ARUP

Thurrock Council

Thurrock Local Plan Evidence Update

Waste Arisings and Capacity Assessment Report

Reference: Final

2.0 | 10 February 2026

This report takes into account the particular instructions and requirements of our client.
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Contents

Tables

Figures

Appendices

Glossary and Definitions

List of Abbreviations

Abbreviation	Meaning
AD	Anaerobic Digestion
CA Site	Civic Amenity Site
CCS	Carbon Capture & Storage
C&D	Construction and Demolition waste
C&I	Commercial and Industrial waste
DRS	Deposit Return Scheme
EDNA	Employment and Demographic Needs Assessment
EfW	Energy from Waste
ELJWP	East London Joint Waste Plan
EPR	Extended Producer Responsibility
ERF	Energy Recovery Facility
ETS	Emissions Trading Scheme
EWC	European Waste Catalogue
HIC	Household, Industrial & Commercial waste (WDI category)
HWRC	Household Waste Recycling Centre
KPI	Key Performance Indicator
LACW	Local Authority Collected Waste
MoU	Memorandum of Understanding
MRF	Materials Recycling Facility
MSW	Municipal Solid Waste
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
NPPW	National Planning Policy for Waste
POPs	Persistent Organic Pollutants
Q1 / Q2 / Q3 / Q4	Reporting year quarters
SNRHW	Stable Non-Reactive Hazardous Waste
SoCG	Statement of Common Ground
TEP	Thames Enterprise Park
WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WDI	Waste Data Interrogator
WFD	Waste Framework Directive
WPA	Waste Planning Authority
WRAP	Waste & Resources Action Programme

Glossary of Terms

Term	Definition (as used in the report)
Anaerobic Digestion	Biological treatment of organic waste (e.g. food/garden) without oxygen, producing biogas and digestate; used for Thurrock's municipal food waste via Bio Collectors (Mitcham).
Arisings (Waste Arisings)	The total quantity of waste generated in Thurrock within a period; modelled by stream (MSW, C&I, C&D, Hazardous) up to 2044.
Capacity (Waste Management Capacity)	The amount of waste that facilities can manage. Report distinguishes operational throughput (observed maxima) from permitted capacity (regulatory limits).
Carbon Capture and Storage	Technology to capture CO_2 from facilities (e.g. ERFs) and store it permanently; referenced for future decarbonisation of energy recovery.
Circular Economy	Policy objective prioritising prevention, reuse, repair, recycling and recovery to minimise resource consumption and landfill.
Civic Amenity Site	Public drop-off sites for household waste; treated as transfer capacity (bulking/ collection) rather than final treatment capacity.

Term	Definition (as used in the report)
C&I Waste	Waste from businesses and industry (offices, retail, manufacturing). Forecasted per employee; largely managed via private contracts.
C&D Waste	Waste from construction and infrastructure works, demolition, excavation, soils/aggregates.
Deposit Return Scheme	National policy placing deposits on drink containers to incentivise returns; expected to divert containers from kerbside collections directly to reprocessors.
Disposal (D Codes)	EU classification codes for disposal operations (e.g. landfill), as recorded in WDI.
Duty to Co-operate	Legal requirement for authorities to collaborate on strategic planning matters (including waste), evidenced by MoUs and SoCGs.
Energy from Waste	Recovery processes converting residual waste into energy (electricity/heat).
Environment Agency	Regulator issuing permits and publishing datasets (e.g. WDI, Remaining Landfill Capacity).
European Waste Catalogue	Coding system categorising waste types; used to filter datasets for C&I, C&D, Hazardous analyses.
Exempt Facility (Waste Exemption)	Waste operations without permits under strict limits/conditions; not captured in WDI.
Forecast	Projected quantity derived from historic trends plus growth scenarios (population/employment).
Hazardous Waste	Waste with properties harmful to health/environment (chemicals, asbestos, batteries); requires specialist collection, treatment and disposal.
Household Waste Recycling Centre	Public sites for household waste drop-off; considered transfer capacity (bulking) rather than recycling/treatment capacity.
HIC	WDI grouping combining LACW and C&I for imports/exports movement analysis.
LACW	Waste collected by local authorities, including household MSW and limited commercial streams.
Landfill Void Capacity	Remaining physical volume in permitted landfills (m^3); report converts to tonnes using 1.5 t/m^3.

Term	Definition (as used in the report)
Materials Recycling Facility	Plant that sorts mixed recyclables into single-material fractions for reprocessing (e.g. Biffa MRF, Edmonton).
Memorandum of Understanding	Non-binding agreement among WPAs to share data and coordinate planning.
MSW	In this report: household waste collected by Thurrock Council (excludes non-household municipal-like business waste).
Self-sufficiency	Planning principle that Thurrock provides capacity equivalent to its own arisings (not necessarily treating every tonne locally).
Proximity Principle	Waste should be managed at the nearest suitable facility; actual flows also reflect contracts, gate fees and facility capabilities.
Recovery Capacity	Capacity for managing waste through energy recovery, biomass, gasification, or deposit to land (e.g. restoration, reclamation).
Recycling Capacity	Capacity for processing waste via recycling or composting/organic treatment, including separation, material recycling, anaerobic digestion and similar processes.
Residual Waste	Waste remaining after reuse/recycling/ composting; typically sent to energy recovery (EfW).
Simpler Recycling	Government reform standardising household collections (paper/card, metals, plastics incl. film, glass, food, garden) across England.
Throughput (Annual Throughput)	Observed tonnage managed per year (2015-2024) used as a proxy for operational capacity in 2044.
Tonnes per annum (tpa)	Annualised measure of arisings or capacity used in tables and gap analyses.
Waste Hierarchy	Policy principle: prevention → reuse → recycling/composting → recovery → disposal (landfill).

1. Introduction

1.1 Overview

Ove Arup & Partners Limited (Arup) has been appointed by Thurrock Council to provide technical support for the review of the Thurrock Local Plan. The findings will help Thurrock Council identify the waste infrastructure needed to meet future demand, which the updated Local Plan may need to accommodate.

This assessment updates Thurrock Council's Waste Needs Assessment and strengthens the evidence base for the new Thurrock Waste Local Plan (the Plan). The Plan will set out the future strategy for waste management in Thurrock up to 2044 (the plan period) and identifies the waste management capacity required to meet projected needs.

This assessment identifies the current quantities of waste generated within Thurrock for the following waste streams and forecasts how these quantities are likely to change up to 2044:

- Household municipal solid waste (MSW);
- Commercial and industrial (C&I) waste;
- Construction and demolition (C&D) waste; and
- Hazardous waste.

This assessment also provides details of existing waste management capacity within Thurrock, highlights any planned waste management facilities, and evaluates whether the available capacity will be sufficient to manage the projected waste quantities over the plan period to 2044.

1.2 Purpose of assessment

This Waste Arisings and Capacity Assessment (the Assessment) forms a key part of the evidence base for the emerging Local Plan. Its purpose is to quantify the need for additional waste management capacity within the county. By identifying any gaps in capacity, this report provides justification for whether new waste infrastructure should be allocated or excluded in the Local Plan and informs the development of policies that will guide planning decisions throughout the plan period.

The findings of this Waste Arisings and Capacity Assessment supports plan-making by:

- Presenting an up-to-date picture of current waste arisings, projected waste generation over the plan period, and existing waste management capacity.
- Assessing future waste management requirements and the extent to which existing facilities can meet anticipated demand, while identifying the broad types of treatment or disposal methods that may be needed.
- Considering wider waste management issues, including London's non-apportioned household and C&I waste that may be exported for non-hazardous disposal (landfill).
- Reviewing strategic waste movements.

All waste projections presented in this assessment are scenario-based and indicative of potential future requirements rather than as definitive forecasts. Actual waste arisings will be influenced by a range of factors including population change, economic activity, waste behaviour, and national regulatory reform. The scenarios therefore provide an indicative range to inform robust Local Plan decision-making, rather than predicting exact future waste tonnages.

As waste planning is influenced by evolving regulations, policy updates and new planning permissions, the Assessment reflects a specific point in time aligned with the Local Plan review and monitoring cycles.

1.3 Thurrock context

Thurrock Council is a unitary authority, meaning it is responsible for all local government functions within its area. This includes the collection and disposal of household waste, as well as waste planning. Unlike two-tier systems, there are no separate borough or district councils in Thurrock - the Council undertakes both Waste Collection Authority (WCA) and Waste Disposal Authority (WDA) roles.

As the WCA, Thurrock Council is responsible for collecting household waste. In its role as the WDA, it manages the treatment and disposal of this waste and plans future waste management infrastructure to meet the area's needs.

Thurrock Council has a statutory responsibility to arrange the collection of MSW and may charge for the collection of commercial waste; it operates alongside private waste contractors in the borough.

2. Assessment methodology

2.1 Overview

This section provides information on the data sources utilised for the Assessment, offers background on the sources of the growth forecasts and lists the key assumptions and limitations underpinning the wider methodology to ensure transparency in the assessment process.

2.2 Data sources

2.2.1 Waste data flow

WasteDataFlow is a national reporting system used by local authorities to submit data on Local Authority Collected Waste (LACW), which includes household MSW arisings.

Thurrock Council reports its MSW data to the Government through this system, making it a legally required and therefore reliable and robust source of information.

For this assessment, WasteDataFlow was used to obtain data on current household MSW arisings within Thurrock.

At the time of writing, the system contained data for the first quarter (January, February, March) of the 2024 calendar year.

2.2.2 Waste data interrogator

The Waste Data Interrogator (WDI) is a database maintained by the Environment Agency to record waste movements through permitted waste facilities in England. It does not capture all waste produced, as it only includes waste that passes through registered facilities, but it is considered the most reliable source for estimating waste flows by origin.

For this assessment, the WDI's "Waste Received" data has been used to extract data on waste received by facilities where the origin is Thurrock. This dataset covers the period from 2015-2024 and provides insight into the types and quantities of waste managed within the permitted waste infrastructure.

2.2.3 Incinerator waste returns

Incineration data was obtained separately from the Environment Agency's Incinerator Waste Returns, because incinerator data was not included in the WDI prior to 2019.

The incinerator datasets for 2016-2018 were used to identify waste received at these facilities during the years when WDI did not capture this information.

This dataset shows the amount and type of waste sent to incineration facilities and is sourced directly from the reporting system for incinerator operations.

2.2.4 UK statistics on waste

UK Statistics on Waste are published by the UK Government and provide national-level data on waste generation, treatment, and disposal.

These statistics offer a broader context for understanding waste trends across the country and allow local data, such as that for Thurrock, to be benchmarked against national averages. The UK Statistics on Waste were used to access MSW recycling rates for Thurrock in 2024.

2.2.5 Remaining landfill capacity

The Environment Agency publishes data on the remaining permitted capacity of landfill sites in England. This dataset shows how much landfill void capacity is left for waste disposal and is critical for assessing future disposal options and planning for landfill diversion.

2.2.6 Borough planning registers

Each planning authority maintains a register of all planning applications and permissions granted. These registers are used to identify new waste facilities or expansions that have been approved within Thurrock.

This dataset shows the pipeline of potential infrastructure development and is sourced from the official planning registers of local authorities.

2.3 Growth forecast

Forecasting future waste arisings is inherently uncertain, but it is essential to understand whether additional waste management capacity will be needed over the plan period.

To determine the level of waste infrastructure that may be required, it is necessary to estimate the type and quantity of waste likely to be generated within the borough during the plan period. These forecasts must consider wider factors such as anticipated housing and population growth, economic development and major infrastructure projects.

National Planning Policy Guidance (NPPG) provides advice on how waste planning authorities (WPAs) should approach forecasting, while allowing flexibility for each authority to adopt the most appropriate methodology. NPPG recommends forecasting waste arisings by establishing a growth profile based on two key factors:

- Household, population or employee growth; and
- Waste arisings per household, per capita or per employee.

Arisings forecasts should also reflect potential changes in behaviour and policy aimed at reducing or minimising waste in the future.

Given the inherent uncertainties associated with population growth, economic change, behaviour change and evolving waste policy, the projections are intentionally framed as scenarios. This approach avoids over-precision and allows the Local Plan to consider reasonable ranges of potential outcomes instead of relying on a single projection.

2.3.1 Population growth scenarios

Population growth scenarios have been used for predicting future MSW and C&D waste arisings.

In preparing this assessment, Arup worked closely with Thurrock Council, who provided the historic and projected population numbers for the borough. These figures were backdated to 2001 and forward calculated to 2044.

Projections are based on data extracted from the Council's Housing Needs Assessment, which incorporates assumptions from the Employment and Demographic Needs Assessment (EDNA) and reflects the housing growth scenario of 29,284 new homes by 2044.

Three different growth scenarios to 2044 were provided, as shown below:

- Standard population baseline, which is a 19% increase on 2024 population.
- Higher population growth, which is the standard baseline plus 10%.
- Lower population growth, which is the standard baseline minus 6%.

2.3.2 Employment growth scenarios

Employment growth was factored into projections for C&I and hazardous waste arisings.

Historic employment data for Thurrock was obtained from Nomis (Census-based labour market statistics) and shows historic employment numbers back to 2015.

Future employment growth was derived from the Arup Planning Team analysis of allocated housing sites and planning permissions for Thurrock, which identified 16,795 additional jobs expected to be delivered by 2044. This employment uplift was split equally per year to 2044 and was used to estimate additional C&I waste generation, recognising the link between economic activity and waste production.

As per the methodology used for population growth, Arup applied the same standard, low and high growth rate percentages to the expected growth of 16,795 jobs, to provide us with three different employment growth rate scenarios.

- Standard employment baseline, which is growth of 16,795 jobs by 2044.
- Higher employment growth, which is the standard baseline plus 10%.
- Lower employment growth, which is the standard baseline minus 6%.

2.3.3 Impacts of waste policies and targets

In line with NPPG guidance, this assessment also considers a range of waste policies and targets which could lead to alternative generation scenarios, for example, assuming waste generation continues at a steady growth rate or declines progressively as waste minimisation measures take effect.

Each section of the report identifies the current recycling rates for the relevant waste streams, using the most recent and robust data available.

Building on this baseline, the report then explores how future recycling rates may improve because of evolving policies, statutory targets and new waste recycling initiatives, as listed below. These drivers include national and local government strategies, legislative changes, and innovative programs designed to increase recycling and reduce landfill dependency.

The waste policies and targets as listed below. This assessment does not attempt to model the specific impacts of these individual schemes. Rather, it analyses their overall collective impact on waste arisings by measuring changes in recycling percentages to 2044, using medium, high and low recycling percentage scenarios for each waste stream generated.

- Simpler Recycling - this reform standardises the materials collected for recycling across all local authorities in England, ensuring that every household can recycle the same core set of materials (paper/card, metals, plastics, glass, food, and garden waste). The aim is to reduce confusion, improve recycling rates, and support the development of a circular economy. Key reforms include:
  - Kerbside food waste collection;
  - Introduction of plastic film in the recycling stream; and
  - Glass mandated for collection.
- Extended Producer Responsibility (EPR) - EPR shifts the cost of managing packaging waste from taxpayers to the businesses that produce packaging. Producers will pay fees based on the recyclability and environmental impact of their packaging, incentivising reduction, reuse, and the use of recyclable materials. The scheme is expected to generate over £1 billion annually to support local recycling services and infrastructure upgrades.
- Deposit Return Scheme (DRS) - DRS will require consumers to pay a deposit on drinks containers (plastic, glass, cans), which is refunded when the container is returned for recycling. The aim is to increase recycling rates, reduce litter, and divert valuable materials from landfill or incineration. DRS is expected to significantly reduce the volume of drinks containers in residual waste streams.
- Organic to Landfill Ban (~2028 England, end 2025 Scotland) - a ban on sending organic waste (such as food and garden waste) to landfill is being introduced to reduce methane emissions and promote composting and anaerobic digestion. This will require local authorities and businesses to provide separate collection and treatment for organic waste.
- Reduction in Residual Waste (2042) - the UK government has set a legally binding target to halve residual waste (waste not recycled or composted) by 2042. This will drive further waste prevention, reuse, and recycling efforts across all sectors.
- Waste Carrier Changes - reforms to the waste carrier, broker, and dealer registration system are being introduced to improve traceability, reduce illegal waste activity, and ensure that only compliant operators handle waste.
- Landfill Tax - landfill tax continues to increase the cost of landfill disposal, encouraging waste prevention, recycling, and recovery as more cost-effective alternatives.
- Emissions Trading Scheme (ETS) - The introduction of an ETS for energy from waste (EfW) facilities is scheduled for 2026 (GHG permits) with costs from 2028. This will have implications for the operational costs and carbon performance of EfW facilities, potentially influencing the economics of residual waste management and the drive towards decarbonization.
- Recycled Content Plastic Tax - this tax is designed to stimulate demand for recycled plastics.

- Persistent Organic Pollutants (POPs) Regulation - new regulations on POPs may require changes in how certain waste streams (e.g. upholstered furniture, plastics) are managed.

In each section, forecast scenarios are presented to illustrate the potential for improvement, and the implications for waste management capacity are discussed in subsequent chapters.

This approach ensures that the assessment not only reflects current conditions but also provides a forward-looking perspective on Thurrock's ability to meet future waste management challenges once waste minimisation initiatives have been implemented.

2.4 Growth assumptions

The following assumptions underpin the waste forecasts discussed in Section 2.3 Growth forecast:

- For the low recycling scenarios, recycling and recovery rates are assumed to remain stable and not decline.
- A significant proportion of C&D waste is reused on-site. This capacity is not visible in the data and is therefore excluded from the forecasts and capacity analysis.
- Management of C&I and C&D waste is influenced by commercial contracts, but this has not been factored into the projections.
- Growth in C&I waste arisings is assumed to correlate directly with employment growth.
- Waste recorded at intermediate facilities (such as transfer stations) is accounted for at the point of final treatment or disposal (e.g. recycling facilities, treatment, landfill).
- Population growth forecasts are assumed to indicate general construction activity and associated waste generation.

2.5 Limitations and assumptions

2.5.1 WDI

The WDI relies on information submitted by waste facilities to the Environment Agency. The accuracy of the WDI is therefore dependent on operators providing correct and complete data. Currently, there is limited enforcement by the Environment Agency regarding domestic waste movements and the accuracy of reporting.

WDI compiles information from waste transfer notes completed under the Duty of Care system. The WDI provides details on waste types, origins, destinations, and facility types. However, it only covers permitted facilities where operators report the geographical origin of waste. It excludes waste managed at exempt sites, illegally disposed waste and material sent directly for recycling, recovery, or export.

As a result, there are recognised limitations in the dataset, including:

- Movements of waste between facilities may not be recorded correctly by the receiving site due to errors or misclassification.
- Some waste data may not be captured or entered the WDI at all.
- Certain operators provide insufficient detail on the origin of waste, leading to entries marked as 'not codeable' or 'WPA not codeable (East of England)'. It is possible that some of this 'not codeable' waste originated within Thurrock.

2.5.2 Impacts of COVID-19

The COVID-19 pandemic (2020-2023) had a significant impact on waste generation patterns in Thurrock, resulting in notable fluctuations in annual waste arisings. These fluctuations are reflected in the data for certain years, where the effects of the pandemic led to unusually high or low waste generation compared to typical trends.

Such anomalies can distort the calculation of average percentage changes over time, potentially skewing forecasts and analysis.

To ensure the robustness of this assessment, years in which COVID-19 caused extreme percentage changes, resulting in outliers that would disproportionately affect the average, have been excluded from the calculation of growth rates. This approach helps to provide a more accurate representation of underlying trends.

Instances where this adjustment has been made are identified and explained in the relevant sections of the report.

2.5.3 Spatial considerations

This assessment does not consider the proximity of proposed housing or population growth to existing or potential waste management facilities. The spatial relationship between new development and waste infrastructure could influence future service requirements and transport implications, but this falls outside the scope of this assessment.

2.5.4 Exempt facilities

A waste exemption is a waste operation that is exempt from needing an environmental permit. There are several 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 and are therefore excluded from the scope of this assessment.

3. Policy review

3.1 Overview

This section outlines the waste and planning policies that provide the framework for Thurrock Council's approach to future waste management.

These policies address key issues such as climate change, recycling, waste prevention, economic growth, development, and waste management capacity. They include legislation and guidance originating from the European Union that has been incorporated into UK and English law, as well as national and local government policies.

Table 1 summarises the relevant legislation and policy documents, their primary purpose, and how they interconnect, while a full description of each document is provided in Appendix A.

Table 1: Summary of key legislation and policy documents relevant to waste management in Thurrock

Location	Document Name	Relevant Policy
EU	Waste Framework Directive (2008/98/EC)	Establishes the waste hierarchy and the proximity/self-sufficiency principles; requires Waste Management Plans - forming the basis for how arisings, capacity and imports/exports are treated in the assessment.
EU	Landfill Directive (1999/31/EC; 2018/850)	Sets strict landfill controls and the target that ≤10% of municipal waste is landfilled by 2035, which the assessment uses to phase out MSW/C&I landfill and focus void capacity planning on residual C&D only.
National	National Planning Policy for Waste (NPPW, 2014)	Requires robust forecasting of arisings, identification of sufficient capacity, and application of proximity/self-sufficiency - the framework for Chapters 4-6 (arisings, capacity, and gap analysis).
National	National Planning Policy Framework (NPPF, Dec 2024)	Embeds environmental objectives (resource efficiency, pollution minimisation) that underpin the report's emphasis on recycling first and careful recovery/landfill use in plan-making.
National	National Planning Practice Guidance: Waste (NPPG, 2015)	Provides the technical method used here: extrapolation of time-series for hazardous arisings; growth-linked scenarios for MSW/C&I/C&D; and treatment of transfer capacity to avoid double counting.
National	Waste (England & Wales) Regulations 2011 (as amended)	Transposes EU requirements: mandates separate collections where practicable and ongoing plan reviews, supporting Simpler Recycling pathways and data standards used in the assessment.
National	Our Waste, Our Resources: A Strategy for England (2018)	National shift to a circular economy; introduces EPR, DRS, food waste collections and higher recycling ambition - used to define the low/medium/high recycling scenarios for MSW/C&I.
National	Waste Management Plan for England (2021)	Confirms 65% municipal recycling by 2035 and ≤10% landfill by 2035 - targets directly applied to MSW forecast tables and recovery/landfill gap analysis.
National	Environmental Targets (Residual Waste) Regulations 2023	Legally binds the trajectory to halve residual waste to 287 kg/person/year by 2042
London	London Plan (2021)	Requires self-sufficiency and in-London management; informs cross-boundary assumptions and the stance on imports/exports and recovery market context.
London	City Plan 2040 (Mar 2024)	Safeguards wharves and promotes circular economy/recovery capacity - context for London flows and regional infrastructure used by Thurrock facilities.
Local	Waste Strategy for Essex 2024-2054 (adopted July 2024)	Universal collections by 2026/27, end landfill by 2030 (municipal), 65% reuse/recycle/compost by 2035, and net-zero by 2050.
Local	Municipal Waste Strategy for Thurrock 2021-2031 (updated July 2024)	Local objectives: increase household recycling (to 50% by 2030), zero landfill,

Location	Document Name	Relevant Policy
		separate food waste collections, explore transfer station efficiency.
Local	Thurrock Core Strategy & Policies for Management of Development (as amended, January 2015)	Sets Thurrock's minerals/waste policy context: self-sufficiency for local arisings, contribution to handling imports, and priority for waste hierarchy-compliant solutions in site/capacity planning.

4. Waste arisings

4.1 Overview

This section explains how current waste arisings have been assessed and how future arisings have been projected. The waste streams considered include:

- MSW;
- C&I;
- C&D; and
- Hazardous waste.

By modelling waste generation across these sectors, an overall forecast of waste arisings within Thurrock can be produced. This enables us to determine the level of waste management capacity required to handle these quantities and assess whether sufficient capacity will be available up to 2044.

4.2 Municipal solid waste

Historically in the UK, the term 'municipal waste' referred to waste collected by local authorities. However, Defra's 2011 definition of municipal waste is "*household waste or waste similar in composition to household waste*", which includes a significant amount of business waste that is not collected by local authorities (most business waste is managed by private companies).

For clarity, this assessment uses the term MSW to describe only household waste collected by Thurrock Council, rather than other business waste also collected. Due to the number of variables involved, it is not practical to forecast non-household waste collected by the local authority separately to the household MSW stream.

4.2.1 Methodology

To calculate MSW arisings, the first step was to determine waste generated per capita.

Data on household MSW arisings was obtained from WasteDataFlow. The data is split into quarters, so this was totalled to get the annual waste collected in tonnes.

At the time of preparing this assessment, WasteDataFlow had only published data for the first quarter (Q1) of 2024. As a result, a full year's dataset for 2024 was not available to provide a robust annual baseline. Therefore, 2023 was selected as the baseline year for current MSW arisings.

The total household waste was divided by the population number for that year, to calculate an average MSW generation rate per capita.

4.2.2 Arisings

Table 2 presents the annual quantities of MSW generated in Thurrock from 2015 to 2023, alongside per capita figures.

Table 2: Total and per capita MSW generation in Thurrock, 2015-2023

Year	Total MSW (tonnes)	MSW per capita (tonnes)
2015	72,342	0.443
2016	76,435	0.463
2017	76,738	0.459
2018	76,034	0.446
2019	76,649	0.444
2020	76,671	0.440
2021	72,633	0.414
2022	67,502	0.384
2023	68,758	0.389

Figure 1 illustrates the trend in total MSW generation in Thurrock from 2015 to 2023.

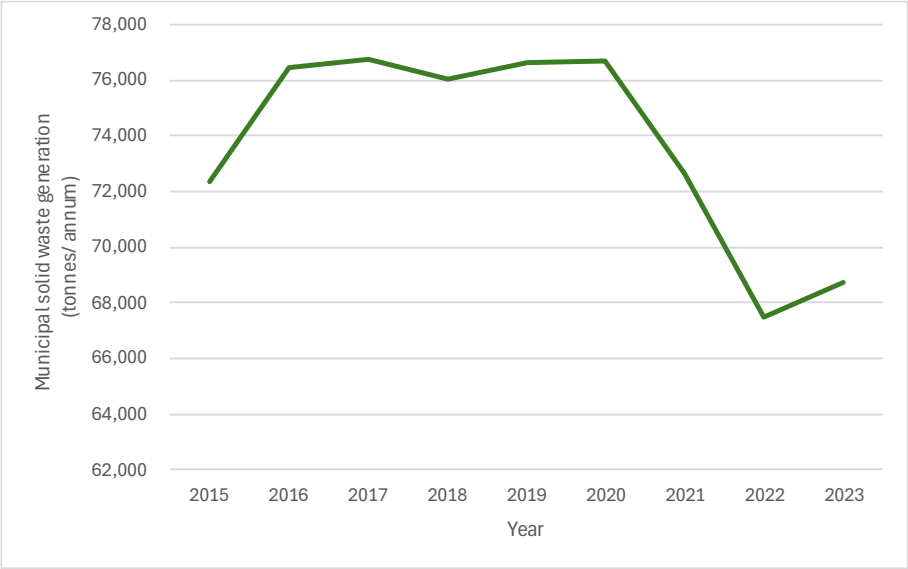

Figure 1: Total MSW generation from in Thurrock, 2015-2024

The data shows that MSW arisings remained relatively stable between 2015 and 2020, averaging around 76,000 tonnes per year, with per-capita figures between 0.443 to 0.463 tonnes. From 2021 onwards, a clear downward trend emerges. Total household waste fell to about 72,600 tonnes in 2021 and further to 67,500 tonnes in 2022, before a slight increase to 68,758 tonnes in 2023.

During 2020 and 2021, COVID-19 lockdowns shifted goods consumption and waste patterns. England saw increased kerbside collections and reduced hospitality and transport spending, leading to more dry recyclables but also greater reuse and repair. Waste & Resources Action Programme (WRAP) surveys reported improved food management at home, temporarily reducing food waste; these effects lessened as lockdown restrictions eased but provides a potential explanation for the decrease in generation since 2020. Supply chain disruptions following the pandemic also contributed to lower waste generation. Product shortages and longer lead times discouraged impulse buying and overconsumption, while sustainability awareness grew. This heightened public consciousness created a sustained downward trend in household waste arisings beyond the temporary effects of lockdowns.

4.2.3 Population growth scenarios

To forecast future MSW generation in Thurrock, historical trends in waste generation per capita were first analysed. The average annual percentage change in MSW arisings per person over the previous ten years (removing 2021 and 2022 due to the impacts of COVID-19) was calculated and applied to project future per capita waste generation. This approach assumes that past trends provide a reasonable basis for estimating future changes in individual waste production.

These per capita forecasts were then combined with three population growth scenarios provided by Thurrock Council, as outlined in Section 2.3.1. For each year between 2024 and 2044, and for each scenario, the projected waste per person was multiplied by the corresponding population estimate. This calculation produced total MSW arisings under each population growth scenario.

Figure 2 illustrates the results of this analysis, showing projected MSW arisings in Thurrock from 2024 to 2044 under the three population scenarios. The figure highlights how variations in population growth and per capita waste generation are expected to influence overall waste volumes over the forecast period.

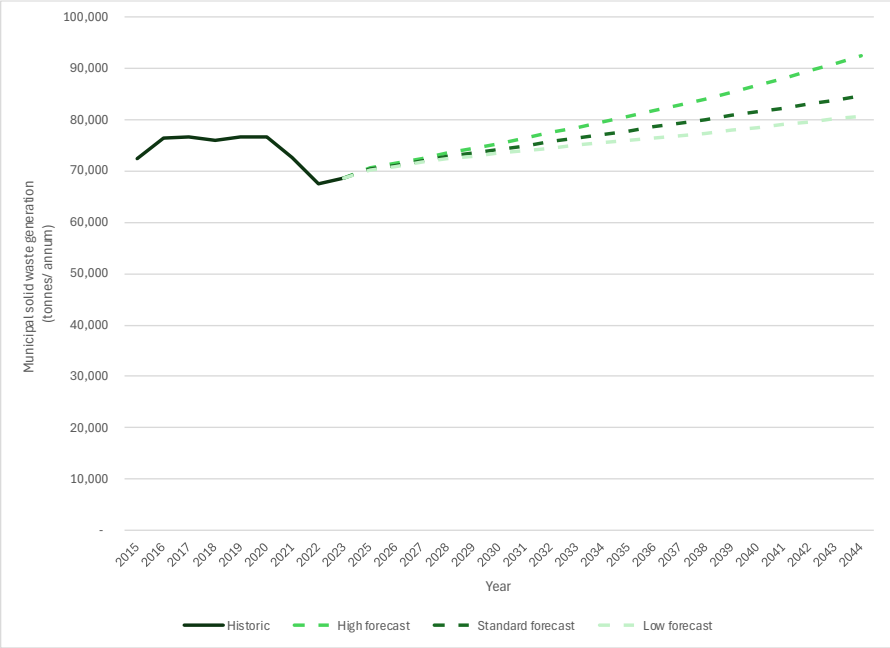

Figure 2: Projected MSW arisings in Thurrock under the three population growth scenarios, 2024-2044

These forecast increases in MSW reflect the calculated increase in per capita MSW generation, derived by dividing the projected total household waste by the forecast population under each growth scenario.

MSW in Thurrock is projected to grow steadily from the 2023 baseline of 68,758 tonnes through to 2044. Although there is a very minor gradual increase in per-capita MSW over time, the population increase combines with this, so total tonnes rise across all scenarios. Under the standard scenario, total MSW increases to 84,657 tonnes by 2044. If population growth is lower, MSW is still forecast to reach 80,700 tonnes in 2044. Under high growth, MSW is likely to grow to 92,500 tonnes. The curve is smooth and upward year-on-year, reflecting moderate growth rather than any sharp spikes.

The standard forecast is considered the most realistic and has been used to assess the impact of waste reduction initiatives on future waste management capacity requirements, as explained in the next section.

4.2.4 Waste reduction initiatives

It is assumed waste per household reduces by 2044, which accounts for expected waste reduction measures. The methodology therefore applies three recycling scenarios:

- Low recycling scenario, assuming the current Thurrock MSW recycling rate remains unchanged at 30% through to 2044.
- Medium recycling scenario, targeting a 50% recycling rate by 2044, reflecting improvement beyond current performance but below national targets.
- High recycling scenario, aiming for 65% recycling by 2044 in line with national policy (65% recycling by 2035) and the Waste Strategy for Essex 2024-2054 (adopted July 2024).

Thurrock's recycling rate is currently around 30%, which means achieving the government's target of 65% by 2035 and the Essex target of 65% by 2040 will be challenging. To meet this goal, Thurrock would need to make significant year-on-year improvements in recycling performance. It is important to note that future changes, such as the introduction of DRS and EPR, could influence the composition of municipal waste and improve recycling outcomes.

In addition, national policy sets a target of no more than 10% of municipal waste to landfill by 2035. This commitment is reinforced at a local level; the Essex Waste Strategy goes further by aiming to end the use of landfill entirely by 2030. WDI data shows that Thurrock currently sends a small proportion of MSW to landfill, and for planning purposes, this is assumed to decline to 0% by 2044 across all scenarios.

The remaining non-recyclable waste is assumed to be managed through recovery, primarily via EfW facilities.

These recycling scenarios have been applied to the standard baseline MSW growth forecasts.

Table 3 summarises the forecast quantities of MSW managed by recycling/composting, landfill and recovery methods in 2044 under low, medium and high recycling scenarios. It provides a clear comparison of how

different policy ambitions and service improvements could shape the composition of waste streams and the resulting demand for treatment infrastructure.

Table 3: Forecast quantities of MSW managed in Thurrock by recycling/ composting, recovery and landfill methods in 2044

Recycling scenario	Total MSW (2044)	Recycled/ composted (tonnes)	Recovery (tonnes)	Landfill (tonnes)
Low (30%)	84,675	25,397	59,260	0
Medium (50%)	84,657	42,328	42,328	0
High (65%)	84,657	55,027	29,630	0

The implications of these scenarios for the borough's remaining waste management capacity, particularly in terms of recycling, recovery and landfill requirements, require detailed analysis. Accordingly, the impact of each recycling scenario on Thurrock's available capacity has been assessed in Section 6 of this report, where forecast waste arisings are compared against operational infrastructure and capacity gap analysis is undertaken.

4.3 Commercial and industrial waste

C&I waste refers to waste generated by businesses and industrial activities, including offices, retail premises and manufacturing operations. While a small proportion of C&I waste is collected by the local authority, the majority is managed by private waste contractors.

This section estimates the amount of C&I waste currently generated within Thurrock and provides forecasts of future arisings from the baseline year (2024) through to 2044.

4.3.1 Methodology

Waste arising data for Thurrock was extracted from the Environment Agency's WDI for the years 2015-2024, focusing exclusively on waste received at permitted facilities where the origin was identified as Thurrock.

To ensure the assessment is representative of C&I waste, the dataset was filtered to exclude:

- Hazardous waste (as flagged in the WDI).
- Waste streams not classified as C&I, based on European Waste Catalogue (EWC) codes and WDI site categories. The following waste types were systematically excluded as out-of-scope:
  - Chapter 01: Wastes from mineral extraction and processing (e.g. mining, quarrying, tailings, overburden).
  - Sub-Chapter 02 01: Agricultural, horticultural, aquacultural, forestry, hunting, and fishing wastes.
  - Chapter 17: Construction and demolition (C&D) wastes, including concrete, bricks, metals, wood, and excavated soils.
  - Chapter 19: Sludges from waste and wastewater treatment, which are addressed in separate studies.
  - EWC Code 20 02 02: Soil and stones from garden and park waste, classified as municipal rather than C&I.

To prevent double counting, waste received at transfer stations was excluded from the arising calculations.

Incineration data was sourced separately from the Environment Agency's Incinerator Waste Returns, as these figures were not included in the WDI prior to 2019. Incinerator datasets for 2016-2018 were reviewed to ensure completeness of C&I waste flows to energy recovery. Data for 2015 was excluded because it did not exist, avoiding the creation of artificial averages that could distort accuracy. The C&I arisings are therefore presented from 2016-2024.

MSW arisings, as reported through WasteDataFlow, were then subtracted from the total waste received to isolate the C&I fraction. This ensures that the assessment reflects only non-household, non-municipal commercial and industrial waste streams.

C&I waste arisings were then calculated on a per-employee basis to provide per employee C&I waste.

4.3.2 Arisings

Table 4 details the annual quantities of C&I waste generated in Thurrock in 2016 to 2024, along with per employee figures.

Table 4: Total and per employee C&I waste generation in Thurrock, 2016-2024

Year	Total C&I waste (tonnes)	C&I waste per employee (tonnes/employee)
2016	20,501	0.257
2017	27,929	0.334
2018	60,997	0.720
2019	60,800	0.704
2020	46,799	0.543
2021	74,654	0.855
2022	77,834	0.879
2023	120,553	1.348
2024	112,066	1.222

Figure 3 visualises the trend in C&I waste generation over the past nine years, highlighting periods of growth, dips associated with the pandemic and the subsequent rebound.

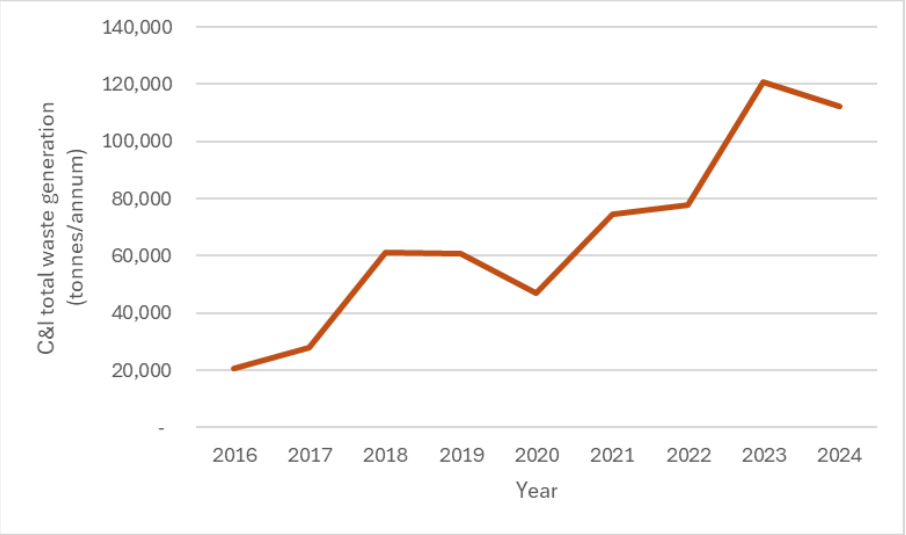

Figure 3: Total C&I waste generation in Thurrock, 2016-2024

The data for C&I waste arisings between 2016 and 2024 reveals a pronounced upward trend, with total C&I waste rising from approximately 20,500 tonnes in 2016 to a peak of over 120,500 tonnes in 2023, before easing slightly to around 112,000 tonnes in 2024. The waste generated per employee follows a similar trajectory, increasing from 0.257 tonnes per employee in 2016 to 1.348 tonnes per employee in 2023, then decreasing to 1.222 tonnes per employee in 2024.

This growth in per-employee waste generation is particularly notable given that the number of employees in Thurrock has also increased steadily over the period, indicating that the rise in waste generation is not simply a result of a shrinking workforce but reflects a genuine intensification of commercial and industrial activity.

Thurrock's strategic position within the Thames Gateway, coupled with the presence of major international ports such as London Gateway and Tilbury, as well as the Thames Freeport designation, has driven significant growth in logistics, warehousing and associated industrial sectors. The expansion of these activities typically results in higher volumes of packaging, residuals and recyclables entering the C&I waste stream. The post-pandemic period has also seen a strong rebound in industrial and commercial throughput, with

the 2021-2023 period marked by rapid growth in waste arisings. This is consistent with the broader economic recovery and the surge in e-commerce, which tends to generate substantial quantities of packaging waste.

The temporary dip in 2020 aligns with the impacts of the COVID-19 pandemic, which suppressed industrial and commercial activity across the UK.

Major infrastructure projects, including preparatory works for the Lower Thames Crossing, have also contributed to increased industrial activity and, by extension, higher C&I waste generation.

4.3.3 Employment growth scenarios

To forecast future C&I waste generation in Thurrock, historical trends in waste produced per employee were analysed. The average annual percentage change in C&I waste per employee over the previous nine years was calculated and applied to project future waste generation per employee.

These per-employee forecasts were then combined with employment growth projections provided by Thurrock Council, as outlined in Section 2.3.2. For each year between 2025 and 2044, the projected waste per employee was multiplied by the corresponding employment estimate. This calculation produced total C&I waste arisings under each employment growth scenario.

Figure 4 presents the results of this analysis, showing projected C&I waste arisings in Thurrock from 2025 to 2044 under different employment scenarios.

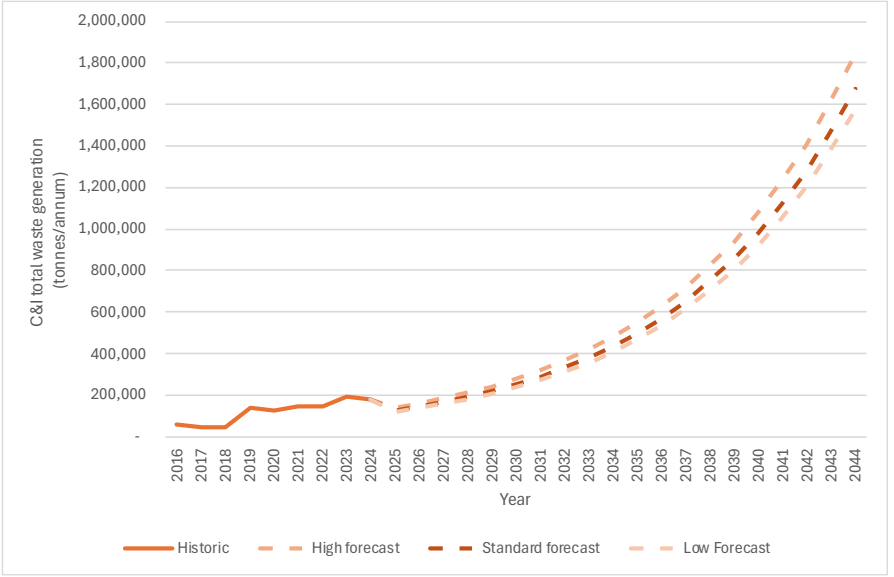

Figure 4: Projected C&I waste arisings in Thurrock under the three employment growth scenarios, 2024-2044

The projections for C&I waste arisings in Thurrock indicate a significant and sustained increase over the next two decades. According to the forecast, total C&I waste is expected to rise from approximately 112,000 tonnes in 2024 to over 1.6 million tonnes by 2044 under the high forecast scenario, with the standard and low scenarios also showing substantial growth, albeit at a slightly slower pace.

The per-employee waste generation is projected to increase in parallel, rising from just over 1.2 tonnes per employee in 2024 to more than 15 tonnes per employee by 2044.

This dramatic projected growth reflects several key local and structural factors. Firstly, Thurrock's ongoing role as a major logistics and industrial hub means that both the volume and intensity of commercial and industrial activity are expected to continue expanding.

The forecast also assumes continued growth in sectors that are particularly waste-intensive, such as warehousing, distribution and manufacturing. As these sectors expand, both the absolute volume of waste and the waste

generated per employee are expected to rise, especially if packaging and materials throughput increase in line with economic output. The projections account for potential increases in both the number of businesses and the scale of operations, as well as possible changes in waste management practices and reporting.

The standard forecast is considered the most realistic and has been used to assess the impact of waste reduction initiatives on future waste management capacity requirements.

4.3.4 Waste reduction initiatives

We can assume C&I waste per employee reduces by 2044, which accounts for expected waste reduction measures. The methodology therefore applies three recycling scenarios:

- Low recycling scenario, assuming the current MSW recycling rate (assumed to be applicable to C&I in this instance) remains unchanged at 30% through to 2044.
- Medium recycling scenario, targeting a 55% recycling rate by 2044, reflecting improvement beyond current performance but below national targets.
- High recycling scenario, aiming for 65% recycling by 2044 in line with national policy (65% recycling by 2035) and the Waste Strategy for Essex 2024-2054 (adopted July 2024).

The Essex Waste Strategy aims to end the use of landfill entirely by 2030. For planning purposes, this is assumed to decline to 0% by 2044 across all scenarios.

It has been assumed that the remainder of the non-recyclable/compostable waste that is not sent to landfill will either be subject to energy recovery or other disposal methods.

These recycling scenarios have been applied to the standard baseline C&I forecasts.

Table 5 summarises the forecast quantities of C&I waste managed by recycling/composting, landfill and energy recovery/other disposal methods in 2044 under low, medium, and high recycling scenarios. It enables comparison of how different policy and market drivers could affect the treatment and disposal of C&I waste.

Table 5: Forecast quantities of C&I waste managed by recycling/composting, recovery and landfill methods in 2044

Recycling scenarios	Total C&I waste arisings (2044)	Recycled/ composted (tonnes)	Recovery (tonnes)	Landfill (tonnes)
Low (30%)	1,692,577	507,773	1,184,804	0
Medium (55%)	1,692,577	930,917	754,259	0
High (65%)	1,692,577	1,100,175	586,646	0

The implications of these scenarios for the borough's remaining waste management capacity, particularly in terms of recycling, recovery and landfill requirements, require detailed analysis. Accordingly, the impact of each recycling scenario on Thurrock's available capacity has been assessed in Section 6 of this report, where forecast arisings are compared against operational infrastructure and capacity gap analysis is undertaken.

4.4 Construction and demolition waste

C&D waste includes all waste generated by construction activities, such as building and infrastructure projects, demolition works, and excavation of soil and rock.

C&D waste arisings are challenging to quantify due to limited data sources, with most information derived from the Environment Agency's WDI. A significant proportion of C&D waste is managed on-site or at facilities operating under permit exemptions, which are not always subject to planning controls or direct regulation by the Environment Agency.

It is also widely acknowledged that large volumes of C&D waste are reused on-site, representing unseen capacity that is not captured in WDI data. As a result, not all waste arisings are recorded.

The WDI reports C&D waste 'as managed' rather than total arisings, meaning the figures reflect waste entering permitted facilities rather than the full amount generated.

4.4.1 Methodology

Current C&D waste arisings have been calculated using data from the Environment Agency's WDI for waste received by permitted facilities between 2015 and 2024. The dataset was filtered to include only C&D waste and exclude all other waste types.

To ensure accuracy, the following EWC chapters were removed:

- Chapter 02 – Agricultural and related wastes. Covers wastes from agriculture, horticulture, aquaculture, forestry, hunting, and fishing (e.g., plant residues, animal waste). These were excluded as they are agricultural rather than C&D wastes.
- Chapter 19 – Sludges from waste and wastewater treatment. Includes sludges from urban wastewater treatment and other waste management processes. These are addressed through separate wastewater studies and were excluded from this dataset.

Additionally, waste handled at transfer stations was excluded to avoid double counting.

Incineration data was sourced separately from the Environment Agency's Incinerator Waste Returns. No C&D waste was recorded as being received by incineration facilities for 2016-2018; therefore, 2015 was also assumed to be zero for consistency.

Finally, C&D waste arisings were calculated on a per capita basis.

4.4.2 Arisings

Table 6 details the annual quantities of C&D waste generated in Thurrock in 2016 to 2024, along with per capita figures.

Table 6: Forecast quantities of C&I waste managed by recycling/composting, recovery and landfill methods in 2044

Year	Total C&D waste (tonnes)	Per capita C&D waste (tonnes/capita)
2015	124,728	0.749
2016	145,668	0.862
2017	210,946	1.234
2018	80,000	0.462
2019	162,530	0.929
2020	171,115	0.973
2021	133,908	0.761
2022	152,079	0.860
2023	136,100	0.764
2024	142,961	0.800

Figure 5 visualises the trend in C&D waste generation over the past ten years, highlighting periods of growth and decline.

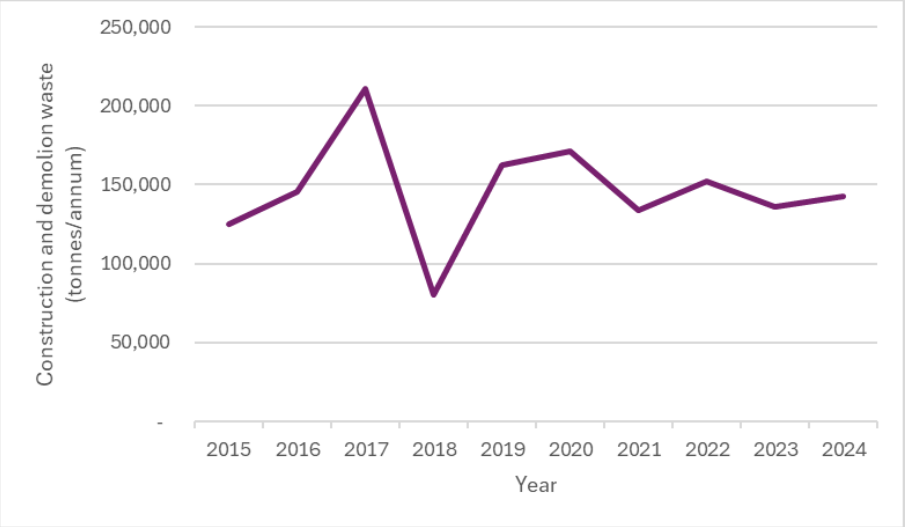

Figure 5: Total C&D waste generation in Thurrock, 2015-2024

Over the past decade, C&D waste arisings in Thurrock have shown marked variability, with totals ranging from 80,000 tonnes in 2018 to a peak of over 210,000 tonnes in 2017. Per capita figures mirror this pattern, reaching 1.234 tonnes per person at the peak and falling to 0.462 tonnes during the dip.

Between 2015 and 2017, C&D waste rose sharply from around 125,000 tonnes to over 210,000 tonnes. This surge likely reflects major infrastructure projects, regeneration schemes and a buoyant construction market. The corresponding rise in per capita figures suggests genuine growth in activity rather than population-driven change.

In 2018, waste volumes fell dramatically to 80,000 tonnes, possibly due to project completions, a temporary slowdown in construction or anomalies in reporting.

The most recent years show moderate fluctuations, with totals between 134,000 and 153,000 tonnes and per capita figures stabilising around 0.76-0.86 tonnes. This suggests a more consistent level of construction activity, albeit still sensitive to economic and planning cycles.

Thurrock's role as a growth hub within the Thames Gateway, combined with port expansion and housing targets, underpins high waste levels. However, temporary dips and rebounds likely reflect the timing of major projects.

4.4.3 Population growth scenarios

To forecast future C&D waste generation in Thurrock, historical trends in waste produced per capita were analysed. The average annual percentage change in C&D waste per person over the previous ten years was calculated and applied to project future per capita waste generation.

These per capita forecasts were then combined with population growth projections provided by Thurrock Council (outlined in Section 2.3.1). For each year between 2025 and 2044, the projected waste per person was multiplied by the corresponding population estimate. This calculation produced total C&D waste arisings under each population growth scenario.

Figure 6 presents the results of this analysis, showing projected C&D waste arisings in Thurrock from 2025 to 2044 under different population scenarios.

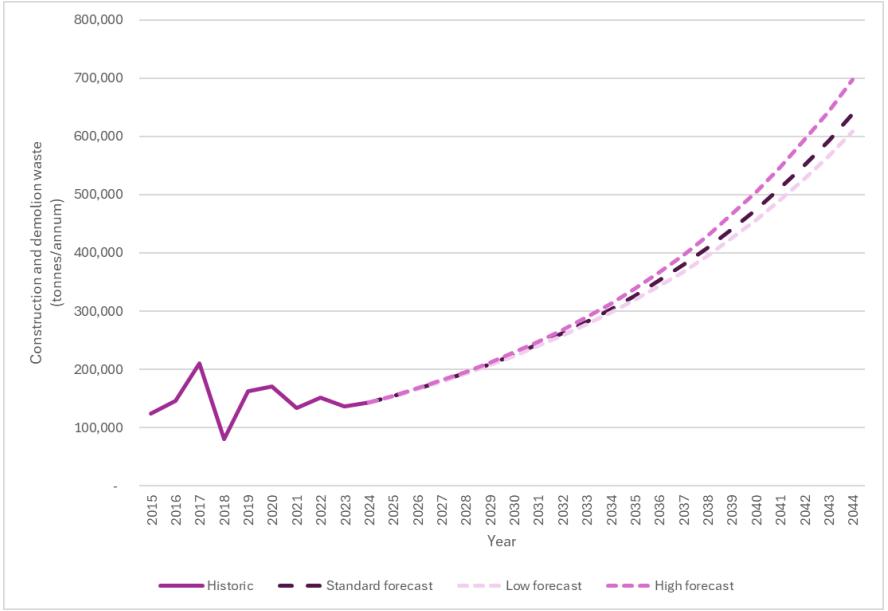

Figure 6: Projected C&D waste arisings in Thurrock under the three population growth scenarios, 2024-2044

Looking ahead to 2044, the projections for C&D waste arisings in Thurrock show a clear upward trend across all three scenarios. Under the low forecast scenario, arisings are expected to reach around 697,000 tonnes, while the medium and high scenarios project even higher totals, up to about 639,000 and 609,000 tonnes respectively. This growth reflects expectations of continued development, infrastructure expansion and regeneration in the borough.

The scale and timing of future C&D waste arisings in Thurrock will also be strongly influenced by several major infrastructure projects planned or underway within the borough. Two nationally significant infrastructure projects - the Lower Thames Crossing and the Norwich to Tilbury National Grid (NG) extension - are expected to have a substantial impact on C&D waste generation over the plan period. The Lower Thames Crossing involves large-scale tunnelling, earthworks, and road construction, generating substantial volumes of excavated materials and construction waste, while the Norwich to Tilbury NG extension will require extensive civil engineering for

new transmission lines and substations, producing additional C&D waste streams.

Together, these projects are expected to drive significant peaks in waste generation during their construction phases. The scale of these projects means that its waste arisings could represent a significant proportion of Thurrock's overall C&D waste during peak construction years.

The standard forecast is considered the most realistic and has been used to assess the impact of waste reduction initiatives on future waste management capacity requirements.

4.4.4 Waste reduction initiatives

Recycling and recovery scenarios have been applied to the C&D waste forecasting model. Three scenarios have been considered:

- Low recycling scenario, assuming the current C&D recycling rate remains unchanged at 62% and the recovery rate remains unchanged at 1% (current recycling/recovery rate for C&D waste has been extracted from the Environment Agency WDI 2024) through to 2044.
- Medium recycling scenario, targeting a 75% recycling and 5% recovery rate by 2044, reflecting improvement beyond current performance but below national targets.
- High, aiming for 85% recycling and 10% recovery rate by 2044, reflecting targets set out in the London Plan (in-lieu of other practical targets, the targets for C&D waste found within the London Plan have influenced the high scenario).

Although Essex has set a target of zero municipal waste to landfill by 2030, this commitment does not include C&D waste. These materials are managed under separate regulatory frameworks, and while a significant proportion can be recycled or recovered, some residual C&D waste that cannot be processed will still require disposal to landfill. It is therefore assumed that any C&D waste that is not recycled or recovered will be sent to landfill or other disposal.

These recycling scenarios have been applied to the standard growth forecast for C&D waste.

Table 7 summarises the forecast quantities of C&D waste managed by recycling, landfill and energy recovery/other disposal methods in 2044 under low, medium, and high recycling scenarios. It enables comparison of how different policy and market drivers could affect the treatment and disposal of C&D waste.

Table 7: Forecast quantities of C&D waste managed by recycling, recovery and landfill methods in 2044

Recycling scenarios	Total C&D waste (tonnes)	Recycling (tonnes)	Recovery (tonnes)	Landfill (tonnes)
Low (62% recycling, 1% recovery)	638,232	395,704	6,382	236,146
Medium (75% recycling, 5% recovery)	638,232	478,674	31,912	127,646
High (85% recycling, 10% recovery)	638,232	542,497	63,823	31,912

The implications of these scenarios for the borough's remaining waste management capacity, particularly in terms of recycling, recovery and landfill requirements, require detailed analysis. Accordingly, the impact of each recycling scenario on Thurrock's available capacity has been assessed in Section 6 of this report, where forecast arisings are compared against operational infrastructure and capacity gap analysis is undertaken.

4.5 Hazardous waste

Waste is classified as hazardous when it exhibits properties that may pose risks to human health or the environment. Examples include chemicals, batteries, asbestos and pesticides.

Due to these hazardous properties, specialist collection, treatment, and disposal methods are required to minimise potential impacts.

This section establishes a baseline of hazardous waste arisings within Thurrock and uses this to forecast future arisings from 2024 to 2044.

4.5.1 Methodology

Hazardous waste arisings in Thurrock were quantified using data from the Environment Agency's WDI, covering waste received by permitted facilities between 2015 and 2024. The dataset was filtered to include only hazardous waste streams, as defined by the relevant EWC codes, ensuring that all non-hazardous waste types were excluded from the analysis.

To maintain a clear focus on hazardous waste, the following waste categories were also removed from the dataset:

- Chapter 02 - Agricultural and related wastes: This includes materials from agriculture, horticulture, aquaculture, forestry, hunting, and fishing (e.g., plant residues, animal waste).
- Chapter 19 - Sludges from waste and wastewater treatment: These comprise sludges from urban wastewater treatment and other waste management processes.

To avoid double counting, any hazardous waste managed at transfer stations was excluded, ensuring that only final treatment and disposal sites were considered in the calculation.

In addition, data on hazardous waste received by incineration facilities for the years 2016-2018 was extracted from the Environment Agency's Incinerator Waste Returns. While this represents a minor proportion of the overall hazardous waste stream, its inclusion ensures completeness.

Finally, hazardous waste arisings were normalised on a per-employee basis for Thurrock.

4.5.2 Arisings

Table 8 details the annual quantities of Hazardous waste generated in Thurrock in 2015 to 2024, along with per employee figures.

Table 8: Total and per employee Hazardous waste generation in Thurrock, 2015-2024

Year	Hazardous waste (tonnes)	Per employee (tonnes/employee)
2015	1,999	0.025
2016	2,095	0.026
2017	3,576	0.043
2018	4,240	0.050
2019	13,636	0.158
2020	23,814	0.276
2021	31,461	0.360
2022	8,225	0.093
2023	14,310	0.160
2024	10,687	0.117

Figure 7 visualises the trend in Hazardous waste generation over the past ten years, highlighting periods of growth and decline.

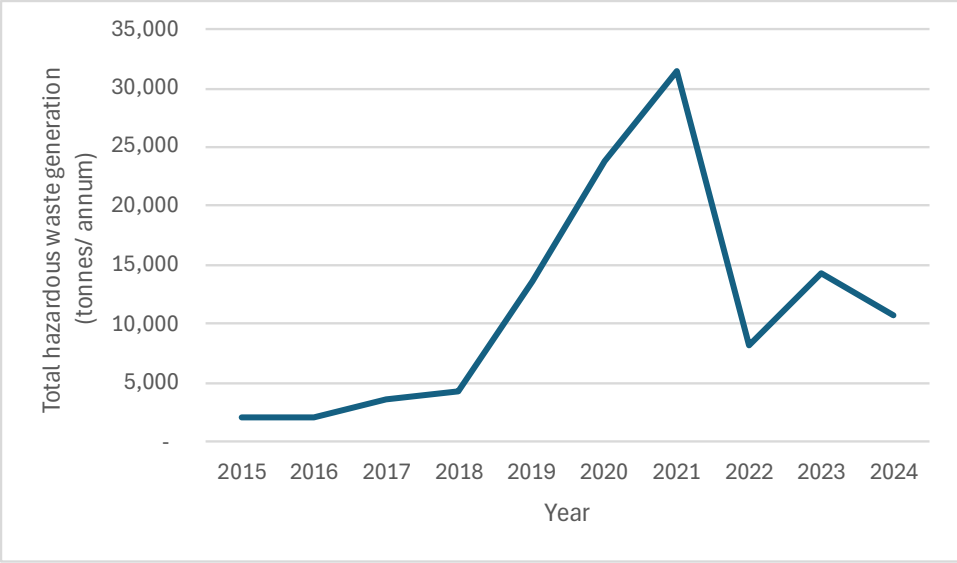

Figure 7: Total hazardous waste generation in Thurrock, 2015-2024

Hazardous waste generation in Thurrock has shown significant variability over the past decade. From 2015 to 2018, annual hazardous waste arisings remained relatively modest, increasing from approximately 2,000 tonnes to

just over 4,200 tonnes. However, a marked surge occurred in 2019, with hazardous waste generation rising sharply to over 13,600 tonnes. This upward trend continued into 2020 and 2021, peaking at 31,461 tonnes, before dropping to 8,225 tonnes in 2022.

When normalised per employee, the data reflects similar volatility. The hazardous waste generated per employee rose from 0.025 tonnes in 2015 to a high of 0.360 tonnes in 2021, before falling back to 0.093 tonnes in 2022 and stabilising around 0.160-0.117 tonnes in 2023-2024. This suggests that the changes in total hazardous waste are not solely due to workforce fluctuations but are driven by other factors.

The pronounced increase in hazardous waste generation from 2019 onwards is likely attributable to several factors:

- The temporary increase in hazardous waste observed during 2020 and 2021 is largely due to significant transfers between facilities and the impacts of COVID-19.
- The spike may reflect changes in local industry, such as the opening, expansion, or closure of facilities handling hazardous materials. Economic cycles, construction booms, or shifts in manufacturing can all influence waste profiles.
- Updates to waste classification, stricter reporting requirements or improved data capture can result in apparent increases in hazardous waste, even if underlying activity remains constant.
- Large infrastructure projects, remediation works, or incidents (such as site clearances or contamination events) can cause temporary spikes in hazardous waste arisings.

The drop in hazardous waste generation in 2022, followed by moderate levels in 2023-2024, could indicate a return to more typical activity levels post-pandemic, completion of major projects, or improved waste minimisation and management practices. It may also reflect changes in the types of businesses operating in Thurrock.

4.5.3 Employment growth scenarios

To forecast future Hazardous waste generation in Thurrock, historical trends in Hazardous waste produced per employee were analysed. The average annual percentage change in Hazardous waste per employee over the previous ten years was calculated and applied to project future waste generation per employee.

The scenario does not adjust for fluctuations in hazardous waste arisings during the COVID-19 pandemic (2019, 2020 and 2021), as it is anticipated that waste levels will normalise over the plan period.

These per-employee forecasts were then combined with employment growth projections provided by Thurrock Council (outlined in Section 2.3.2). For each year between 2025 and 2044, the projected waste per employee was multiplied by the corresponding employment estimate. This calculation produced total Hazardous waste arisings under each employment growth scenario.

Figure 8 presents the results of this analysis, showing projected C&I waste arisings in Thurrock from 2025 to 2044 under different employment scenarios.

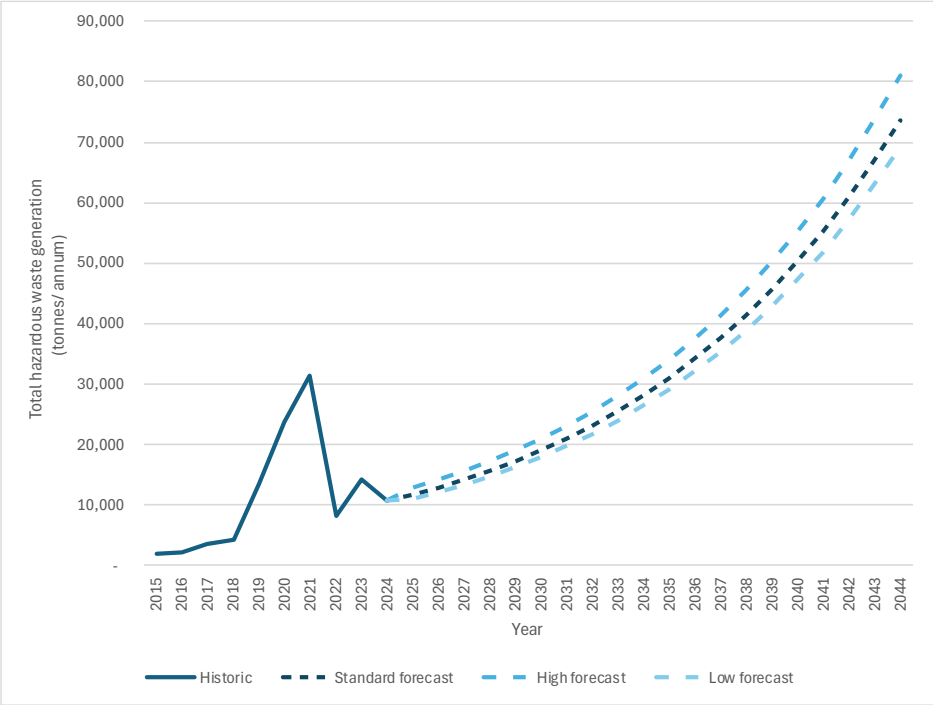

Figure 8: Projected hazardous waste arisings in Thurrock under the three employment growth scenarios, 2025-2044

Across all scenarios, hazardous waste is projected to increase substantially over the plan period. In the standard forecast scenario, hazardous waste arisings are expected to rise from approximately 10,687 tonnes in 2024 to circa 73,700 tonnes by 2044. This represents a more than six-fold increase over 20 years. The high and low scenarios follow a similar pattern, reaching approximately 81,000 tonnes and 69,000 tonnes respectively by 2044.

Per-capita hazardous waste generation also rises sharply under each scenario. Projected hazardous waste per employee increases from around 0.127 tonnes per employee in 2025 to 0.681 tonnes per employee in 2044 across all growth scenarios, driven by the application of the historic per-employee growth rate.

This steep rise is primarily a result of the forecasting method, which compounds the historic growth rate observed in the data. Additionally, the projection reflects an expectation of ongoing economic and construction activity in Thurrock, which would continue to generate both routine and exceptional hazardous waste streams.

The scale and timing of future Hazardous waste arisings in Thurrock will also be strongly influenced by major infrastructure projects planned or underway within the borough, most notably the Thames Enterprise Park (TEP).

TEP is a major employment-led regeneration project covering approximately 260 hectares of brownfield land. The development aims to deliver substantial employment floorspace, with potential for up to 750,000m^2 or a minimum of around 400,000m^2 for B2/B8 and energy-related uses. Target sectors include logistics, digital technologies, manufacturing, port-related facilities, rail freight, and energy.

TEP occupies the former Coryton Oil Refinery site, which has a long history of industrial use and is therefore likely to be contaminated. Redevelopment of this site will require extensive demolition, site clearance, remediation and subsequent construction phases. These activities are expected to generate significant volumes of hazardous waste, particularly during the early years of the plan period when contaminated structures are removed and groundworks are undertaken.

As one of the largest brownfield regeneration sites in Thurrock, TEP will play a key role in both the generation and management of hazardous waste throughout the plan period.

4.5.4 Waste reduction initiatives

Unlike other waste streams, hazardous waste is not subject to specific national recycling or reduction targets. Current national policy and guidance do not set statutory requirements or targets for hazardous waste minimisation, recycling or diversion from landfill. As a result, waste reduction scenarios have not been analysed for hazardous waste in this assessment. Instead, future arisings have been forecast by extrapolating historic trends, in line with National Planning Practice Guidance.

The standard forecast is considered the most realistic and has been used to assess the impact of waste reduction initiatives on future waste management capacity requirements. Therefore, by 2044, Thurrock is forecast to generate approximately 73,700 tonnes of hazardous waste annually.

The impact of forecast hazardous waste arisings on Thurrock's available capacity has been assessed in Section 6 of this report, where projected quantities are compared against operational infrastructure and a capacity gap analysis is undertaken.

5. Waste capacity

5.1 Overview

This section reviews the current waste management facilities within Thurrock and assesses their capacity to manage forecast waste arisings over the plan period. In addition, this section highlights major proposed waste management facilities with submitted or approved planning applications that could potentially provide additional capacity before 2044. However, these future facilities have not been included in the current capacity estimates to ensure a conservative approach to planning.

The Environment Agency regulates waste management facilities by requiring each facility to hold an environmental permit. Waste management facilities granted a permit from the Environment Agency have been termed 'permitted facilities' within this assessment.

5.2 Methodology

Data on waste received by permitted facilities within Thurrock was extracted from the Environment Agency's WDI, while remaining landfill capacity has been identified using the Environment Agency Remaining Landfill Capacity dataset.

Only facilities that remain active have been included, identified by reported waste receipts in 2024.

5.2.1 Exclusions

Consistent with the approach used to calculate waste arisings, capacity associated with waste transfer storage facilities has been excluded.

This assessment focuses on capacity for MSW, C&I, C&D, and hazardous waste streams; therefore, facilities dealing with agricultural, mining and liquid waste streams have also been excluded.

Facilities that reprocess recyclate into new products, such as glass furnaces or paper mills, have not been included in this assessment. These operations are considered part of the manufacturing process rather than waste management development and therefore do not fall within the scope of planning for waste infrastructure in the Local Plan.

Capacity for sites without planning permission has not been included in this assessment, nor has capacity at exempt facilities. The estimates only reflect operational sites with valid planning consent.

Each facility has been classified into one of the types described in the list below, based on its site category, permit, facility type, and Recovery or Disposal (R and D) code recorded in the Environment Agency's WDI.

5.3 Capacity types

5.3.1 Recycling capacity

For this assessment, recycling is defined as any process that separates materials for reuse as raw materials or converts them into new products.

In this report, 'recycling' is used as shorthand for material recycling and organic waste treatment, including anaerobic digestion.

The WDI categorises some sites as 'treatment'; these have been included as recycling capacity.

Household Waste Recycling Centres (HWRCs) or Civic Amenity Sites (CA) are not considered as part of the recycling capacity in this assessment, as they are treated as transfer capacity only. HWRCs primarily serve as collection and bulking points for various waste streams before onward transport to treatment or disposal facilities, and do not themselves provide significant processing or disposal capacity.

5.3.2 Recovery capacity

Energy Recovery converts waste into usable heat or electricity through combustion, gasification, or pyrolysis.

Other recovery also includes deposit-to-land facilities where waste is used for construction, reclamation, restoration or land improvement.

5.3.3 Landfill void capacity

Landfill permanently disposes of waste to land when recovery or recycling is not possible.

There are three main types of landfills in the UK:

- Non-hazardous waste landfill – for municipal and similar residual wastes; may include a Stable Non-Reactive Hazardous Waste (SNRHW) cell for certain hazardous materials that meet stability criteria such as asbestos cement board.
- Inert waste landfill – for materials that do not undergo significant physical, chemical, or biological changes, such as soils, stones, and concrete.
- Hazardous waste landfill – specifically engineered for hazardous wastes that cannot be treated or recovered, with stringent containment and monitoring requirements.

It is important to distinguish between landfill capacity and maximum throughput used for the treatment capacity. Capacity refers to the remaining physical void space available for waste, whereas throughput reflects the volume of waste a site can process annually under operational and regulatory constraints.

The remaining capacity of Thurrock's landfills has been calculated using the Environment Agency's annual dataset on landfill void capacity, which reports available space in cubic metres as of the end of 2024.

Waste mass does not directly correspond to its volume; for example, one tonne of waste does not necessarily occupy one cubic metre of void. To estimate the required void accurately, the density of different waste types must be considered. For this assessment, a density of 1.5 tonnes per cubic metre has been used to convert landfill capacity from volume to mass.

5.4 Results

5.4.1 Throughput

Table 9 presents the annual throughput of waste managed at permitted facilities in Thurrock, broken down by facility type (recycling, recovery, and hazardous waste treatment) for each year from 2015 to 2024.

Table 9: Annual throughput (tonnes) at permitted waste management facilities in Thurrock by facility type, 2015-2024

Year	Recycling (tonnes)	Recovery (tonnes)	Hazardous (tonnes)
2019	1,794,629	468,482	3,401
2020	1,524,966	656,813	2,623
2021	1,904,376	519,263	24,896
2022	1,862,293	481,995	27,440
2023	1,912,375	618,582	18,850
2024	2,054,800	372,263	55,438

These figures represent the actual quantities of waste processed each year, not the maximum permitted capacities. It is important to note that permitted capacities, as authorised by the Environment Agency, often exceed operational throughput due to various operational, contractual or market constraints.

A map illustrating the locations of permitted waste management facilities in Thurrock is provided in Figure 9.

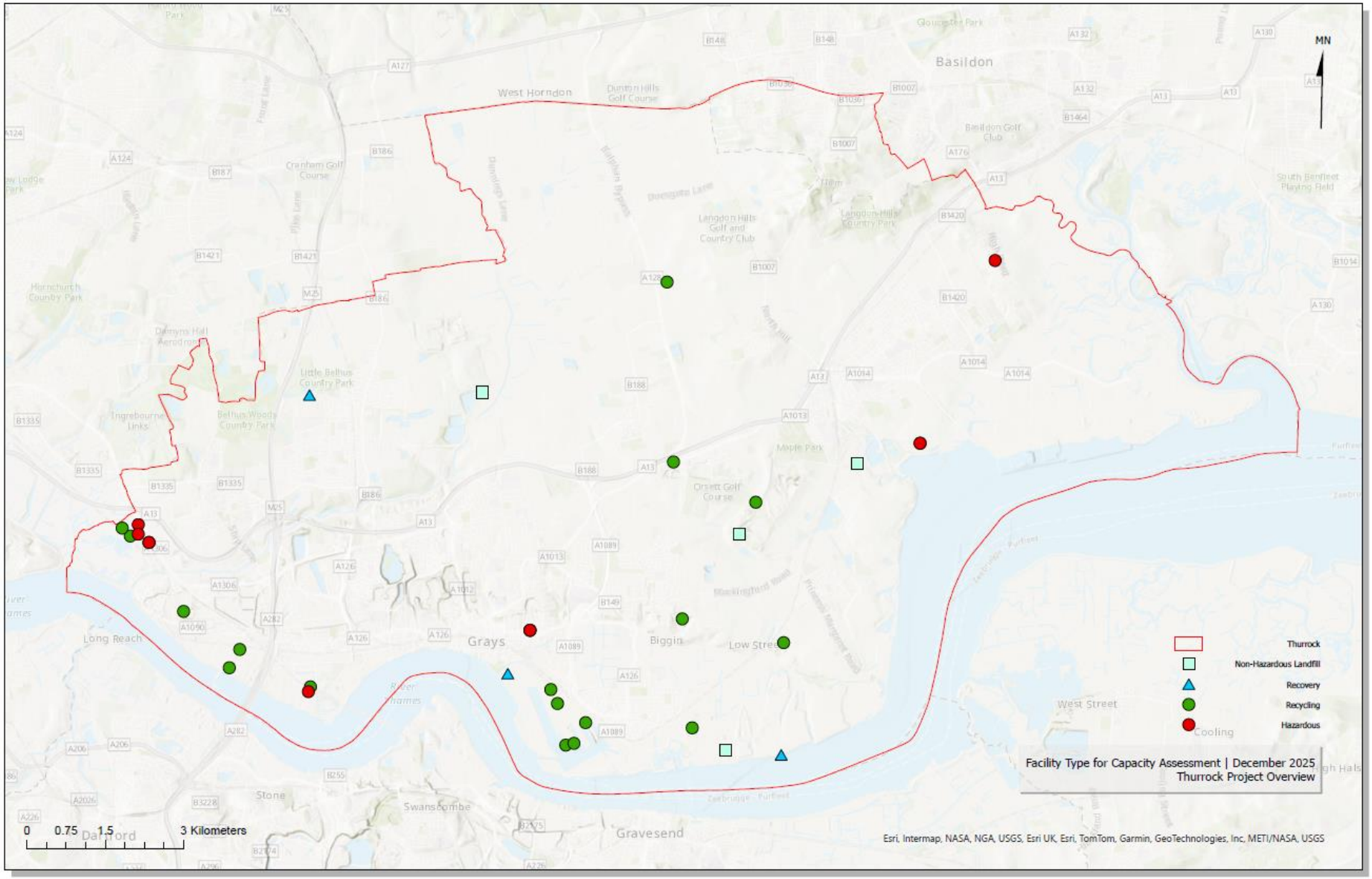

Figure 9: Map of permitted waste management facilities in Thurrock, 2024

5.4.2 Permitted capacity

For the purposes of this assessment, Environment Agency permitted capacities have been included here, in Table 10 below, to provide a comprehensive overview of the potential waste management capacity available within Thurrock. This approach allows us to identify where there may be latent or underutilised capacity at existing facilities, which could be brought into use in response to future increases in waste arisings or changes in policy and market conditions. It also highlights where there is potential for facilities to increase throughput without the need for new planning permissions or significant infrastructure investment.

Permit data for all facilities in Thurrock was requested from the Environment Agency via email as an Environmental Information Regulations (EIR) request. The Environment Agency responded to the request and supplied a portion of the requested permits. However, not all permit documents could be provided. According to the Environment Agency's response, some information was withheld due to required redactions under Regulation 13(1) of the Environmental Information Regulations 2004, which restricts the disclosure of personal data where doing so would breach data protection principles. This meant that certain permits or sections of permits could not be released where redaction could not sufficiently prevent identification of individuals. The permits that were released in full or in redacted form are presented within this section and form the basis of the permitted capacity analysis in Table 10.

Table 10 summarises the maximum permitted capacity of operational waste management facilities in Thurrock, as authorised by the Environment Agency, for the facilities and permits that were made available. It shows the permitted capacity for each operational waste management site in Thurrock, alongside its facility type and long-term average throughput. By comparing permitted capacity with the 10-year average throughput, the table highlights the level of spare capacity at each site, shown as the difference in tonnes.

Table 10: Permitted waste management capacity at operational facilities in Thurrock (tonnes per annum)

Site name	Facility type	Permitted capacity (tonnes)	Average 10-year throughput (tonnes)	Difference (tonnes)
Benfleet Scrap	Metal Recycling	50,000	13,064	36,936
Brocks Haulage	Physical Treatment	75,000	45,381	29,619
European Metal Recycling	Metal Recycling	330,000	876,898	-546,898
Fort Road Biomass Processing Plant	Physical Treatment	240,000	43,900	196,100
Gordon Recycling	Physical Treatment	75,000	4,885	70,115
Holcim UK Limited	Physical Treatment	250,000	35,516	214,484
Juliette Way Materials Recycling & WEEE ATF	Material Recycling Facility	75,000	17,765	57,235
Lowes Yard	Metal Recycling	25,000	17,154	7,846
Modern Skips 2014 Limited (Units 15/16 Juliet Way)	Physical Treatment	32,000	9,849	22,151
Rainbow Shaw Treatment	Physical Treatment	75,000	34,710	40,290
Recycled In Orsett	Physical Treatment	75,000	58,386	16,614
Seales Road Haulage Ltd	Physical Treatment	250,000	56,972	193,028
Tilbury IBA Facility - EPR/CP3732WS	Material Recycling Facility	275,000	172,115	102,885
Tilbury New Site	Physical Treatment	200,000	122,840	77,160

Site name	Facility type	Permitted capacity (tonnes)	Average 10-year throughput (tonnes)	Difference (tonnes)
Unit 5 Bennett's Industrial Estate	Physical Treatment	75,000	3,090	71,910

The analysis of the available permit data demonstrates that all operational facilities in Thurrock are currently operating below their permitted capacities, in some cases significantly so. At several sites, long-term average throughputs are only a fraction of the maximum tonnages allowed under existing Environment Agency permits. This indicates a substantial amount of latent capacity within the local waste management network. In practical terms, this means that many facilities could accommodate notable increases in throughput without requiring new planning permissions, physical expansion or major infrastructure investment.

Where differences between permitted capacity and historic throughput are large, this suggests that these facilities have the flexibility to respond to future growth in waste arisings, changes in collection systems, shifts in material composition or market-driven demands for recycling and treatment capacity.

Overall, the comparison between permitted capacity and observed throughput highlights that Thurrock has a robust theoretical capacity buffer, which could be mobilised to support future waste management needs and reduce reliance on facilities outside the authority area.

5.4.3 Landfill void capacity

Table 11 shows the remaining permitted landfill void capacity in Thurrock for each year from 2015 to 2024, distinguishing between inert (non-hazardous) and non-hazardous landfill sites.

The data highlights the ongoing reduction in available landfill space due to waste disposal and site closures, providing a baseline for forecasting future landfill availability and planning for landfill diversion.

Table 11: Remaining landfill void capacity in Thurrock, 2015-2024

Year	Inert (non-hazardous) landfill (cubic meters)	Non-hazardous landfill (cubic meters)	Total (cubic meters)
2015	688,231	486,107	1,170,308
2016	913,970	486,108	1,396,046
2017	863,882	1,502,017	2,361,865
2018	826,468	1,488,883	2,311,315
2019	613,256	1,251,160	1,860,378
2020	585,240	1,779,514	2,360,714
2021	109,682	786,263	891,903
2022	122,424	735,404	853,784
2023	121,786	3,288,928	3,554,146
2024	116,837	3,167,351	3,284,188

5.5 Forecast capacity

5.5.1 Introduction

Two methodologies have been applied in this Assessment to provide both a high-level understanding of Thurrock's overall waste management capacity and a more detailed analysis of capacity constraints associated with specific facility types and waste streams.

The first methodology, presented in Section 5.5.2, considers total operational capacity by broad treatment type - recycling, recovery, and hazardous waste treatment. This approach uses the highest annual waste throughput recorded over the past decade (2015-2024) as a proxy for future operational waste management capacity in 2044. This approach, while conservative, does not account for potential increases or new developments. This is therefore a high-level assessment based on the maximum annual reported waste tonnages rather than environmental permit limits or planning consents, so the approach may underestimate Thurrock's overall waste management capacity.

Once the highest annual waste throughput has been established, the first method then aggregates all facilities within each waste treatment category.

This method is intended to give a strategic overview of Thurrock's total recycling, recovery and hazardous waste management capacity and to identify whether, at the highest level, supply is likely to meet demand. However, it does not distinguish between the different kinds of facilities or the types of waste they are technically capable of managing. As a result, broad treatment-type totals alone can mask important nuances in how capacity is distributed across the local infrastructure.

To address this limitation, a second methodology has been applied in Section 5.5.3, which assesses forecast capacity by specific waste facility type. In this approach, each facility is treated individually, and its maximum recorded waste throughput over the past decade is again used to estimate its estimated operational capacity in 2044. Crucially, this method also incorporates the actual composition of waste received at each facility in 2024, using WDI data to determine the proportions of Household/C&I and Inert/C&D waste handled. This enables the assessment to match projected 2044 arisings to the types of facilities most likely to process them, based on observed operating patterns. Including Tilbury Green Power within this analysis is important because its composition of waste received can be disaggregated and aligned to the relevant waste stream categories, even though it is excluded from the high-level recovery total due to its role as a biomass EfW facility. By applying this more granular methodology, the assessment can pinpoint where future capacity gaps are associated with specific waste streams or specific infrastructure types, rather than only identifying gaps at the broader treatment-type level.

For the purposes of the waste capacity gap analysis, for both methodologies, it has been assumed that all existing waste management capacity will remain operational throughout the plan period and that no new capacity is currently under development or will be developed before 2044. This provides a conservative basis for assessing future requirements.

5.5.2 Forecast waste treatment capacity by treatment type

Table 12 provides an estimate of the operational waste management capacity expected to be available in Thurrock in 2044, based on the maximum waste annual throughput recorded over the previous decade. It covers recycling, recovery, and hazardous waste treatment facilities.

Table 12: Forecast waste management capacity in Thurrock by facility type, 2044

Year	Recycling (tonnes per annum)	Recovery (tonnes per annum)	Hazardous (tonnes per annum)
2044	2,808,664	581,959	61,755

The recovery capacity for Thurrock, in reality, is 839,796 tonnes per annum. However, as shown in Table 12, only 581,959 tonnes is listed as the likely capacity in 2044. This is due to the Tilbury Green Power EfW in Thurrock being a renewable biomass power plant fuelled by waste wood. When considering the total energy recovery capacity for all waste streams, it is unlikely that large quantities of MSW would be sent here for energy recovery. The highest annual throughput recorded over the past decade (2015-2024) as a proxy for future availability at Tilbury Green Power was 257,837 tonnes. This has therefore been removed from the energy recovery capacity in 2044 to provide realistic and robust assessment of future recovery capacity to deal with the relevant types of wastes.

5.5.3 Forecast waste treatment capacity by waste facility type

Forecast waste treatment capacity by waste facility type was analysed by establishing the composition of waste received at each waste management facility in Thurrock using the 2024 Waste Data Interrogator WDI. For every facility, the total waste inputs recorded for 2024 were reviewed and grouped into the assessment's core waste-stream categories: Household/C&I (HCI) and Inert/C&D waste (C&D). The tonnage associated with each stream was then divided by the facility's total received waste for that year, producing a percentage split that reflects the typical composition of waste handled by that facility type. These percentage proportions form the basis of later analysis, as they indicate the waste streams most likely to be processed by each type of infrastructure.

Tilbury Green Power is included within this calculation because the specific waste composition and throughput at the facility is required for further analysis of recovery capacity and gap analysis.

These composition percentages were then applied to the projected forecasts of waste arisings to 2044. This translates overall future arisings into estimates of how much waste, by type, is likely to require treatment at each facility category.

While total waste quantities may change over time, the proportional mix of waste handled by each type of infrastructure tends to remain relatively stable unless major policy or market shifts occur. Applying the 2024 ratios in this way enables a facility-specific comparison between projected demand and available capacity.

Table 13 provides an estimate of the operational waste management capacity expected to be available in Thurrock in 2044, based on the maximum annual throughput recorded over the previous decade. It covers each specific type of waste facility.

Table 13: Forecast waste management capacity in Thurrock by waste facility, 2044

Waste facility	Capacity (tonnes)	Primary waste stream received at facilities in 2024	Facility type used in this Assessment
Metal recycling	1,163,148	95% household, industrial, commercial 5% inert, C&D	Recycling
Car breaker	19,088	100% inert, C&D	Recycling
MRF	636,840	45% household, industrial, commercial 55% inert, C&D (primarily glass)	Recycling
Physical treatment	753,085	27% household, industrial, commercial 72% inert, C&D	Recycling
Physical-chemical treatment	15,318	100% household, industrial, commercial	Recycling
Recovery of waste (mixed metals recycling)	221,184	100% household, industrial, commercial	Recycling
EfW Incinerator (Tilbury Green Power)	257,837	82% household, industrial, commercial 18% inert, C&D	Recovery
Deposit of waste to land (recovery)	581,959	100% inert, C&D	Recovery
Hazardous (including vehicle depollution facility, non-specified treatment, metal recycling, car breaker and material recycling facility)	61,755	100% hazardous	Hazardous

Table 14 allocates projected 2044 waste arisings to the facility types most likely to process them, using the observed 2024 composition of inputs at each facility as the basis for apportionment. For each facility, the share of household, industrial and commercial (HIC) waste versus C&D waste received in 2024 was applied to the 2044 arisings to estimate the tonnage that each waste stream would place on that facility type.

Table 14: Allocation of 2044 waste arisings to facility types by waste stream (HIC vs Inert/C&D)

Facility	Total Capacity (tonnes) (2044)	HIC Capacity (2044) (tonnes)	Inert/C&D Capacity (2044) (tonnes)
Metal recycling	**1,163,148**	1,104,990	58,157
Car breaker	**19,088**	0	19,088
MRF	**636,840**	286,578	350,262
Physical treatment	**753,085**	203,332	542,221
Physical-chemical treatment	**15,318**	15,318	0
Recovery of waste (mixed metals recycling)	**221,184**	221,184	0
EfW (wood)	**257,837**	211,424	46,410
Deposit to land (recovery)	**581,959**	0	581,959

Within Section 6, for each facility type, the projected tonnage of each waste stream expected to be processed in 2044 is compared with the forecast

operational capacity. Where the projected demand exceeds available capacity, a capacity gap is identified; where capacity exceeds projected demand, a surplus is recorded.

This method allows the assessment to determine not only whether Thurrock has sufficient overall waste management capacity, but also whether the borough has the right types of facilities to manage the waste streams it is expected to produce. It also highlights areas where Thurrock may be dependent on exporting waste to facilities outside the borough or where investment in new or expanded infrastructure may be required.

5.5.4 Landfill capacity

To project future landfill capacity, the average annual percentage change in capacity from 2015-2024 was calculated and applied to the most recent (2024) baseline figure.

This approach applies observed reductions in landfill use to forecast how available void space may decline over time, providing a more realistic picture than relying solely on static capacity figures.

For this assessment, the average annual percentage decline in landfill capacity was calculated to be approximately -5.5% per year. This rate was then used to forecast the reduction in available landfill void capacity for each subsequent year, up until 2044.

Table 15 shows the remaining landfill void capacity in Thurrock for the year 2044, using the observed average annual rate of decline from 2015 to 2024. The figures are presented in both cubic metres and converted to tonnes, providing a clear indication of the borough's long-term landfill provision.

Table 15: Projected remaining landfill void capacity in Thurrock, 2044

Remaining Landfill Capacity (Non-hazardous)	
2044	1,057,931m^3
Converted to tonnes using a density conversion factor of 1.5 tonnes/m^3	1,586,896 tonnes

5.6 Contracted facilities outside of Thurrock

This assessment and the wider report focus on quantifying waste arisings and management capacity within Thurrock's administrative boundary. All baseline data, forecasts and capacity gap analyses are based on waste generated in Thurrock and the operational capacity of facilities located within the borough. However, it is important to recognise that the practical management of Thurrock's waste is more nuanced. Thurrock Council has already commissioned several waste contracts that utilise facilities located outside the borough. These out-of-borough facilities play a significant role in the current waste management system, particularly for certain waste streams where local capacity is limited or where specialist treatment is required.

The key facilities currently used by Thurrock Council, outside of Thurrock and under existing contracts, are listed below:

- Residual waste: Cory Environmental (Cory) holds a 10-year contract (with a 5-year extension option) signed in April 2024 for non-recyclable waste incineration. Residual waste is sent to Cory's Riverside EfW facility in Belvedere (Londo Borough of Bexley), where it is incinerated to generate heat and power. Metals are recovered for recycling, and bottom ash is processed.
- Recycling: A two-year contract with Biffa, starting April 2023, covers household recycling. Materials are sent to Biffa's materials recycling facility (MRF) in Edmonton, where they are sorted and sent for recycling or recovery.
- Food waste: A 10-year contract (with a 5-year extension option) with Bio Collectors, signed in 2022, handles food waste. Waste is taken to their anaerobic digestion plant in Mitcham, producing biogas for the National Grid and creating a nutrient-rich fertilizer from the remaining material.

If capacity gaps are identified, these contracted facilities outside Thurrock will help to bridge the shortfall. They provide essential outlets for the management of Thurrock's waste, ensuring continuity of service and compliance with statutory obligations.

Nevertheless, the strategic aim for Thurrock remains to achieve self-sufficiency in waste management wherever possible.

6. Arisings and capacity gap analysis

6.1 Overview

Thurrock Council aims to be self-sufficient by providing enough waste management facilities to manage the equivalent of its own arisings, supported by a mix of sites to ensure sustainable waste management wherever possible.

In line with this principle, this section compares the amount of waste predicted to arise within Thurrock over the plan period with the existing waste management capacity. Any capacity surplus or deficit is identified, with surplus capacity indicating that facilities may currently manage waste imported from outside Thurrock.

The gap analysis identifies broad pressure points rather than precise deficits. Headroom within existing sites, the ability of operators to adjust waste throughput and the use of contracted out-of-borough treatment all contribute to the real-world deliverability of waste management capacity. Results should therefore be interpreted as indicators of resilience and flexibility, not as rigid thresholds.

Although waste transfer stations play an important intermediary role in the management of waste, their primary function is to bulk smaller loads into larger, more efficient loads before transporting waste to its destination, such as a recycling facility, EfW or landfill site. To avoid double counting, and consistent with the methodology used to calculate waste arisings, the capacity provided by waste transfer stations has been excluded from the final capacity calculations. This ensures that the analysis reflects only the facilities directly responsible for waste treatment, recovery, or disposal.

6.2 Arisings and capacity by treatment type

Forecast waste arisings for 2044 are compared against projected available waste treatment capacity for each waste stream, considering low, medium, and high recycling scenarios. The analysis is broken down into:

- Recycling;
- Recovery (EfW and other residual waste treatment);
- Landfill (non-hazardous, primarily C&D); and
- Hazardous waste treatment.

Shortfalls (gaps) are highlighted in red, while surpluses are shown in green, providing a clear visual summary of Thurrock's future waste management position.

6.2.1 Recycling

Table 16 compares the projected quantities of waste requiring recycling in Thurrock in 2044 across MSW, C&I and C&D streams against the borough's available recycling capacity. It presents results for low, medium, and high recycling scenarios, highlighting whether Thurrock will have sufficient infrastructure to meet future recycling demand or if additional capacity will be required.

Table 16: Comparison of forecast recycling arisings and available recycling capacity in Thurrock under low, medium, and high recycling scenarios, 2044

Waste arisings type	Recycling scenario	Quantity (tonnes)
MSW	Low (30% recycled)	25,397
	Medium (50% recycled)	42,328
	High (65% recycled)	55,027
C&I	Low (30% recycled)	507,773
	Medium (55% recycled)	930,917
	High (65% recycled)	1,100,175
C&D	Low (62% recycled)	395,704
	Medium (75% recycled)	478,674
	High (85% recycled)	542,497
TOTAL	**Low**	**928,874**
	Medium	**1,451,919**
	High	**1,697,699**
Recycling capacity	2,808,664	
Net difference	Low	1,879,790

Waste arisings type	Recycling scenario	Quantity (tonnes)
	Medium	1,356,745
	High	1,110,965

Table 16 indicates that there is currently more than enough capacity at recycling and composting facilities within Thurrock by 2044. However, this surplus gradually decreases over the plan period as recycling volumes rise. This can be seen in Figure 10 below, showing recycling capacity is higher than required under all scenarios.

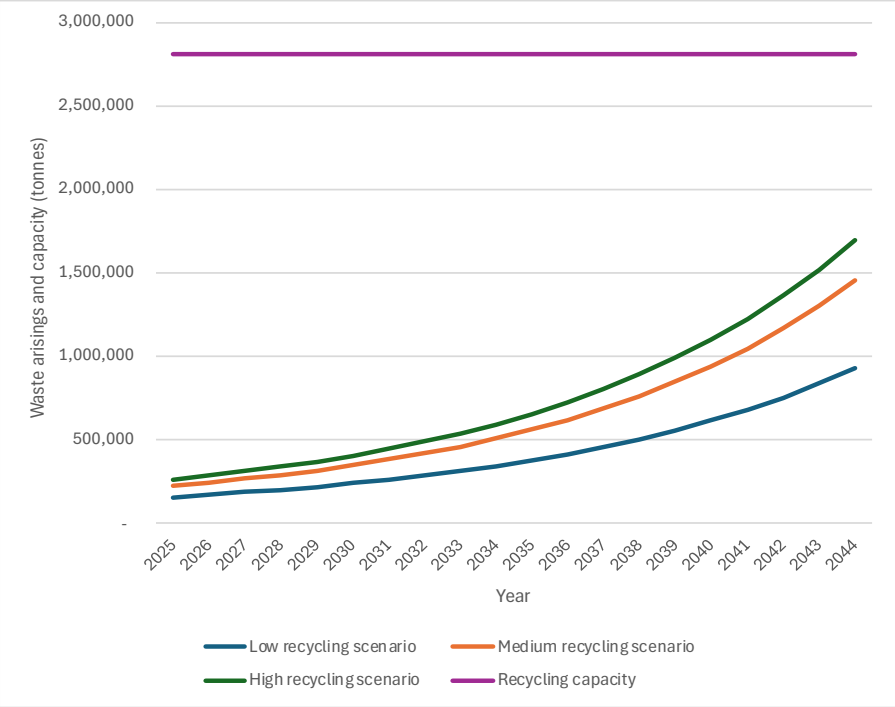

Figure 10: Thurrock total waste arisings under low, medium and high recycling scenarios and total recycling capacity, 2025-2044

The implementation of DRS will likely lead to a reduction in the volume of drinks containers collected through local authority kerbside recycling schemes. Instead, a greater proportion of these containers will be returned directly through DRS collection points and sent straight for reprocessing. As a result, while overall recycling rates for these materials are expected to improve, the tonnage of recyclables recorded in local authority statistics may decrease. This shift reflects a change in the collection pathway rather than a reduction in recycling performance.

The recycling capacity provided by the Biffa MRF in Edmonton supports Thurrock's recycling operations; however, it currently handles only a limited proportion of the borough's household waste. According to Thurrock's Municipal Waste Strategy, in 2023/24 approximately 19.27% of household waste was sent to the Biffa facility for sorting and processing. Because only part of Thurrock's recycling is managed through this facility, it cannot be relied upon to provide complete capacity for all recycling needs, and additional arrangements in Thurrock remain necessary to meet overall waste management requirements.

Therefore, although total recycling capacity is expected to remain sufficient under all recycling scenarios, the distribution of demand across different types of facilities may change. For example, some material recovery facilities may see reduced throughput for drinks containers, while reprocessing plants handling DRS returns could experience increased demand.

The introduction of Simpler Recycling is also expected to standardize the collection of recyclable materials across all local authorities in England, ensuring that every household can recycle the same core set of materials, including food and garden waste. Simpler Recycling will likely lead to an increase in the volume of organic waste (such as food and garden waste) collected separately at the kerbside. As a result, there will be a greater need for local composting and anaerobic digestion facilities to process this material.

Thurrock currently sends its municipal food waste to Bio Collectors' anaerobic digestion plant in Mitcham, under a 10-year contract (with an option to extend for an additional five years), initiated in 2022. The Bio Collectors plant provides valuable capacity for Thurrock's municipal food waste. However, because this plant is located outside Thurrock and serves multiple clients, it cannot be considered a complete or long-term solution for the borough's needs. Delivering local facilities would strengthen resilience and reduce transport emissions.

Therefore, the total headroom looks ample, but provision of recycling stream capacity may need rebalancing over the plan period.

6.2.2 Recovery

Table 17 sets out the projected quantities of waste requiring energy recovery or other forms of residual waste treatment in Thurrock in 2044, based on different recycling scenarios. It compares these arisings to the borough's available recovery capacity, identifying any surplus or deficit.

Table 17: Comparison of forecast recovery arisings and available recovery capacity in Thurrock under low, medium, and high recycling scenarios, 2044

Waste arisings type	Recycling scenario	Quantity (tonnes)
MSW	Low recycling (60% recovery)	59,260
	Medium recycling (50% recovery)	42,328
	High recycling (45% recovery)	29,630
C&I	Low recycling (60% recovery)	1,184,804
	Medium recycling (45% recovery)	761,660
	High recycling (35% recovery)	592,402
C&D	Low recycling (1% recovery)	6,382
	Medium recycling (5% recovery)	31,912
	High recycling (10% recovery)	63,823
TOTAL	**Low**	**1,250,446**
	Medium	**835,900**
	High	**685,855**
Recovery capacity	581,959	
Net difference	Low	-668,487
	Medium	-253,941
	High	-103,896

The recovery capacity position is scenario-dependent. Against an estimated 581,959 tonnes of recovery capacity, the Low recycling scenario requires 1,250,446 tonnes of recovery capacity, resulting in a deficit of 668,487 tonnes. Under the Medium recycling scenario, total arisings reach 835,900 tonnes, resulting in a deficit of 253,941 tonnes. The High recycling scenario reduces total arisings to 685,855 tonnes but still leaves a deficit of 103,896 tonnes. This can be seen in below in Figure 11, showing recovery capacity becomes constrained from 2038 onwards under the low recycling scenario, 2024 onwards under the medium scenario and 2043 onwards under the high scenario.

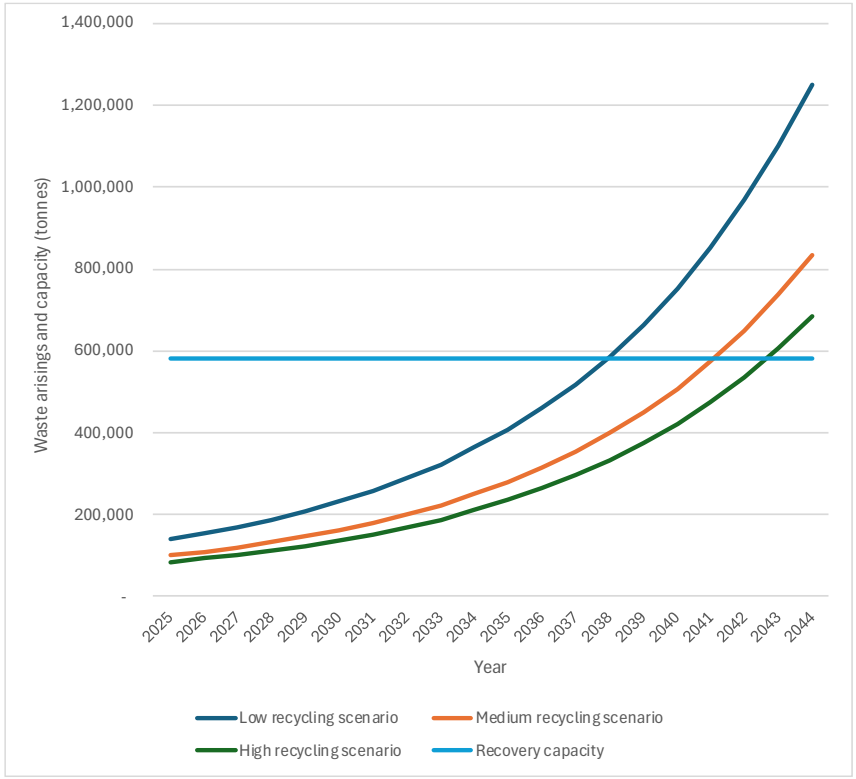

Figure 11: Thurrock total waste arisings under low, medium and high recycling scenarios and total recovery capacity, 2025-2044

Even at higher recycling rates, Thurrock remains above its available recovery capacity, indicating that improved recycling performance alone will not fully eliminate the shortfall. The persistent deficits across all scenarios mean that additional third-party EfW capacity, demand-reduction measures or accelerated recycling and waste-prevention gains will be necessary to achieve recovery capacity self-sufficiency.

The highest annual throughput recorded at the Tilbury Green Power EfW site (biomass site for waste wood) in Thurrock over the past decade (2015-2024) was 257,837 tonnes. This figure has been excluded from the projected 2044 recovery capacity to ensure that the assessment reflects only the capacity realistically available for the waste types considered within the Local Plan.

While Tilbury Green Power remains a feasible outlet for C&D and C&I waste wood, it is not included in the 2044 recovery capacity forecast to avoid overstating the availability of suitable recovery infrastructure for Thurrock's broader waste management needs. It therefore remains possible that these arisings could, in practice, be managed at Tilbury Green Power. In 2024, Tilbury Green Power received 14,532 tonnes of waste from Thurrock, predominately made up of wood arisings from HIC waste sources. This additional capacity is not currently reflected in the assessment, as it is unlikely this facility would receive MSW waste and the detailed composition of these arisings in 2044 is not yet known.

The analysis shows that Thurrock's existing recovery capacity is not sufficient to meet projected demand under any of the low, medium or high recycling scenarios, indicating that additional recovery provision will be required to maintain self-sufficiency and reduce reliance on out-of-borough EfW contracts. This position may, however, be strengthened later in the plan period by the development of the Viridor Thameside Energy Recovery Facility at Tilbury. Once operational, which is due in 2028, the facility is expected to provide approximately 350,000 tonnes of residual waste annually, adding additional EfW capacity within Thurrock and offering a significant new local outlet for residual waste. Although Thurrock Council does not currently plan to utilise this facility as part of its disposal strategy, its future presence increases the capacity of the borough's recovery infrastructure. Further detail on the Viridor development and its potential implications for future capacity is provided in Section 8 of this report.

As explained in Section 5.6, Thurrock Council has also recently entered a long-term contract with Cory for the energy recovery of residual municipal waste. This contract commenced in April 2024 and provides Thurrock with secure access to EfW capacity outside the borough for the treatment of residual waste that cannot be recycled or composted locally. This facility provides near-term security for MSW recovery but does not eliminate the risk created by C&I or C&D growth. As the Cory contract only became operational in April 2024, the impact of this arrangement is not yet reflected in the facility throughput data presented elsewhere in this assessment. The facility's contribution to Thurrock's waste management capacity will become more apparent in future datasets as operational tonnages are reported and incorporated into the WDI.

6.2.3 Landfill (Non-hazardous)

Table 18 provides the projected quantities of C&D waste requiring landfill disposal in Thurrock in 2044, under varying recycling and recovery rates. It compares these figures to the borough's forecast landfill void capacity, assessing whether Thurrock will have sufficient space to accommodate residual C&D waste.

MSW and C&I is excluded from Table 18 in line with the policy drive to phase out MSW and C&I landfill in Essex by 2030; it therefore focuses on C&D waste that cannot be recycled or recovered.

Table 18: Comparison of forecast landfill arisings (C&D waste only) and available landfill void capacity in Thurrock under low, medium, and high recycling/recovery scenarios, 2044

Waste arisings type	Recycling scenario	Quantity (tonnes)
C&D (waste that is not recycled or recovered)	Low (low recycling/recovery, and therefore higher use of landfill)	236,146
	Medium (medium recycling/recovery, and therefore medium use of landfill)	127,646
	High (high recycling/recovery, and therefore lower use of landfill)	31,912
Landfill void capacity	1,586,896	
Net difference	Low	1,350,750
	Medium	1,459,250
	High	1,554,984

While headroom is large, landfill void capacity is finite and spatially specific - operational constraints, engineering phases and acceptance criteria can still limit access in practice. If recycling/recovery rates underperform, the Low scenario (highest landfill reliance) applies, still leaving over 1.3 million tonnes spare but potentially concentrating demand temporally or geographically. This can be seen in below in Figure 12, showing landfill void capacity is far higher than required under all scenarios.

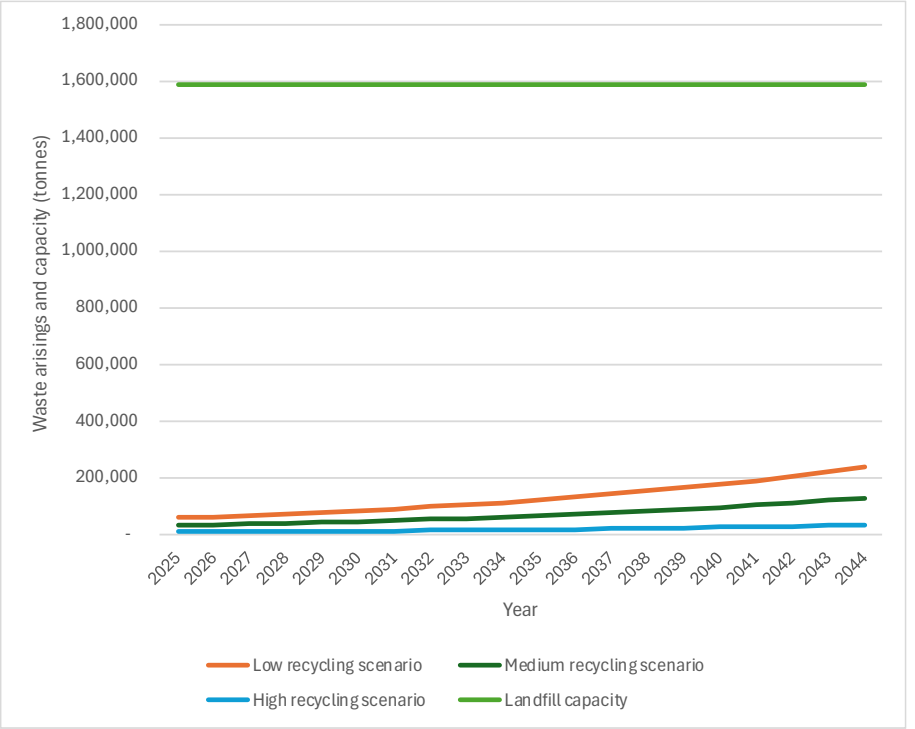

Figure 12: Thurrock total waste arisings under low, medium and high recycling scenarios and total landfill capacity, 2025-2044

Continued upstream C&D recycling/recovery remains the preferred approach under the waste hierarchy despite comfortable landfill void capacity availability.

The estimate of waste to landfill represents a likely maximum to ensure sufficient landfill provision; however, this does not preclude the management of this waste higher up the waste hierarchy where viable.

6.2.4 Hazardous waste treatment

Table 19 presents the projected quantity of hazardous waste expected to arise in Thurrock in 2044 and compares it to the borough's available hazardous waste treatment capacity.

Table 19: Comparison of forecast hazardous waste arisings and available hazardous waste treatment capacity in Thurrock, 2044

Waste arisings type	Quantity (tonnes)
Arisings (hazardous)	73,664
Hazardous capacity	61,755
Net difference	-11,909

The hazardous table shows a 2044 arisings forecast of 73,664 tonnes versus available hazardous treatment capacity of 61,755 tonnes, leaving a capacity shortfall of 11,909 tonnes. This can be seen in below in Figure 13, showing hazardous waste treatment capacity is exceeded two years before 2044.

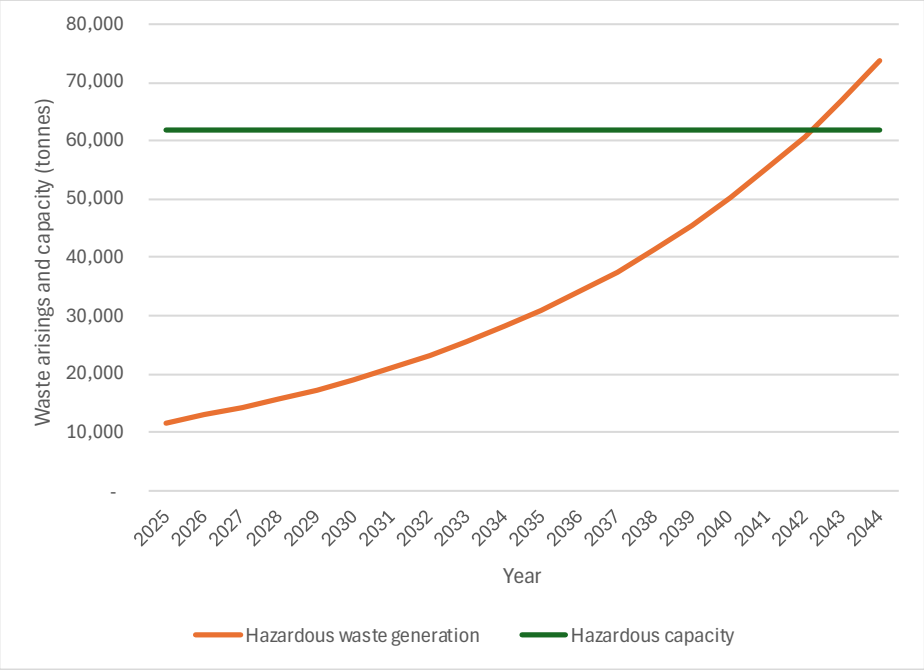

Figure 13: Thurrock total waste arisings and total hazardous waste treatment capacity, 2025-2044

This is the clearest gap in the analysis and suggests a need for additional hazardous capacity or secure export routes to regional specialist facilities.

Options to fill the capacity gap include permitting at existing sites, contracts with nearby hazardous treatment/landfill operators and targeted minimisation/segregation initiatives to reduce hazardous arisings.

6.3 Waste arisings and capacity by waste facility type

This section presents a facility-level assessment of Thurrock's future waste management position by comparing forecast 2044 arisings with the operational capacity of the specific facilities that historically received each waste stream.

Unlike the treatment-type analysis provided in the previous section, which provides a high-level overview of total recycling, recovery and hazardous waste treatment capacity, this section applies the second, more granular methodology. Here, treatment capacity is broken down by individual facility types, and projected waste arisings are allocated according to the actual composition of waste received at each facility in 2024.

This approach enables a clearer understanding of where waste treatment capacity gaps likely to occur. It distinguishes, for example, between recycling capacity that is technically available in aggregate, and the subset of that capacity, which is realistically accessible to particular waste streams, broken down into HIC waste or Construction & Demolition (C&D) waste.

The following subsections summarise the outcomes for HIC recycling, HIC recovery, C&D recycling and C&D recovery.

6.3.1 HIC Recycling

Table 20 presents projected MSW and C&I recycling tonnages under low, medium and high recycling scenarios, which are then are compared with the combined operational recycling capacity of facilities that historically accepted HIC waste.

Table 20: Comparison of forecast HIC recycling arisings and available recycling capacity by facility type in 2044

Waste arising or capacity type	Recycling scenario	Quantity (tonnes)
MSW	Low (30% recycled)	25,397
	Medium (50% recycled)	42,328
	High (65% recycled)	55,027
C&I	Low (30% recycled)	507,773
	Medium (55% recycled)	930,917
	High (65% recycled)	1,100,175
TOTAL	**Low**	**533,170**
	Medium	**973,245**
	High	**1,155,202**
Metal recycling capacity	1,104,990	
Car breaker capacity	0	
MRF capacity	286,578	
Physical treatment capacity	203,332	
Physical-chemical treatment capacity	15,318	
Recovery of waste capacity	221,184	
HIC total recycling capacity	1,831,402	
Net difference	Low	1,298,232
	Medium	858,157
	High	676,200

The data shows that Thurrock has a substantial surplus of HIC recycling capacity under all recycling scenarios. This strong headroom reflects the large operational throughput of metal recycling sites, MRFs and physical treatment sites.

Although several facilities in Thurrock are categorised as “physical treatment” or “physical-chemical treatment” sites within the WDI, it is important to note that none of these facilities provide biological treatment capacity such as composting or anaerobic digestion (AD). The operations captured under these categories are instead dominated by activities such as wood processing, mineral and aggregate treatment, soils handling, oils and fat processing, and biomass preparation, as reflected in the 2024 composition of waste received. For example, facilities such as Fort Road Biomass Processing Plant, Tilbury New Site and Modern Skips primarily manage wood waste, construction-derived materials and mixed non-putrescible HIC waste, while sites such as Palmer & Klein and Purfleet Vegetable Oil Refinery treat edible oils, sludges and liquid organic by-products, rather than household food waste or green waste. As a result, these facilities do not contribute any biological treatment capacity for municipal food waste and should not be interpreted as composting or AD infrastructure within the borough.

This distinction is a significant nuance in the assessment of Thurrock’s waste management capacity. While the borough appears to have substantial “recycling” capacity in aggregate, much of this relates to dry mixed recyclables or industrial feedstocks (e.g. plastics, cardboard, paper, metals) processed through physical treatment routes. These processes do not provide any meaningful capacity for the organic fraction of household or commercial waste. Consequently, even though physical treatment facilities collectively handle large volumes of waste, they do not alleviate the need for dedicated organic-waste treatment capacity.

Reflecting this, Thurrock currently sends all separately collected food waste to an out-of-borough anaerobic digestion facility, operated by Bio Collectors in Mitcham under aits long-term contract. This arrangement ensures compliant treatment of the borough’s food waste, but it also highlights Thurrock’s continued dependence on out-of-borough biological treatment infrastructure, as no in-borough composting or AD facility exists. As national reforms such as Simpler Recycling mandate separate food waste collections, the absence of local AD or composting capacity underscores a strategic consideration for the borough: even though overall recycling capacity remains high in the headline analysis, there is effectively zero local capacity for the treatment of biodegradable kitchen and garden waste.

Taken together, this demonstrates that while Thurrock’s physical treatment and physical-chemical treatment facilities play an important role in managing

wood waste, construction waste, oils, sludges and similar material types, they cannot be relied upon to manage organic waste streams.

Any future strategy to strengthen local resilience or reduce reliance on out-of-borough commercial contracts for food-waste treatment would therefore need to consider whether new AD or composting capacity is required within the borough.

6.3.2 HIC Recovery

Projected MSW and C&I recovery requirements are assessed against the available operational capacity of recovery facilities used for HIC waste in 2024, as shown in Table 21.

Table 21: Comparison of forecast HIC recovery arisings and available recovery capacity by facility type in 2044

Waste arising or capacity type	Recycling scenario	Quantity (tonnes)
MSW	Low recycling (60% recovery)	59,260
	Medium recycling (50% recovery)	42,328
	High recycling (45% recovery)	29,630
C&I	Low recycling (60% recovery)	1,184,804
	Medium recycling (45% recovery)	761,660
	High recycling (35% recovery)	592,402
TOTAL	**Low**	**1,244,064**
	Medium	**803,988**
	High	**622,032**
EfW capacity	211,424	
Deposit to land capacity	0	
HIC total recovery capacity	211,424	
Net difference	Low	-1,032,640
	Medium	-592,564
	High	-410,608

Table 21 reveals a significant and persistent deficit in HIC recovery capacity across all scenarios. Even at high recycling rates, Thurrock faces a shortfall of over 410,000 tonnes, rising to more than 1 million tonnes under the low recycling scenario. This reflects the extremely limited local recovery infrastructure for HIC waste - essentially Tilbury Green Power only, which is not designed to process the mixed MSW or general C&I residuals that dominate recovery demand.

This finding is one of the clearest examples of why the facility-specific methodology is essential. The gap demonstrates that Thurrock's recovery shortfall will continue even with ambitious recycling improvements and reaffirms the borough's continued reliance on out-of-borough EfW contracts.

6.3.3 C&D Recycling

Table 22 shows projected C&D recycling under low, medium and high recycling scenarios compared to the operational recycling capacity of facilities historically receiving C&D materials.

Table 22: Comparison of forecast C&D recycling arisings and available recycling capacity by facility type in 2044

Waste arising or capacity type	Recycling scenario	Quantity (tonnes)
C&D	Low (62% recycled)	395,704
	Medium (75% recycled)	478,674
	High (85% recycled)	542,497
Metal recycling capacity	58,157	
Car breaker capacity	19,088	
MRF capacity	250,262	
Physical treatment capacity	542,221	

Waste arising or capacity type	Recycling scenario	Quantity (tonnes)
Physical-chemical treatment capacity	0	
Recovery of waste capacity	0	
C&D total recycling capacity	869,728	
Net difference	Low	474,024
	Medium	391,054
	High	327,231

Table 22 shows that Thurrock has a large surplus in C&D recycling capacity, with between 327,000 and 474,000 tonnes of spare capacity across the scenarios. This reflects the very high operational throughput of facilities capable of handling inert and construction materials, particularly physical treatment sites and MRFs configured for glass, aggregates and soil-based feedstocks.

This result confirms that C&D recycling is well matched to the types of facilities that normally handle it and that C&D material has multiple possible treatment routes and is unlikely to produce a capacity gap. The key is not capacity, but ensuring material continues to be diverted from landfill in line with the hierarchy.

6.3.4 C&D Recovery

Table 23 compares projected C&D recovery requirements with the combined capacity of the EfW (wood) facility and deposit-to-land recovery routes.

Table 23: Comparison of forecast C&D recovery arisings and available recovery capacity by facility type in 2044

Waste arising or capacity type	Recycling scenario	Quantity (tonnes)
C&D	Low recycling (1% recovery)	6,382
	Medium recycling (5% recovery)	31,912
	High recycling (10% recovery)	63,823
EfW capacity	46,410	
Deposit of waste to land capacity	581,959	
C&D total recovery capacity	628,369	
Net difference	Low	621,987
	Medium	596,457
	High	564,546

Table 23 shows a very large surplus of C&D recovery capacity. Under all recycling scenarios, Thurrock retains at least 560,000 tonnes of spare recovery capacity, largely due to the substantial deposit-to-land capacity available and the ability of the EfW to accept a proportion of C&D wood.

This illustrates how differently C&D behaves compared with HIC waste under the dual-methodology approach. At the treatment-type level, recovery capacity appeared tight for residual wastes; however, the facility-specific breakdown shows that the recovery pathways for inert and C&D materials are significantly more flexible and abundant.

The gap analysis confirms that C&D recovery will not be a limiting factor for the borough, and Thurrock's inert recovery infrastructure is well placed to accommodate growth, including that from major construction projects.

6.4 Conclusions

The analysis undertaken demonstrates that Thurrock is well positioned to meet future recycling needs. Even under scenarios of significant growth in waste arisings, the borough's existing recycling infrastructure provides ample capacity to manage projected volumes. This surplus is particularly notable for C&I and C&D waste streams, which together account for most of the recycling demand. However, as national policies such as Simpler Recycling and the DRS are implemented, the composition of waste streams may shift, requiring ongoing attention to the balance of facility types and their operational focus.

A specific nuance within the recycling capacity relates to the classification of several Thurrock facilities as “physical treatment” or “physical-chemical treatment” sites. Although these sites contribute substantially to the borough’s overall recycling tonnage, primarily by processing wood waste, oils, sludges, aggregates, soils and mineral-based C&D wastes, they do not provide composting or AD capacity. None of the facilities currently operating in Thurrock are capable of treating source-segregated food waste or other biodegradable municipal waste. As a result, despite strong headline recycling capacity, the borough has no in-borough biological treatment infrastructure, and all food waste continues to be exported to an AD plant outside Thurrock under existing long-term contractual arrangements. This remains an important strategic consideration as separate food-waste collections become mandatory under Simpler Recycling in 2026.

For energy recovery, the outlook is more challenging. Under all three recycling scenarios, Thurrock’s existing recovery capacity is not sufficient to manage projected HIC residual waste. The facility-specific analysis confirms that this deficit relates almost entirely to household and commercial residual waste: while recovery capacity for inert C&D materials is more than adequate, owing to large deposit-to-land operations, the borough has insufficient capacity for non-recyclable HIC waste. Improving recycling rates will help reduce this pressure but cannot eliminate the deficit. The long-term contract with Cory provides near-term security for MSW residual waste treatment, but it does not mitigate the wider shortfall driven by forecasted C&I growth. The forthcoming Viridor Thameside ERF will increase the resilience of the regional EfW network, although Thurrock does not currently intend to use this facility.

Landfill capacity for non-hazardous waste, specifically C&D waste residues, is projected to remain more than adequate throughout the plan period. The available landfill void capacity far exceeds forecast demand, even in scenarios with lower recycling and recovery rates. Nevertheless, Thurrock’s strategic aim is to minimise landfill use, reserving it as a last resort for waste streams that cannot be otherwise managed.

Hazardous waste presents a clear challenge. By 2044, Thurrock is expected to face a shortfall in hazardous waste treatment capacity. This gap will require either the development of new local facilities or the establishment of secure arrangements with neighbouring authorities and specialist operators to ensure safe and compliant management of hazardous waste.

6.5 Implications for the Local Plan

Considering these findings, the Local Plan should prioritise continued improvements in recycling. Achieving higher recycling rates will be essential to keeping residual waste volumes within the limits of existing energy recovery capacity and maintaining Thurrock’s progress toward self-sufficiency in waste management. However, the facility-specific assessment shows that a significant proportion of Thurrock’s recycling capacity is provided by physical treatment facilities that manage wood, oils, aggregates, soils and other non-putrescible materials. As none of these sites provide composting or AD capacity, the borough currently has no local treatment route for food waste, and all separately collected organic waste must continue to be exported to out-of-borough AD facilities. The Local Plan should therefore recognise the strategic need either to maintain secure out-of-borough treatment arrangements or to explore future opportunities for in-borough biological treatment capacity.

The Local Plan should also ensure that energy recovery infrastructure remains resilient and adaptable, especially as business activity and associated waste generation grow. Thurrock’s recovery shortfall is driven almost entirely by HIC residual waste, while C&D recovery capacity is more than sufficient. This means that local policy interventions, such as reviewing contractual arrangements, exploring additional EfW capacity options and supporting measures to reduce business waste, will be essential to managing residual tonnages and reducing reliance on out-of-borough facilities.

For hazardous waste, the Local Plan must address the anticipated capacity gap by considering options for new local treatment facilities or formalising partnerships with out-of-borough providers. Ongoing monitoring of hazardous waste trends and proactive engagement with regional stakeholders will be critical to safeguarding public health and environmental standards.

Finally, while landfill capacity is not a constraint for C&D waste, the Local Plan should reinforce Thurrock’s commitment to the waste hierarchy by promoting waste reduction, reuse, recycling and recovery as the preferred management routes, reserving landfill for unavoidable wastes only.

7. Waste imports and exports

7.1 Overview

Waste does not always stay within the authority area or even the region where it is generated, which adds uncertainty to planning for its management.

Some WPAs may handle more waste than they produce, and the level of inter-authority movement can vary significantly from year to year due to new site developments, changes in collection services or commercial decisions. Not all waste can be managed within the WPA where it arises because of contractual arrangements, operational networks, capacity limitations, and geographical factors. There will always be some movement of waste in and out of WPAs, which is why the principle of aiming for self-sufficiency is applied.

7.1.1 Self-sufficiency and proximity principles

Self-sufficiency is a principle used in waste planning to determine how much capacity should be provided within each council or county. It reflects the polluter pays principle, meaning the area that generates the waste should take responsibility for managing it. Waste does not respect administrative boundaries, so there is no expectation that every tonne produced in Thurrock must be managed locally. Instead, the aim is to achieve an overall balance, ensuring Thurrock has enough capacity to handle an amount of waste equivalent to what is forecast to arise during the plan period.

To assess Thurrock's position on self-sufficiency, the available capacity within the borough is compared against projected requirements. This helps identify any gaps in provision. The proximity principle also applies, meaning waste should be managed at one of the nearest suitable facilities, which may be outside Thurrock.

The Localism Act (2011) places a legal duty on local planning authorities, county councils and other prescribed bodies to engage constructively and actively on strategic matters, known as the 'Duty to Co-operate'. The NPPG highlights that:

"Waste is a strategic issue which can be addressed effectively through close co-operation between waste planning authorities and public bodies to ensure a suitable and sustainable network of waste management facilities is in place.".

Thurrock's approach is to plan for future needs by working towards self-sufficiency, ensuring that the borough has enough waste management capacity to deal with the equivalent of its own waste arisings. This includes providing a balanced mix of facilities so that waste can be managed sustainably wherever possible.

Thurrock's approach to self-sufficiency is best expressed as seeking an appropriate balance between managing waste arisings within the borough and recognising the practical role of waste cross-boundary moments. Waste flows are influenced by contractual arrangements, market conditions and the availability of specialist waste treatment facilities, and it is recognised that waste management operates across administrative boundaries. In practice, some waste will continue to be managed outside the borough where this represents the most effective and sustainable option. The NPPG recognises that assessing waste management needs requires an understanding of local waste arisings, including imports and exports. Certain waste streams need specialist waste treatment facilities, and long-term arrangements can result in waste being managed across different administrative areas.

7.2 Methodology

The most reliable source for tracking waste movements is the WDI, which classifies waste into categories such as Household, Industrial and Commercial (HIC), Inert/Construction and Demolition (Inert/C&D), and Hazardous. For this assessment, LACW and C&I waste have been grouped together under HIC rather than separated.

Waste movements were analysed using WDI 2024 data, covering all waste received at facilities within Thurrock (imports) and all waste sent to other WPAs from Thurrock (exports).

For imports and exports, the dataset includes all waste and facility types reported in the WDI, except waste transfer stations, to capture all origins.

This method differs from that used for arisings, forecasts, and capacity gap analysis, so figures should not be directly compared.

The WDI provides details of the origin of waste received at permitted facilities, which helps estimate movements in and out of Thurrock. However, it does not give a complete picture because:

- Operators are not required to record origin, so this field is sometimes left blank.
- Where origin is recorded, it is usually at WPA or local authority level; if unknown, “Not Codeable” is used, and where possible, attributed to a region.
- The WDI excludes waste sent to facilities exempt from environmental permitting.

7.3 Results

Analysis of the 2024 data shows that Thurrock is both a significant exporter and importer of waste, with complex cross-boundary flows reflecting contractual arrangements, facility locations and regional waste management needs.

7.3.1 Total waste exports

In 2024, Thurrock produced approximately 335,411 tonnes of waste, of which only 51,187 tonnes (about 18%) was managed within the borough itself. The remaining 82% (over 284,000 tonnes) was exported to facilities outside Thurrock. This pattern highlights Thurrock’s reliance on out-of-borough waste management infrastructure for the treatment and disposal of its own waste.

The principal destinations for Thurrock’s exported waste are neighbouring and regional authorities, with the largest shares going to Havering (111,856 tonnes), Bexley (35,407 tonnes), Rotherham (32,516 tonnes), Kent (29,827 tonnes) and Barking & Dagenham (15,559 tonnes). These waste flows are closely aligned with Thurrock’s contractual arrangements such as residual municipal waste is sent to Cory’s EfW facility in Belvedere under a long-term contract.

Figure 14 illustrates the distribution of waste exported from Thurrock to other sub-regions in 2024, showing that the majority of Thurrock-origin waste is managed outside the borough. Neighbouring sub-regions are shown in teal (deep blue-green) colour on the right side of the figure.

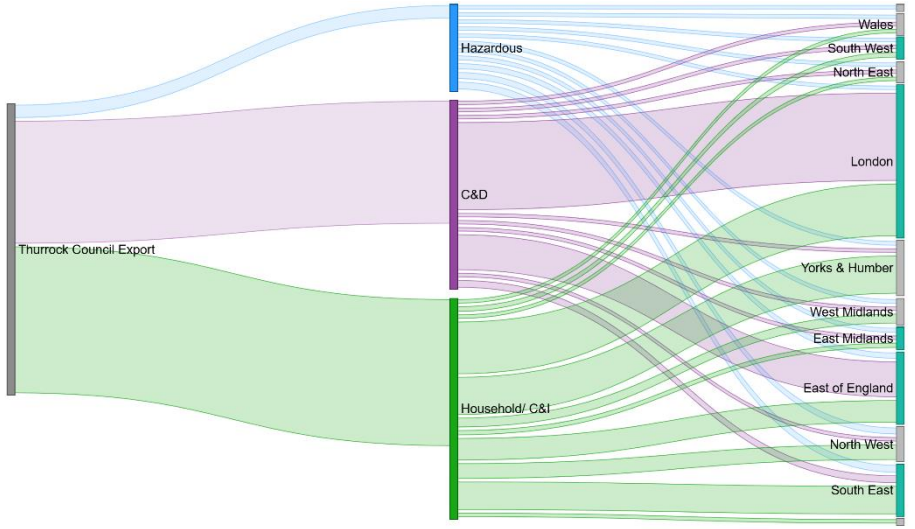

Figure 14: Total waste exported from Thurrock in 2024

Figure 15, shown on the next page, shows a heat map, to visually represent where the waste generated in Thurrock is exported to for treatment.

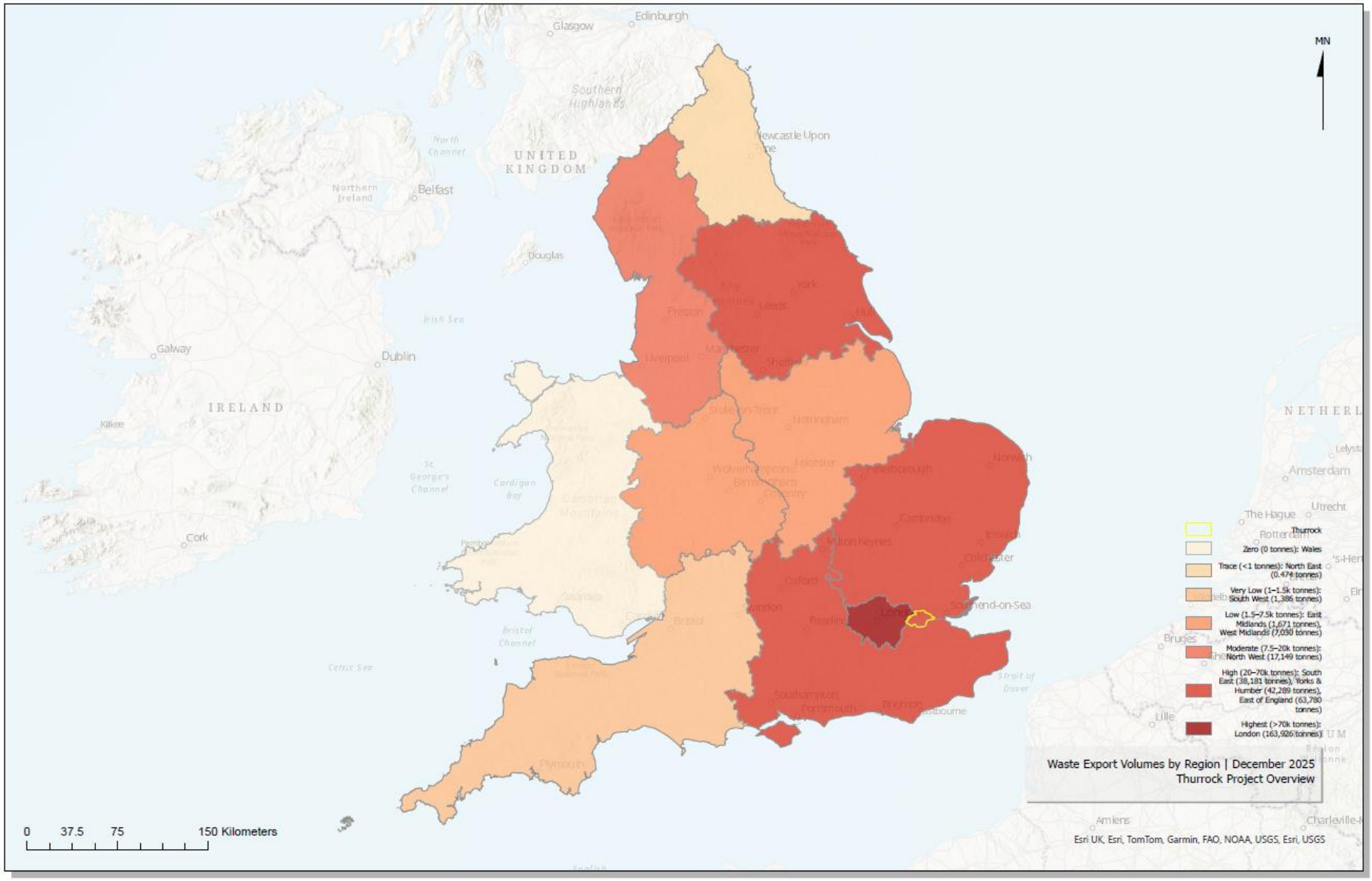

Figure 15: Heat map for waste exports from Thurrock, 2024

7.3.2 Waste streams exported

Thurrock exports over 284,000 tonnes of waste, despite having a range of permitted facilities within the borough to deal with arisings.

The largest outbound waste type is soil and stones (EWC 17 05 04), with over 58,000 tonnes exported in 2024. The destination of this material is split between inert landfill and physical treatment facilities. This would seem to indicate a lack of local inert landfill capacity and the limitations of existing treatment facilities to manage this waste stream. Linford landfill is currently the only operational inert landfill in Thurrock. Its remaining void capacity is estimated by the Environment Agency at 74,000 cubic metres (approximately 111,000 tonnes) in 2024, which significantly limits the amount that can be managed locally in the coming years. As a result, a large proportion of soils and stones will need to continue being exported to regional inert landfill sites or specialist treatment facilities.

Another major exported stream is mixed municipal waste (EWC 20 03 01), amounting to 46,030 tonnes sent to municipal waste incinerators. Thurrock does not currently host a residual MSW-capable EfW facility and therefore relies on its long-term contractual arrangement with Cory's Riverside EfW. Thurrock's only EfW plant, Tilbury Green Power, is a biomass facility designed specifically to combust processed waste wood fuel, not mixed municipal waste. As a result, residual household waste must continue to be exported for treatment outside the borough.

Over 55,000 tonnes of waste wood (EWC 19 12 07) are exported from Thurrock for energy recovery or physical treatment, despite the area having a dedicated wood-fuel EfW plant. This may be due to operational limits at Tilbury Green Power, which can only use certain types of clean, processed biomass. Local wood may be mixed or contaminated or lack proper pre-processing. As Thurrock does not have enough pre-processing facilities, only selected waste meets the plant's requirements; the rest goes to out-of-borough processors or other energy-recovery outlets based on contracts or facility capabilities.

Additional outbound streams include concrete, bricks, tiles and ceramics (EWC 17 01 07) and pre-mixed non-hazardous residues (EWC 19 02 03). These are exported either for specialist physical treatment or disposal, depending on their composition and contamination levels.

This demonstrates that while Thurrock has considerable waste management infrastructure, many of the borough's highest-volume exports could, in principle, be treated locally if targeted capacity gaps were addressed, particularly in inert waste management, pre-processing of wood waste and non-hazardous residual treatment.

A further factor influencing Thurrock's waste movements is the economic framework within which waste operators and waste disposal authorities' function. Waste flows are rarely driven solely by geographic proximity or available capacity; instead, they are shaped by commercial incentives, gate fees, market competition and long-term contractual arrangements. Treatment costs vary significantly between facility types and regions, meaning operators frequently select destinations that offer the most favourable financial terms rather than those closest to the point of origin. For example, lower gate fees at out-of-borough soil treatment centres, EfW facilities or C&D processors can make exporting waste more economically attractive than using available capacity within Thurrock.

These commercial drivers help to explain instances where waste types, such as wood waste or inert materials, are exported even when local facilities exist.

7.3.3 Total waste imports

Thurrock's permitted waste facilities manage a substantial volume of waste originating from outside the borough. In 2024, the total amount of waste received and managed in Thurrock (excluding transfer stations) originating from outside of Thurrock was approximately 3.36 million tonnes.

The largest sources of imported waste include the South East (804,955 tonnes), Essex (705,859 tonnes) and London (WPA not codeable, 514,155 tonnes), as well as significant contributions from specific London boroughs such as Bexley, Barking & Dagenham, Enfield, and Greenwich.

This pattern reflects Thurrock's longstanding role as a regional hub for waste management, facilitated by its strategic location, transport links and the presence of large-scale permitted waste treatment facilities.

Figure 16, shown on the next page, shows a heat map, to visually represent where most of the waste into Thurrock comes from.

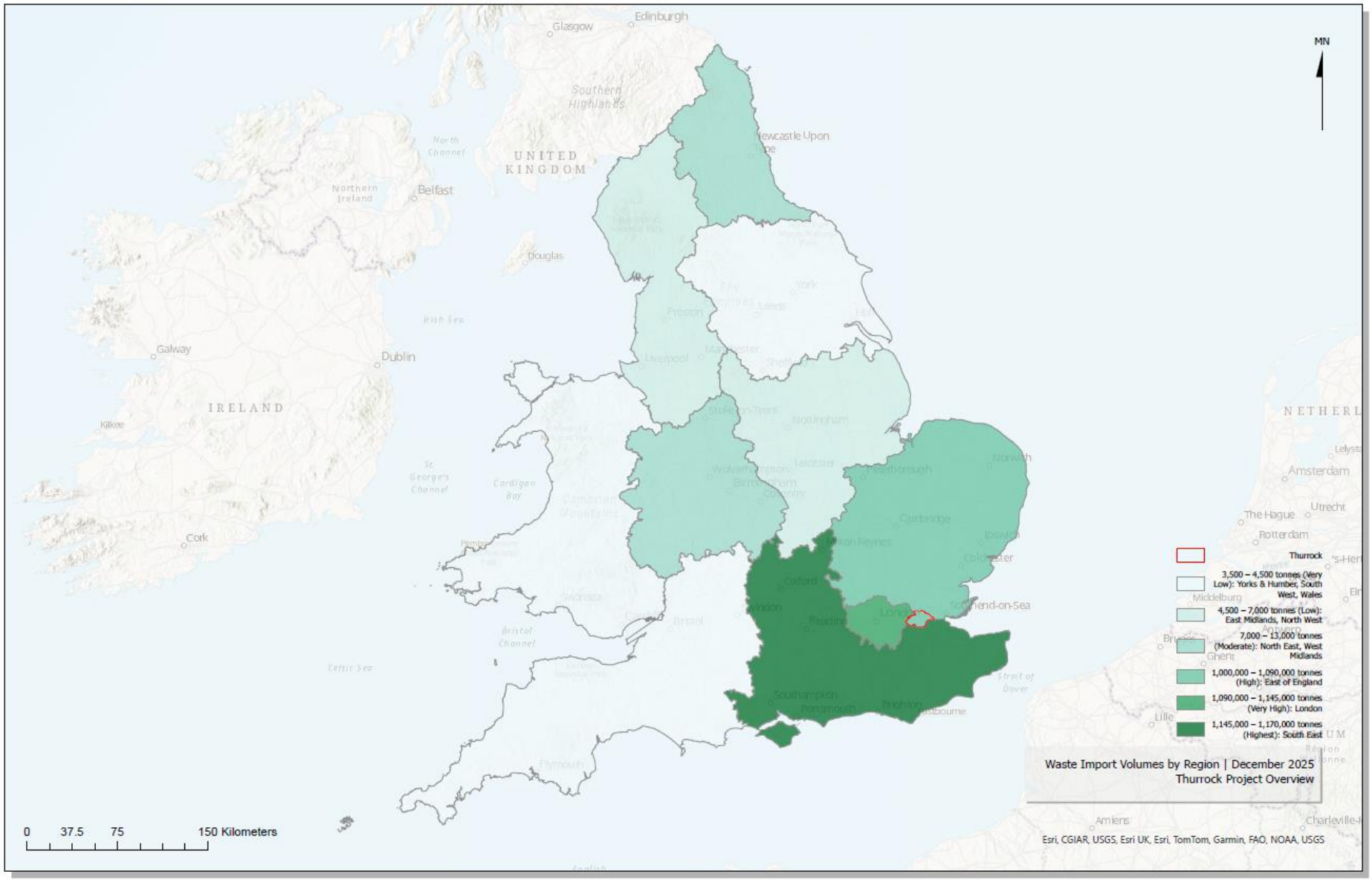

Figure 16: Heat map for waste imports to Thurrock, 2024

Figure 17 illustrates the distribution of waste imported into Thurrock from other sub-regions in 2024. Neighbouring sub-regions are shown in teal (deep blue-green) colour on the right side of the figure.

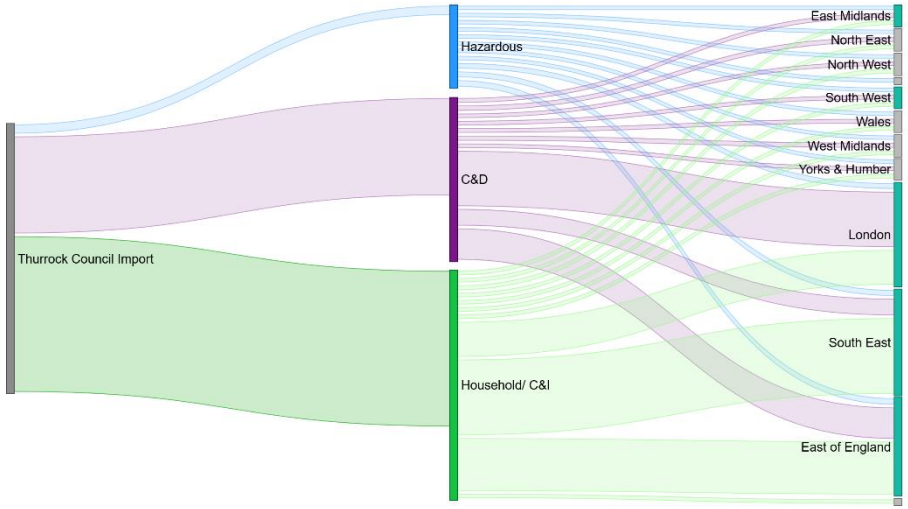

Figure 17: Total waste imported into Thurrock in 2024

7.4 Imports and exports by waste type

7.4.1 HIC

In 2024, Thurrock imported 2,066,275 tonnes of HIC waste and exported 177,008 tonnes. Imports were dominated by flows from the South East, London, and the East of England, reflecting extensive cross-boundary management of recyclables, residual municipal waste, and commercial waste streams.

Exports consisted primarily of residual MSW and elements of the C&I waste stream sent to EfW facilities and reprocessors outside Thurrock.

The scale of HIC movements illustrates both Thurrock's role as a hub for regional waste management and its dependence on out-of-borough recovery and disposal capacity for its own municipal and business wastes. It also shows the significance of long-term contracts in shaping the direction of these flows, particularly for MSW.

Figure 18 compares inbound and outbound Household and C&I waste movements, demonstrating that Thurrock imports substantially more HIC waste than it exports.

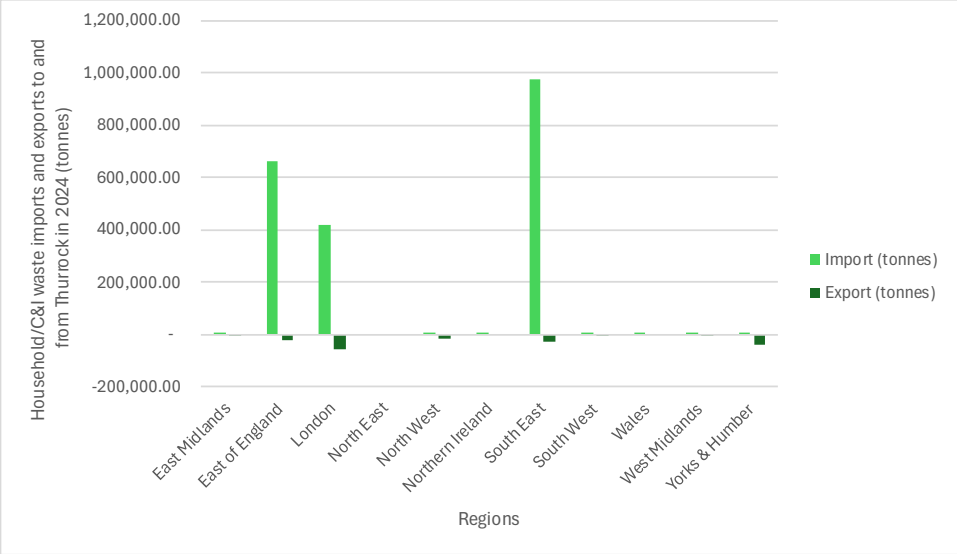

Figure 18: Graph showing imports and exports of household/C&I waste to and from Thurrock in 2024

7.4.2 C&D

In 2024, Thurrock imported approximately 1,267,286 tonnes of C&D waste and exported 147,344 tonnes. Imported C&D waste comes largely from London, the East of England and the South East, reflecting the concentration of large-scale construction and excavation projects across the Thames Gateway and Greater London.

Figure 19 compares inbound and outbound C&D waste movements.

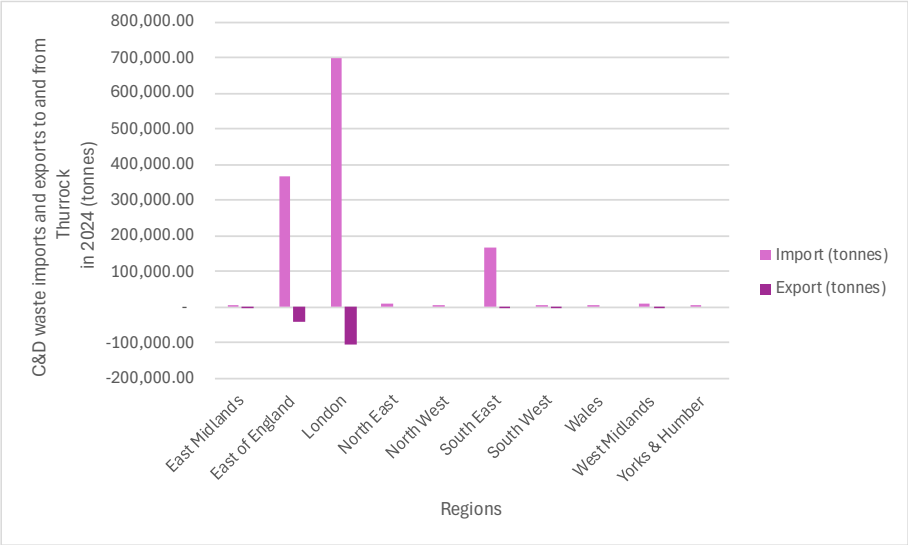

Figure 19: Graph showing imports and exports of C&D waste to and from Thurrock in 2024

7.4.3 Hazardous

Hazardous waste movements are smaller in scale but are significant due to the requirement for specialist treatment.

In 2024, Thurrock imported 66,687 tonnes of hazardous waste and exported 11,058 tonnes. Imports were predominantly from the East of England, London and the South East.

Exports of hazardous waste reflect the limited on-site capacity for certain specialist treatments and the need to send some hazardous waste types, such as complex chemical wastes, asbestos, or specific industrial residues, to regional or national facilities with appropriate capabilities. The relatively small scale of exports compared to imports reflects Thurrock's position as a location for specialist hazardous waste treatment but also impacts the forecast capacity gap identified in Chapter 6, where local treatment provision is expected to fall short of future hazardous arisings.

Figure 20 compares inbound and outbound hazardous waste movements.

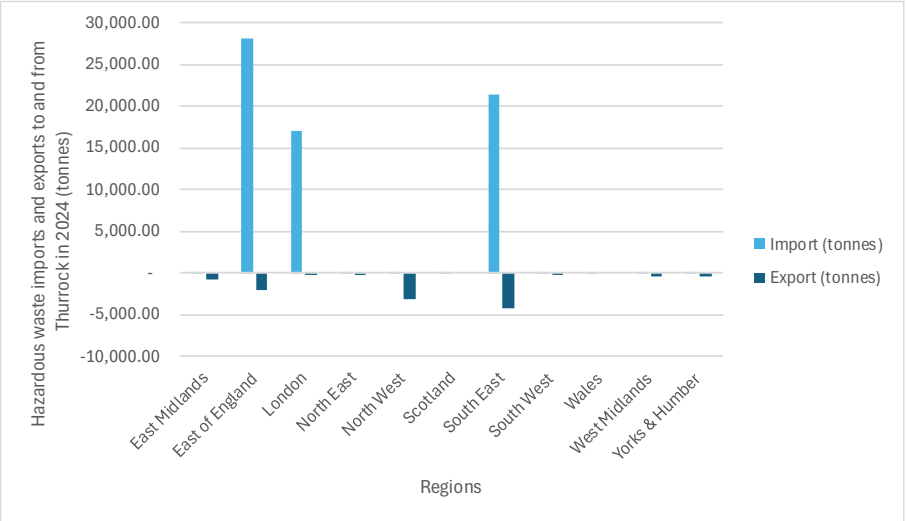

Figure 20: Graph showing imports and exports of Hazardous waste to and from Thurrock in 2024

7.5 Summary

Although Thurrock aims for self-sufficiency - meaning the borough should provide enough waste management capacity to handle an amount of waste equivalent to what it generates - it currently exports the majority of its own waste for treatment elsewhere. Of all the waste received at facilities in Thurrock, only about 1.5% of this total originated from within Thurrock itself, with the remaining 98.5% imported from other local authorities and regions. This reflects the practical realities of waste management, where contractual arrangements, geographical factors, gate fees and facility capabilities often drive waste movements more strongly than administrative boundaries.

There are also several waste streams that Thurrock exports despite having facilities that could, in theory, manage them locally, such as large quantities of soil and stones and waste wood.

Therefore, while Thurrock aims to provide sufficient capacity to manage the equivalent of its own waste arisings, in practice, the borough both exports most of its own waste and imports large volumes from elsewhere. This

pattern reflects both the borough's strategic location and the commercial structure of the waste market. While Thurrock's current infrastructure provides ample capacity for recycling and landfill void capacity, the borough remains dependent on out-of-borough facilities for key waste streams, and its own facilities are heavily used by waste from outside the borough. This is consistent the duty-to-cooperate, which recognise that waste will inevitably cross administrative boundaries due to contractual, operational, and geographical factors.

Although the proximity principle states that waste should be managed at the nearest suitable facility, Thurrock continues to send significant volumes of waste to facilities located much further away. The current pattern of long-distance waste movements is therefore not fully aligned with the proximity principle and highlights the need for targeted investment in local infrastructure to reduce reliance on distant facilities.

The data highlights the need for ongoing monitoring of cross-boundary flows and for flexibility in planning to accommodate changes in contractual arrangements, facility availability and policy drivers such as Simpler Recycling and DRS.

8. Future waste management facilities

8.1 Overview

The assessment of Thurrock's waste management capacity gap, comparing projected waste arisings to available treatment, recycling, and disposal capacity, has been undertaken using only the current (2024) operational facilities and infrastructure. This approach provides a conservative estimate of the capacity gap, ensuring that any identified shortfall reflects the infrastructure that is already in place and available to manage waste within the borough.

This analysis does not include any additional capacity that may be delivered by facilities which are currently proposed, have planning permission but are not yet operational, or are otherwise in the development pipeline. Excluding these future facilities from the capacity gap calculation ensures that the assessment is robust and not reliant on projects that may be subject to change, delay or cancellation.

However, to provide a comprehensive overview and to inform longer-term planning, this section lists and describes major waste management facilities that are proposed or have received planning approval but are not yet operational. Including this information offers valuable context for stakeholders and decision-makers, illustrating how Thurrock's waste management infrastructure could evolve over the plan period to 2044. These future facilities, if delivered, have the potential to significantly alter the borough's waste management capacity, reduce or eliminate identified gaps, and support the achievement of self-sufficiency and policy targets.

8.2 Proposed and approved facilities

Current planning applications and variations to existing permissions have been reviewed.

Proposed major waste management facilities with a submitted/approved planning application which could potentially provide additional waste management capacity between now and the end of the plan period are listed here:

- Asphalt Plant and Road Planings Recycling Facility (Burnley Road, West Thurrock). Application 24/01305/CONDC (Dec 2024): Approval of details for a facility including asphalt production and recycling of road planings.
- Landfill Gas Engine Expansion (South Ockendon Quarry and Landfill Site). Application 22/00232/NMA (2022): Amendment to expand landfill gas engine capacity, supporting energy recovery from landfill waste.

No other major waste treatment applications were identified, but regular monitoring of Thurrock's planning portal is recommended.

There is currently one EfW facility with planning permission in construction. The Thameside Energy Recovery Facility (Viridor) facility, located at the Port of Tilbury, will process up to 350,000 tonnes of residual waste annually, generating approximately 40MWe of electricity, enough to power around 93,000 homes. It represents a major investment in modern waste infrastructure and is part of Viridor's strategy to expand its UK fleet of Energy Recovery Facilities (ERFs). The plant will operate as a high-efficiency, single-line facility, with potential for combined heat and power (CHP) integration and future carbon capture and storage (CCS) capabilities, aligning with the UK Government's decarbonisation targets for 2035.

However, Thurrock Council confirmed that it does not intend to use any capacity from the Viridor Tilbury ERF currently under construction. The Council's disposal strategy, both now and for the foreseeable future, is based on the long-term contract with Cory for energy recovery. There are no current arrangements or future plans to seek capacity from the Viridor facility, and Thurrock's waste management approach will continue to rely on the Cory EfW contract as its primary solution for residual waste treatment.

8.3 Site allocations

No new waste management or waste treatment site allocations have been identified through Thurrock Council's Call for Sites process, and no waste-related allocations are currently proposed in the draft Local Plan. As a result, there are no forthcoming sites identified that would contribute additional waste management capacity over the plan period.

Any future opportunities for new or expanded infrastructure would therefore need to be brought forward through separate planning applications rather than through Local Plan allocations.

8.4 Implications

While new waste treatment facilities may enhance regional capacity, Thurrock's strategy is to maintain self-sufficiency through existing contracts and infrastructure, notably the Cory EfW arrangement. This approach aligns with Thurrock's commitment to the waste hierarchy, minimising reliance on landfill and prioritising recycling and recovery within the borough.

Ongoing monitoring of planning applications, infrastructure delivery and contractual arrangements will be essential to ensure the Local Plan remains robust and adaptable to changing circumstances.

It is recommended that Thurrock continue to monitor the progress of proposed facilities and review their relevance to Thurrock's strategic objectives. Thurrock should also maintain clear communication with stakeholders regarding the borough's disposal strategy and infrastructure commitments and update the Local Plan as new information on site allocations and facility operations becomes available.

9. Conclusions and recommendations

9.1 Conclusions

This waste arisings and capacity assessment provides a robust evidence base for Thurrock Council's Local Plan, evaluating current and projected waste arisings, existing management capacity, and the implication for future infrastructure needs up to 2044. The analysis covers all principal waste streams including MSW, C&I waste, C&D waste, and hazardous waste using the latest available data and policy context.

Key conclusions are as follows:

- Thurrock is well positioned to meet future recycling needs, with ample capacity under all scenarios for MSW, C&I and C&D materials. This surplus is particularly strong for C&I and C&D waste, which represent the bulk of recycling demand. However, the facility-level analysis highlights that much of Thurrock's "recycling" capacity relates to physical treatment of wood, soils, aggregates and other non-putrescible materials, rather than organic waste. Crucially, none of these sites provide composting or AD capacity, meaning Thurrock has no in-borough capability to treat food waste. All separately collected food waste therefore continues to be managed at out-of-borough AD facilities under long-term contracts. The shift in waste composition expected under Simpler Recycling reinforces the need to monitor organic waste treatment provision closely.
- Energy recovery capacity is insufficient for HIC waste across all scenarios, even with high recycling performance. The high-level treatment analysis and facility-specific breakdown both show persistent deficits driven almost entirely by MSW and C&I residual waste. While Thurrock's long-term contract with Cory provides security for municipal residual waste, this does not address the broader shortfall associated with commercial waste growth. In contrast, the facility-level analysis shows that C&D recovery capacity is more than adequate, with a substantial surplus delivered through deposit-to-land recovery operations. The forthcoming Viridor Thameside ERF will strengthen regional capacity, although Thurrock Council does not currently intend to use it.
- Landfill capacity for non-hazardous waste, particularly C&D waste residues, is projected to remain more than adequate throughout the plan period. Available landfill capacity far exceeds forecast demand, even in scenarios with lower recycling and recovery rates. Nonetheless, Thurrock's strategic aim should remain to minimise landfill use, reserving it as a last resort.
- By 2044, Thurrock is expected to face a shortfall in hazardous waste treatment capacity, with projected arisings exceeding local treatment provision by approximately 12,000 tonnes. This gap will require either the development of new local facilities or secure arrangements with regional specialist operators.
- Thurrock is both a significant exporter and importer of waste, reflecting its role as a regional hub and the realities of contractual and operational arrangements. The borough exports most of its own waste for treatment elsewhere, while its facilities manage large volumes imported from other areas. This demonstrates the importance of ongoing regional cooperation and the principle of self-sufficiency. The Local Plan should articulate self-sufficiency as a direction of travel, based on providing sufficient capacity to manage an equivalent amount of waste to that generated in Thurrock, while maintaining practical and commercially viable cross-boundary arrangements.
- The assessment adopts a conservative approach by excluding capacity from facilities not yet operational. However, several major projects are in the pipeline, and their delivery could significantly alter the borough's waste management landscape.

9.2 Recommendations

Based on the above conclusions, the following recommendations are made to inform the Local Plan and Thurrock's waste management strategy:

- Prioritise higher recycling rates, particularly for C&I waste, to reduce pressure on recovery infrastructure and limit reliance on out-of-borough EfW capacity.

- Support the implementation of Simpler Recycling, DRS and EPR reforms, and monitor their impacts on materials composition and collection tonnages.
- Given the absence of local composting or AD capacity, the Local Plan should recognise the need to maintain secure out-of-borough arrangements for food-waste treatment or explore options for future in-borough organic waste management infrastructure.
- Ensure energy recovery infrastructure remains resilient and adaptable, recognising that the recovery shortfall relates specifically to MSW and C&I residual waste. Review long-term contractual arrangements, explore options for increased EfW access, and support initiatives that reduce residual waste generation, especially in the commercial sector. Maintain awareness of regional recovery developments such as the Viridor Thameside ERF.
- Investigate options for new local hazardous waste treatment facilities or formalise partnerships with regional operators. Monitor hazardous waste trends and engage proactively with stakeholders to ensure safe and compliant management.
- Reinforce the commitment to the waste hierarchy by promoting waste prevention, reuse, recycling and recovery as preferred management routes, reserving landfill for unavoidable wastes only. Continue to monitor landfill void capacity availability and operational constraints.
- Maintain flexibility in planning to accommodate changes in waste flows, contractual arrangements, and policy drivers. Continue to engage with regional partners to uphold the principle of self-sufficiency and address any capacity shortfalls collaboratively.
- Track the progress of proposed and approved waste management facilities, updating the Local Plan as new capacity becomes available. Ensure clear communication with stakeholders regarding Thurrock's disposal strategy and infrastructure commitments.

In summary, Thurrock is well placed to meet its future waste management needs, particularly for recycling and C&D waste, provided that recycling rates continue to improve and residual waste is effectively managed. The Local Plan should reinforce the borough's commitment to the waste hierarchy, self-sufficiency and regional cooperation, ensuring that Thurrock remains resilient, sustainable and compliant with national and local policy objectives.

These conclusions and recommendations represent plausible scenario ranges rather than definitive forecasts. Their purpose is to show the scale and direction of potential change, acknowledging that waste generation is sensitive to wider economic, behavioural and policy shifts.

Capacity should be viewed dynamically: permitted limits, operational capacity and contractual arrangements collectively determine whether capacity can be deployed effectively. The headline gaps or surpluses therefore express resilience, not absolute constraints.

9.3 Monitoring

Given ongoing changes to policy, waste composition, market behaviour and infrastructure, Thurrock should undertake a review of waste arisings and capacity every 2-3 years. An early refresh should be triggered where:

- National policy materially alters waste volumes or collection systems;
- Major new waste infrastructure is commissioned or closed; or
- Significant local development results in unexpected changes in projected waste arisings.

This ensures the evidence base remains current and proportionate across the plan period.

Appendix A

Policy Review

A.1 Policy Review

A.1.1 EU Legislation

Waste management in the UK has long been shaped by EU policy, which focuses on protecting health, supporting a circular economy, and setting recycling and landfill targets. Despite leaving the EU, the UK has adopted these policies into its own laws, so they remain relevant.

A.1.1.1 Waste Framework Directive (2008/98/EC)

The Waste Framework Directive is the cornerstone of European waste policy, establishing the waste hierarchy as the guiding principle for all waste management activities. It requires member states to prioritise waste prevention, reuse, recycling, and recovery, with disposal as a last resort. The Directive also mandates the protection of human health and the environment, the principles of proximity and self-sufficiency, and the preparation of Waste Management Plans. Although the UK has left the EU, the core principles and requirements of the Directive have been transposed into UK law and continue to shape national and local waste policy.

A.1.1.2 Landfill Directive (1999/31/EC, as amended by Directive (EU) 2018/850)

The Landfill Directive sets strict standards for the location, design, operation, and closure of landfill sites, aiming to prevent or reduce negative impacts on the environment and human health. It requires member states to minimise the amount of waste sent to landfill, with a target that by 2035, no more than 10% of municipal waste should be landfilled. The Directive also promotes the recovery of valuable materials and the use of best available techniques in landfill management.

A.1.2 National Policy

A.1.2.1 National Planning Policy for Waste (NPPW, 2014)

This is the principal national framework for waste planning. It requires plan-makers to use robust data when forecasting waste arisings, identify sufficient capacity to manage these arisings, support the waste hierarchy, and promote proximity and self-sufficiency in waste treatment facilities.

A.1.2.2 National Planning Policy Framework (NPPF, Dec 2024)

JE to update this section as a new NPFP was released on 16th December

The NPPF is the overarching planning policy for England. It includes environmental objectives such as prudent resource use, minimising pollution, and aligns with waste policies including those in the NPPW.

A.1.2.3 National Planning Practice Guidance: Waste (NPPG, 2015)

Provides technical guidance on implementing waste planning policy, including forecasting arisings, capacity assessment, and applying proximity and self-sufficiency principles.

A.1.2.4 Waste (England and Wales) Regulations 2011 (as amended)

Sets statutory requirements for waste management regulations, including the Waste Management Plan for England, regular review cycles, and detailed waste-related obligations.

A.1.2.5 Our Waste, Our Resources: A Strategy for England (2018)

Outlines England's shift to a circular economy, with goals to double resource productivity and eliminate avoidable waste, including plastics, by 2050.

A.1.2.6 Waste Management Plan for England (2021)

An updated synthesis of national waste policy, it consolidates existing policy frameworks, sets out municipal recycling targets (65% by 2035) and aims to reduce landfill to 10% of waste arisings by 2035.

A.1.2.7 Environmental Targets (Residual Waste) Regulations 2023

Imposes a target to limit residual waste to 287 kg per person annually by 2042, with mandatory reporting and monitoring arrangements.

A.1.3 London Policy

A.1.3.1 London Plan (2021)

Promotes self-sufficiency and full management of London's waste within its boundaries by 2026, supports the development of recycling and energy-recovery infrastructure, and mandates waste management considerations via the waste hierarchy.

A.1.3.2 City Plan 2040 (March 2024)

The City of London's planning framework emphasizes consistent application of national and London waste policies, securing safeguarding for wharves, enhancing circular economy initiatives, and boosting recycling and recovery capacity in the Square Mile.

A.1.4 Local Policy

A.1.4.1 Waste Strategy for Essex 2024-2054 (adopted July 2024)

The Essex County Waste Strategy sets out a comprehensive 30-year plan to manage household and business waste across the county. Its primary aim is to reduce environmental impact, support climate goals, and deliver effective waste management solutions. The strategy is built around the principles of the waste hierarchy, prioritizing waste prevention, reuse, recycling, and energy recovery before disposal, to protect the environment and conserve resources.

The vision for Essex focuses on four key priorities: moving towards a circular economy where resources are used efficiently and products are designed to be durable, repairable, and recyclable; applying the waste hierarchy by designing services that prioritize reduction, reuse, and recycling; collaborating and innovating with government, businesses, and communities to create a sustainable waste system; and educating and engaging residents and businesses to reduce waste and improve recycling practices.

To achieve these ambitions, Essex has set out clear targets and milestones:

- 2026: Universal access to recycling services for plastics, paper, card, metal, glass, garden waste, and food waste.
- 2027: Access to plastic film recycling.
- 2030: End use of landfill.
- 2035: Reuse, recycle, or compost 65% of waste (aiming for 70%).
- 2042: Halve residual waste to 110kg per person annually.
- 2050: Achieve net zero greenhouse gas emissions.

The strategy is driven by several factors, including climate change, resource efficiency, legislative requirements, population growth, and the financial and environmental costs of landfill dependency.

Essex's population is expected to grow by 125,000 by 2030, reaching 1.6 million, while in 2023, 340,000 tonnes of waste were still sent to landfill. Although recycling rates have improved significantly, from 21% in 2001 to 50% in 2024, studies show that a considerable amount of recyclable material continues to be disposed of in residual waste bins, highlighting the need for further action.

Implementation will focus on preventing waste through sustainable product design and responsible consumption, promoting reuse via repair services, second-hand markets, and community initiatives, and boosting recycling by expanding services and educating residents on correct practices. Residual waste will be managed through energy-from-waste facilities incorporating heat recovery and carbon capture, utilization, and storage (CCUS) as a last resort.

The strategy acknowledges that progress may fluctuate due to the ambitious nature of these targets but emphasizes phased implementation and continuous improvement to achieve long-term goals.

A.1.4.2 Thurrock Council Municipal Waste Strategy for Thurrock 2021-2031 (updated July 2024)

Thurrock Council's Waste and Recycling Strategy outlines its vision, objectives, and measurable targets for managing municipal waste over the next decade. The strategy aligns with the UK Government's 25-Year Environment Plan and incorporates legislative changes such as Extended Producer Responsibility (EPR) and the Deposit Return Scheme (DRS).

As a unitary authority, Thurrock is responsible for both the collection and disposal of municipal solid waste. The overarching aim is to create a greener, more sustainable future for Thurrock by reducing waste, increasing recycling, and safeguarding natural resources through collaboration with residents, businesses, and the wider community.

Strategic objectives are as follows:

- Eliminate unnecessary single-use plastics and packaging - Thurrock aims to support the Government's 25-Year Environment Plan and WRAP's commitment to eliminate unnecessary SUP by 2024. Progress will be monitored through reductions in waste arisings and kilograms of waste produced per capita.
- Minimise waste generation and raise public awareness - the Council plans to establish a reuse partnership with local charities or community groups, enabling items brought to Household Waste Recycling Centres (HWRCs) to be repurposed. This may include redeveloping HWRCs to incorporate dedicated reuse facilities. Key performance indicators (KPIs) will include kilograms per head (recycling and residual), total waste arisings, tonnage reused, and budget impact reporting.
- Increase recycling rates to 50% by 2030 - actions include introducing separate food waste collections, reducing residual waste, ensuring compliance with the Environment Act 2021 and the Government's Simpler Recycling Plan, and improving recycling infrastructure for flats. Progress will be tracked via household recycling rates and HWRC performance.
- Ensure carbon-efficient waste collection and disposal - Thurrock will explore the feasibility of developing a local waste transfer station to improve operational efficiency and reduce transport emissions. Monitoring will include the proportion of waste sent to EfW facilities versus landfill, and carbon savings from reduced vehicle mileage.
- Achieve zero waste to landfill – This will be delivered through value-for-money contracts that avoid landfill disposal and resident education on the environmental impacts of landfill. Success will be measured by the percentage of municipal waste diverted from landfill.

A.1.4.3 Thurrock Core Strategy and Policies for Management of Development (as amended) (adopted January 2015)

The Thurrock Core Strategy, originally adopted in 2011 and amended in 2015, provides the planning framework for sustainable development within the borough. It includes a dedicated chapter on minerals and waste, which sets out thematic policies known as Core Strategy Thematic Policies (CSTPs). These policies establish Thurrock's approach to waste management and its role as a unitary authority responsible for planning an adequate supply of waste treatment and disposal facilities.

The overarching aim is to ensure Thurrock is self-sufficient in managing its own waste while contributing to the management of a reducing proportion of waste imported from London. This approach aligns with European and national legislation, emphasizing waste reduction at source and minimizing landfill disposal.

A.1.5 Guidance on imports and exports

A.1.5.1 East of England Waste Technical Advisory Body Memorandum of Understanding between the Waste Planning Authorities of the East of England (October 2023)

This Memorandum of Understanding (MoU) records how the East of England Waste Planning Authorities (including Thurrock) will cooperate on strategic waste planning in the absence of a formal regional planning tier.

It sets out the purpose, scope and spirit of collaboration, confirms the list of signatory WPAs (Cambridgeshire, Peterborough, Suffolk, Norfolk, Essex, Thurrock, Southend-on-Sea, Hertfordshire, Central Bedfordshire, Bedford and Luton), and clarifies that the MoU is not legally binding but underpins ongoing data-sharing, consistency of evidence, and constructive engagement on cross-boundary issues such as capacity shortfalls and self-sufficiency.

The agreement supports collaborative planning and minimises long-distance waste exports.

A.1.5.2 Draft Statement of Common Ground: East London Boroughs & Thurrock (v1.2, Jan 2025)

This draft Statement of Common Ground (SoCG) between the East London Boroughs (Barking & Dagenham, Havering, Newham, Redbridge) and Thurrock identifies shared geography and functional inter-relationships for waste management to 2041.

It sets out the intention to coordinate on strategic capacity, recognise mutual dependencies (imports to and exports from Thurrock and East London), and maintain ongoing engagement as the East London Joint Waste Plan (ELJWP) and Thurrock's Local Plan progress. The SoCG frames how data and agreements from both plan-making processes will be aligned and updated, providing a mechanism to evidence cooperation at examination.

A.1.5.3 Thurrock Response: East London Joint Waste Local Plan (ELJWLP) Regulation 18 (Sept 2024) – Draft

Thurrock's draft officer response to the ELJWP Regulation 18 consultation welcomes the sub-regional approach and raises targeted comments on cross-boundary landfill of inert excavation waste and the need for continued liaison, monitoring and transparent reporting on imports and exports. It flags that Thurrock is commissioning updated waste evidence for its new Local Plan and will share relevant outputs to inform the ELJWP's capacity position and any reliance on Thurrock's facilities. This early response set up the trajectory for stronger wording later included in ELJWP policy text around deposit to land and cooperation mechanisms.

A.1.5.4 Thurrock Response: ELJWP Regulation 19 (June 2025)

At Regulation 19, Thurrock's formal submission response recognises improvements since Regulation 18, notably the amendment to Policy JWP6 ("Deposit of waste on land") to reflect ongoing liaison with neighbours and monitoring of inert landfill.

The response reiterates that Thurrock's updated Local Plan evidence (this report) will provide the up-to-date position on capacity across the plan period and commits to sharing it to inform cross-boundary planning. The letter underscores Thurrock's willingness to cooperate while reserving a firm evidence-led stance on the extent to which external flows can be accepted in future.

A.1.5.5 A Joint Strategy for East London's Resources and Waste (2027-57, adopted 2022)

This strategy sets out a collaborative approach to resource and waste management across East London, with implications for cross-boundary waste movements and infrastructure planning.

A.1.5.6 Medway Council Municipal Waste Management Strategy 2005-2020 (adopted January 2006)

Medway's strategy provides context for waste management arrangements and cooperation with Thurrock, particularly regarding cross-boundary flows and capacity sharing.