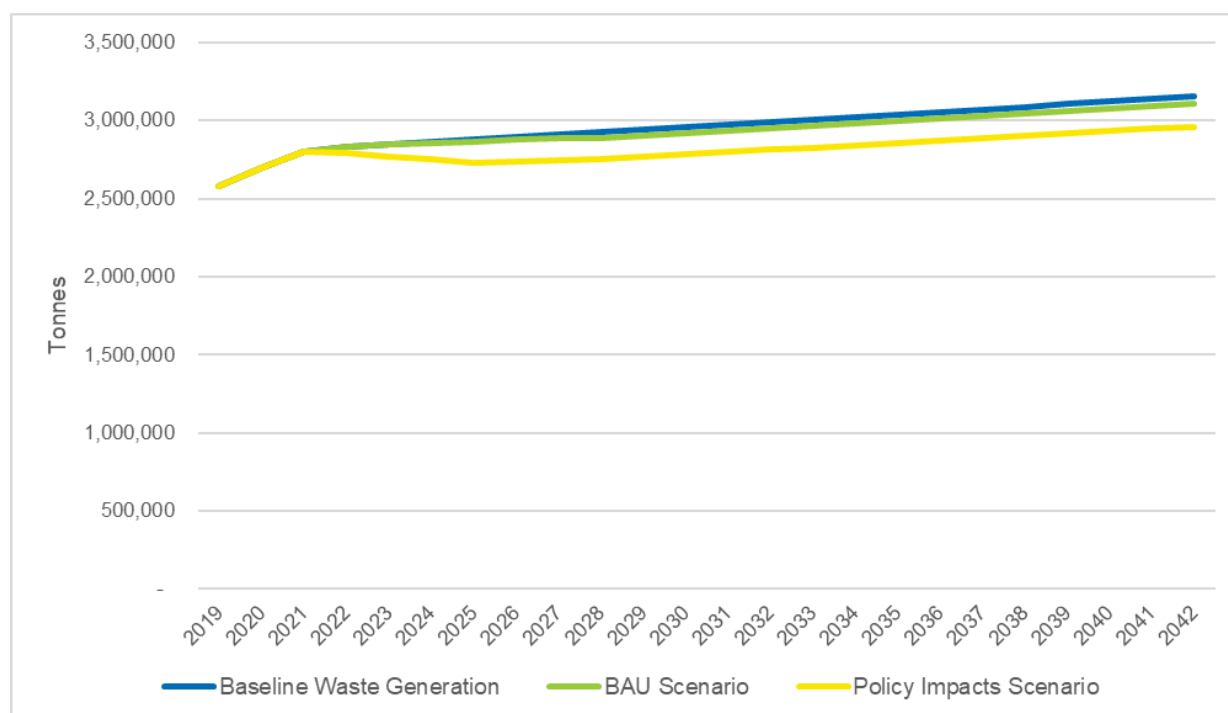


Table 9 Overall waste arisings comparison under different scenarios (thousand tonnes)

	2020	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040	2042
	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)	Tonnes (thousand s)
Baseline Waste Generation	2,695	2,830	2,862	2,894	2,926	2,958	2,991	3,024	3,056	3,089	3,121	3,153
BAU Scenario (including DRS and EPR impact)	2,695	2,830	2,859	2,877	2,877	2,919	2,951	2,983	3,015	3,047	3,078	3,110
Policy Impacts Scenario (including DRS, EPR and waste generation reduction target)	2,695	2,791	2,750	2,739	2,739	2,783	2,813	2,843	2,873	2,903	2,932	2,962

### 3.2.2 LACW results

The following chart and table provide a more detailed assessment of LACW tonnages and yields (kg per household per year), comparing the different scenarios. The number of households is shown to grow by 17.6% across the forecast period, from 427,000 in 2019 to 501,000 in 2042. The effect of this on forecast LACW tonnages shows LACW arisings of 572 Kt by 2042. Applying both the impacts of EPR from 2024 and DRS from 2025 (i.e. the BAU scenario), results in a net reduction of 14 Kt by 2042 and a LACW tonnage of 557 Kt. Applying a reduction of 0.2% per annum from 2022, the amount required to reach a 10% reduction from 2014/15 in waste generated per person by 2025, results in a net reduction of 174 Kt from the baseline by 2042, with a LACW arising of 397 Kt.

Figure 16 LACW waste arisings comparison under different scenarios



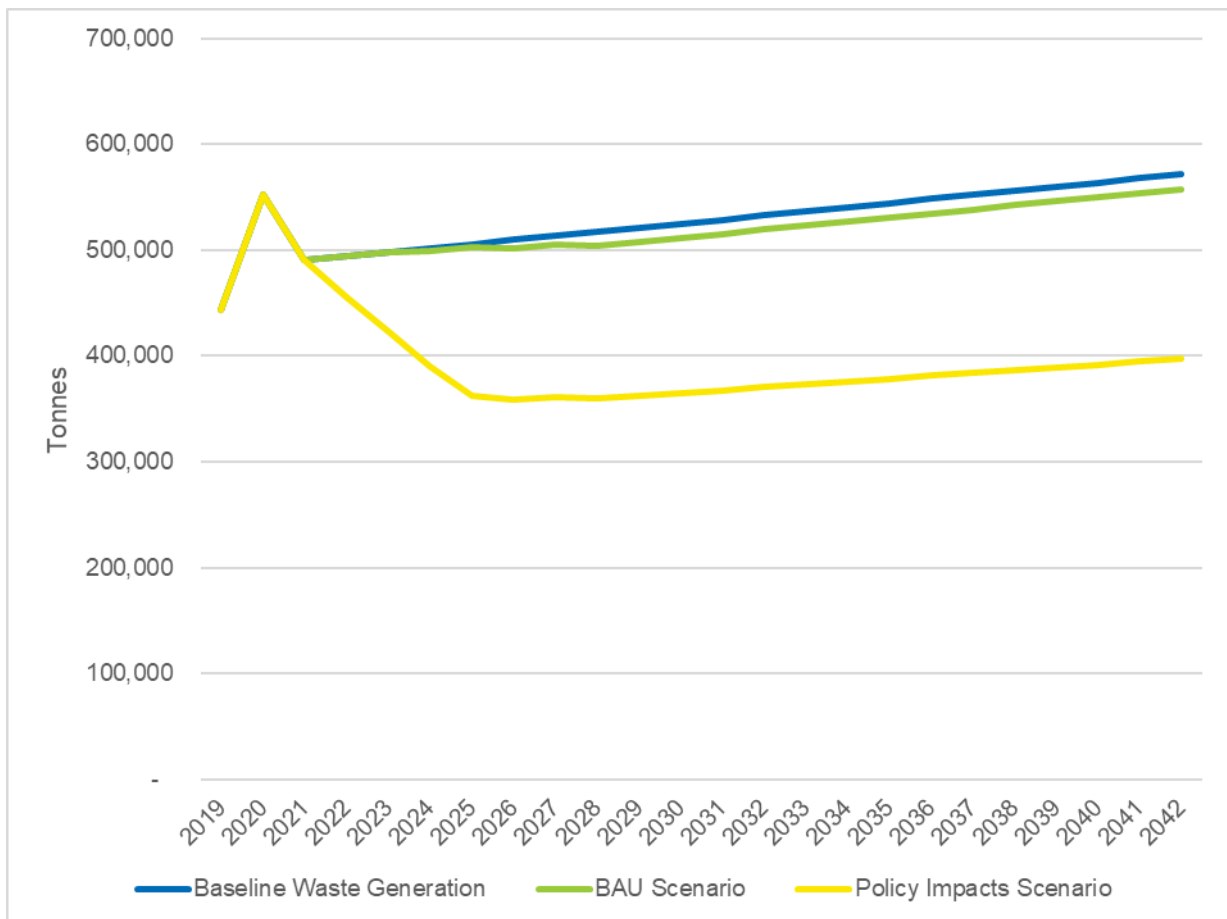


Table 10 Overall waste arisings comparison under different scenarios (thousand households/tonnes)

	2020	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040	2042
Households (thousands)	429	434	441	447	454	461	468	475	481	488	495	501
Tonnes (thousands)												
Baseline Waste Generation	553	495	502	510	517	525	533	541	549	557	564	572
BAU scenario	553	495	500	502	504	512	520	527	535	543	550	557
Policy impacts scenario	553	456	390	359	359	365	370	376	381	387	392	397

### 3.2.3 Landfill diversion

Figure 17 and Table 11 demonstrate how landfill tonnages must decrease year-on-year to reach the Council's target of 0% waste to landfill in 2040<sup>23</sup>. 2021-22 saw 2.72% of LACW arisings (or 12.6 Kt) sent to landfill. In order to achieve the Council's target (taken to be 0.5% of total arisings by 2040), the proportion of waste sent to landfill must decrease by 0.1% each year.

Around 75% of total waste sent to landfill currently is Inert/C&D. As outlined in the Net Zero Strategy 2021<sup>24</sup>, the government have committed to achieving near elimination of biodegradable municipal waste to landfill from 2028. As a result, the main streams to target will be LACW and C&I waste where the majority of food and organic waste is present.

Figure 17 Target waste tonnage to landfill

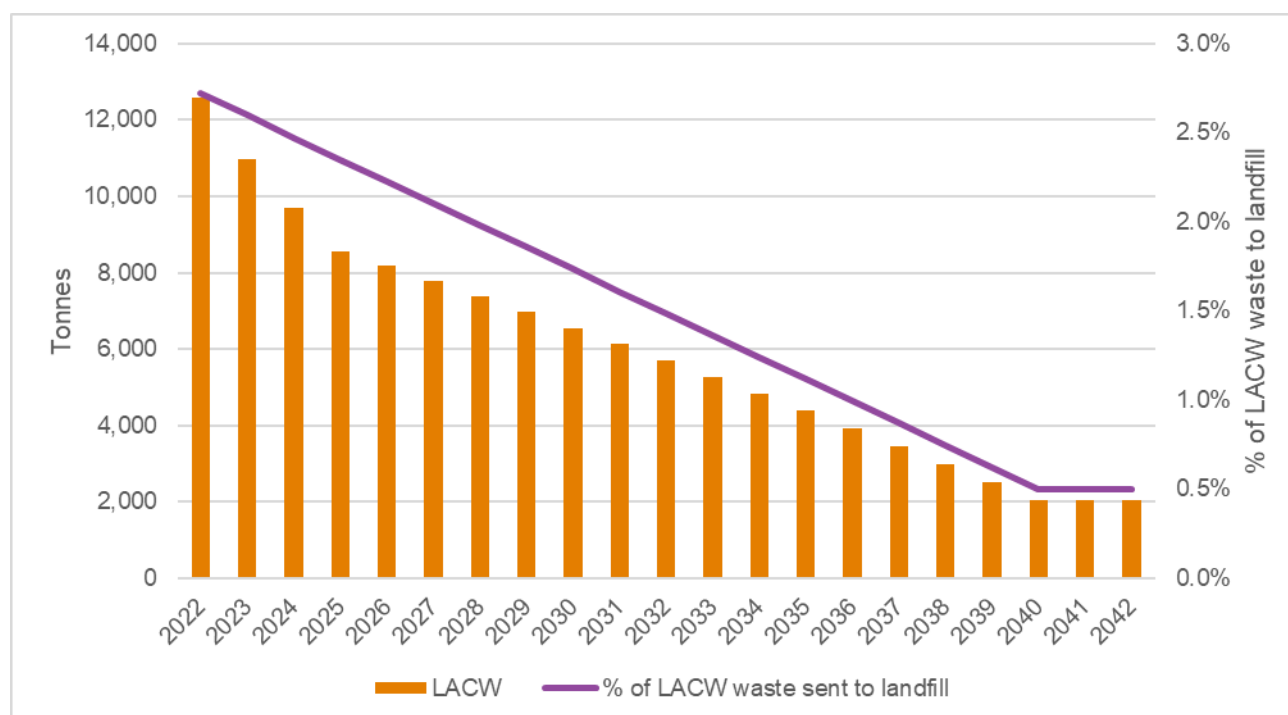


Table 11 Target LACW waste tonnage to landfill

	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040	2042
LACW total tonnage (with Policy Impacts)	455,898	390,091	359,014	359,485	364,786	370,332	375,143	375,883	381,251	391,973	397,187
LACW landfill tonnage	12,600	9,711	8,173	7,376	6,552	5,705	5,272	3,924	2,992	2,031	2,058
% of LACW sent to landfill	2.7%	2.5%	2.2%	2.0%	1.7%	1.5%	1.2%	1.0%	0.7%	0.5%	0.5%

### 3.2.4 Recycling rate

BCC's recycling rate in 2021-22 was reported as 23.9%<sup>25</sup>. As a result, it would be extremely challenging for BCC to reach the government's national targets for municipal waste recycling. In order to meet the 55% recycling by 2025 and subsequent targets, BCC's recycling rate would need to increase 10.4% per year between the years 2022 and 2025, followed by 1% each year after. In order to reach the target of 60% by

<sup>23</sup> Note, the forecast calculates a reduction of landfill tonnes to 0.5%, accounting for any material that cannot be treated/disposed of in an alternative manner, such as asbestos.

<sup>24</sup> HM Government, 2021, [Net Zero Strategy: Build Back Greener](#)

<sup>25</sup> Provided by BCC.

2030, the recycling rate would need to increase by 4.51% each year (and 1 % each year after). In order to meet the final target of 65% by 2035, the recycling rate must increase by 3.2% on average per year.

A comparison of key target milestones and required rate of increase are demonstrated in Figure 18 and Table 12. It should be noted that in addition to impacts of waste minimisation, the introduction of schemes such as DRS and EPR could have an impact on the composition of waste in municipal waste collections, and therefore recycling performance. Therefore, these should be considered as part of any policies introduced to help to meet these recycling targets.

Figure 18 Target recycling rates

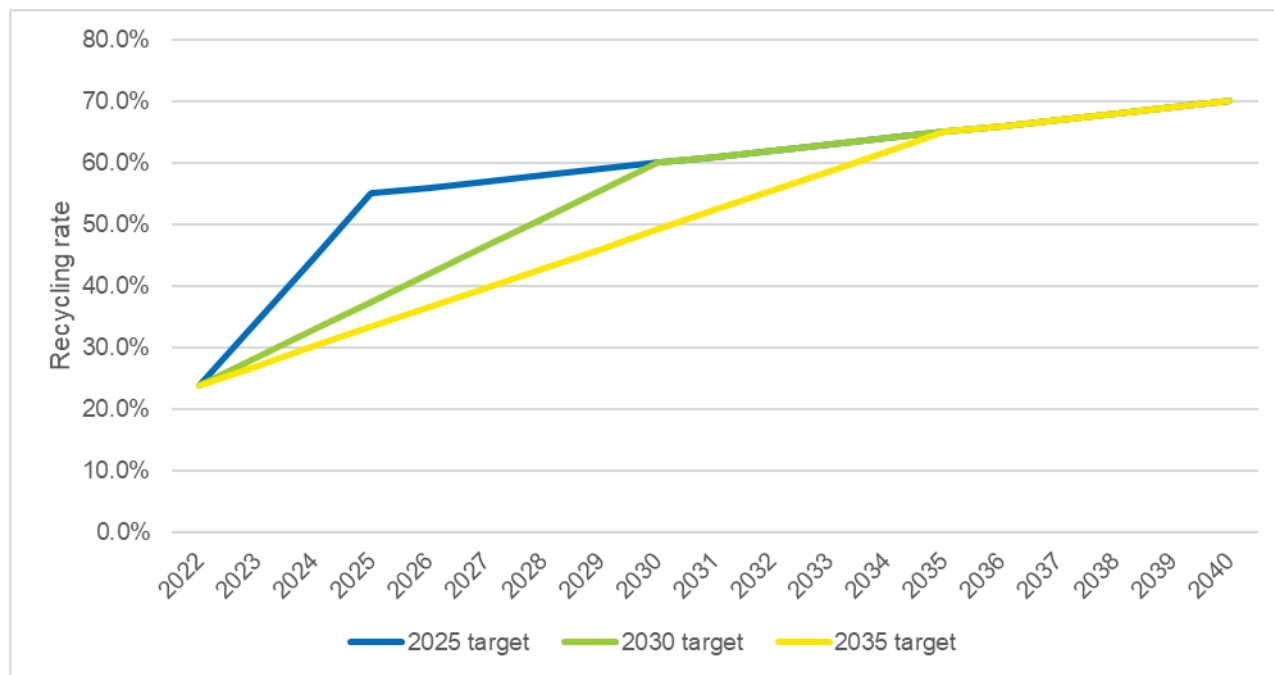


Table 12 Target recycling rates

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
<b>2025 target</b>	23.9%	34.3%	44.6%	55.0%	56.0%	57.0%	58.0%	59.0%	60.0%	61.0%	62.0%	63.0%	64.0%	65.0%
<b>2030 target</b>	23.9%	28.4%	32.9%	37.4%	42.0%	46.5%	51.0%	55.5%	60.0%	61.0%	62.0%	63.0%	64.0%	65.0%
<b>2035 target</b>	23.9%	27.1%	30.2%	33.4%	36.5%	39.7%	42.9%	46.0%	49.2%	52.4%	55.5%	58.7%	61.8%	65.0%

## 4. ASSESSING EXISTING WASTE MANAGEMENT CAPACITY

### 4.1 APPROACH AND ASSUMPTIONS

The following section produces an estimate of the capacity of all waste management facilities currently active within Birmingham City. This assessment is undertaken using the last three years' of data available in the EA's WDI (2019-2021) to identify the active sites and assess the amount of waste received (and removed where applicable) at each facility by type of waste (LACW, C&I, C&D/Inert and Hazardous). To assess available capacity in Birmingham City, the peak throughput of each facility in the last three years has been used as a proxy of maximum capacity. It should be noted that this is a high-level assessment based on reported tonnages rather than permits and planning consents, and the approach may underestimate Birmingham City's total waste management capacity. Additionally, the capacity assessment doesn't provide the full context as to why

there may be spare capacity available, for reasons such as contractual obligations or generation of specific wastes which cannot be treated at Birmingham facilities. To gain the full picture, facility specific analysis could be undertaken supported by direct contact with facility operators to verify capacity values obtained. However, this is beyond the scope of this project.

In 2021, 87 facilities identified as located in Birmingham City reported via WDI (i.e. received waste for management). A full facility breakdown of estimated maximum capacity (i.e. peak throughput 2019-2021) by waste type is included in Appendix 3 of this report.

Table 13 summarises the maximum total capacity of the facilities operational in Birmingham by waste stream compared to the waste managed in Birmingham in 2021, therefore highlighting potential spare capacity in Birmingham City. Comparing the peak throughput of the last three years to the reported tonnages of 2021 shows Birmingham's facilities are at 60% capacity for C&D/Inert and 40% capacity for hazardous waste, and are therefore currently able to manage additional waste arisings rather than send the waste it generates to other WPAs. The table indicates that there is less spare capacity in Birmingham City to handle LACW and C&I waste, with 24% available altogether.

**Table 13 Total facility capacity summary**

	LACW	C&D/Inert	C&I Waste	Hazardous Waste
Maximum Potential Capacity (Tonnes)	1,406,102	1,071,739	1,922,062	113,412
Waste managed in Birmingham City 2021 (Tonnes)	1,322,300	641,267	1,567,241	45,511
Total spare Capacity (Tonnes)	83,802	430,472	354,821	67,901
Total spare Capacity (%)	6%	40%	18%	60%

## 4.2 MAJOR RECOVERY AND DISPOSAL INSTALLATIONS

Around 50% of waste managed in Birmingham City is undertaken at five sites: Tyseley EfW Plant, EMR Birmingham, Perry Barr Waste Transfer Station and Household Waste and Recycling Centre (HRC), and Nechells Paper Mill<sup>26</sup>. The following table summarises the throughput of waste going to Birmingham's top 20 facilities (accounting for over 90% of waste received by Birmingham's permitted waste management facilities) over the three-year period 2019-2021 as reported in WDI. Tyseley EfW currently receives the largest tonnage of waste within Birmingham City.

**Table 14 List of major management facilities in Birmingham (throughput in tonnes and % of waste received) 2019-2021**

	Primary Destination	2019 Received	2019 Received	2020 Received	2020 Received	2021 Received	2021 Received
1	Tyseley Energy from Waste Plant	339,833	16%	354,237	17%	374,168	17%
2	EMR Birmingham	256,188	12%	202,101	10%	271,084	12%
3	Perry Barr Waste Transfer Station And H R C	165,714	8%	166,326	8%	158,193	7%
4	Nechells Paper Mill	216,718	10%	206,120	10%	155,530	7%
5	Parkway Recycling Limited	145,918	7%	158,550	8%	144,819	7%
6	Lifford Lane Waste Transfer Station And H R C	130,357	6%	134,787	6%	130,175	6%
7	Landor Street IRRC <sup>27</sup>	83,556	4%	93,390	4%	93,455	4%
8	C & J Recycling Ltd	103,841	5%	78,939	4%	93,186	4%
9	Minworth S T W <sup>28</sup>	n/a	n/a	69,979	3%	93,064	4%
10	Armoury Road Waste Management Centre	63,375	3%	67,981	3%	83,556	4%
11	Hawkeswood Metal Recycling	71,005	3%	55,308	3%	61,298	3%
12	One Stop Recycling Ltd	104,023	5%	49,082	2%	51,059	2%
13	Keily Bros Ltd	83,807	4%	75,786	4%	49,955	2%
14	Mercian Recycling Ltd	47,000	2%	46,130	2%	47,480	2%
15	Walsall Road Waste Transfer Station	36,676	2%	32,386	2%	44,518	2%
16	Veolia – Tyseley (Transfer Station)	51,637	2%	39,099	2%	38,711	2%
17	Hays Mills	n/a	n/a	29,169	1%	36,598	2%
18	Go Waste U K Ltd	27,599	1%	27,694	1%	24,121	1%
19	34 Redfern Road	n/a	n/a	31,847	2%	23,422	1%
20	Bogan Skip Hire	25,778	1%	22,777	1%	21,967	1%

<sup>26</sup> Note that reprocessing sites such as glass works and papermills are not considered to be waste facilities under the TCPA Use Class Order, and as such are normally consented as an industrial activity. However, for the purpose of the capacity analysis, these facilities have been included.

<sup>27</sup> The site comprises a Solid Recovered Fuel (SRF) production facility, a Material Recycling Facility (MRF) and a Waste Transfer Station (WTS). The site is permitted to accept 250,000 tonnes of hazardous and non-hazardous wastes (105,000 tonnes are allowed to be accepted at the SRF Facility for conversion into SRF managed offsite).

<sup>28</sup> Sewage Treatment Works (STW) typically deal with wastewater treatment and therefore not in scope.

## 4.3 EXEMPT FACILITIES

### 4.3.1 Overview

Defra stipulates that a waste exemption is a waste operation that is exempt from needing an environmental permit<sup>29</sup>. There are a number of different exemptions which each have different limits and conditions that must be met.

Waste managed at exempt sites are not included within the waste tonnages reported through the WDI from permitted sites. Therefore Ricardo has considered the number of waste exemptions registered with the EA located within Birmingham City as this contributes to some additional waste management capacity in the City.

### 4.3.2 Waste Exemptions in Birmingham

Data from the public register was collected on the current waste exemptions within Birmingham in September 2023, providing a snapshot in time on the total waste quantities that could be held under these exemptions. An exemption registration lasts for three years and therefore specific registrations would last for varying lengths in time (i.e., some could have been recently renewed and have near to three years remaining, whilst some could expire in the next couple of months).

The full list of exemptions is outlined in Appendix 4 and Table 20 to Table 23. There are four main types of exemption classification:

- Using waste 'U' exemptions.
- Disposing waste 'D' exemptions.
- Treating waste 'T' exemptions.
- Storing waste 'S' exemptions.

Each exemption details the specific conditions, outlining the waste(s) allowed to be managed under the specific exemption and the maximum quantities for the applicable activity. Some exemptions allow for multiple waste types which can each have different quantities against them for the appropriate activity. As an example, the S2 exemption for storing waste in a secure place has up to 34 different waste types, with maximum storage capacities ranging from 10 tonnes in a 6 month period to 60,000 tonnes in a 12 month period.

There is currently no data or mechanism to report the tonnage of waste actually received against each exemption. For example, if an exemption allows the storage of a particular waste up to 1,000 tonnes per year, there is no mechanism to determine if the site actually received the full amount over the time period, or if only 10 tonnes were received for example. Therefore, in the analysis below and in Appendix 4, Ricardo has taken the maximum quantities/capacity limit for each exemption. This is therefore likely to result in an overestimate of the potential waste managed through exempt activities in Birmingham but provides the theoretical maximum quantities/capacity limit.

Table 15 indicates that there was a total of 606 exemptions registered at sites located within Birmingham City at September 2023. Of these exemptions, there were a total of 1,116 different exemption codes (as multiple exemptions can be registered at the same location).

**Table 15: Summary of the most common waste exemption codes in Birmingham City (over 20 exemption codes)**

Exemption	Description	Number	Exemption Capacity*	Estimated Maximum Capacity
T28	Sort and denature controlled drugs for disposal	275	1 cubic metre for up to 6 months	275 cubic metres up to 6 months
S2	Storing waste in a secure place	143	60,000 tonnes up to 12 months	8,580,000 tonnes up to 12 months
S1	Store waste in secure containers	86	400 cubic metres up to 12 months	34,400 cubic metres up to 12 months

<sup>29</sup> <https://www.gov.uk/guidance/register-your-waste-exemptions-environmental-permits>

Exemption	Description	Number	Exemption Capacity*	Estimated Maximum Capacity
U1	Use of waste in construction	85	50,000 in a 3 year period	4,250,000 in a 3 year period
T4	Preparatory treatment, such as, bailing, sorting, shredding	52	15,000 tonnes at any one time	780,000 tonnes at any one time
D7	Burning waste in the open	49	20 tonnes at any one time	980 tonnes at any one time
T9	Recovering scrap metal	46	1,000 tonnes at any one time	46,000 tonnes at any one time
T6	Treating waste wood and waste plant matter by chipping, shredding, cutting or pulverising	33	500 tonnes over any 7 day period	16,500 tonnes over any 7 day period
U10	Spreading waste to benefit agricultural land	30	1,250 tonnes at any one time	37,500 tonnes at any one time
U8	Using waste for specified purpose	25	50,000 tonnes at any one time	1,250,000 tonnes at any one time
U13	Spreading plant matter to provide benefits	21	50 tonnes per hectare per year	1,050 tonnes per hectare per year
T10	Sorting mixed waste	21	10 tonnes at any one time	210 tonnes at any one time
D1	Depositing waste from dredging inland waters	20	50 cubic metres per each metre of land over 12 month period	1,000 cubic metres per each metre of land over 12 month period
Total Number of Exemptions Registered in Birmingham City				606
		Total Number of Exemption Codes		1,116

\* Some exemptions allow different quantities of wastes to be used, where this has been evident, the largest quantity has been used.

### 4.3.3 Future Changes

Some waste exemptions are changing following review and consultation on potential changes by Defra. It is understood that a number of exemptions are to be withdrawn or restricted, with these changes currently due to be introduced in 2024 and 2025 but these timescales have not yet been finalised.

In a supplementary response to the consultation in October 2023<sup>30</sup> Defra outlined the intended changes will be targeted at seven waste exemptions (U1, T4, T6, T12, D7, S1, S2) with the removal of three exemptions (T8, T9, U16). The potential removal of the three exemptions would impact 68 registrations within Birmingham City based upon the presented analysis for which 46 of this total were T9 exemptions. This will likely result in operators needing to apply for an environmental permit or stop operations depending upon the final outcomes from the consultation.

<sup>30</sup> <https://www.gov.uk/government/consultations/reducing-crime-at-sites-handling-waste-and-introducing-fixed-penalties-for-waste-duty-of-care/outcome/supplementary-government-response#background>



## 4.4 PIPELINE FACILITIES

Table 16 provides the most recent list of planning permissions granted to additional waste management capacity in Birmingham City either by new facilities or expansion of existing. These have been supported by BCC's TP14 Policy<sup>31</sup>, which supports the expansion of existing facilities and the development of new waste management facilities, including the development of MRFs to increase the City's recycling capacity and efficiency.

Table 16 Existing and planned waste facilities

Year	Location	Capacity (Tonnage)	Type of Facility	Status
2013/14	2013/07484/PA Unit A5 & A6, Heartlands Park, Washwood Heath, B8 2UW.	Unknown	Wood recycling facility (business relocated from Landor Street)	Not in Land Manager or Google Maps
2015/16	2015/06588/PA (Renewal of approval 2012/05409/PA) Washwood Heath Freight Yard, North of common Lane, Washwood Heath B8 2SQ	195,000 tonnes pa	Energy from waste/ anaerobic digestion facility	Completed
2020/21	2019/07850/PA BSA Business Park, Unit 3a Armoury Road, Small Heath, B11 2RQ	500 tonnes per day (182,500 pa)	Aggregates recycling facility	Under Construction
2021/22	2020/05790/PA Household Waste Recycling Centre and Waste Transfer Station, Holford Drive, Perry Barr, B42 2TU	233,000 tonnes (25,000 civic amenity, 208,000 transfer station)	Replacement household waste recycling centre and waste transfer station	Completed
2021/22	2021/04541/PA Tasol Limited Recycling Centre. Unit 3 Whitworth Industrial Park, Bordesley Green, B9 4PP	Unknown	Change of use of industrial unit to electrical cable recycling business	Not in Land Manager
2021/22	2021/05417/PA Unit 1 Landor Street, Birmingham, B8 1AH	75,000 tonnes (Material recovery/recycling) 50,000 tonnes (commercial and industrial)	Change of use from storage to material recycling facility	Completed

<sup>31</sup> Birmingham City Council, [Planning Committee](#), 16 September 2021

## 4.5 FUTURE POLICY IMPLICATIONS

In 2022, Ricardo produced a preliminary recommendation report to inform the update of the Birmingham Development Plan (BDP) in light of developments that have taken place since the BDP was adopted and any changes to the national or local context for waste. A copy of the Preliminary Report is included in Appendix 2.

The following section provides an update on the policy implications with regards to management of waste arising within Birmingham.

### 4.5.1 The Resources and Waste Strategy 2018 & Progress Monitoring Report

The Resources and Waste Strategy<sup>32</sup> was released in 2018 to outline the government's plans for minimising waste, promoting resource efficiency and moving towards a circular economy. This includes a target of recycling at least 65% of municipal waste by 2035, with no more than 10% ending up in landfill. The Strategy also includes targets of zero avoidable waste by 2050, zero plastic waste by 2042 and zero food waste to landfill by 2030.

In terms of the potential requirement for management capacity for dealing with waste, the initial consultation released by Defra<sup>33</sup> stated that Government wanted to provide clarity to local authorities on the specific materials they will be required to collect from households through regulations and will provide further detail through statutory guidance. This requirement was originally intended to be effective from October 2023.

The Policy rationale explained in the Consultation was that "in order to achieve high-quality recycling, these recyclable waste streams must be collected separately from each other, except where this is not technically or economically practicable or where there is no significant environmental benefit from separate collection".

The consultation proposed that the following recyclable materials should be collected separately from households and businesses (with businesses not required to recycle garden waste): The Government intention was to specify these materials in regulations so that they are required to be collected by all Waste Collection Authorities and C&I contractors:

- Glass bottles and containers – including drinks bottles, condiment bottles, jars
- Paper and card – including newspaper, cardboard packaging, writing paper (but excluding disposable paper cups as these items are largely consumed 'on-the-go' or away from home)
- Metal packaging – steel and aluminium tins and cans
- Plastic bottles – including clear drinks containers, high-density polyethylene (HDPE; e.g. milk containers), detergent, shampoo and cleaning products.
- Food waste (effective from 2023/4)
- Garden waste
- Food and drink cartons (included into the plastics recyclable waste streams)

Defra also proposed that plastic films should be phased in for collection from households in England by the end of the financial year 2026/27. Government accepted that the inclusion of plastic films into the plastic recyclable waste stream could require significant investment in sorting infrastructure, expecting that this 'clear legislative signal' would encourage appropriate investment by the private sector.

The consultation documents also noted that the Secretary of State may also, by regulations, specify additional recyclable waste streams to be collected in accordance with certain conditions and following consultation, for example:

- Textiles
- Batteries
- Waste electricals.

The Environment Act (2021) included requirements for these proposals to be implemented by all local authorities. It also required all businesses and non-domestic premises (relevant non-domestic premises include residential homes, educational establishments, hospitals and nursing homes) to arrange for the collection of glass, metal, plastic, paper and card and food waste for recycling or composting. The timescales

<sup>32</sup> HM Government, 2018, [Our waste, our resources: a strategy for England](#)

<sup>33</sup> Defra, 2019, [Consultation on consistency in household and business recycling collections in England](#)

for non-household municipal waste producers are in line with those for local authority mandatory requirements to collect:

- From financial year 2023/24: All dry recyclables (glass bottles and containers, paper and card, plastic bottles, plastic pots tubs and trays, steel and aluminium tins and cans, Aluminium foil, Aluminium food trays, Steel and aluminium aerosols, Aluminium tubes, Metal jar/bottle lids and Food and drink cartons).
- From financial year 2023/24: Food waste.
- No later than the end of the financial year 2024/25: Recyclable plastic films.

These legislative requirements have the potential to require additional capacity for the management of both LACW and similar waste arising in the C&I waste stream. This capacity may include interim sorting facilities (i.e. MRFs), food and garden waste processing facilities (IVC and AD) plus material reprocessors, based on the government's inclusion of additional waste streams, the additional requirements for businesses to recycle and the government's assumptions that a more consistent collection methodology will increase recycling participation. However, there is not sufficient information for the translation of these legislative requirements into material specific tonnage quantities for each destination category to be considered within this report.

#### 4.5.2 The Resources and Waste Strategy Update – October 2023

In October 2023 Defra published their response to the Consistency in Collections consultations. The key revision to the original proposals in the Resource & Waste Strategy (as incorporated in the Environment Act) was an acceptance that the requirement to collect each dry recyclable collection scheme separately would not be enforced, with government proposing to provide an exemption to allow all dry recyclables (paper and card, plastic, glass and metal) to be collected together in one recycling bin, allowing councils to co-collect these material streams (known as comingled collections).

The response noted that "The Secretary of State has the power to set an exemption from the requirement to separately collect in relation to 2 or more recyclable waste streams, if satisfied that doing so does not significantly reduce the potential for the waste streams to be recycled or composted." This exemption would apply for both household and non-household municipal premises in England. Subject to consultation with relevant parties, as per the requirements in the Environment Act 2021, government will confirm these exemptions in upcoming regulations.

Under the new requirements:

- By 31st March 2026, all local authorities in England must collect the same recyclable waste streams for recycling or composting from households. The recyclable waste streams include paper and card, plastic, glass, metal, food waste, and garden waste
- All non-household municipal premises in England (such as businesses, schools and hospitals), must make arrangements to have the same set of recyclable waste streams (with the exception of garden waste) collected for recycling or composting, and must present their waste in accordance with the arrangements

The additional deadlines for implementation have also been extended, with the current timelines as shown below:

- Co-mingled collection of dry recyclables allowed (municipal and businesses)
- Weekly Food waste collections must be in place by 31st March 2026 (31st March 2025 for businesses)
- DEFRA will require recyclable plastic film to be collected by 31st March 2027 (municipal and businesses)
- Garden Waste. Must be offered by all councils (by 31st March 2026) – but can still be charged for

It should be noted that through statutory guidance, DEFRA proposes requiring local authorities to collect residual (non-recyclable) waste at least fortnightly. This proposal is subject to consultation with local authorities and will be confirmed in the statutory guidance. Limiting local authority ability to restrict the frequency of residual waste collections may compromise the ability to achieve reductions in residual waste arisings and increase recycling performance.

The response set out the materials which must be collected in the dry recyclable waste streams, from both households and non-household municipal premises:

- Glass:

- glass packaging including bottles and jars
- Metal:
  - steel and aluminium tins and cans
  - steel and aluminium aerosols
  - aluminium foil
  - aluminium food trays
  - steel and aluminium jars and bottle lids
  - aluminium tubes
- Plastic:
  - plastic bottles made of polyethylene terephthalate (PET, including amorphous, recycled PET), polypropylene (PP) and high-density polyethylene (HDPE)
  - pots, tubs and trays made of PET (including amorphous, recycled and crystalline PET), PP (including expanded PP) and polyethylene (PE)
  - PE and PP plastic tubes larger than 50mm x 50mm
  - cartons for food, drink and other liquids, including aseptic and chilled cartons
- Plastic film packaging and plastic bags made of mono-polyethylene (mono-PE), mono-polypropylene (mono-PP) and mixed polyolefins PE and PP, including those metallised through vacuum or vapour deposition (to be included from 31 March 2027)
- Paper and card:
  - All paper and card except:
    - paper and card that contains glitter or foil
    - paper that is laminated
    - stickers and sticky paper
    - padded lined envelopes
    - paperback and hardback books
    - wallpaper

As above, these revised legislative requirements have the potential to require additional capacity for the management of recyclable materials arising in both the Local Authority Collected Waste stream and that arising in the C&I waste stream. This capacity may include interim sorting facilities (i.e. MRFs), food and garden waste processing facilities (IVC and AD) plus material reprocessors.

Several aspects of Defra's response remain subject to consultation, and thus the capacity requirements to address these proposals cannot yet be fully evaluated.

## 5. ASSESSING FUTURE WASTE MANAGEMENT CAPACITY

### 5.1 APPROACH AND ASSUMPTIONS

This section brings together the findings of the review of current waste management capacity in Birmingham City with the management requirements relates to the projected forecast waste arisings to assess the future waste management capacity needs of Birmingham City. In order to provide an estimate of the expected growth in wastes to be managed by Birmingham facilities between 2022 and 2040, the following assessment projects waste arisings using the same methodologies as those reported in Section 3. The following table summarises the forecast of waste arisings by principal stream, including the impacts of DRS, EPR plus a 10% reduction in waste generated per person from the baseline.

Table 17 Projected growth per waste stream 2022-2040

2019-2021 (Thousand tonnes)		2019	2020	2021						
LACW		443	553	491						
C&D/Inert		913	1,154	1,362						
C&I		1,137	943	871						
Hazardous		90	46	80						
2022-2030		2022	2023	2024	2025	2026	2027	2028	2029	2030
LACW		-0.48%	-0.74%	-0.73%	-0.80%	0.40%	0.32%	0.18%	0.54%	0.53%
C&D/Inert		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
C&I		2.26%	1.25%	1.24%	1.22%	1.21%	1.19%	1.18%	1.16%	1.15%
Hazardous		2.26%	1.25%	1.24%	1.22%	1.21%	1.19%	1.18%	1.16%	1.15%
2031-2040	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
LACW	0.53%	0.54%	0.53%	0.53%	0.52%	0.52%	0.52%	0.52%	0.51%	0.50%
C&D/Inert	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
C&I	1.14%	1.13%	1.11%	1.10%	1.09%	1.08%	1.07%	1.05%	1.04%	1.03%
Hazardous	1.14%	1.13%	1.11%	1.10%	1.09%	1.08%	1.07%	1.05%	1.04%	1.03%

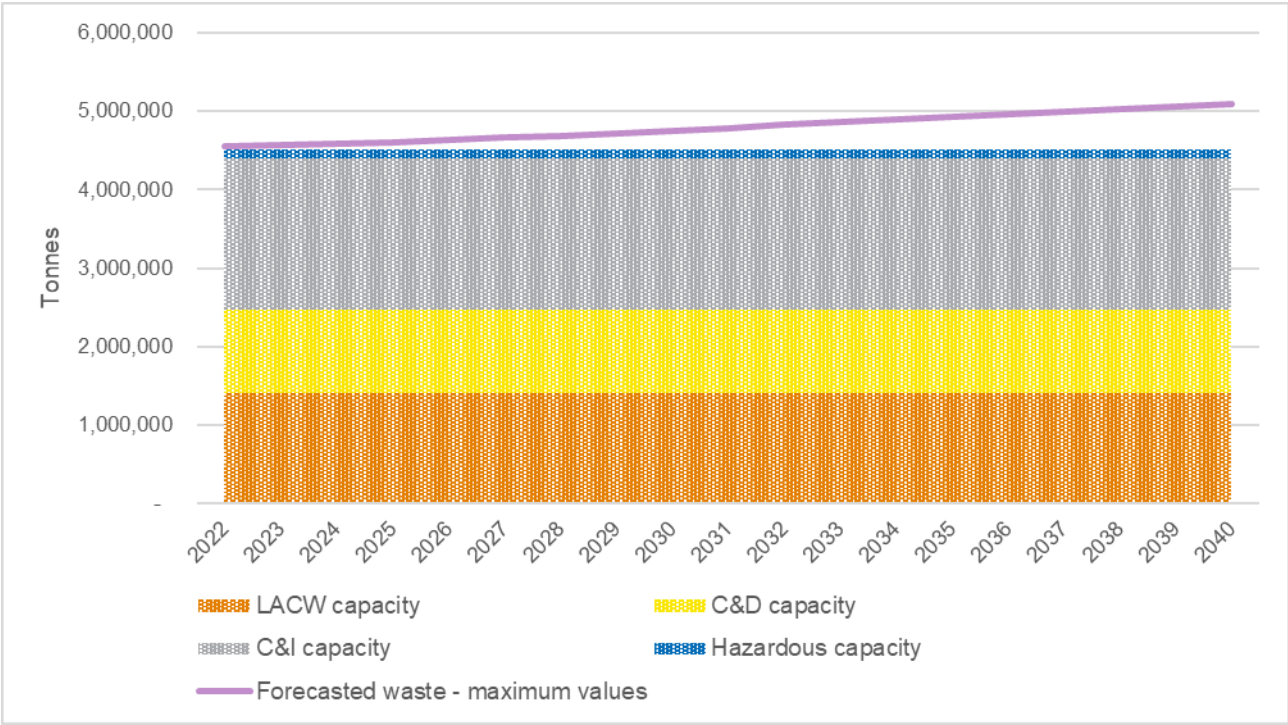
The forecast growth rates set out in Table 18 are specific to the growth rate of waste projected to arise in Birmingham City alone. Future capacity across the sites in Birmingham is assumed to remain constant throughout the Plan period at the totals calculated in Section 4 (i.e. maximum throughput per site during the years 2019-2021). This does not include any planned waste infrastructure projects (as reported in Section 4.3.3) as capacity for these projects is unknown.

## 5.2 FUTURE CAPACITY NEEDS

### 5.2.1 Overall results

Figure 19 demonstrates how applying the rate of growth per waste stream from Table 17 to the maximum throughput of Birmingham facilities in the years 2019-2021 compares against current capacity. As the expected capacity of Birmingham facilities is based on this maximum value, increasing growth against these figures shows capacity will be exceeded by 579 kt by 2042. Already noted is the potential underestimation of capacity using this method, but the analysis provides a worst-case scenario.

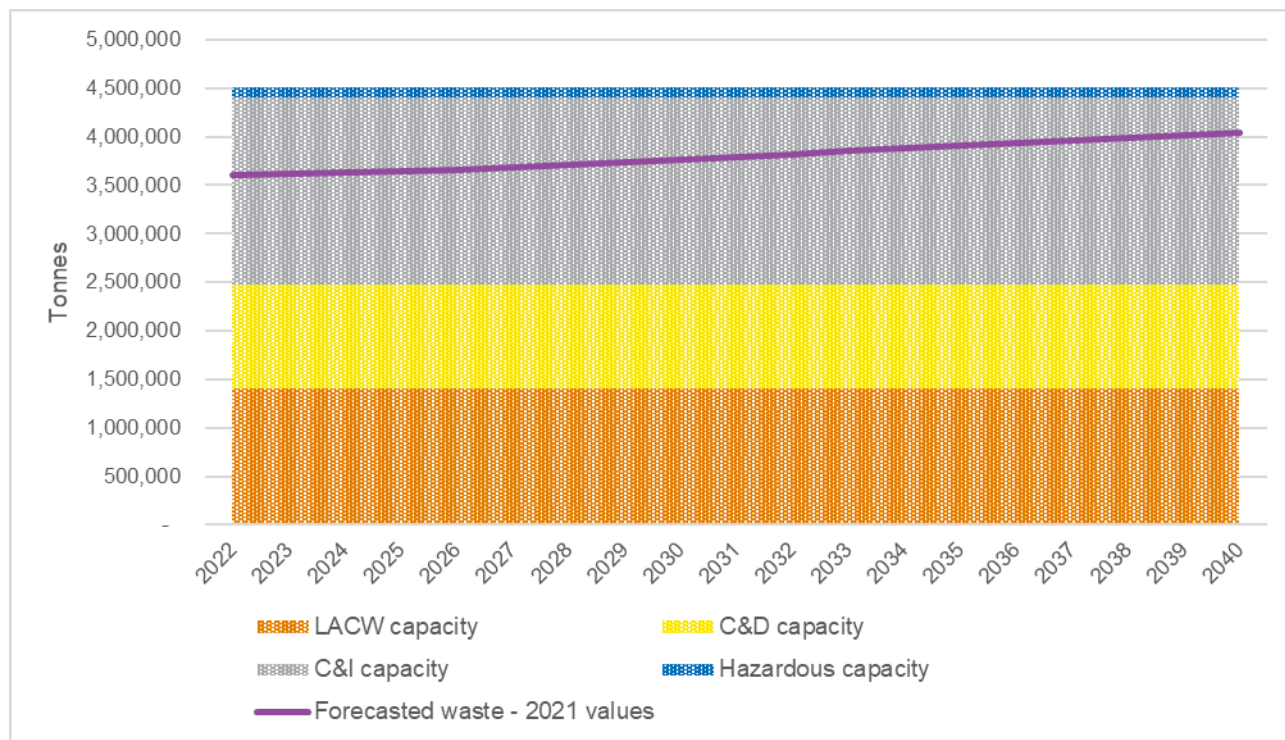
Figure 19 Capacity gap assessment using maximum projected values (2019-2021)





By taking the arisings from the managed waste tonnages reported as having been received at Birmingham's permitted waste management facilities in 2021 and applying the rate of growth per waste stream from Table 17, the chart below indicates that Birmingham's available capacity, as it is currently, is predicted to decline from around 20% in 2022 to 10% (469 kt available) in 2040. This provides a more measured estimate of available future capacity requirements. Figure 20 demonstrates this by comparing the current total estimated capacity of Birmingham's facilities by basic waste stream, with the total forecasted waste arisings.

Figure 20 Capacity gap assessment using 2021 projected values



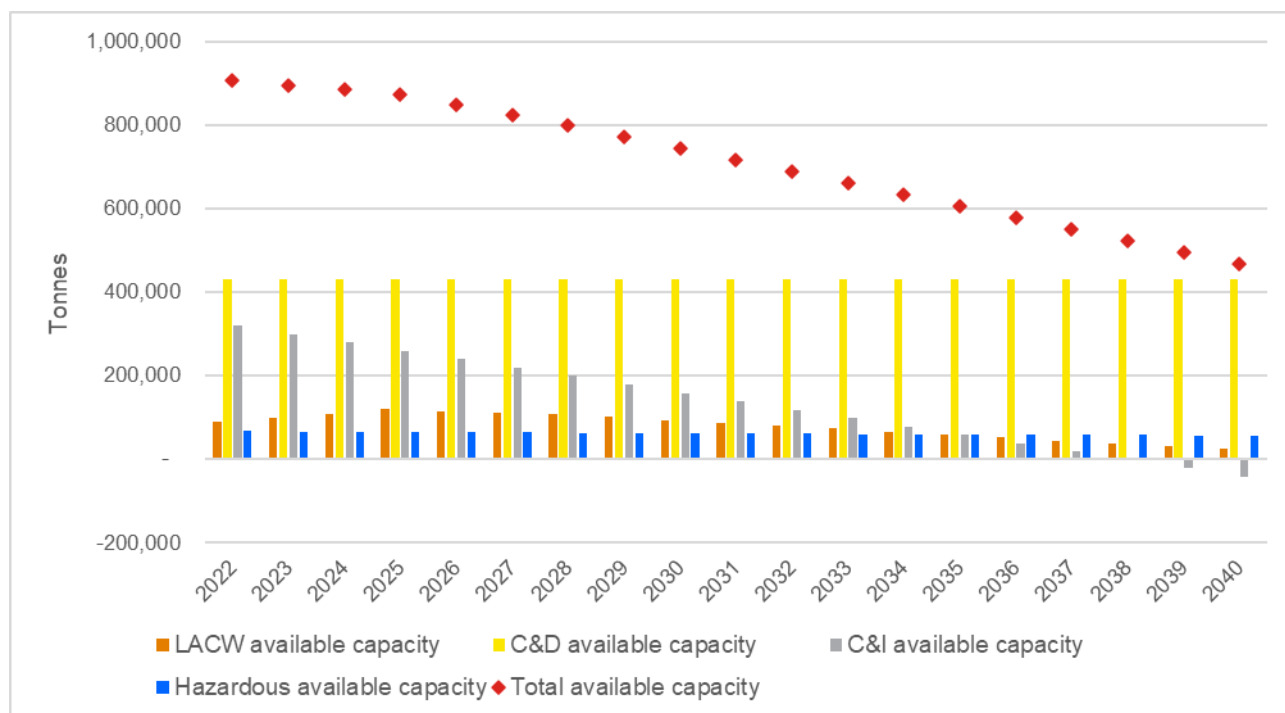
As detailed in Table 13, available capacity at Birmingham facilities differs across the different waste streams. Figure 21 demonstrates the decline in available capacity by waste stream over time when applying the forecasted waste arisings to 2021 figures.

The chart shows that C&D/Inert available capacity remains at 430 Kt throughout the forecast period, assuming no change to capacity in Birmingham and a static growth forecast (as detailed in Section 3.1.2). Available hazardous capacity falls slightly from 67 Kt in 2022 to 56 Kt in 2040. This therefore suggests Birmingham has the capability to handle more C&D/Inert waste and hazardous waste than it currently does. However, this must also consider contextual factors such as contractual obligations and hazardous waste which needs specific treatment not currently provided in Birmingham.

The C&I waste stream, which was estimated to be at 82% capacity in 2021 (as per Table 13) is shown to reach full capacity by 2038. LACW meanwhile sees a slight increase in available capacity in the years 2023 to 2026 as measures to minimise waste are put in place. There is then a forecasted decline in available capacity to 24 Kt by 2040.



Figure 21 Capacity gap assessment using 2021 projected values by waste type

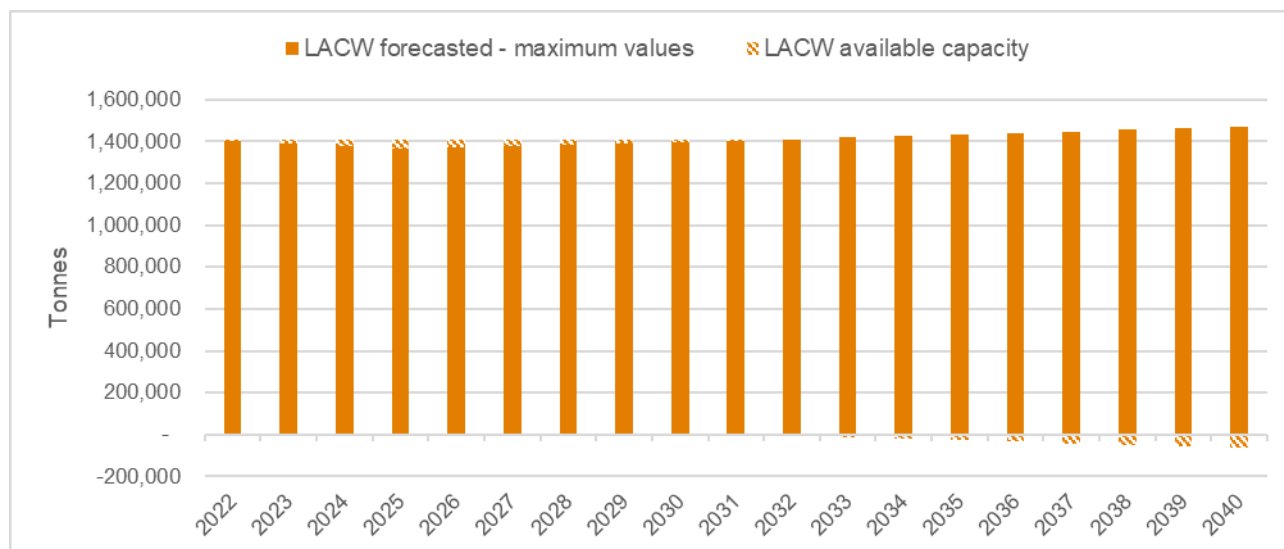


The following capacity gap assessments project future waste arisings per waste stream from the maximum values reported by facilities in Birmingham as this provides the high-end estimation of required additional capacity required.

### 5.2.2 LACW capacity assessment

Figure 22 shows the capacity gap of LACW, comparing current capacity in Birmingham to manage LACW waste against the LACW forecast generated from the maximum values reported in 2019-2021. The chart shows that should the measures for waste minimisation in this waste stream be implemented, Birmingham will have the capacity to manage this type of waste until 2031 before requiring additional capacity. This is notwithstanding the potential cessation of Tyseley EfW contract from 2034, which currently receives 464 Kt of predominantly LACW waste.

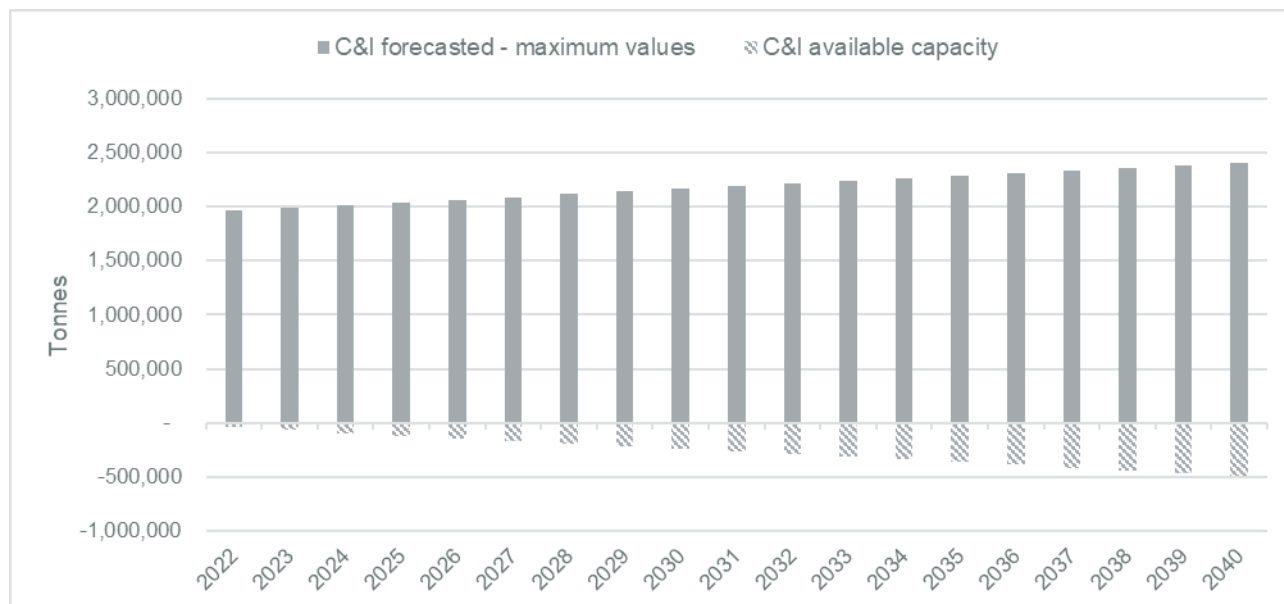
Figure 22 LACW capacity gap assessment using maximum projected values



### 5.2.3 Commercial and industrial waste capacity assessment

Figure 23 shows the current capacity in Birmingham to manage C&I waste against the forecast generated from the maximum values reported in 2019-2021. The chart indicates capacity could be exceeded by 486 kt by 2040. It should be noted that Nechell's paper mill accepts around 191,000 tonnes of C&I waste per year. In 2022, the site experienced a fire<sup>34</sup> but the impact of this is not accounted for within this projection.

Figure 23 C&amp;I waste capacity gap assessment using maximum projected values



### 5.2.4 Construction and demolition and inert waste

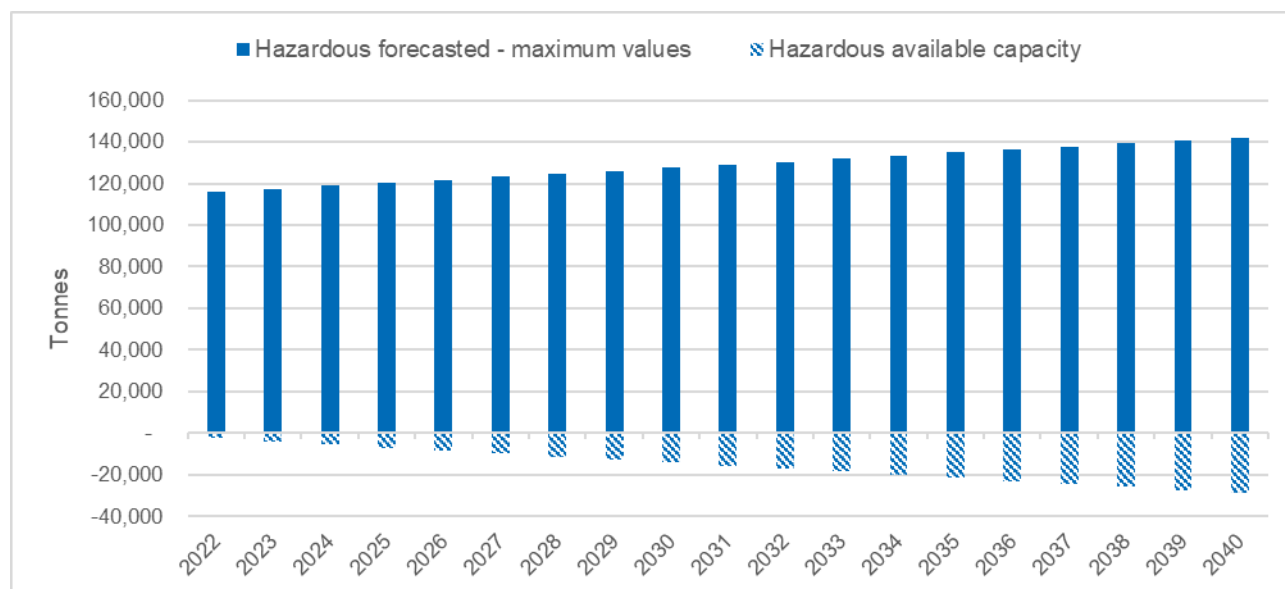
As previously mentioned, the forecast does not account for any growth to this waste stream as per NPPG for waste. As a result, no conclusions can be drawn from required capacity in the future, assuming that Birmingham is currently handling this waste within its means.

<sup>34</sup> BBC News, 2022, [Nechells recycling plant sees cardboard go up in flames](#)

### 5.2.5 Hazardous waste

Figure 24 demonstrates the current capacity in Birmingham to manage hazardous waste against the forecast generated from the maximum values reported in 2019-2021. The chart indicates that capacity could be exceeded by 29 kt by 2040.

Figure 24 C&I waste capacity gap assessment using maximum projected values



### 5.2.6 Top 20 facilities

The following table summarises the capacity gap of each of the top 20 facilities in Birmingham when compared with forecasted maximum projected values.

Table 18 Top 20 facilities waste capacity gap assessment using maximum projected values (capacity deficit of more than 10% highlighted)

Primary Destination	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040
Tyseley Energy from Waste Plant	-0.1%	0.6%	0.4%	-0.5%	-1.9%	-3.2%	-4.6%	-5.9%	-7.3%	-8.6%
EMR Birmingham	-1.4%	-2.6%	-4.2%	-6.1%	-8.2%	-10.3%	-12.3%	-14.4%	-16.5%	-18.5%
Perry Barr Waste Transfer Station And HRC	0.3%	1.4%	1.6%	0.9%	-0.2%	-1.4%	-2.5%	-3.7%	-4.9%	-6.0%
Nechells Paper Mill	-1.9%	-3.9%	-6.1%	-8.3%	-10.7%	-13.0%	-15.4%	-17.7%	-20.1%	-22.4%
Parkway Recycling Limited	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lifford Lane Waste Transfer Station And HRC	0.2%	1.3%	1.5%	0.8%	-0.3%	-1.5%	-2.7%	-3.8%	-5.0%	-6.2%
Landor Street IRRC	-0.6%	-0.9%	-1.7%	-2.9%	-4.3%	-5.7%	-7.1%	-8.5%	-9.9%	-11.3%
C & J Recycling Ltd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Minworth S T W	-2.0%	-4.2%	-6.4%	-8.8%	-11.2%	-13.6%	-16.0%	-18.4%	-20.9%	-23.3%
Armoury Road Waste Management Centre	-0.6%	-0.7%	-1.4%	-2.7%	-4.3%	-5.9%	-7.5%	-9.2%	-10.8%	-12.4%
Hawkeswood Metal Recycling	-0.9%	-1.5%	-2.7%	-4.2%	-6.0%	-7.9%	-9.7%	-11.5%	-13.4%	-15.2%
One Stop Recycling Ltd	-0.3%	-0.3%	-0.8%	-1.6%	-2.6%	-3.6%	-4.7%	-5.7%	-6.7%	-7.7%

Primary Destination	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040
Keily Bros Ltd	-0.9%	-1.9%	-2.9%	-3.9%	-4.9%	-5.9%	-6.9%	-7.9%	-8.9%	-10.0%
Mercian Recycling Ltd	-0.8%	-1.7%	-2.6%	-3.6%	-4.7%	-5.8%	-6.9%	-8.0%	-9.1%	-10.1%
Walsall Road Waste Transfer Station	-1.5%	-3.1%	-4.8%	-6.7%	-8.7%	-10.6%	-12.6%	-14.6%	-16.5%	-18.5%
Veolia – Tyseley (Transfer Station)	-0.1%	0.5%	0.2%	-0.6%	-1.8%	-3.0%	-4.2%	-5.5%	-6.7%	-7.9%
Hays Mills	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Go Waste U K Ltd	-0.1%	0.2%	0.1%	-0.3%	-1.0%	-1.7%	-2.4%	-3.0%	-3.7%	-4.4%
34 Redfern Road	0.0%	0.2%	0.1%	-0.3%	-0.9%	-1.6%	-2.2%	-2.8%	-3.5%	-4.1%
Bogan Skip Hire	-0.2%	0.0%	-0.3%	-0.8%	-1.5%	-2.2%	-2.9%	-3.7%	-4.4%	-5.1%

## 6. KEY FINDINGS

### 6.1 CURRENT WASTE FLOWS

Around 2.80 Mt of waste was generated within Birmingham city in 2021 (an increase from 2.58 Mt in 2019) with nearly half of this tonnage attributed to Inert/C&D waste. There has been a notable decline in C&I waste production from 1.15 Mt in 2019 to 871 kt in 2021. The majority of waste is sent for recovery (i.e., to a MRF, MRS or car breaker, or as inert waste sent to land operations), with around 20% of total waste sent to landfill in recent years.

The vast majority of Birmingham's waste is managed at facilities in Birmingham City (57%) and the West Midlands (28%). There has been an increase in the amount of waste sent outside of England in recent years, though the North West and Yorkshire and Humber regions are also notable destinations for Birmingham's waste.

Around 2.70 Mt of waste was managed at facilities in Birmingham City in 2021, a decrease from 2.87 Mt in 2019. Birmingham City received nearly 300 kt more waste than it produced in 2019, though in 2021 received around 100 kt less than it produced. Approximately 70% of the waste received in Birmingham in 2021 was recovered, with Birmingham's waste facilities managing around 20% more waste (320 kt additional tonnes) for recovery than it produces. Only 3% of waste handled in Birmingham is ultimately managed through landfill (although it is noted that there are no landfills in Birmingham City area).

Around 85% of waste managed in Birmingham originates from within the West Midlands (including Birmingham City itself). The next largest amount (6%) originates from the East Midlands.

### 6.2 WASTE FORECASTING

Using projected waste arising growth forecasts results in an increase of total waste tonnage produced by Birmingham from 2.58 Mt in 2019 to 3.15 Mt by 2042. The impact of introducing DRS, EPR and the 10% waste reduction target on baseline waste arisings, reduces this estimate, producing a forecasted waste tonnage of 2.96 Mt by 2042 (a reduction of 191 kt tonnes compared to baseline waste generation and a reduction of 111 kt compared to a 'business as usual' scenario).

2021-22 saw 2.72% of BCC's LACW arisings (or 12.6 Kt) sent to landfill. In order to achieve the Council's target (taken to be 0.5% of total arisings by 2040), the proportion of waste sent to landfill must decrease by 0.1% each year.

BCC's recycling rate in 2021-22 was reported as 23.9%. As a result, it would be extremely challenging for BCC to reach the government's national targets for municipal waste recycling, which are 55% recycling by 2025, 60% by 2030 and 65% by 2035. In order to meet the final target of 65% by 2035, the recycling rate must increase by 3.2% on average per year.

## 6.3 EXISTING CAPACITY

It is estimated that Birmingham's waste management facilities currently have around 60% available capacity for hazardous waste, 40% capacity available for C&D/Inert waste, and 24% available for LACW/ C&I waste. There are however limitations to the assessment. The figures are based on peak throughput of waste at these sites in the past three years compared to waste received values in Birmingham in 2021. This estimate does not account for potential capacity as per permits or planning permissions, nor account for waste exemptions not included in the throughput estimates, therefore may underestimate the actual amount of management capacity available for waste in Birmingham. The estimate also does not demonstrate the full contextual picture such as contractual considerations or inability of Birmingham's facilities to deal with specific waste streams which may lead to spare capacity.

Around 50% of waste management capacity in Birmingham is located at five sites: Tyseley EfW Plant, EMR Birmingham, Perry Barr Waste Transfer Station and HRC and Nechells Paper Mill. Tyseley EfW currently manages the largest amount of waste within Birmingham (comprising mostly of LACW waste). Over 90% of waste currently managed in Birmingham is managed at only twenty facilities.

## 6.4 FUTURE CAPACITY NEEDS

Forecast waste arisings were used to estimate the expected growth in wastes managed at Birmingham facilities between 2022 and 2040. Using maximum values 2019-2021 with forecasted growth as per Section 3, the review indicates that Birmingham's capacity could be exceeded by 579 kt by 2042 without any changes to current capacity levels. This indicates the worst-case scenario.

By taking the arisings from the managed waste tonnages reported as having been received at Birmingham's permitted waste management facilities in 2021 and applying the rate of growth per waste stream, Birmingham's available capacity, as it is currently, is predicted to decline from around 20% in 2022 to 10% (469 kt available) in 2040, providing a more measured estimation of future capacity requirements.

The most pressing need is for additional capacity to manage LACW and C&I waste. While policies to minimise municipal waste may alleviate some capacity requirement, it is likely that available capacity will be exceeded before the end of the forecast period. Conversely, it is projected that there will be a surplus in available capacity for the management of both C&D waste and hazardous waste throughout the forecast period despite growth projections. This highlights the potential for Birmingham to treat more of these wastes through its own facilities, rather than exporting for treatment outside of the region.

## APPENDICES

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Appendix 1 – Beyond Waste Advice Note

Appendix 2 – Preliminary Recommendation Report

Appendix 3 – Estimated Facility Capacity

Appendix 4 – Waste Exemptions

## APPENDIX 1 – BEYOND WASTE ADVICE NOTE



Appendix 1\_Waste  
Attribution Note v1.0 |

## APPENDIX 2 - PRELIMINARY RECOMMENDATION REPORT



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Preliminary Recomm

## APPENDIX 3 – ESTIMATED FACILITY CAPACITY

Table 19: List of operational facilities in Birmingham and the maximum tonnage received 2019-2021

	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)
Primary Destinations	LACW	C&D/Inert	C&I	Hazardous	Total
11 Pentos Drive	462	5,363	0	0	5,824
24/7 Grab Hire	0	3,500	3,125	0	6,625
34 Redfern Road	16,433	24,542	4,407	0	45,382
A K Motors Ltd	0	0	243	283	526
A W S Recycling Ltd	746	0	0	0	746
Action Skip Hire Ltd	0	1,217	109	0	1,326
Alma Crescent Facility EPR/CP3796FQ	917	51	1,102	1,788	3,858
Armoury Road Waste Management Centre - EPR/UP3931WJ	81,510	3,124	52,440	0	137,073
Astar Waste Limited	3,183	17,899	409	0	21,491
Aston waste oil facility EPR/DP3636MQ	0	201	0	5,589	5,790
Birmingham ( Bromford ) Service Centre	181	0	2,471	1,295	3,948
Birmingham Autobreak Recycling	0	0	1,032	1,106	2,138
Birmingham Concrete Ltd	0	1,035	2,059	0	3,094
Birmingham Site	603	0	281	270	1,153
Bogan Skip Hire	14,648	23,213	6,231	0	44,092
Brewers Of Erdington	0	0	317	356	673
Bromford Drive Compost Site	3,372	0	0	0	3,372
Builders Skips Ltd	7,610	4,200	2,917	255	14,982
C & J Recycling Ltd	0	103,841	0	0	103,841
Call - A - Skip Ltd	1,652	5,867	1,935	309	9,763
Castle Bromwich IBA Facility EPR/ZP3932WU	0	0	153,286	1	153,288
City Hospital	0	0	25	679	704
Commercial Waste Recycling Limited	2,908	1,310	0	0	4,218
Cosmos Auto Parts	0	21	2	9	32



	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)
Court Auto Dismantlers	108	6	1,998	419	2,530
Crown Road Spares & Salvage	3	1	27	66	97
EMR Birmingham EPR/PP3232WU	151,027	388	306,030	7,939	465,384
Enviro City Limited	212	0	525	782	1,519
Foreign Car Spares Ltd	0	0	535	600	1,135
Go Waste U K Ltd	14,526	19,775	4,001	20	38,321
Green Waste Recycling	3,124	0	0	0	3,124
Guest Trucks	0	0	18	13	31
H W Taroni ( Metals ) Limited	1,465	3,696	84	0	5,245
Hall Green Car Spares	0	79	525	759	1,363
Hawkeswood Metal Recycling EPR/NP3530AG	55,141	200	58,292	48	113,680
Hays Mills	0	36,598	0	0	36,598
Hayward & Cook Ltd	146	0	3,156	0	3,301
Heartland Spares Limited	0	0	40	37	77
Heartlands Auto Services Ltd	0	0	81	85	166
Henry Taroni Motor Spares	0	19,102	25	5,598	24,725
Holborn Waste 2015 Limited	4,471	10,591	3,700	1,808	20,570
Hoppers Autobreak	0	287,246	187,533	21,105	495,884
Hybrid Autos Midlands Ltd	0	0	81	115	196
Inspire Healthcare Services	0	0	393	1,000	1,394
International Export And Import Limited	29	0	176	293	498
J J Crowhurst Ltd	295	0	0	0	295
John Butlin Ltd	225	0	52	0	278
Kaug Refinery Services Ltd	67	3	131	162	364
Keily Bros Ltd	1,919	83,807	55,109	0	140,835
Kiely Bros. Limited	0	521	16,126	0	16,647
Kier Highways, Thimble Mill Depot	116	11,529	0	7	11,652
Kitts Green Aluminium Melting Furnace EPR/BJ9720IP	379	3,796	11,793	4,512	20,480
Land At Plot 1 Clarel Avenue	1,570	2,718	698	0	4,986
Landor Street IRRC EPR/FP3335RJ	93,171	42,372	78,970	0	214,513
Lifford Lane Waste Transfer Station And H R C	131,688	3,263	11,910	353	147,214
M I C Group	9	0	0	252	262
Mac Skip Hire	390	1,090	160	0	1,640
Mercian Recycling Ltd	7,500	40,000	29,550	0	77,050
Metal & Waste Recycling Ltd - Park Road	640	49	9,538	0	10,228
Midland Street Auto Spares	0	11	125	130	266
Minworth S T W	42,389	0	386,660	4,647	433,696
Monster Skips Ltd	2,209	13,100	9,650	5	24,964
National Grid Distribution Centre	0	0	5,249	0	5,250
Nechells Paper Mill EPR/ZP3437GZ	29,887	699	191,619	100	222,306
One Stop Recycling Ltd	84,389	76,651	45,472	3,489	210,001
p4c	2	2	53	87	144
Par Metals Ltd	0	0	625	0	625
Parkway Recycling Limited	0	145,918	162	0	146,080
Parts 4 Cars	2	6	132	171	311
Perry Barr Waste Transfer Station And H R C	165,366	2,541	13,085	421	181,414
R & C Williams Ltd	10,589	0	0	0	10,589

	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)	Maximum tonnage (2019-2021)
Riverside Works	7,425	2,185	2,777	296	12,684
S C C National Distribution Centre	21	0	642	15,324	15,987
S T W Waterworks Road	52	3,058	7	0	3,117
Secure I T Disposals Ltd	661	352	262	355	1,629
Seven Day Parts	0	0	53	73	126
Shady Lane	106	3,746	0	10	3,862
Sherringtons Waste Management Ltd	258	7,517	1,065	267	9,107
Sims Group - Birmingham	1,694	0	2,650	112	4,457
Sims Group U K Limited	899	6	27,882	0	28,786
Slater Brothers	0	14	725	780	1,519
Small Heath Recycling	0	10,154	0	0	10,154
Spares And Repairs	0	1	12	10	23
Sunrise Auto Spares	0	93	665	761	1,519
The Ford Centre	0	0	82	83	165
The Scrapyard Co	0	4	105	87	195
Transfer Station (Cadent Gas Limited)	42	4	4	19	68
Tyseley Energy from Waste Plant EPR/WP3239SJ	372,238	0	83,185	8,838	464,261
Unit 1a	0	6,340	0	0	6,340
Unit 1A, Freedom House, Northfield, Birmingham,B314HL	0	0	18	34	52
Veolia - Castle Bromwich	10,045	1,672	6,735	555	19,007
Veolia - Norris Way H W S	14,981	4,273	23	407	19,684
Veolia - Tyseley	41,298	6,633	10,653	379	58,963
Viking Co Rover Spares Ltd	0	0	972	17,893	18,865
Volksworks	0	0	55	10	65
W A R R ( Midlands ) Limited	0	696	687	156	1,539
Walsall Road Waste Transfer Station	18,565	15,745	81,018	0	115,328
Witton Plant -EPR/BM5020IC	0	0	2,637	0	2,637
Wood Waste Recycling Ltd	0	5,481	29,578	0	35,059
Yardley Green Clincial Waste Treatment Facility	536	2,626	3,092	0	6,254
<b>Total</b>	<b>1,406,102</b>	<b>1,071,739</b>	<b>1,922,062</b>	<b>113,412</b>	<b>4,513,315</b>

## APPENDIX 4 - WASTE EXEMPTIONS

Table 20: Using Waste 'U' Exemptions in Birmingham

Exemption	Number of Exemptions in Birmingham	Exemption Capacity*	Estimated Maximum Capacity**	Units
U1	85	50,000	4,250,000	Tonnes
U2	7	50	350	Tonnes
U3	4	20	80	Tonnes
U4	17	10	170	Tonnes
U5	4	5,000	20,000	Litres
U6	2	1,000	2,000	Cubic metres

Exemption	Number of Exemptions in Birmingham	Exemption Capacity*	Estimated Maximum Capacity**	Units
U7	0	10	n/a	Cubic metres in any 24-hour period
U8	25	50,000	1,250,000	Tonnes
U9	4	1,500	60,000	Tonnes
U10	30	1,250	37,500	Tonnes
U11	4	1,250	5,000	Tonnes
U12	19	100	1,900	Tonnes per month
U13	21	50,	1,050	Tonnes per hectare
U14	10	10	100	Tonnes per hectare
U15	2	0.15	0.30	Tonnes per hectare
U16	15	2	30	Number of vehicles

\* Some exemptions allow different quantities of wastes to be used, where this has been evident, the largest quantity has been used.

\*\* Per year unless otherwise stated within the units column.

Table 21: Disposing Waste 'D' Exemptions in Birmingham

Exemption	Number of Exemptions in Birmingham	Exemption Capacity*	Estimated Maximum Capacity**	Units
D1	20	50	1,000	Cubic metres per metre of land
D2	1	25	25	Litres
D3	0	1	n/a	Cubic metres
D4	9	250	2,250	Per pile of waste
D5	4	10	40	Can be stored up to 12 months or longer under a Court order
D6	15	5	75	Tonnes
D7	49	20	980	Tonnes
D8	1	10	10	Tonnes in a 24 hour period

\* Some exemptions allow different quantities of wastes to be used, where this has been evident, the largest quantity has been used.

\*\* Per year unless otherwise stated within the units column.

Table 22: Treating Waste 'T' Exemptions in Birmingham

Exemption	Number of Exemptions in Birmingham	Exemption Capacity*	Estimated Maximum Capacity**	Units
T1	11	300	3,300	Tonnes in any 7 day period
T2	9	20,000	180,000	Tonnes
T3	Registered with the local authority, not the Environment Agency.			
T4	52	15,000	780,000	Tonnes in any 7 day period
T5	16	50,000	800,000	Tonnes over 3 year period
T6	33	500	16,500	Tonnes over any 7 day period
T7	Registered with the local authority, not the Environment Agency.			
T8	7	60	420	Tonnes over any 7 day period
T9	46	1,000	46,000	Tonnes
T10	21	10	210	Tonnes over any 7 day period
T11	13	1,000	13,000	Tonnes over any 12 month period
T12	18	500	9,000	Tonnes
T13	4	30	120	Tonnes
T14	5	1	5	Tonnes
T15	4	3,000	12,000	Tonnes over any 12 month period
T16	1	150	150	Tonnes
T17	0	2	0	Tonnes
T18	0	30,000	0	Litres
T19	2	5,000	10,000	Litres
T20	0	10,000	0	Cubic metres over any 12 month period
T21	0	100,000	0	Cubic metres over any 12 month period
T23	8	80	640	Tonnes

T24	1	1,250	1,250	Cubic metres
T25	0	50	0	Cubic metres
T26	2	6	12	Tonnes over any 12 month period
T27	0	8,000	0	Litres in a 24 hour period
T28	275	1	275	Cubic metres
T29	3	8,000	24,000	Litres in a 24 hour period
T30	0	1,000	0	Litres
T31	0	250	0	Cubic metres
T32	2	150,000	30,000	Litres in a 12 month period
T33	0	400	0	Litres in a 7 day period

\* Some exemptions allow different quantities of wastes to be used, where this has been evident, the largest quantity has been used.

\*\* Per year unless otherwise stated within the units column.

Table 23: Storing Waste 'S' Exemptions in Birmingham

Exemption	Number of Exemptions in Birmingham	Exemption Capacity*	Estimated Maximum Capacity**	Units
S1	86	400	34,400	Cubic metres
S2	143	60,000	8,580,000	Tonnes
S3	6	1,250	7,500	Tonnes

\* Some exemptions allow different quantities of wastes to be used, where this has been evident, the largest quantity has been used.

\*\* Per year unless otherwise stated within the units column.



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