

South Tyneside Council

Waste Capacity Study

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Waste Capacity Study

South Tyneside Council

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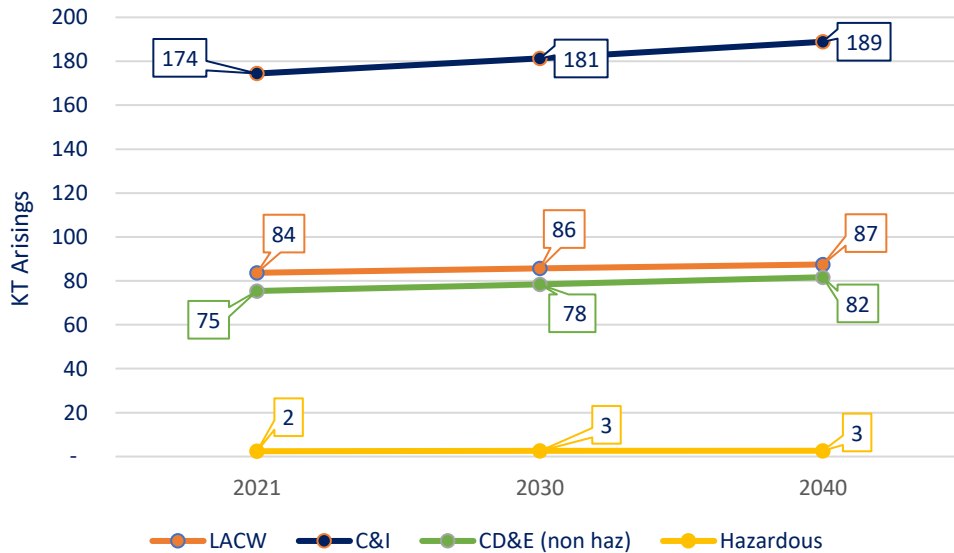
Our team combines broad and deep sustainability expertise with the commercial and operational capabilities it takes to conceive and deliver real change.

Executive Summary

South Tyneside Council commissioned Anthesis to undertake a waste capacity gap assessment for the authority, to provide robust supporting evidence for the emerging South Tyneside Local Plan.

Using the most recent publicly available datasets, the total amount of waste generated in South Tyneside in 2021 was estimated at 335,921 tonnes, broken down into the constituent waste streams - Local Authority Collected Waste (LACW), commercial and industrial (C&I), construction, demolition and excavation (CD&E) and hazardous waste - as shown in ES Figure 1.

ES Figure 1: Summary of Forecasted Waste Arisings in South Tyneside 2021, 2030 and 2040



These 2021 baseline figures were then used as the starting point for forecasting to 2040 (in line with the new Local Plan time horizon). Forecasting was done using key assumptions around waste growth and recycling performance. By 2040 there is forecast to be 189,000 tonnes of C&I waste, 87,000 tonnes of LACW, 82,000 tonnes of CD&E and 3,000 tonnes of hazardous waste arising in South Tyneside (ES Figure 1).

Existing and planned waste treatment capacity, both in South Tyneside and the wider North East region, was then identified and compared to the forecast arisings to establish South Tyneside's potential waste treatment capacity gap.

The analysis suggests that there is sufficient treatment capacity within South Tyneside over the Local Plan period (to 2040) for much of this waste, including recycling, reuse or composting of LACW and C&I waste, as well as CD&E waste. It should, however, be noted that South Tyneside does currently rely on significant recycling capacity in the wider North East region, most notably for household dry mixed recycling.

There is currently a significant capacity gap (85,000 tonnes in 2021) for residual LACW and C&I waste within South Tyneside, although there is significant existing capacity in the wider North East region.

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1 Introduction & Background

1.1 Background

South Tyneside Council commissioned Anthesis to undertake a waste capacity gap assessment for the authority, to provide robust supporting evidence for the emerging South Tyneside Local Plan.

This report for South Tyneside is underpinned by a waste model, which considers baseline waste arisings (2021) as well as forecasts to 2040 in line with the new Local Plan time horizon for the following waste streams:

- Local authority collected waste (LACW);
- Commercial and industrial waste (C&I);
- Construction, demolition and excavation waste (CD&E);
- Hazardous waste;
- Agricultural waste;
- Radioactive waste; and
- Waste water.

The model also includes existing and planned waste treatment capacity, thus allowing a ‘capacity gap’ profile to be generated – essentially the difference between the forecasted waste needing treatment, and the known facility capacity to deliver treatment. This resulting capacity gap is a material consideration in the context of planning for any additional treatment capacity in South Tyneside.

1.2 Scope of this Report

This report is structured as follows:

- **Section 1** (this section) provides background for the study.
- **Section 2** provides the planning policy context underpinning the evolution of waste capacity gap figures in South Tyneside. This includes an overview of national, regional, local and emerging legislation and policy relevant to waste planning in England.
- **Section 3** describes the methodology and results of the waste model.
- **Section 4** outlines additional cross-boundary considerations.
- **Section 5** draws a summary and conclusions.

2 Planning Policy Context

South Tyneside Council is currently developing a new Local Plan, an important document that will set out how the authority will meet the Borough's future social, economic and environmental needs. It will be used to assess all planning applications and development proposals.¹

In developing the Local Plan South Tyneside Council must comply with national, regional and local policies. With regards to waste, these are summarised below:

2.1 National Planning Policy for Waste

The National Planning Policy for Waste (NPPW)², published in 2014, sets out the Government's waste planning policies that all local planning authorities must have regard to when developing local waste plans. Local Plans should drive waste management up the waste hierarchy as per Figure 1.

The waste hierarchy ranks waste management options according to the best environmental outcome taking into consideration the lifecycle of the material and is therefore a key tool for waste plans to help address the climate emergency. The waste hierarchy gives top priority to preventing waste. When waste is created, it gives priority to preparing it for reuse, then recycling, then other recovery, and last of all disposal (i.e. landfill).

The NPPW is supplemented by the Planning Practice Guidance (PPG) section on waste which requires planning provision of new capacity and its spatial distribution to be "*based on robust analysis of best available data*".³

It also requires the identification of the need for waste management facilities in the Waste Planning Authority (WPA) area over the period of the plan. This will be based on existing and future forecasts of a range of different waste streams. It will also be important to respect the statutory duty to cooperate with other WPAs in the local area.

¹ South Tyneside Council, *About the Local Plan*, accessed 3 August 2023. Available at: <https://www.southtyneside.gov.uk/article/6465/Overview>

² Department for Communities and Local Government, *National Planning Policy for Waste*, October 2014. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/364759/141015_National_Planning_Policy_for_Waste.pdf

³ Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government, *Planning Practice Guidance: Waste*, October 2015. Available at: <https://www.gov.uk/guidance/waste>

Figure 1 Waste Hierarchy Diagram (Waste Framework Directive, 2023)



2.2 Duty to Cooperate Statement 2022

Waste is a strategic cross-boundary issue and is subject to the Duty to Cooperate. The duty to cooperate is a mechanism for WPAs to engage with each other on waste movements between their areas to establish if there are any planning reasons why these exports and imports cannot continue. The duty requires local planning authorities to “consider joint approaches to plan making, evidence gathering and infrastructure planning”.⁴

South Tyneside Council published the Duty to Cooperate Statement 2022 to accompany the Pre-Publication of the South Tyneside Local Plan (Regulation 18). It demonstrates how the Council has and continues to comply with the requirements of the Duty to Cooperate. This is necessarily a ‘live’ document and as such future iterations of this Statement will be updated detailing the latest outcomes from ongoing collaborations, consultations and discussions (including those around waste).

2.3 South Tyne and Wear Waste Management Strategy

The South Tyne and Wear Waste Management Strategy, agreed in 2007, outlines a comprehensive 20 year plan to reduce waste to landfill and increase recycling efforts in the region.⁵ This strategy is the result of a collaborative partnership between WPAs and local bodies, emphasizing the importance of close cooperation to address strategic waste management issues effectively. Clearly this document (and subsequent revisions) provides an important guide as to future aspirations with regard to waste in the local area, and by extension influences the waste treatment facilities that may need to be planned for.

⁴ South Tyneside Council, *Duty to Cooperate Statement 2022*. Available at: https://www.southtyneside.gov.uk/media/3143/Local-Plan-Duty-to-Co-operate-Statement-May-2022/pdf/Local_Plan_-_Duty_to_Cooperate_Statement_May_2022_rev4.pdf?m=637926317101230000

⁵ South Tyne and Wear Waste Management Partnership, *Joint Municipal Waste Management Strategy*, October 2007. Available at: <https://www.gateshead.gov.uk/media/3078/Joint-Municipal-Waste-Management-Strategy-October-2007/pdf/finalwastestrategy.pdf?m=637618655322870000>

The Strategy was produced by the South Tyne and Wear Waste Management Partnership (STWWMP), consisting of Gateshead, South Tyneside, and Sunderland councils, the strategy charts the course of waste management in the area from 2007 to 2027. To facilitate collaborative efforts, regular meetings of the North East Waste Planning Policy Officers Group are held to address cross-boundary waste management matters and ensure the development of a suitable and sustainable network of waste management facilities.⁶

There is a commitment within the strategy to review the document at least every five years. This was undertaken in 2012,⁷ and a further review and refresh of aims was published in 2021.⁸

3 Methodology and Results

In undertaking the capacity assessment for South Tyneside Council, Anthesis followed a practiced methodology. In summary this included:

- **Estimation of baseline waste arisings** – for LACW, C&I waste, CD&E waste, hazardous waste, agricultural waste, radioactive waste and waste water were estimated using publicly available datasets from 2021. This selection is in line with PPG which requires local authorities to plan for these seven waste streams.
- **Waste Growth** – has been used to explore future waste arisings with different waste growth factors used for different waste streams.
- **Sensitivity analysis** – for LACW and C&I waste streams, a sensitivity analysis was conducted providing a range of low-high recycling rates to reflect variation in recycling performance between 2030 and 2040.
- **Waste treatment capacity**- has been assessed to estimate the current and future forecast waste treatment capacity within South Tyneside for the management of waste.
- **Waste treatment capacity gap** – has been assessed to estimate potential capacity requirements within South Tyneside for the management of waste, along with insights into capacity in the wider North East.

The approach to these methodological steps is set out in the following sections along with the associated results.

⁶ South Tyneside Council, *Duty to Cooperate Statement 2022*. Available at: https://www.southtyneside.gov.uk/media/3143/Local-Plan-Duty-to-Co-operate-Statement-May-2022/pdf/Local_Plan_-_Duty_to_Cooperate_Statement_May_2022_rev4.pdf?m=637926317101230000

⁷ South Tyne & Wear Waste Management Partnership, *Joint Municipal Waste Management Strategy Review 2012*, January 2013. Available at: <https://www.gateshead.gov.uk/media/3079/Joint-Municipal-Waste-Management-Strategy-2012-review/pdf/JMWMS-review-2012.pdf?m=636414991897670000>

⁸ South Tyne and Wear Waste Management Partnership, *Joint Municipal Waste Management Strategy: 2021-2025*, February 2021. Available at: https://www.gateshead.gov.uk/media/28118/Joint-Municipal-Waste-Management-Strategy-2021-2025/pdf/3349-JH-Joint_Municipal_Waste_Management_Strategy_202125.pdf?m=637616915099070000

3.1 Baseline Waste Arisings

The first step in calculating the baseline waste arisings within South Tyneside was to collate relevant data sources. These included:

- Extracting LACW data for South Tyneside from WasteDataFlow (WDF), the web-based system for local authority waste data reporting by UK local authorities to Government;
- Extracting C&I, CD&E, agricultural and hazardous waste arisings from the Environment Agency's Waste Data Interrogator (WDI);
- Extracting hazardous waste arisings from the Environment Agency's Hazardous Waste Data Interrogator (HWDI);
- Extracting Low Level Radioactive arisings from the Integrated Pollution Prevention and Control (IPCC) Pollution Inventory dataset for 2021; and
- Local insights from South Tyneside Council were sought around waste arisings and waste treatment sites.

Data provision for LACW is of higher quality and granularity than other waste streams because statutory reporting requirements make it clear from which district or borough the waste originates.

In contrast producers of C&I, CD&E, agricultural and hazardous waste have no requirement to report waste arisings, making it more challenging to make accurate estimates within a given area. The methodologies described below for estimating the arisings of each waste stream are limited, as there are nuances and weaknesses of the data provision that make precise modelling of waste flows difficult to achieve. Detail on these nuances and weaknesses are discussed in the following waste specific paragraphs.

Local Authority Collected Waste

LACW is primarily comprised of waste generated by households and other wastes collected by local authorities, for example street bins and street sweepings. Historically this waste stream has been known as the 'municipal solid waste' stream.

Baseline LACW arisings were calculated using the most recent data set available from WDF as per PPG guidance³, which at the time of the study was calendar year 2021. WDF shows all waste collected and managed by each district and borough, including both recycling and residual waste. Multiple WDF questions were analysed, addressing the waste arising from a range of sources, including households, commercial waste, street scene and Household Waste Recycling Centres (HWRCs). The WDF questions used to inform the analysis are set out in Appendix 5.1.

Analysis of the data shows that South Tyneside Council collected and managed 83,700 tonnes of LACW in 2021. Of this material, approximately 55,500 tonnes was residual waste and 28,200 tonnes was recycling – this included dry mixed recycling (DMR), green waste, food waste and various streams from HWRCs. This equates to an overall recycling rate of ~34%.

Data for 2019 and 2020 was also examined and shown in

Table 1. This shows relatively consistent figures, despite 2020 being affected by restrictions related to the Covid-19 pandemic.

Table 1: LACW Residual and Recycling Arisings in South Tyneside 2019-2021 (tonnes)

Year	Recycling	Residual	Total	Recycling Rate
2021	28,178	55,496	83,674	34%
2020	26,185	52,085	78,270	33%
2019	27,367	51,619	78,986	35%

Source: WDF

Commercial and Industrial Waste

C&I waste is often of a similar format to LACW including separate residual and recycling streams, but comes from different (non-household) sources, for example offices, schools and businesses.

Estimating C&I waste arisings in England has always been a challenge, with no statutory reporting requirements for businesses to report waste generation. Primary data has periodically been gathered through surveys to estimate waste arising from C&I sources, however, this has been sporadic and only based on a limited number of data points. The last example of such a survey was Defra's 'Survey of Commercial & Industrial Waste Arisings' published in 2010 using 2009 data, making it outdated for use in this study.

The approach taken for this study is similar to that used by Defra when producing national estimates of C&I waste arisings, with WDI and site permit returns used as the basis for analysis as per PPG guidance³. WDI covers annually reported figures on waste as it enters and leaves permitted waste management sites.

There are some drawbacks to this data, including potential double counting of waste streams as they travel in and out of different sites (i.e. waste transfer stations), and the fact that it does not cover waste treated under waste license exemptions (i.e. waste facilities deemed not to require a waste permit, typically due to low volumes).

Despite this it is the best available data set for estimating how much waste from all sources is being processed by the waste management sector and can be filtered by waste type and origin (geographical). It can therefore be used to quantify the total tonnage of all non-hazardous and non-inert waste originating in South Tyneside, from which LACW waste can be deducted to provide an estimate of C&I waste arisings in the study area.

The principal steps used for this calculation were:

1. To extract all waste received records from the WDI received data set with a waste WPA origin "South Tyneside" and basic waste category "Hhold/Ind/Com" (household waste and C&I waste). Transfer and storage facility sites, alongside sites with a recovery and disposal code of R12, R13, D12, D13, D14 and D15 were then excluded, as these sites tend to bulk collect wastes before transporting to other facilities for, for instance, landfilling, energy recovery or separation for recycling. As such, whilst a critical step in the waste management supply chain, this capacity does not count towards the total available treatment capacity in South Tyneside and is therefore excluded from the capacity analysis.
2. In addition to this, some WDI arisings have 'unknown' WPA origins, meaning regional North East origin waste arisings need to be apportioned to the relevant WPAs based on

the known WPA origins. To do this, all 'North East' region origin waste data was extracted from WDI (excluding transfer and storage facility sites) and the percentage of arisings across each 'basic waste category' that comes from South Tyneside calculated. These percentages were then applied to waste with an origin of 'North East (WPA Not codable)'. This allowed the portion of waste arising without a known WPA origin from South Tyneside to be estimated.

3. Using WDI it was estimated that 5.3% of waste categorised as the basic waste category Hhold/Ind/Com and arising in the North East originated in South Tyneside in 2021. This apportionment was then applied to the "North East WPA uncodeable" Hhold/Ind/Com waste stream to estimate the portion of this waste arising in South Tyneside. This waste estimated to amount to an additional 39,800 tonnes of Hhold/Ind/Com waste in 2021. When combined with the volumes specifically arising from South Tyneside, a total of 258,095 tonnes of Hhold/Ind/Com waste was estimated to arise in South Tyneside in 2021.
4. An estimate of the C&I proportion of the Hhold/Ind/Com waste stream was then made by subtracting LACW arisings from WDF (83,674 tonnes) from the total Hhold/Ind/Com arisings from WDI (258,095 tonnes). This provided an estimated 174,421 tonnes of C&I waste arising in 2021. These proportions (68% C&I: 32% LACW) were then cross-checked with Defra's national reported figures⁹ (last comparable year 2018). Defra estimated ~60% C&I and 40% LACW, which would appear to validate the approach taken for this study given local variations.
5. C&I recycling performance is estimated to be between 40-45% based on insights from the waste and resources sector. Defra do not give any estimate of C&I recycling rates to allow for comparison. The mid-point 42.5% (rounded to 43%) was used for analysis.

Construction, Demolition and Excavation Waste

Construction & Demolition waste comprises waste arising from construction and demolition activities, including stone, concrete, brick, tiles etc, whilst excavation waste includes materials excavated during construction and is made up of mainly inert materials such as soils. There are also non-inert elements in this waste stream such as wood, metals, plastics, cardboard, and residual household-like wastes. The inert elements, however, make up the majority of the tonnage.

Establishing the current arisings of CD&E waste is challenging due to the lack of robust data sources for this waste type. WDI collates data from waste returns from individual waste sites and although it has limitations as discussed in the C&I section above, it is still the best data available as per PPG guidance³ and allows CD&E waste to be identified as it is coded under Chapter 17 (Construction and Demolition Waste) of the European Waste Catalogue (EWC).

The steps taken to estimate CD&E arisings are as follows:

⁹ Department for Environment, Food & Rural Affairs, *UK statistics on waste*, Updated 28 June 2023. Available at: <https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste>

1. Chapter 17 waste was extracted from WDI excluding transfer and storage facility sites, and excluding hazardous waste to avoid duplication with hazardous waste arisings. This removes 1,400 tonnes of hazardous CD&E waste from the arisings.
2. In line with the C&I methodology outlined above, a proportion of CD&E waste managed in the North East does not specify its origin in WDI. An estimated 1.8% of CD&E waste managed in the North East originated in South Tyneside, this apportionment was applied to the “North East uncoded” inert waste in this category. This amounts to an additional 18,800 tonnes of CD&E arisings. When combined with the volumes specifically arising from South Tyneside this provides a total of 75,400 tonnes of CD&E waste arising in South Tyneside in 2021.

CD&E waste is highly influenced, particularly in urban areas, by large-scale infrastructure projects as well as commercial and residential developments, which means that peaks and troughs are common and arisings do not necessarily follow a steady linear pattern. This was therefore an important consideration with respect to forecasting future CD&E waste arisings in this study, although no future major infrastructure planned projects were identified by South Tyneside Council for consideration in this study.

Hazardous Waste

Hazardous wastes are categorized as those that are harmful to human health, or the environment, either immediately or over an extended period of time. They range from asbestos, chemicals, and oil through to electrical goods and certain types of healthcare waste. Hazardous waste requires a range of specialist facilities for treatment and disposal, and so often this waste may travel further than types of non-hazardous waste.

Estimates of hazardous waste were collated from both WDI (2021) and the EA’s Hazardous WDI (HWDI 2021), as HWDI source reports records from consignment notes and is considered by the EA and the PPG³ to be the most accurate data source for this waste type, whilst WDI’s hazardous waste category includes hazardous waste from the CD&E waste stream (as this portion of hazardous waste was excluded from the CD&E arisings) and also shows the site type where waste is treated and destinations to allow transfer/storage sites to be excluded.

Using WDI data to allow site types to be identified and excluded accordingly, and in line with the methodology described for other waste streams for apportioning “North East WPA uncodeable” records, South Tyneside was estimated to generate 0.35% of hazardous waste arising in the North East. This percentage was applied to all “North East WPA uncodeable” hazardous waste arisings, contributing 261 tonnes to a total of 2,424 tonnes of hazardous waste arising in South Tyneside in 2021. This arisings figure was crossed checked against the EA’s HWDI 2021 to ensure the tonnage extracted from WDI was accurate as HWDI is considered to be the most accurate data source for this waste type. HWDI reported 2,552 tonnes of hazardous waste arising in South Tyneside in 2021 (excluding waste with fate stated as ‘transfer’ and North East WPA uncodeable waste), which is comparable to the WDI figure.

Low Level Radioactive Waste

Radioactive waste is any material that is either radioactive itself, or is contaminated by radioactivity and for which no further use is envisaged. Most radioactive waste is produced from nuclear power stations, through the fuel manufacturing process. This is referred to as “nuclear waste”. Radioactive waste is not included in the definition of hazardous waste.

Radioactive waste can be classified as Higher Activity Wastes (HAW) and Low Level Waste (LLW). HAW is unsuitable for disposal in the Low Level Waste Repository (LLWR) and arises from activities such as reactor operation, reprocessing of spent nuclear fuel and decommissioning.¹⁰ HAW is not one of the waste streams PGG requires waste planning authorities to plan for.

However, LLW is one of the waste streams PGG requires waste planning authorities to plan for. LLW contains relatively low levels of radioactivity. Most LLW comes from the operation and decommissioning of nuclear facilities, although small amounts also come from hospitals and universities, which are the main sources in South Tyneside.

Estimates of Radioactive waste were taken from the Integrated Pollution Prevention and Control (IPCC) Pollution Inventory dataset for 2021¹¹ as per PPG guidance³. This dataset provides the quantity of radioactivity released from radioactive waste regionally. This data is reported in becquerel (Bq) units of radioactivity, therefore is not comparable with arisings from other waste streams. As a result, this waste stream has been excluded from the forecasting and capacity gap analysis.

The IPPC Pollution Inventory dataset reports 311,858 Mbq of radioactivity released in South Tyneside in 2021 from two sites, the majority of which is generated at South Tyneside District Hospital. More details on these sites can be found in Appendix 5.2.

Agricultural Waste

Since 2006, most agricultural waste has been subject to the same controls that have applied to other sectors for many years (with the exception of natural wastes including slurries and manures used as fertiliser on agricultural premises). In the 2006 waste management regulations, agricultural waste was defined as waste from premises used for agriculture within the meaning of the Agriculture Act 1947, the Agriculture (Scotland) Act 1948 or the Agriculture Act (Northern Ireland) 1949, and the Chartered Institute of Wastes Management (CIWM) refer to it as waste that has been produced on a farm in the course of 'farming'.¹²

Again, WDI has been used to estimate current agricultural waste arisings as per PPG guidance³, using EWC codes beginning 02 01 arising in South Tyneside and apportioning waste arising in the North East but with an uncodeable WPA. An estimated 1,527 tonnes of agricultural waste were generated in South Tyneside in 2021. This low volume represents the relatively metropolitan nature of the authority. Given the minimal tonnage, it is not considered to need specific waste management consideration and therefore is excluded from the forecasting and capacity gap analysis.

¹⁰ Nuclear decommissioning Authority, *UK Radioactive Waste Inventory*. Available at: <https://ukinventory.nda.gov.uk/about-radioactive-waste/what-is-radioactivity/what-are-the-main-waste-categories/>

¹¹ Environment Agency, *2021 Pollution Inventory Dataset*, October 2022. Available at: <https://environment.data.gov.uk/portalstg/home/item.html?id=7ddf166a9b41444ebdca1baec1eede38>.

¹² CIWM, *Agricultural Waste*, Accessed 28 July 2023. Available at: <https://www.ciwm.co.uk/ciwm/knowledge/agricultural-waste> [Accessed 28.07.23].

Waste Water

Waste water in South Tyneside is managed through a joint arrangement between Northumbrian Water Ltd (NWL) and the EA, covering Northumberland, Rural Tyne, Tyneside, Wearside, Wear, Teesdale and Teesside. The joint working arrangements are in place to meet collective growth needs with an aligned policy approach to reducing surface water runoff and separating it from the sewerage system. Within the regions managed, there are 350 wastewater treatment works and 478 drainage areas serving a population of 2.75 million.¹³

South Tyneside Council has worked closely with NWL regarding future development needs, and NWL's emerging investment program seeks to increase longer term capacity of water separation schemes to accommodate future growth.

Currently, within Tyneside (Tyneside level 2 strategic planning area defined by NWL)¹⁴ there are 3 waste water treatment works and 58 wastewater drainage areas covering a total population of 870,000.¹⁴ All waste water generated in South Tyneside (and other Tyne and Wear authorities and parts of Northumberland) is treated at Howdon Waste Water Treatment Works in North Tyneside and Hendon Waste Water Treatment plant in Sunderland.¹⁵ The Howdon facility has a design capacity to treat 40,000 tonnes of dry solids per annum and serves a population of 2.4 million treating both primary and secondary sludge to produce heat and power as well as biosolids to be used on land.¹⁶

The PPG states "*Waste planning authorities are responsible for determining all waste development except: waste water treatment plants with a capacity to exceed a population equivalent of 500,000*", therefore future waste water treatment plant requirements have been not been estimated in this study as the population served by the current waste water treatment works is in excess of 500,000.

Total Baseline Waste Arisings in South Tyneside

The total amount of waste generated in South Tyneside in 2021 was estimated at 335,921 tonnes, this is broken down into the constituent waste streams in Figure 2. It is important to note that this figure does not include agricultural waste, radioactive waste or waste water for the reasons previously provided.

¹³ Northumbrian Water, *Drainage and Wastewater Management Plans. Level 1 Operating Area Technical Summary*. 2023. Available at: https://www.nwl.co.uk/globalassets/customer-pdfs/dwmp/dwmp-2023/l1_summary.pdf

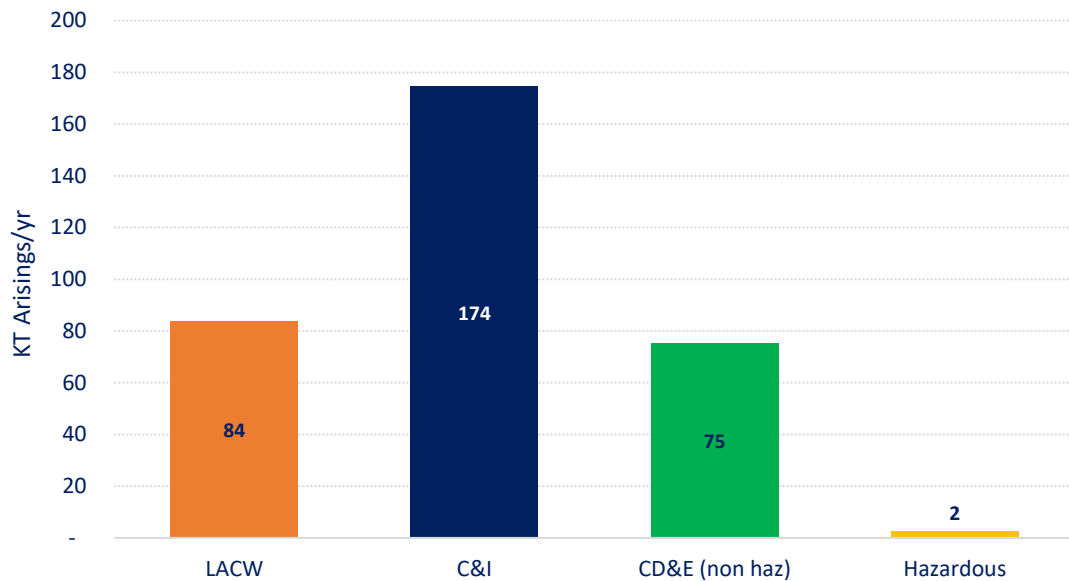
South Tyneside Council, *About the Local Plan*, accessed 3 August 2023. Available at: <https://www.southtyneside.gov.uk/article/6465/Overview>

¹⁴ Northumbrian Water, *Drainage and Wastewater Management Plans. Level 2 Strategic Planning Area Summary – Tyneside*. 2023. Available at: https://www.nwl.co.uk/globalassets/customer-pdfs/dwmp/dwmp-2023/area-technical-reports/l2_report_tyneside.pdf

¹⁵ South Tyneside Council. *Infrastructure Delivery Plan*. 2022. P38. Available at: https://www.southtyneside.gov.uk/media/3195/Infrastructure-Delivery-Plan-2022/pdf/2022_Infrastructure_Delivery_Plan2.pdf?m=637927039356230000

¹⁶ Cambi. *Newcastle – Howdon*, accessed 30 August 2023. Available at: <https://www.cambi.com/resources/references/europe/united-kingdom/newcastle-howdon/>

Figure 2: Baseline LACW, C&I, CD&E, and Hazardous Waste Arisings in South Tyneside (2021)



3.2 Waste Growth Modelling and Recycling Performance Sensitivity

The core aim of the study is to try and understand the infrastructure requirements for the in-scope waste streams treatment in South Tyneside to 2040.

To achieve this the baseline waste arisings have been projected forward to 2040 using the following key assumptions:

- **Waste growth** – to what extent do we expect waste arisings to grow year on year, for LACW, C&I, CD&E and Hazardous waste. Agricultural waste arisings are assumed to remain the same as baseline arisings are minimal and considered unlikely to increase given the metropolitan nature of South Tyneside.
- **Recycling Performance Sensitivity** – To what extent do we expect policy initiatives to impact the market positively, to either drive waste minimisation or improve recycling performance for LACW and C&I waste in particular. The results of this section are provided across three sensitivities, ranging from low recycling performance to high recycling performance. The central sensitivity is used in the capacity gap results.

The rationale for setting the assumptions used is set out in the following section.

Waste Growth Forecasting

Different methods to forecasting waste growth were applied to key waste streams, drawing on waste PPG³:

LCAW:

- For LACW population growth was selected to inform the growth profile as LACW arisings are expected to correlate with rising population numbers.³
- For this study Office of National Statistics (ONS) population forecast data for South Tyneside was used to generate year-on-year (YoY) growth rates to 2040.¹⁷ The average annual growth rate calculated from this ONS forecast was 0.23%. See Appendix 5.3 for the population growth rate data.

C&I:

- For this study employment growth rates were used to forecast C&I waste arisings to 2040. Employment growth rates reflect the size and productivity of commerce and industry, and by extension there will be a correlation to non-household waste arisings. Employment growth rates YoY from South Tyneside Councils Employment Land Review report¹⁸ were used and applied to waste arisings. The report provides four growth rate scenarios. For this study, scenario two was selected representing baseline projections of employment growth of 0.42% annual growth on average. See Appendix 5.4 for the full growth rate data.

CD&E

- PPG suggests waste planning authorities should start from the basis that net arisings of CD&E waste will remain constant over time as there is likely to be a reduced evidence base on which forward projections can be based for construction and demolition wastes.
- Another consideration is whether there are any significant planned regeneration or major infrastructure projects over the timescale of the Local Plan, as these can distort CD&E arisings considerably within a given year(s). In discussion with the South Tyneside Planning Team, no such projects were identified.
- In recent years CD&E waste arisings have grown significantly, with 41,000 tonnes reported in 2019; 61,000 tonnes in 2020 and 75,000 tonnes in 2021. The South Tyneside Planning Team reported that this significant growth is likely to be attributable to a substantial number of demolitions across the Borough within this timeframe, including former local authority housing clearance / renewal schemes. There has also been a large-scale junction upgrade at the Lindisfarne Roundabout of the A194 and the Testo's junction of the A19, as well as regeneration projects such as the Holborn project in South Shields, involving site remediation, regrading of the site and restoration of three derelict docks between 2019-2021.

¹⁷ Office of National Statistics. *Population projections – local authorities: SNPP Z1, 2018*. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandz1>

¹⁸ South Tyneside Council, *Employment Land Review Final Report, 2023*.

- This recent significant growth is not deemed suitable for extrapolating time series data. Therefore for this study the same employment growth rates for C&I arisings were used (0.42% annual growth on average), which represent the size and productivity of the wider economy and therefore are considered a suitable projection for CD&E waste arisings to 2040.

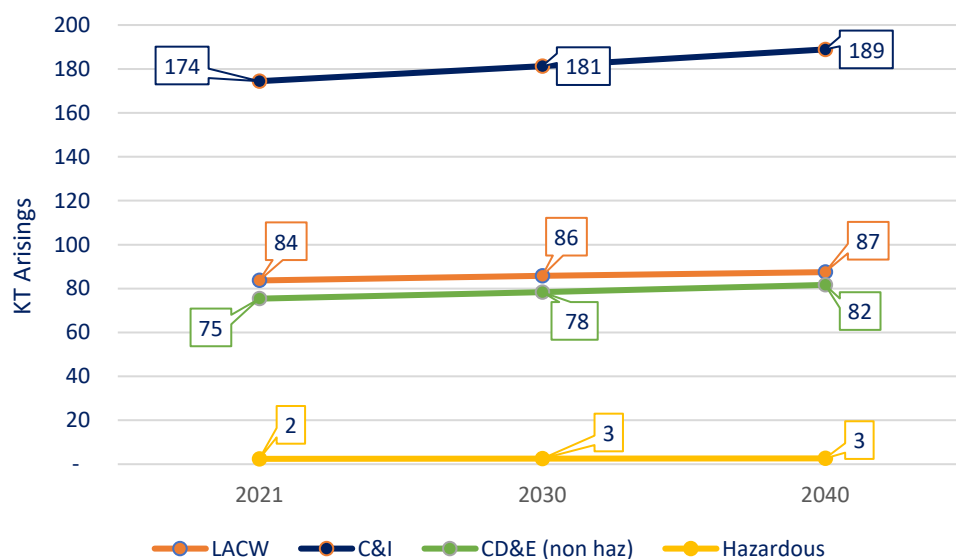
Hazardous:

- As for CD&E, hazardous waste arisings have also been volatile in recent years, with 2,848 tonnes reported in 2019; 1,157 tonnes in 2020 and 2,433 in 2021. These figures are likely to be heavily influenced by the Covid-19 pandemic. As such these figures are not deemed suitable for extrapolating time series data. Therefore for this study the same employment growth rates for C&I arisings were used (0.42% annual growth on average), which represent the size and productivity of the wider economy and therefore are considered a suitable projection for hazardous waste arisings to 2040.

To note, agricultural waste arisings were assumed to remain the same as the baseline, at 1,527 tonnes to 2040, as the baseline arisings are low and not expected to see significant growth.

Figure 3 shows how the volume of waste arisings in South Tyneside have been forecast to change over time between 2021 and 2040 using the aforementioned growth rates. The figures represent both residual waste and recycling tonnages combined. By 2040 there is forecast to be 189,000 tonnes of C&I waste, 87,000 tonnes of LACW, 82,000 tonnes of CD&E and 3,000 tonnes of hazardous waste arising in South Tyneside.

Figure 3: Summary of Forecasted Waste Arisings in South Tyneside 2021, 2030 and 2040



Recycling Performance Sensitivity - National

Previous modelling carried out by Anthesis on behalf of Local Authorities suggests that up to 80% of the material in household waste could theoretically be recycled. In practice, this theoretical potential is limited by existing service provision (i.e. more recyclable material streams could be collected – which is directly linked to available funding), household participation, capture rates of specific materials and contamination issues.

The Government is currently in a round of consultation processes which will deliver a package of policy-led measures that are aimed at setting England on course to achieve a 65% recycling target by 2035. These include:

- Revisions to the Extended Producer Responsibility (EPR) regulations, including mandatory targets for recycling of packaging waste materials, combined with the full net cost of recovery at end of life being charged to the producers. This includes a moderated and malice fee payment system which will aim to drive up recycling from October 2025 when the new system is expected to be implemented (this date is correct at the time of writing following a recent announcement by Defra regarding further delays).¹⁹
- A consistent approach to collections and labelling of recyclability is also under review by the Government with a view to increasing awareness and driving pro-recycling behaviours amongst consumers and householders.
- A separate deposit return scheme (DRS) is also being considered to boost recycling of beverage containers.
- A Plastic Packaging Tax (PPT) came into force in the UK in April 2022. It applies a rate of £210.82 per tonne on plastic packaging with less than 30% recycled plastic, manufactured or imported into the UK. This is expected to drive a change in the collection and reprocessing marketplace to meet the producers' requirements for post-consumer recycled (PCR) content plastic.
- Defra has outlined longer-term intentions to review other waste and material streams that could also be incorporated into the EPR policy frameworks of the future.
- With the UK recycling rate fluctuating between 45% and 47%,²⁰ these measures rely on business as well as households to improve participation and capitalise on the new level of environmental awareness and interest in climate change and sustainability to improve recycling rates across the country.

South Tyneside's recycling rate may increase more rapidly due to some initiatives compared to others. However, as there is uncertainty around the launch date of many of the above initiatives, alongside changes to recycling rates depending on how rapidly services change, for example how quickly EPR fees will be invested and services changed, a linear increase in recycling rates has been modelled to 2040.

¹⁹ Department for Environment, Farming and Rural Affairs, *Extended producer responsibility for packaging: who is affected and what to do*, July 2023. Available at: <https://www.gov.uk/guidance/extended-producer-responsibility-for-packaging-who-is-affected-and-what-to-do>

²⁰ Oluwadipe S, Garelick H, McCarthy S, Purchase D. *A critical review of household recycling barriers in the United Kingdom*. Waste Manag Res. 2022 Jul;40(7):905-918. Epub 2021 Nov 20. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9109241/>

Recycling Performance Sensitivity Methodology – South Tyneside

Aside from the national drivers for recycling it has also been important to assess the current position and future recycling ambition within South Tyneside.

LACW

Anthesis has undertaken a benchmarking exercise using Waste and Resources Action Programme (WRAP) data to assess the waste from household recycling performance of South Tyneside relative to the rest of the UK.²¹

The benchmarking presented in Table 2 demonstrates that South Tyneside’s household kerbside collection service recycling rates (the biggest contributor to LACW) are in the lower 50% of local authorities across the UK. Whilst the dry recycling rate (23%) is not far behind the national average (26%), garden waste (7%) contributes less than half the national average (16%) towards the recycling rate. Furthermore, South Tyneside does not currently provide a food waste collection service from households.

This shortfall in recycling performance is, by extension, reflected in the relatively high residual waste percentage. Ultimately this suggests that South Tyneside may find it challenging to reach a 65% recycling rate, the national target, by 2035.

Table 2: Benchmarking South Tyneside against UK Local Authorities LACW (waste from households) 2021

	Dry recycling	Garden waste	Food waste	Residual waste
Baseline (South Tyneside)	23.14%	7.20%	0%	69.65%
National Waste from households Rates ²²	25.9%	16.2%	2.2%	55.7%
Compared with UK Local Authorities	Bottom 50%	NA	Bottom 25%	Bottom 50%

Based on the benchmarking data it is therefore assumed that for modelling purposes, the recycling performance for 2040 would be 54% for the low sensitivity representing a +20% increase from current rate (+1% increase per year), 59% for the central sensitivity representing a +25% increase from current rate (+1.25% increase per year), and 65% in the high sensitivity assuming the 65% recycling target is met (+1.55% per year) - as shown in Table 3.

This is on the basis that whilst South Tyneside will receive an immediate recycling rate uplift through anticipated roll-out of separate food waste collections, closing the gap on dry recycling and garden waste collections will be much harder to achieve. Dry recycling services are already embedded throughout South Tyneside, and so gains here are more likely to be marginal. Garden

²¹ Waste and Resources Action Programme, *Benchmarking*. Accessed 27 July 2023. Available at: <https://laportal.wrap.org.uk/benchmark>

²² National Statistics. *Local authority collected waste management - annual results 2021/22*. Updated 14 April 2023 Available at: <https://www.gov.uk/government/statistics/local-authority-collected-waste-management-annual-results-202122/local-authority-collected-waste-management-annual-results-202122#:~:text=Amongst%20the%2033%20local%20authorities,per%20cent%20in%202021%2F22>

waste collection services are already embedded throughout South Tyneside through a subscription service, so again, gains here are more likely to be marginal unless the service is expanded, or the subscription cost is reduced. The effect of national policy drivers such as EPR and DRS are likely to be similar across the country, albeit with lower performing areas such as South Tyneside having the potential to improve dry recycling performance to a greater extent (from a low base) than comparator authorities.

C&I

As there is not a recycling target set for C&I waste in the UK, for modelling purposes, the recycling performance for C&I waste by 2040 is assumed to follow the same increase as LACW estimates as the composition of the two waste streams is relatively similar and the waste is typically treated at the same type of facilities.

The recycling performance for C&I waste by 2040 is forecast to be 54% for the low sensitivity representing a +20% increase from current rate (+1% increase per year), 59% for the central sensitivity representing a +25% increase from current rate (+1.25% increase per year), and 74% in the high sensitivity assuming a +31% increase from the current rate, which is the same difference as per the LACW high sensitivity - as shown in Table 3.

Table 3 summarises the key assumptions used in the modelling for this study. The central sensitivity represents the most likely in our view as the benchmarking exercise suggests that South Tyneside may find it challenging to reach a 65% recycling rate.

Table 3: Recycling performance sensitivity results in 2030 and 2040

Waste stream	Sensitivity level	2021 recycling rate	2030 forecast recycling rate	2040 forecast recycling rate	2040 rate assumptions
LACW	Low Sensitivity	34%	44%	54%	+20% increase from current rate = 1% per year
	Central Sensitivity	34%	46%	59%	+25% increase from current rate = 1.25% per year
	High Sensitivity	34%	49%	65%	assumes 65% target is met= 1.55% per year
C&I	Low Sensitivity	43%	52%	60%	+20% increase from current rate as per LACW estimate
	Central Sensitivity	43%	56%	68%	+25% increase from current

					rate as per LACW estimate
	High Sensitivity	43%	57%	74%	+31% increase from current rate, same difference as per LACW estimate

Forecasted Waste Arisings in South Tyneside 2021, 2030 and 2040

Using the waste growth rates described in section 3.2 and the central recycling sensitivity described in Table 3, the waste arising in South Tyneside for 2030 and 2040 have been forecast. Table 4 shows the waste streams (i.e. residual and recycling/composting) from both LACW and C&I sources, alongside CD&E and hazardous waste arisings to give an indication of the likely scale of treatment capacity required for these types of waste arisings in South Tyneside between now and 2040.

There is a declining trend of residual LACW and C&I waste arisings driven by increasing recycling due to the reasons described above.

Table 4 Summary of forecast waste arisings in South Tyneside

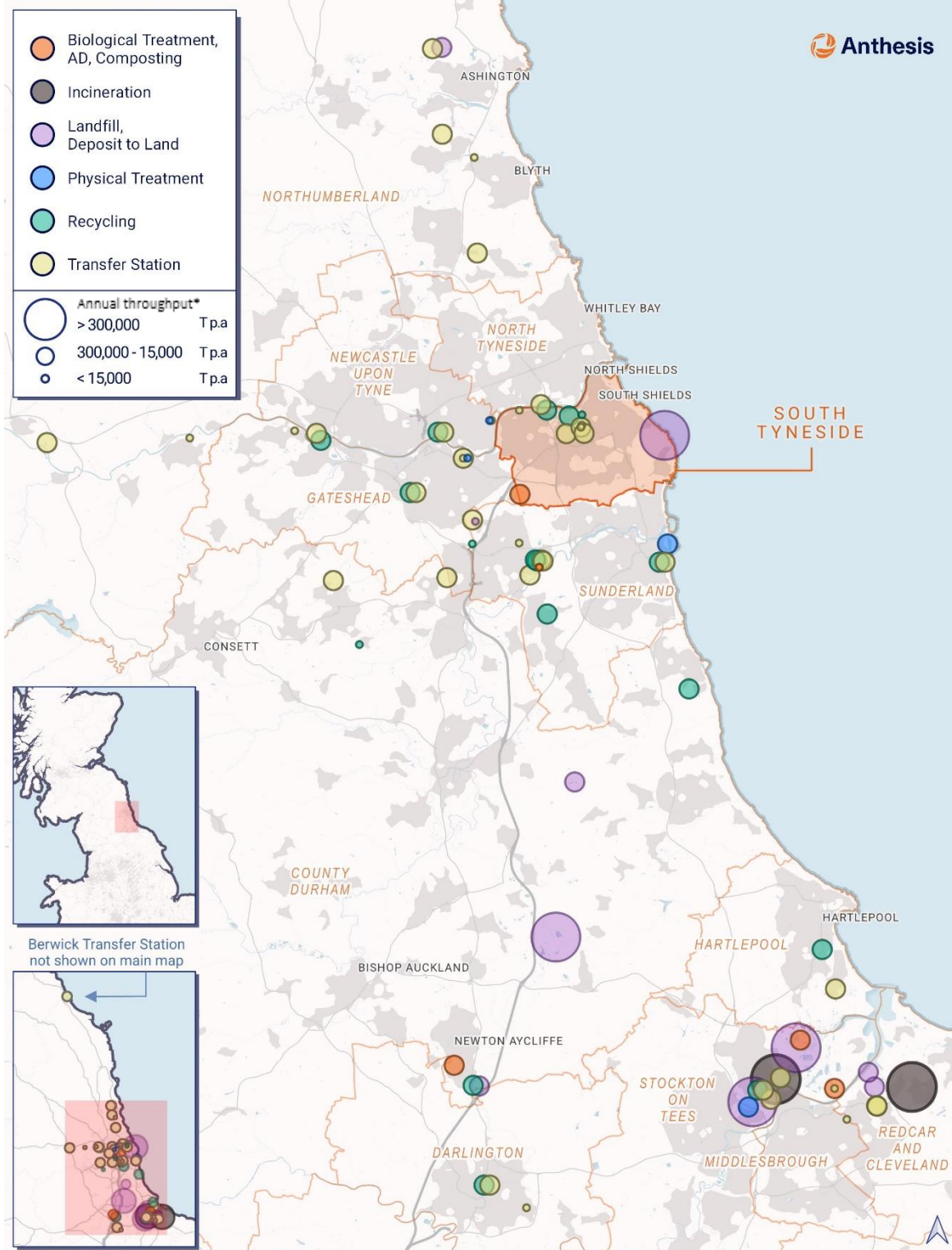
Waste Type	2021	2030	2040
LACW Recycling	28,178	39,593	51,323
LACW Residual	55,496	46,151	36,145
C&I Recycling	75,001	100,608	128,447
C&I Residual	99,420	80,668	60,446
CD&E (non hazardous)	75,392	78,355	81,647
Hazardous	2,433	2,529	2,635

3.3 Waste Treatment Capacity

In this section existing and planned waste treatment capacity is identified, this was then compared to the forecast arisings in section 3.2 to establish South Tyneside's waste treatment capacity gap.

This chapter focuses on waste facilities in South Tyneside and the surrounding local authorities in the North East of the UK that are suitable for handling the waste streams mentioned in this study. The existing facilities are shown in Figure 4.

Figure 4 Map of existing Waste Treatment Facilities in South Tyneside and the Surrounding North East



*Capacities for sites in South Tyneside based on annual permitted capacity, capacities for sites in the rest of the North East based on the maximum annual throughput between 2019 and 2021 as permit data not available for all North East sites.

South Tyneside Capacity

Table 7 identifies four operational waste treatment facilities located in South Tyneside. The permitted capacity of these sites used in the modelling process was requested and received from the Environment Agency.²³ The four identified sites include:

- Marsden Quarry Landfill site in South Tyneside was acquired by Owen Pugh in 2018, and provides a range of primary and recycling construction aggregates that supply the North East of the UK. In 2008 permission was granted for a temporary recycling operation to recover inert construction waste for export from the site to restore the quarry void, which has become a permanent operation alongside landfilling at the site.²⁴ The site had a remaining capacity of 659,462 cubic metres in 2021.²⁵ Using a conversion rate for inert waste of 1.5 tonnes per cubic metre as recommended by the PPS10 Companion guide, there is an estimated 989,193 tonnes of inert capacity remaining. Currently the site is permitted to accept approximately 450,000 tonnes of material annually. It is anticipated that the overall landfill capacity will decline in future, with an expected expiry date for extraction by 2027. Therefore, the capacity is removed from the modelling in 2030²⁶. It should be noted, an extension to the contract post 2027 is possible, however details are currently unknown.
- Wardley Biogas Anaerobic Digestion Facility operated by BioConstruct New Energy processes by-products of the food industries producing biogas and digestate. The digestate is used as soil improving material and fertiliser substitute and the biogas powers gas engines. The facility receives 70,000 tonnes of feedstock per year mainly from LACW and C&I sources, producing 59,500 tonnes of digestate.²⁷
- EMR Tyne Dock operated by European Metal Recycling Limited recycles mixed scrap metal mostly from LACW and C&I sources, alongside a small portion from inert C&D source. Despite this site being categorised as 'Metal Recycling' on WDI, the site's main source of waste is from 'Hhold/Ind/Com' sources on WDI. This is a large site with a permit to treat 291,000 tonnes of waste annually, which is more than the annual arisings of recycling from LACW and C&I sources in South Tyneside.
- Plot 3 is a small site operated by Neil Sweeting, recycling hazardous metals from vehicles. The permitted capacity is 1,600 tonnes.

²³ Personal correspondence via email in June and July 2023.

²⁴ Lichfields, *Planning Statement*. 2021. Available at: <http://planning.southtyneside.info/MVM.DMS/Planning%20Application/795000/795919/ST047520FUL%20Planning%20Statement%20080321.pdf>

²⁵ *2021 Remaining Landfill Capacity - Version 2*. Accessed 30 August 2023. Available at: <https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html>

²⁶ *Joint Local Aggregates Assessment for County Durham, Northumberland and Tyne and Wear*, 2018. Available at: <https://www.northumberland.gov.uk/NorthumberlandCountyCouncil/media/Planning-and-Building/planning%20policy/Studies%20and%20Evidence%20Reports/Minerals%20Waste%20Studies/3.%20LAA/Joint-Local-Aggregate-Assessment-April-2018.pdf>

²⁷ Lichfields, *Planning Statement*. 2021. Accessed 30 August 2023. Available at: <http://planning.southtyneside.info/MVM.DMS/Planning%20Application/795000/795919/ST047520FUL%20Planning%20Statement%20080321.pdf>

It is important to note that no planned waste treatment facilities were found in South Tyneside at the time of the study and this was verified by South Tyneside Council. Alongside this, no sites were identified for closure before 2040 at the time of the study and again this was verified by South Tyneside Council. As a result, the projected future capacity for waste treatment remains constant year-on-year until 2040 for all waste streams. Please see Table 5 for further details on sites in South Tyneside.

Not all waste arising in South Tyneside is treated at facilities within the local authority area. For example, South Tyneside awarded a Residual Waste Treatment Contract to a consortium led by SITA UK (through SITA South Tyne and Wear) in 2011, sending waste to the Energy from Waste (EfW) facility in Teesside, fed by waste from three Waste Transfer Stations located in partner authorities. SITA later became Suez. The contract with Suez (Haverton Hill, Teesside), runs until 2037, with no identified capacity issues over the plan period. The EfW plant at Teesside has an annual throughput capacity (based on the maximum annual capacity between 2019-2021) of 676,000 tonnes, of which 30% is comprised of waste arising in South Tyneside. This reduces pressure on residual waste treatment sites within South Tyneside until at least 2037, and potentially longer if the contract is extended.

Alongside this, STWWMP, which South Tyneside Council are part of, have contracted Cumbria Waste Management to recycle DMR waste from South Tyneside and Gateshead. Cumbria Waste Group's MRF contracts are for a period of 36 months commencing in April 2022. This reduces pressure on recycling sites within South Tyneside until at least 2025, and potentially longer if the contract is extended.

Table 5 Waste Treatment Facilities in South Tyneside

Site Name	Operator	Post Code	Facility Type	Waste category	Permitted Capacity* - Tonnes (2021)	Throughput Tonnes 2019**	Throughput tonnes 2020**	Throughput Tonnes 2021**
Marsden Quarry Landfill Site	O' Brien Aggregate Marsden Limited	SR6 7NG	Landfill	CD&E	450,000	309,978	264,668	356,793
Wardley Biogas Anaerobic Digestion Facility	BioConstruct NewEnergy Ltd.	NE1 0 8YL	AD	LACW, C&I, Hazardous	70,000	0	30,278	42,634
EMR Tyne Dock	European Metal Recycling Limited	NE3 4 9PL	Metal Recycling	LACW, C&I, CD&E	300,000	0	108,453	288,643
Plot 3	Sweeting Neil	NE3 3 5TB	Metal Recycling	Hazardous	1,600	0	425	270

*Combined capacity for all waste categories accepted by the individual site. Source EA.

**Throughput from waste categories arising in all Local Authorities, not only South Tyneside. Source WDI.

Transfer Stations

Table 6 identifies six waste transfer and/or storage facilities located in South Tyneside with throughput registered in WDI for at least one year between 2019 and 2021. Transfer stations operated by waste management contractors tend to bulk collected wastes before transporting to other facilities for, for instance, landfilling, energy recovery or separation for recycling. As such, whilst a critical step in the waste management supply chain, this capacity does not count towards the total available treatment capacity in South Tyneside and is therefore excluded from the capacity analysis in section 3.4.

Table 6 Waste Transfer / Storage Facilities in South Tyneside

Site Name	Operator	Post Code	Permit	Basic Waste Category	Throughput 2019*	Throughput 2020*	Throughput 2021*
Middlefields Recycling Village	South Tyneside Council	NE34 ONU	64149	Hhold/Ind/Com, Hazardous, Inert/C+D	16,807	13,064	13,568
Middlefields Recycling Transfer Station	South Tyneside Council	NE34 ONT	404638	Hhold/Ind/Com	0	0	10,966
Middlefields Transfer Station	Suez Recycling and Recovery U K Ltd	NE34 ONT	67540	Hhold/Ind/Com, Hazardous	51,752	53,600	59,429
Middlefields Waste Reception Site	Suez Recycling and Recovery U K Ltd	NE34 ONT	67541	Hhold/Ind/Com, Inert/C+D	9,586	5,636	5,626
South Shields Waste Transfer And Recycling Centre	Biffa Waste Services Limited	NE34 9PH	64129	Hhold/Ind/Com, Inert/C+D	62,081	38,584	0
Premier Asbestos Services Ltd	Premier Asbestos Services Limited	NE31 1SP	402622	Hazardous	304	0	0

*Throughput for waste arising in all Local Authorities, not only South Tyneside. Combined capacity for all basic waste categories accepted by the individual site as per WDI e.g. Inert/C+D, Hhold/Ind/Com, Hazardous. Source WDI. Note permitted capacity not available for all sites, hence annual throughput displayed.

Rest of North East Capacity

As waste is a strategic cross-boundary issue and is subject to the Duty to Cooperate, waste treatment capacity in the rest of the North East has also been established as per Appendix 5.5.

As so many sites were identified (46), permits were not requested from the EA to establish the sites' permitted capacities, instead the maximum throughput between 2019 and 2021 was used for modelling purposes. The capacity listed below represents the total throughput of sites that receive waste from South Tyneside. It is important to note that not all of this capacity will be readily available for waste arising in South Tyneside, as a portion of the capacity will be used for waste arising in other local authorities.

Waste transfer and/or storage facilities located in the North East were not identified as part of the study as this capacity does not count towards the total available treatment capacity and is therefore excluded from the capacity gap analysis.

3.4 Capacity Gap

The summary of CD&E and hazardous waste arisings forecast in South Tyneside in Table 4 are used in this capacity gap section of the study.

For the purposes of the capacity gap analysis, LACW and C&I forecasted arisings from Table 4 have been combined as per Table 7 as the two waste streams are often treated at the same facilities, alongside capacity for waste treatment sites being grouped by the basic waste category 'Hhold/Ind/Com' on WDI which covers waste arising from both sources.

Table 7 LACW and C&I Arisings used for capacity gap analysis

Waste Type	2021	2030	2040
LACW and C&I Residual	154,916	126,819	96,591
LACW and C&I Recycling	103,179	140,201	179,770

A summary of the capacity gap in South Tyneside is provided in Appendix 5.6. The individual waste streams capacity gaps are described in more detail below.

LACW and C&I

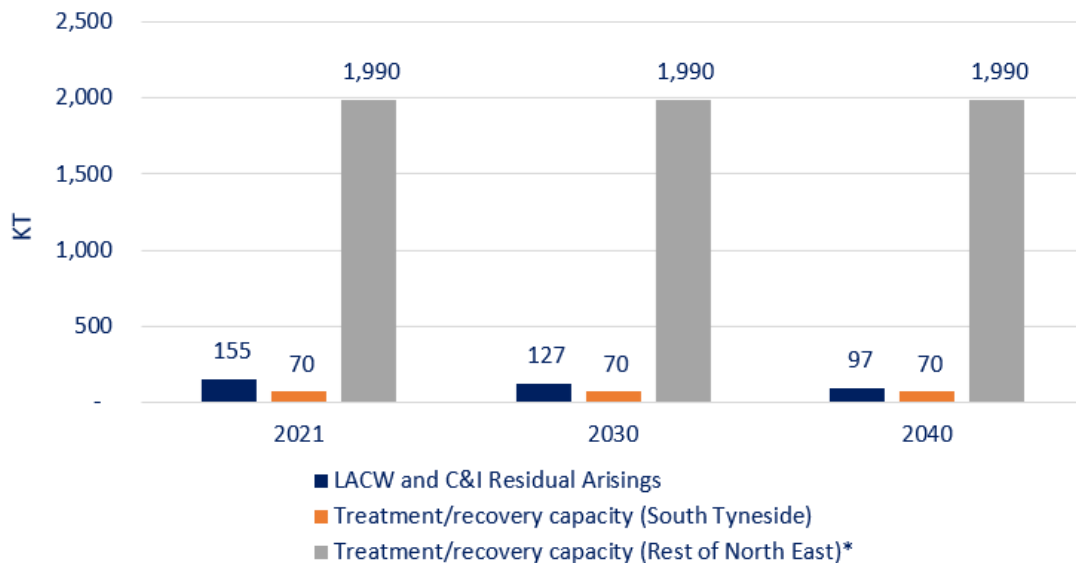
Residual waste

Based on Figure 5, it is estimated that within South Tyneside in 2021 there was a capacity gap of 85,000 tonnes for the treatment of LACW and C&I residual waste. This gap is forecast to reduce to 27,000 tonnes by 2040 as capacity of the existing sites is forecast to remain the same but the volume of residual waste arising in South Tyneside is forecast to decrease as more material is recycled.

Also of significance is that South Tyneside has a residual waste contract with Suez to treat the material at their EfW plant at Teesside until at least 2037.

When considering waste treatment capacity in the rest of the North East against South Tyneside's LACW and C&I residual waste arisings, there is enough capacity, with 1,990,000 tonnes of capacity forecast for 2040 against South Tyneside's forecasted 97,000 tonnes of LACW and C&I residual waste arisings. However, it is important to note that capacity identified in the rest of the North East could be used to treat waste arising in other local authorities, therefore only a portion of this capacity will be available to treatment South Tyneside's waste. For more details on facilities in the rest of the North East see Appendix 5.5.

Figure 5: Capacity gap for LACW and C&I residual waste in South Tyneside and the rest of the North East**



*Rest of North east capacity excludes South Tyneside

**For the purposes of this modelling it has been assumed the capacity in the North East will remain constant until 2040, although it is likely some sites will close and others open.

Recycling

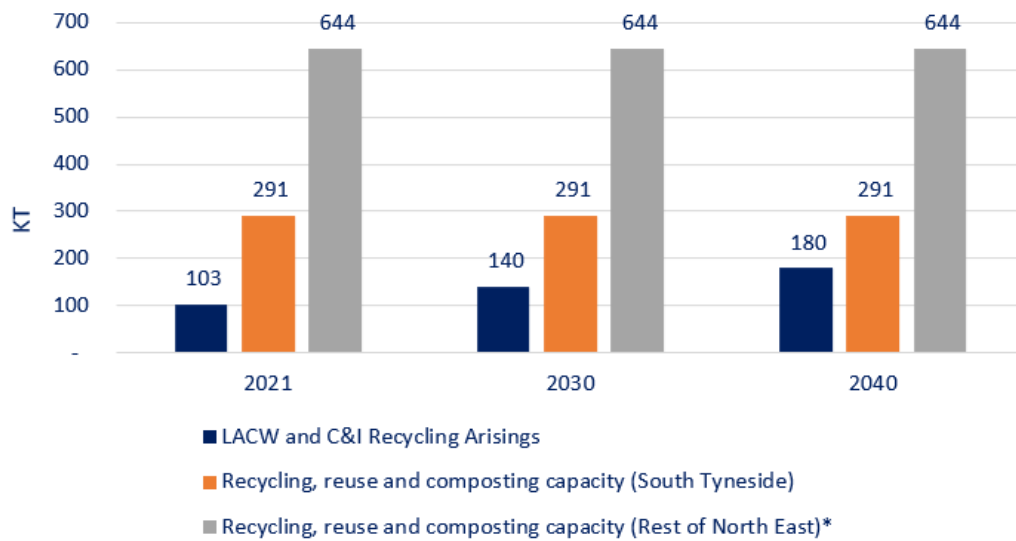
Figure 6 shows there is more capacity available than arisings in South Tyneside, for what is considered recycling, reuse or composting of LACW and C&I waste, with 188,000 tonnes more capacity than arisings in 2021. This is largely due to EMR Tyne Dock's metal recycling facility, with a total permitted capacity of 300,000 tonnes per year, of which 291,000 tonnes are estimated to be available for LACW and C&I waste, with the remainder processing Inert C&D waste. It is important to note this is currently a metal recycling site, but has been grouped within the 'recycling' capacity for this assessment.

By 2040 there is forecast to be 110,000 tonnes more capacity than arisings, as capacity is forecast to remain the same but arisings of recyclable material are projected to increase to meet recycling targets.

Also of significance is that South Tyneside, as part of the STWWMP, have contracted Cumbria Waste Management to recycle DMR waste from South Tyneside and Gateshead. Cumbria Waste Group's MRF contracts are for a period of 36 months which commenced in April 2022.

In addition, there is significant recycling capacity in the North East region, with 644,000 tonnes identified in 2021. However, it is important to note that capacity identified in the rest of the North East could be used to treat waste arising in other local authorities, therefore only a portion of this capacity will be available to treat South Tyneside's waste. For the purposes of this modelling it has been assumed the capacity in the North East will remain constant until 2040, although it is likely some sites will close and others open.

Figure 6: Capacity gap for LACW and C&I recycling in South Tyneside and the rest of the North East**



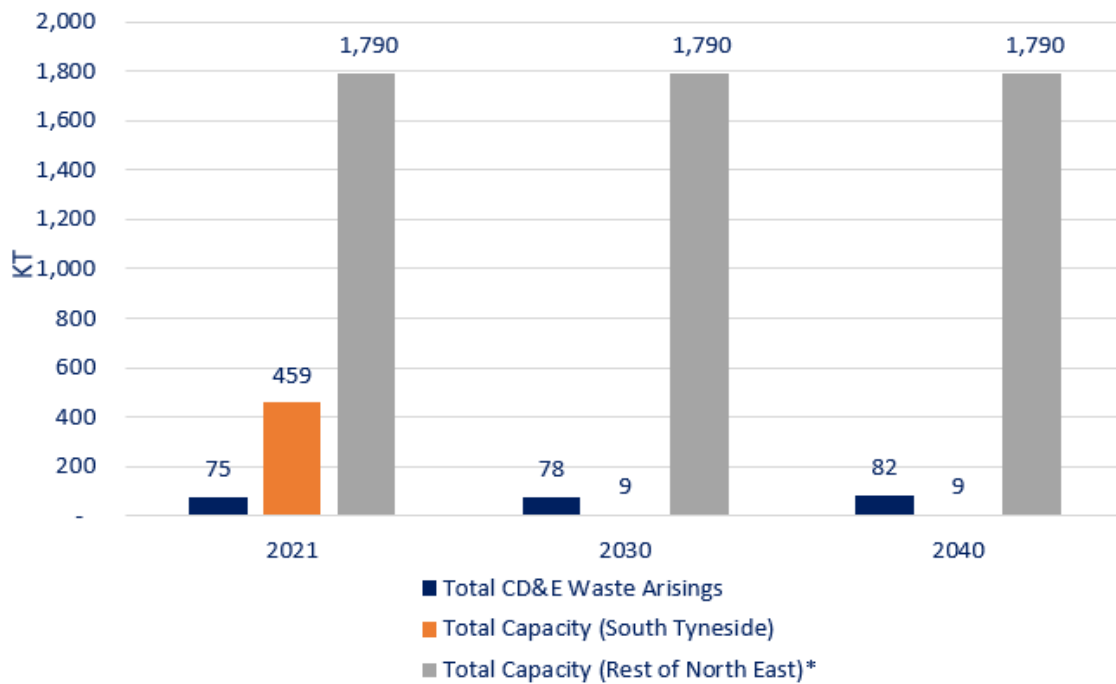
*Rest of North East excludes South Tyneside.

**For the purposes of this modelling it has been assumed the capacity in the North East will remain constant until 2040, although it is likely some sites will close and others open.

CD&E

Figure 7 shows there is more capacity available than arisings in South Tyneside, for CD&E waste disposal, with 459,000 tonnes of capacity identified in South Tyneside against 75,000 tonnes of CD&E waste arisings in 2021. However, by 2027 Marsden Quarry landfill is expected to have reached the end of its extraction period, reducing CD&E treatment capacity by 450,000 tonnes in 2030 and 2040 leaving a capacity gap of 69,000 tonnes in 2030 rising to 73,000 tonnes in 2040. However, there is significant capacity identified in the rest of the North East that could be used to treat waste arising in other local authorities, therefore a portion of this capacity will be available to treatment South Tyneside's waste. For the purposes of this modelling, it has been assumed the capacity in the North East will remain constant until 2040, although it is likely some sites will close and others open.

Figure 7: Capacity gap for CD&E waste treatment in South Tyneside and the rest of the North East**



*Rest of North East excludes South Tyneside.

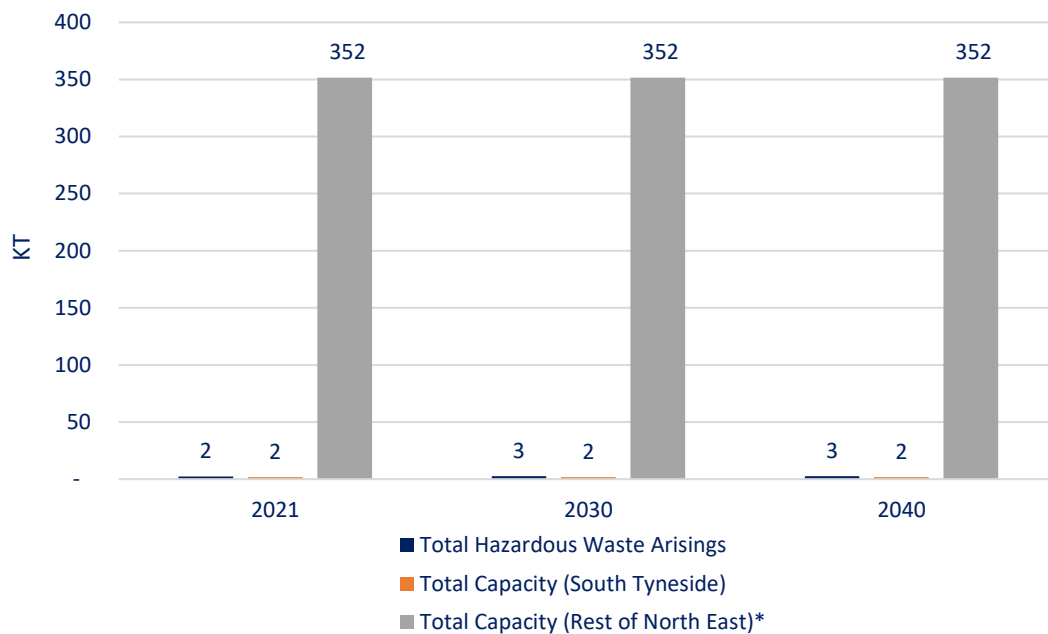
**For the purposes of this modelling it has been assumed the capacity in the North East will remain constant until 2040, although it is likely some sites will close and others open.

Hazardous

Figure 7 shows there is less hazardous waste treatment capacity available than arisings in South Tyneside, with 1,769 tonnes of capacity identified in South Tyneside against 2,433 tonnes of hazardous waste arisings in 2021. This capacity gap rises from 665 tonnes in 2021 to 867 tonnes by 2040 as arisings of hazardous waste are forecast to increase but capacity remains constant.

In addition, there is significant hazardous capacity in the North East region, with 351,509 tonnes identified in 2021. However, it is important to note that capacity identified in the rest of the North East could be used to treat waste arising in other local authorities, therefore only a portion of this capacity will be available to treatment South Tyneside’s waste. For the purposes of this modelling it has been assumed the capacity in the North East will remain constant until 2040, although it is likely some sites will close and others open.

Figure 8 Capacity gap for hazardous waste treatment in South Tyneside and the rest of the North East**



*Rest of North East excludes South Tyneside.

**For the purposes of this modelling it has been assumed the capacity in the North East will remain constant until 2040, although it is likely some sites will close and others open.

Agricultural Waste

Only a very small amount of agricultural waste is generated in South Tyneside, and it is not considered necessary to provide additional facilities for this waste stream.

Radioactive Waste

This waste places no requirement on solid waste management infrastructure and it is not necessary to provide additional facilities for this waste stream.

Waste Water

Northumberland Water use information in the public domain to forecast when upgrades will be required. They monitor the sites performance and population information from ONS and councils monitoring reports and upgrade the works accordingly, ahead of needs.

4 Cross-boundary Considerations

Waste management in South Tyneside presents a strategic cross-boundary issue that requires careful consideration and collaboration among stakeholders. As per the duty to co-operate, outlined in Section 2.2, it is essential to determine the destination of 'significant' waste exports from South Tyneside. Currently, the majority of waste exports from this region are directed towards the wider North East, with approximately 75% of waste originating in South Tyneside being sent to Stockton-on-Tees for treatment.

5 Summary

Anthesis undertook an independent waste capacity gap assessment within South Tyneside. The work has been underpinned by a model which considers baseline (2021) waste arisings from LACW, C&I, CD&E, Hazardous, Agricultural, Low Level Radioactive and Waste Water, as well as forecasts to 2040 (key assumptions being waste growth). The model also includes existing and planned waste treatment capacity, thus allowing a 'capacity gap' profile to be forecast.

The analysis suggests that there is sufficient treatment capacity within South Tyneside over the Local Plan period (to 2040) for much of this waste, including recycling, reuse or composting of LACW and C&I waste, as well as CD&E waste. It should, however, be noted that South Tyneside does currently rely on significant recycling capacity in the wider North East region, most notably for household dry mixed recycling. This material stream is currently under contract, as part of the STWWMP, with Cumbria Waste Management (via a MRF in Middlesbrough).

This situation is typical within England, as waste facilities such as MRFs operate most economically at a scale well beyond the recycling tonnages generated by a relatively small local authority such as South Tyneside. As such this specific need is not something that is required to be addressed by the Local Plan. It is important, however, for South Tyneside to retain access to such facilities, given their fundamental role in the recycling supply chain. As such early dialogue, both internally (involving STWWMP cooperation) and externally with regional MRFs around future contract procurement is recommended.

There is currently a significant capacity gap (85,000 tonnes in 2021) for residual LACW and C&I waste within South Tyneside, and this is forecast to reduce over time (27,000 tonnes by 2040) due to declining residual arisings. Again, such a capacity gap is to be expected as residual waste is typically treated in regional scale facilities. There is significant existing capacity in the wider North East region, and more specifically South Tyneside Council has a residual waste contract with Suez to treat LACW at their EfW plant at Teesside until at least 2037. This therefore provides security for almost all of the Local Plan period. It is therefore not considered necessary to address this residual capacity gap through the Local Plan itself.

Appendix

5.1 WDF Questions extracted from waste data flow to conduct the LACW analysis

Question	Description
Q10	Tonnes of material collected through kerbside schemes from household sources by LA or its contractors
Q11	Tonnes of material collected from commercial, industrial or other non-household sources by LA or its contractors
Q12	Tonnes of material collected through kerbside schemes by non-contracted voluntary/community sector from household sources
Q14	Tonnes of material collected for recycling/reuse at CA Sites operated by LA or its contractors
Q16	Tonnes of material collected for recycling/reuse at CA Sites operated by LA or its contractors
Q17	Tonnes of material collected at bring sites operated by LA or its contractors
Q18	Composting / Recycling tonnage collected through any other recycling schemes. Please note that it is optional to report how much of the total tonnage is from household sources
Q23	Please provide details of other waste collected for disposal. (The destination of the residual is required for authorities in Wales only.)
Q33	Tonnes of materials collected at bring sites operated by voluntary / community sector
Q34	Tonnes of material collected for recycling at street recycling bins

5.2 List of Sites Releasing Radioactive Waste in South Tyneside

Operator Name	Post Code	Substance Name	Route Name
South Tyneside and Sunderland NHS Foundation Trust	NE34 0PL	Gallium 67; Selenium 75; Technetium 99m, Iodine 123; Iodine 125; Iodine 131; Total Beta/Gamma	Wastewater
IDS LTD	NE35 9PD	Iodine 125	Wastewater

5.3 South Tyneside Population Growth Rates

Year	SNPP Population (South Tyneside)	Growth Rate
2021	151935.716	Baseline
2022	152433.454	0.33%
2023	152908.087	0.31%
2024	153366.725	0.30%
2025	153796.316	0.28%
2026	154212.411	0.27%
2027	154603.483	0.25%
2028	154983.194	0.25%
2029	155348.294	0.24%
2030	155693.747	0.22%
2031	156023.139	0.21%
2032	156350.196	0.21%
2033	156677.136	0.21%
2034	157002.149	0.21%
2035	157298.746	0.19%
2036	157603.71	0.19%
2037	157908.665	0.19%
2038	158219.963	0.20%
2039	158525.635	0.19%
2040	158824.621	0.19%

5.4 South Tyneside Employment Growth Rates

Year	Land Review Employment Numbers	Growth Rate
2021	45,600	Baseline
2022	45,800	0.44%
2023	46,000	0.43%
2024	46,200	0.43%
2025	46,400	0.43%
2026	46,600	0.43%
2027	46,800	0.43%
2028	47,000	0.43%
2029	47,200	0.42%
2030	47,400	0.42%
2031	47,600	0.42%
2032	47,800	0.42%
2033	48,000	0.42%
2034	48,200	0.41%
2035	48,400	0.41%
2036	48,600	0.41%
2037	48,800	0.41%
2038	49,000	0.41%
2039	49,200	0.41%
2040	49,400	0.40%

5.5 List of Waste Treatment Facilities in the rest of the North East (excluding South Tyneside and excluding transfer/storage sites)

Facility WPA	Site Name	Operator	Post Code	Permit	Site Category	Max throughput 2019-2021 (tonnes) Hazardous	Max throughput 2019-2021 (tonnes) Hhold/Ind/Com	Max throughput 2019-2021 (tonnes) Inert CD&E
County Durham	Autocraft	Gamble Alec	DH9 6HA	64079	MRS	178	-	-
County Durham	Aycliffe Quarry	Stonegrave Aggregates Ltd	DL5 6NB	100223	Treatment	54	108,380	4,009
County Durham	Aycliffe Quarry Landfill - EPR/TP3735PA	Stonegrave Aggregates Limited	DL5 6NB	TP3735PA	Landfill	2,297	104,444	45,653
County Durham	Bishop Middleham Quarry 2	W & M Thompson (Quarries) Ltd	DL17 9EB	AP3138SD	Landfill	-	-	252,267
County Durham	Bishop Middleham Quarry 2	W & M Thompson Ltd	DL17 9EB	60182	Landfill	-	-	73,349
County Durham	Crime Rigg Quarry Landfill	Breedon Northern Limited	DH6 1LE	210006	Landfill	-	-	216,136
County Durham	Emerald Biogas Energy Park EA/EPR/BP3133TC/A001	Warrens Emerald Biogas Ltd	DL5 6AB	BP3133TC	Treatment	929	47,567	-
County Durham	Joint Stocks Landfill Phase 2 - EPR/LP3832NM	Durham County Council	DH6 4RT	LP3832NM	Landfill	-	5,287	105,488
County Durham	Seaham Plastics Recycling Facility - EPR/GB3905TX	Biffa Waste Services Limited	SR7 7DN	HP3405BG	Treatment	-	44,573	-
Darlington	Cleveland House	Ward Bros (Steel) Limited	DL1 2PE	104572	MRS	655	72,840	411
Gateshead	Birtley Quarry	Ibstock Brick Limited	DH2 1AJ	401252	On/In Land	-	-	77,940
Gateshead	Blaydon Quarry Landfill EPR/WP3537ZG	Octagon Green Solutions Limited	NE21 4SX	WP3537ZG	Landfill	-	311,829	72,887
Gateshead	E M R Blaydon - E L V	European Metal Recycling Ltd	NE21 5RZ	67453	MRS	3,299	70,248	266
Gateshead	Gap Waste Management - EPR/EB3805KW	P A Moody Recycling Ltd	NE10 0ES	LP3632JD	Treatment	22,902	2,102	-

Gateshead	Nest Road Waste Treatment, Recovery and Transfer Facility - EPR/PP3633TC	William Tracey Ltd	NE10 0ES	PP3633TC	Treatment	939	229	-
Gateshead	Riverdale Paper Plc - Materials Recycling Facility	Riverdale Paper Plc	NE11 0RQ	401132	Treatment	-	32,282	-
Hartlepool	Sims Group U K Limited	Sims Group U K Limited	TS25 1NX	60088	MRS	2,206	105,815	179
Newcastle Upon Tyne	Newcastle Clinical Waste Treatment Plant and Transfer Station	SRCL Limited	NE6 4LT	AP3137MC	Treatment	665	3	-
Newcastle Upon Tyne	Quality Row M R S	Ward Bros (Steel) Limited	NE6 1LB	102566	MRS	470	28,527	-
North Tyneside	Dudley Pharmaceutical Site - EPR/AP3234LG	Sterling Pharma Solutions Limited	NE23 7QG	AP3234LG	Treatment	28,332	60,597	-
North Tyneside	Yard 1 Morston Quays	Mack Contracts Ltd	NE28 6UE	403201	Treatment	-	-	20,551
Northumberland	Ellington Road Landfill	SUEZ Recycling and Recovery UK Ltd	NE63 9XS	DP3238SB	Landfill	-	155,523	65,573
Northumberland	Old Stone Road	East Cramlington Recycled Aggregates Limited	NE23 6XW	100542	Treatment	-	-	54,656
Northumberland	Thornbrough Quarry	W & M Thompson (Quarries) Ltd	NE45 5LX	104624	Treatment	-	-	39,324
Redcar and Cleveland	Holden Close Waste Management Facility - EPR/MP3434CN	Cleansing Service Group Limited	TS6 7AL	MP3434CN	Treatment	30,099	90,996	-
Redcar and Cleveland	ICI No 2 (Teesport) Landfill Site - EPR/RP3631DA	Highfield Environmental Limited	TS6 6UG	RP3631DA	Landfill	-	107,839	67,958
Redcar and Cleveland	ICI No 3 Teesport EPR/DP3331DJ	Highfield Environmental Limited	TS6 6UG	DP3331DJ	Landfill	19,911	11	22,480

Redcar and Cleveland	Wilton 11 EfW EPR/XP3436WB	SUEZ Recycling and Recovery UK Ltd	TS10 4RG	XP3436WB	Incineration	-	508,852	-
Redcar and Cleveland	Wilton Waste Treatment Plant - EPR/MP3136HW	Cleansing Service Group Ltd	TS6 8JH	MP3136HW	Treatment	4,068	679	-
Stockton-on-Tees	Billingham Reed Beds EPR/JP3336HA	Scott Bros. Limited	TS18 2QF	JP3336HA	Treatment	-	36,969	-
Stockton-on-Tees	Billingham Treatment Plant EPR/PP3137ML	Rapier Energy Ltd	TS23 1DE	PP3137ML	Treatment	37,062	1,123	-
Stockton-on-Tees	Cowpen Bewley Landfill Site EPR/RP3531DV	Highfield Environmental Limited	TS23 4HS	RP3531DV	Landfill	-	148,376	191,399
Stockton-on-Tees	Cowpen Bewley Open Windrow Composting Facility - EPR/EB3707CF	Highfield Environmental Limited	TS23 4HS	KP3933YA	Treatment	-	131,763	5,026
Stockton-on-Tees	Land Within Riverside Terminal	Shire Aggregates Bulk Limited	TS23 1PX	404689	Treatment	-	-	37,790
Stockton-on-Tees	Norton Bottoms	Scott Bros Limited	TS23 1PX	104444	On/In Land	-	65,779	382,846
Stockton-on-Tees	Port Clarence Landfill Site - EPR/YP3234XR	Augean Treatment Ltd	TS2 1UE	YP3234XR	Treatment	194,317	10	-
Stockton-on-Tees	S R 2010 No 5 & No 11	Scott Bros Limited	TS23 1QA	105177	Mobile Plant	-	-	126,575
Stockton-on-Tees	Teesside EfW Plant EPR/VP3034SG	SUEZ Recycling and Recovery UK Ltd	TS23 1PY	DP3104SC	Incineration	-	676,415	-
Sunderland	5b Freezemoore Road	Grab & Deliver Limited	DH4 7BG	100808	Treatment	-	15	96,163
Sunderland	J & B Recycling Limited	J & B Recycling Limited	NE38 8QU	102297	MRS	-	24,067	-
Sunderland	Mill House Scrapyard	Mr David Auld	DH3 1RE	67563	MRS	63	-	-
Sunderland	Monument Park	Premier Waste Recycling Limited	NE38 8QU	100173	Treatment	324	27,525	649
Sunderland	Port Of Sunderland	Northumbrian Roads Limited	SR1 2BU	103169	Treatment	2,475	-	72,151

Sunderland	Springwell Quarry EPR/HP3530BS	Thompsons Of Prudhoe Limited	NE9 7XW	HP3530BS	Landfill	116	-	12,412
Sunderland	Ward Bros (Steel) Limited	Ward Bros (Steel) Limited	SR2 8DH	402287	MRS	149	41,682	65
Sunderland	Washington Sewage Treatment Works	Northumbrian Water Ltd	NE38 8LB	64039	Treatment	-	-	1,704

5.6 Capacity gap summary

Note capacity for rest of North East is not forecast against site closures/openings due to data and permit access restrictions, it is assumed to remain constant over time.

		2021	2030	2040
LACW/C&I Recycling	Capacity South Tyneside	291,078	291,078	291,078
	Arisings	103,179	140,201	179,770
	Capacity surplus	187,899	150,877	111,308
	Capacity Rest of North East (ex South Tyneside)	644,251	644,251	644,251
LACW/C&I Residual	Capacity South Tyneside	69,759	69,759	69,759
	Arisings	154,916	126,819	96,591
	Capacity gap	-85,121	-57,023	-26,796
	Capacity Rest of North East (ex South Tyneside)	1,989,703	1,989,703	1,989,703
CD&E	Capacity South Tyneside	458,922	8,922	8,922
	Arisings	75,392	78,355	81,647
	Capacity surplus/gap	383,530	-69,433	-72,725
	Capacity Rest of North East (ex South Tyneside)	1,789,590	1,789,590	1,789,590
Hazardous	Capacity South Tyneside	1,769	1,769	1,769
	Arisings	2,433	2,529	2,635

		2021	2030	2040
	Capacity gap	- 665	- 760	- 867
	Capacity Rest of North East (ex South Tyneside)	351,509	351,509	351,509