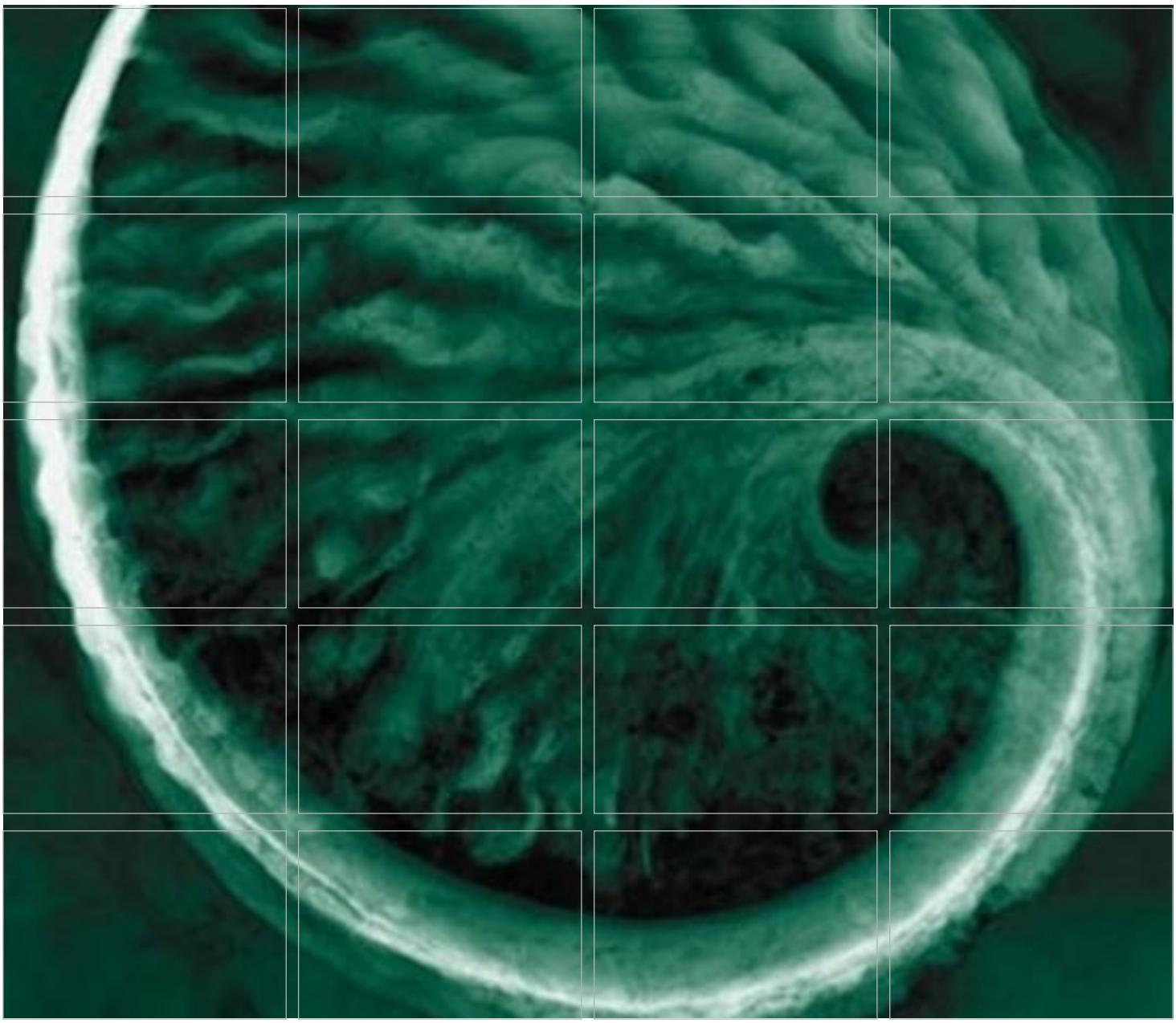


Thurrock Waste Management Capacity Needs Assessment - 2009 Update

Final Report

September 2009

Delivering sustainable solutions in a more competitive world

ERM

Thurrock Council

Thurrock Waste Management Capacity Needs Assessment - 2009 Update

Final Report

September 2009

Prepared by: Phil Short

For and on behalf of
Environmental Resources Management

Approved by: Simon Aumônier

Signed:

Position: Partner

Date: 20 September 2009

CONTENTS

1 UPDATE OF THURROCK WASTE MANAGEMENT CAPACITY NEED ASSESSMENT

1.1 INTRODUCTION

This report is an update to the *Waste Management Need Assessment Report* produced by Environmental Resources Management Limited (ERM) for Thurrock Council in 2007. This update report should be read in conjunction with the original assessment.

This report provides updated information on:

- waste arisings;
- estimated current waste management capacity; and
- capacity gap analysis.

A sensitivity analysis has also been undertaken on the impact that assumptions about reduced economic growth would have on waste arisings.

Data on both waste arisings and waste capacity have been provided by Thurrock Council for use in this report.

Some of the data used in this version of the report remain the same as in the original report. These are not restated within this document. This study covers the period up to 2026/27, this is clearly a longer period than the East of England Plan – the Regional Spatial Strategy (RSS), which runs to 2021, and that which the LDF will plan for, however results for the longer period may prove useful. Results and conclusions have been provided for the year 2021, as well as the end of the forecasting period, to show the capacity gap at the end of the RSS period.

The purpose of this report is to update the evidence base to inform the waste policies and the drafting of the Thurrock LDF, both in terms of performance and capacity required in the future.

1.2 REPORT STRUCTURE

This report is structured according to the following format:

- Section 2 – RSS Forecast Arisings;
- Section 3 – Waste Arisings Update;
- Section 4 – Capacity Data Update;
- Section 5 - Capacity Gap Analysis;
- Section 6 –C&I Waste Management Method Variation; and
- Section 7 – Conclusions.

2 RSS FORECAST ARISINGS

This section assesses the figures included in the East of England Plan for arisings of MSW and C&I waste over the period 2006 – 2021. The forecast arisings are in *Table 2.1* below.

Table 2.1 RSS Forecast Arisings ('000 tonnes)

	MSW	C&I	Imports	Total
2005/06	83	197	320	600
2006/07	86	202	298	586
2007/08	90	207	277	574
2008/09	93	212	255	560
2009/10	97	217	233	547
2010/11	101	223	212	536
2011/12	101	230	190	521
2012/13	102	236	168	506
2013/14	103	242	146	491
2014/15	105	248	125	478
2015/16	106	257	103	466
2016/17	107	265	103	475
2017/18	108	274	103	485
2018/19	109	282	103	494
2019/20	110	291	103	504
2020/21	111	299	103	513

The tonnages reported above for the years 2005 -2009 are higher than those actually seen in practice in Thurrock. The forecasts were based on higher growth rates than have been shown to happen in reality.

The municipal waste forecasts are adjudged by the authority to be high and in light of this further work has been done to assess different waste forecasts and using different baselines. These updated forecasts are presented in *Section 3*. They follow on from the work carried out by ERM in 2007.

The RSS gives targets for recycling/composting and recovery of MSW and C&I wastes. The targets are as follows:

Table 2.2 Management Methods (%)

	MSW			C&I		
	2010	2015	2021	2010	2015	2021
Recycling/Composting	40	50	60	N/A	N/A	N/A
Other Recovery	10	20	38	72*	75*	98*
Landfill	50	30	2	28	25	2

* Total recovery

The target for recovering 98% of wastes is clearly more than that assumed in the previous report by ERM, which assumed that Thurrock would meet its LATS obligations, but not exceed this performance.

The combination of the arisings forecast and the management methods above produce the forecasts in the charts below.

Figure 2.1 ***MSW Forecasts by Management Methods***

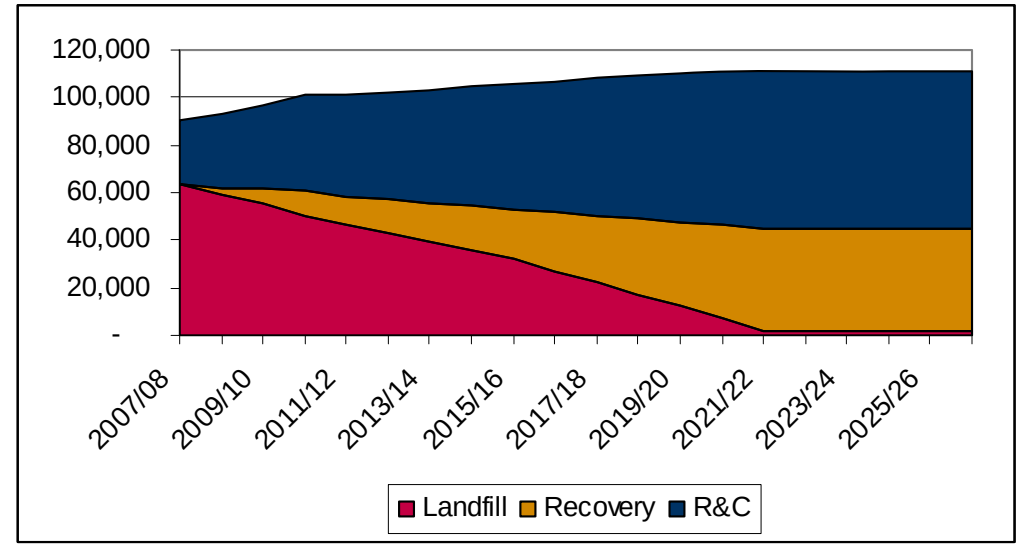
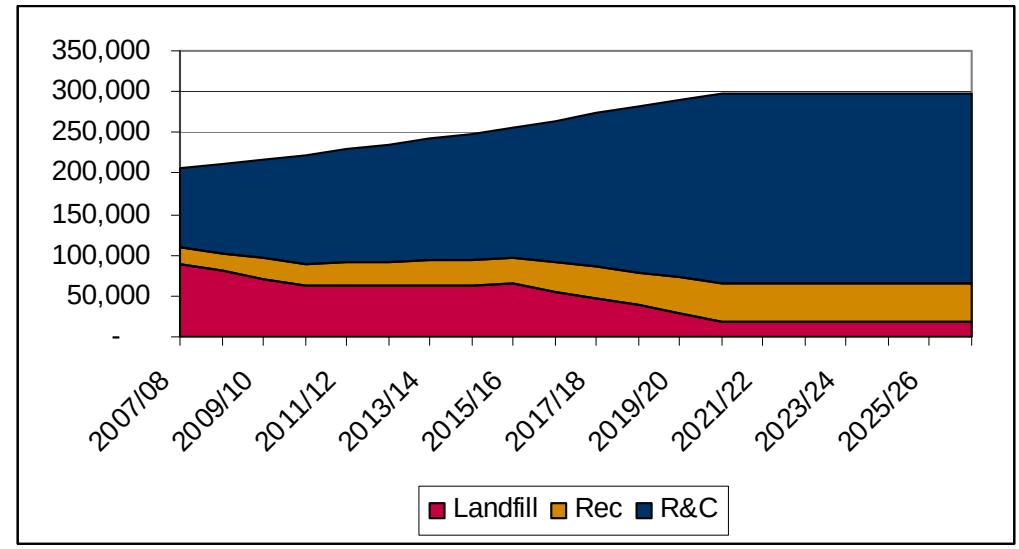


Figure 2.2 ***C&I Forecasts by Management Methods***



This arisings forecast can then be compared to the capacity data in *Section 4*. The results of these comparisons are shown in *Section 5*.

3 WASTE ARISINGS UPDATE

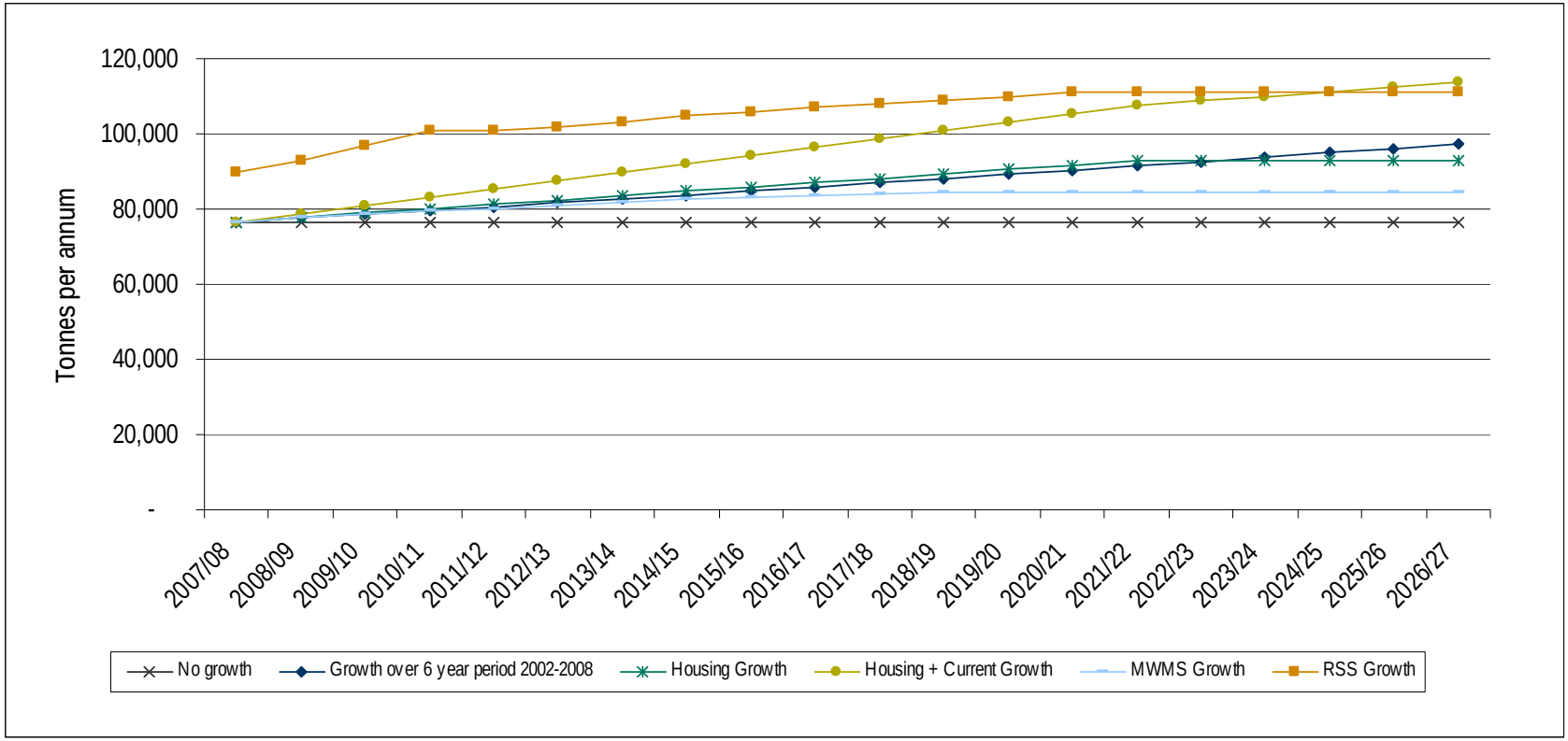
3.1 MUNICIPAL WASTE

The original assessment included three growth scenarios for municipal solid waste (MSW) – No Growth, Housing Growth and MWMS Growth. This update presents more growth scenarios based on more up to date data. These data were provided by Thurrock Council. The growth forecasts are as follows.

- No growth scenario – based on the 20007/08 figure for MSW arisings. These are assumed to remain constant over the next 20 years.
- Current growth scenario – based on MSW data from 2001/02 – 2007/08. This shows a 1.27% increase per annum going forward.
- Housing growth scenario – based on RSS forecasts of housing numbers for 2006 – 2021. Housing is assumed to stay constant from 2021 onwards.
- Housing plus current growth scenario – this combines the assumed growth in housing with the assumed current waste growth scenario.
- Municipal Waste Management Strategy (MWMS) growth scenario – this assumes the growth rates in the MWMS, which are 1% per annum growth until 2015/16, 0.5% per annum growth from then until 2019/20 and then 0% per annum growth thereafter.
- RSS growth scenario – this assumes growth in line with RSS forecasts. The baseline used in the RSS sees a higher tonnage of MSW than currently recorded, meaning this forecast is high in contrast with the others. Forecast growth was 0% per annum after the RSS period ends in 2021.

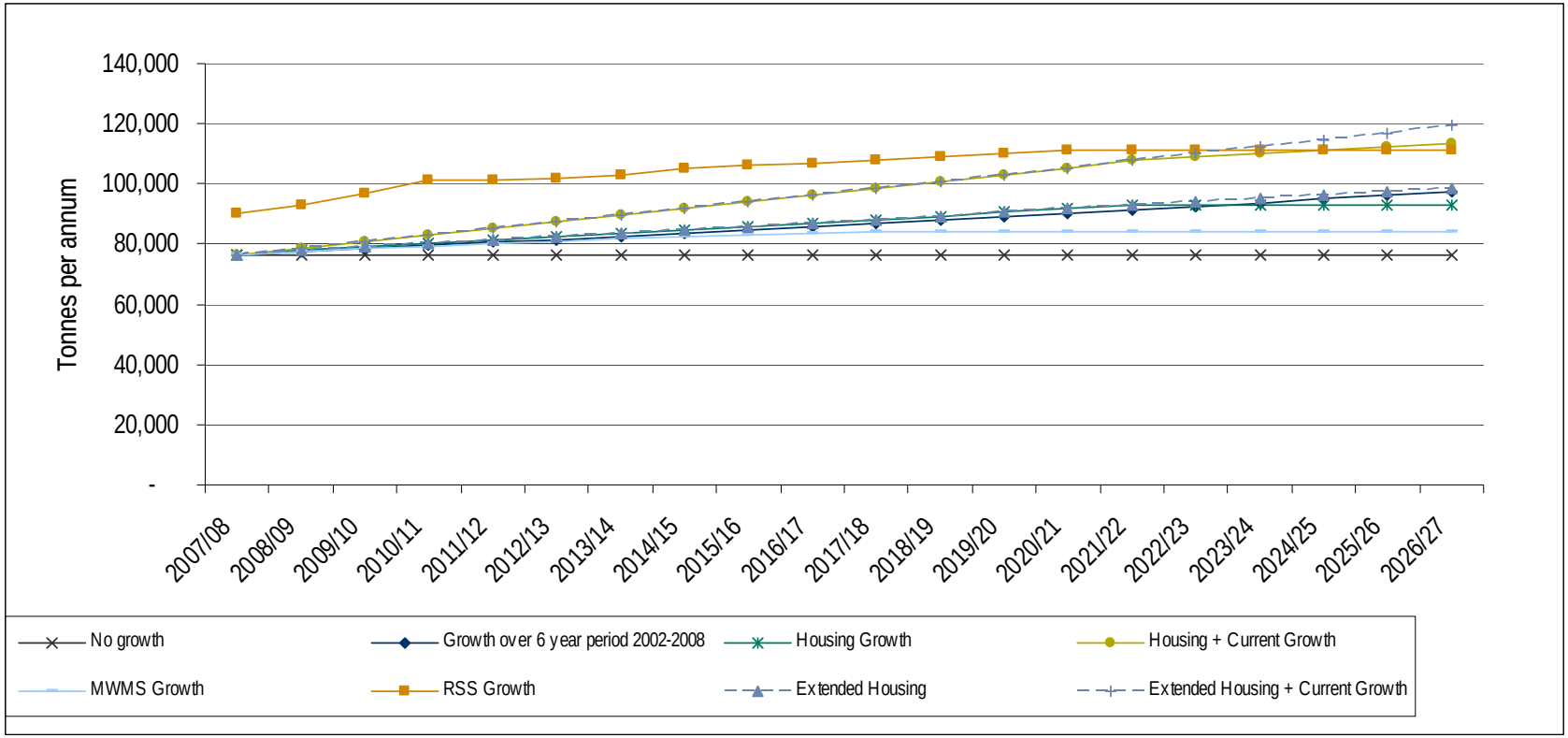
From these five growth scenarios, an upper and a lower bound were selected. The 'no growth' scenario is the lower bound and the 'housing plus current growth' is the upper bound. *Figure 3.1* presents the five forecasts. The figure highlights that, in 2027, there is a range of forecast arisings, with a 40,000 tonne per annum difference between the upper and lower bound. This equates to approximately 50% of the current arisings. The chart also shows that the RSS scenario shows a similar level of growth per annum, but starts from a higher baseline than the data used in this study. Assuming no further growth beyond the RSS forecast period to 2021 means that the RSS forecast finishes within the upper and lower bounds despite the larger level of baseline arisings assumed.

Figure 3.1 *Municipal Solid Waste Growth Rate Scenarios*



Two more growth forecasts were assessed to ensure comparability with the Housing growth forecasts expected in the Local Development Framework. These extend the current level of growth in housing to 2026/27. These are shown on the chart below. The 'extended housing' forecast leads to c.6,000 tonnes more per annum in 2026/27 than the 'housing' forecast. The same increase is forecast in the 'extended housing plus current growth' forecast.

Figure 3.2 *Municipal Solid Waste Growth Rate Scenarios (Extended Housing Growth Figures Included)*



3.1.1 Recycling, Composting & Landfill Diversion Targets

MSW is subject to targets for recycling/composting, recovery and landfill. Since the production of the original report, the Thurrock MWMS has been adopted. This stipulates the following household recycling and composting targets:

- 2010/11 – 40% Recycling and Composting;
- 2015/16 – 50% Recycling and Composting; and
- 2019/20 – 60% Recycling and Composting.

In this report, these targets are assumed to be met. The MWMS also states that Thurrock will meet its landfill diversion obligations. Therefore, it has been assumed that the authority's landfill allowance trading scheme (LATS) targets are always met. The following charts show the upper and lower bounds for forecast future municipal waste arisings, presenting the split in the destination of the waste between recycling/composting, recovery and landfill.

The 'recovery' section is assumed to be recovery other than recycling and composting however, it might be the case that these tonnages are in fact sent for recycling and composting rather than some form of energy/materials recovery.

The RSS sets targets on a Regional level for waste management. The targets in the RSS are as follows:

- 2010 – 50% Recovery of waste (including recycling, composting and recovering value from waste);
- 2015 – 70% Recovery of waste (including recycling, composting and recovering value from waste); and
- 2021 – 98% Recovery of waste (including recycling, composting and recovering value from waste).

These targets, whilst not directly comparable with the Thurrock level recycling and composting targets show a similar shift away from landfill to other forms of management. This RSS conformity scenario is that discussed in *Section 2*.

Figure 3.3 *MSW Upper Bound Growth Scenario, Incorporating Targets*

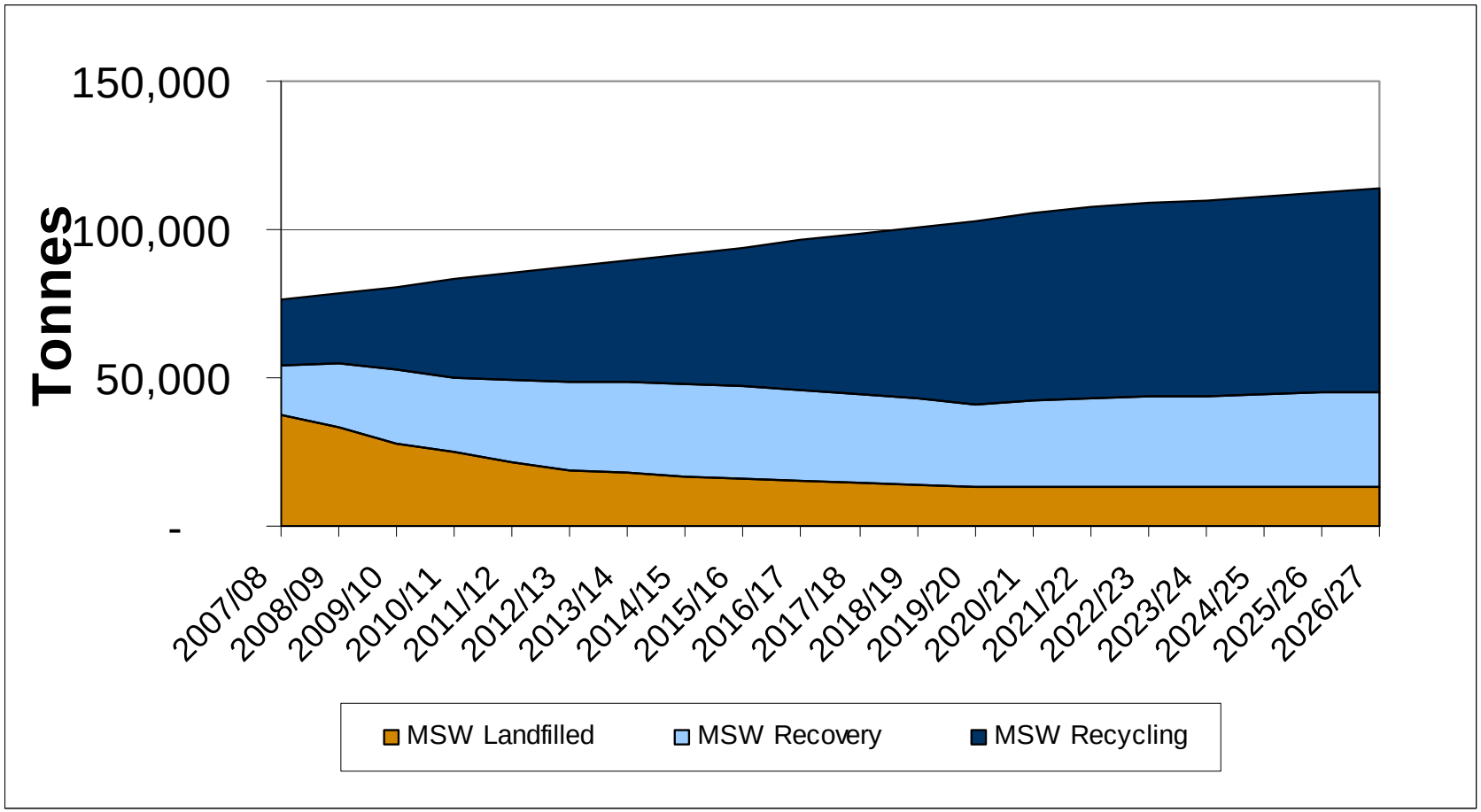
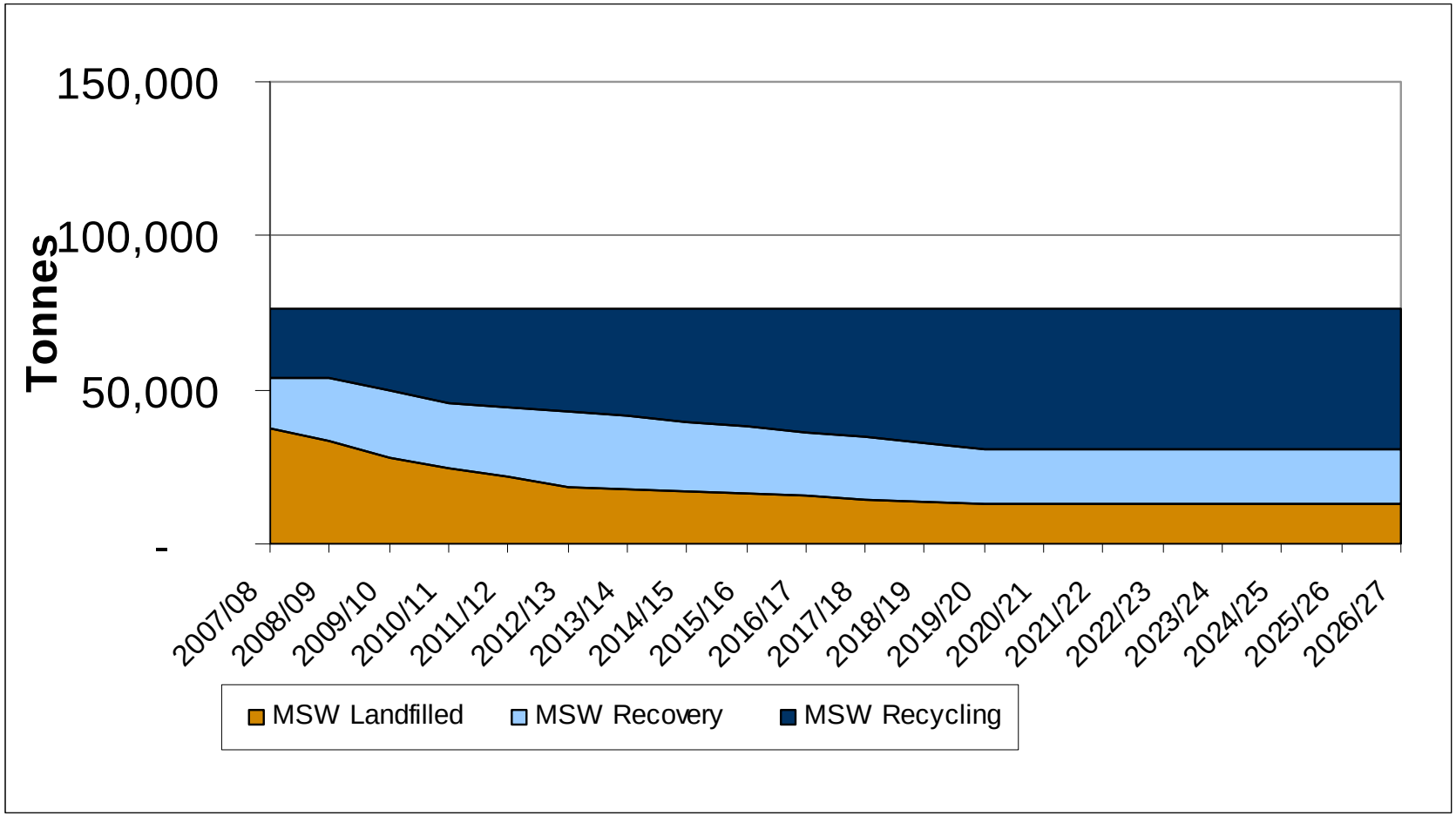


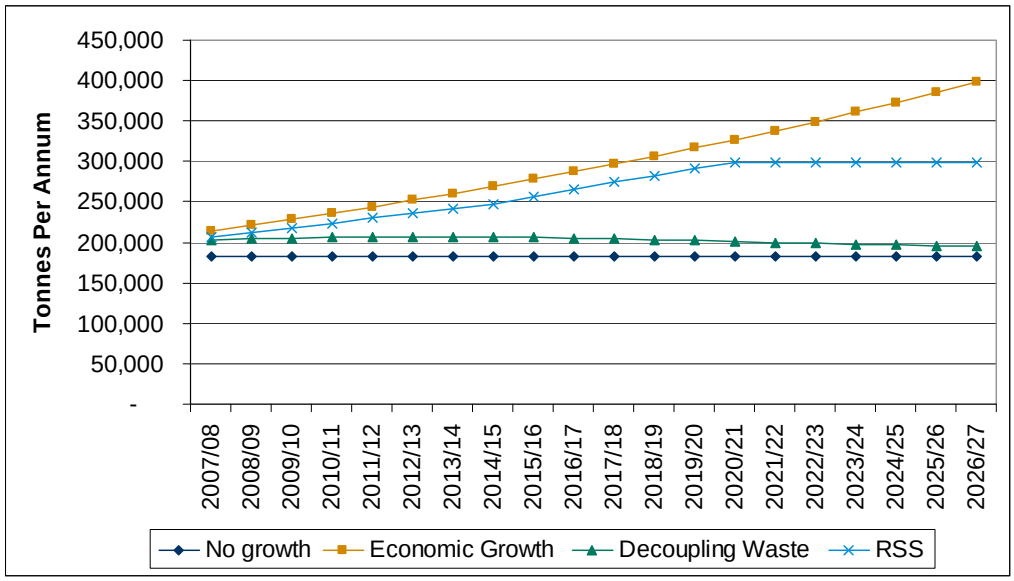
Figure 3.4 *MSW Lower Bound Growth Scenario, Incorporating Targets*



3.2 C&I Waste Arisings Update

The same baseline data is used in this assessment as in the original work. Forecasts have been extended to 2026/27, as with MSW. The same three growth rates were used and the 'no growth' rate and the 'economic growth' rate form the worst and best case estimates. An extra growth rate has been included to provide consistency with the RSS. This shows the RSS forecast sits within the forecast highest and lowest growth rates. All four growth forecasts are shown below.

Figure 3.5 C&I Waste Growth Rate Scenarios



3.2.1 C&I Waste Management Methods

The original study included the assumption that the current (1) management methods for C&I waste would continue throughout the forecast period. The split of management method used was 57% total recovery (including R&C and recovery) increasing to meet RSS targets over time. The proportion that was sent for R&C was 83% of that total recovery, whilst recovery was only 17%. This assumption has been subject to a sensitivity test in this report. This creates two new scenarios, one where R&C and recovery are assumed to make up an equal share of the total recovery. One where the split moves to a recovery heavy bias, with 70% recovered and 30% sent to R&C. The results of this assessment can be found in *Section 6*.

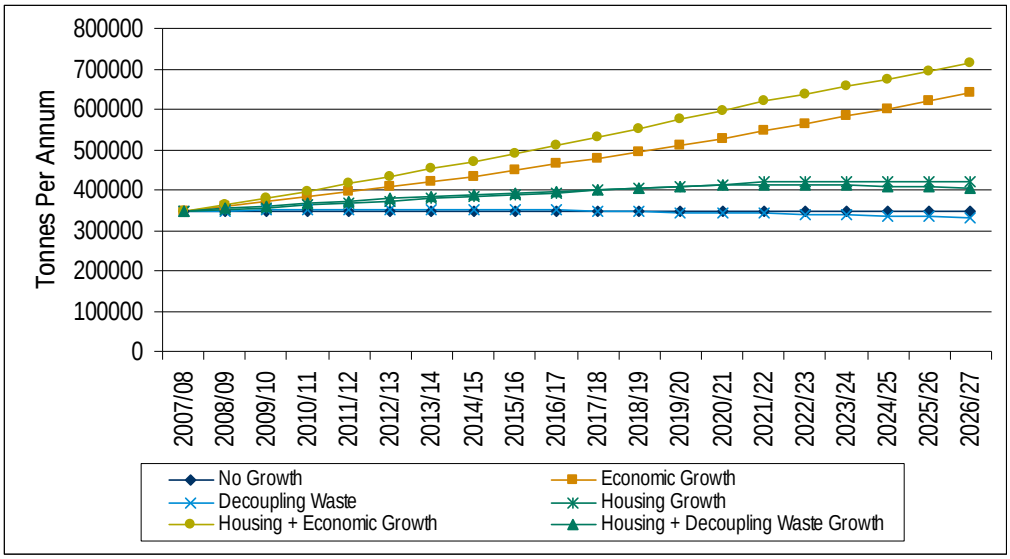
(1) Based on SWMA 2002/3 estimates

3.3 C&D WASTE ARISINGS UPDATE

The C&D waste arisings forecasts have been updated. The original report only included those wastes related to mining and quarrying and construction, based on employment numbers in these sectors. This report has used a method of applying C&D waste arisings based on population. This gives a much larger and more realistic estimate of C&D arisings in Thurrock.

The forecasts are shown below in *Figure 3.6*. There are a range of forecasts included in this assessment for C&D waste. These largely depend on economic growth and housing growth. There are six forecasts presented, the worst case scenario, which forms the upper bound of the range, is based on housing growth plus economic growth. The best case scenario is no growth. The 'decoupling waste growth from economic growth' forecast actually leads to a lower amount by 2026/27. However, it is more prudent to look at 'no growth' as the best case scenario and thus this forms the lower bound of our range.

Figure 3.6 C&D Waste Growth Rate Scenarios



The Symonds report for 2005, where this data is taken from, provides the following split for C&D wastes managed within the Greater Essex (1):

- Recycling – 49%
- Landfill – 29%
- Spread on exempt land – 22%

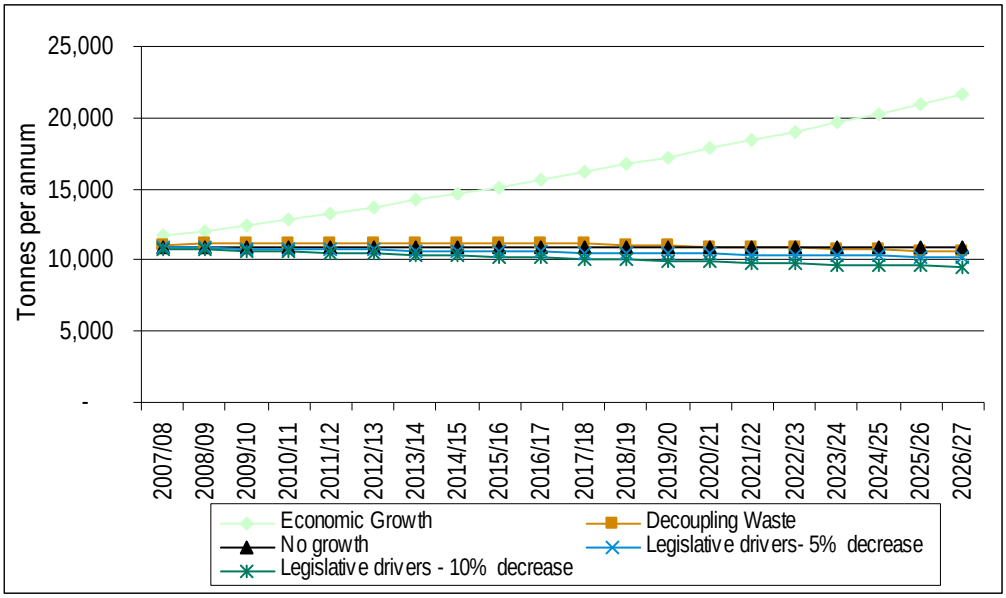
These management splits are assumed to continue in the forecast period.

(1) Includes Essex, Thurrock and Southend-on-Sea

3.4 HAZARDOUS WASTE ARISINGS UPDATE

Data from the Environment Agency's Hazardous Waste Interrogator 2007 has been used to update the hazardous waste arisings section. The same growth rates as used in the original study were used. The forecasts are shown below in *Figure 3.7*.

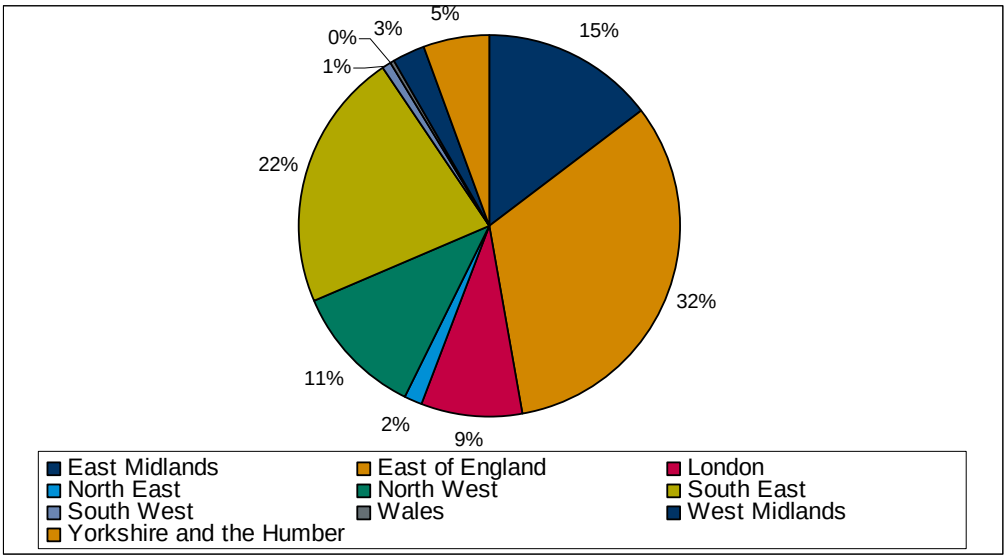
Figure 3.7 Hazardous Waste Growth Rate Scenarios



No specific hazardous waste management capacity types are identified in this study. As such, there are no comparisons in *Section 4* for hazardous wastes. The specialist nature of hazardous waste treatment means that hazardous waste will travel greater distances to recycling/disposal destinations, if required. Destinations for the c. 11,000 tonnes of hazardous waste produced in Thurrock in 2007 are shown below. A third of the hazardous waste produced in Thurrock was treated within the East of England Region. The surrounding regions of the East Midlands and the South East of England treated over a third of the waste, leaving approximately 30% to be sent further afield for treatment.

Rwe NPower has a landfill on its site in Thurrock, this site is there to take ash from the power plant. This site does not import waste from elsewhere and simply landfills ash produced on site at the power station and therefore this void has not been included as available void for hazardous waste.

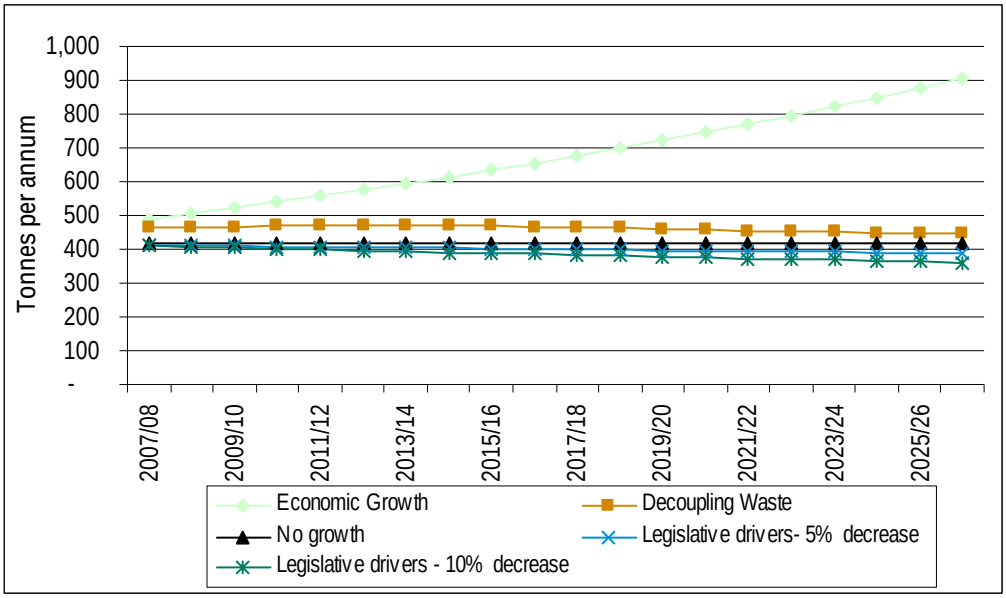
Figure 3.8 Location of Treatment of Thurrock Hazardous Waste Arisings, by Region



3.5 AGRICULTURAL WASTE ARISINGS

Agricultural wastes have not been updated. They form a very small amount of the overall waste stream. The forecast has been extended in line with the other waste streams. However, no changes were made to the baseline data.

Figure 3.9 Agricultural Waste Growth Rate Scenarios



These wastes are insignificantly small in comparison to MSW and C&I waste arisings, and have therefore not been included in any comparisons to available capacity.

4 CAPACITY DATA UPDATE

4.1 INTRODUCTION

In consultation with Thurrock Council, ERM has reviewed the updated list of waste management sites. This list includes information on all sites which manage MSW, C&I waste and C&D waste arisings. No facilities were explicitly identified for the management of hazardous wastes. This review has enabled the list to be consolidated and organised in a way that maximises the use of the data available, and makes for a better estimate of current waste management capacity in Thurrock.

4.2 SITE CAPACITIES

Recycling and composting capacity is provided by a small number of commercial skip operators. One operator (Nordic Recycling) has recently opened a materials recycling facility (MRF) at Tilbury Docks. However, this facility will accept wastes from London and other sources and, as such, the capacity available to Thurrock is difficult to estimate. The majority of the other recycling capacity is for the recycling of metals and end of life vehicles (ELVs). These sites are not included in the 'recycling' category as they do not offer capacity that can be used for general MSW and C&I waste and only offer a specific service. ELV facilities often have a much larger permitted capacity than is used and therefore would skew the results to be overly positive.

Treatment capacity is predominantly provided by one large facility. However, this site is solely for the combustion of used tyres and therefore offers no capacity for general MSW and C&I wastes. The remaining sites in Thurrock for 'treatment' are WEEE recycling facilities and, as such, are similar to the tyre facility, offering little or no capacity for general MSW and C&I waste. One site is included in the 'treatment' list that has no capacity data and is therefore attributed an extrapolated capacity based on the other facilities. As the 'treatment' sites are being discounted, due to their specialist nature, this site will also be given a capacity of zero. Therefore, a scenario assessing the capacity gap without these specialist facilities shows that there is no other capacity in Thurrock.

Landfill capacity has been assessed in four different scenarios. The scenarios assess the capacity that is: currently operational; currently operational but without planning permission; currently non-operational with planning permission; and potential voidspace arising from mineral extraction sites.

The tables below show the capacity for landfill and non-landfill facilities in Thurrock. These capacities are compared to the relevant arisings data in *Section 5*. The capacities are aggregated values for all sites of that type in Thurrock. Where no capacity data was available for a site, an extrapolation

was made based on the site type as to the size of that site. Data were available for between 60% and 80% of all sites.

Table 4.1 Non Landfill Capacity by Site Type (tonnes per annum)

	Capacity	No. Sites	Capacity blanks	Sites with capacity	Extrapolated value
Transfer	55,000	5	2	3	91,667*
Treatment	52,480	4	1	3	69,973
Incinerator	-	0	0	0	0
Composting	-	0	0	0	0
Recycling	20,000	3	1	2	30,000
Ignore	-	3	3	0	0
Metal/ELV Facility	388,163	7	0	7	388,163
CLOSED	-	0	0	0	0
C&D Recycling	1,325,000	4	1	3	1,325,000#

* Part of this transfer capacity is recycling capacity and added in *Table 3.2* below

No extrapolation carried out on C&D recycling sites as these would be skewed by large wharfside facilities

Table 4.2 Non-Landfill Capacity Table (tonnes per annum) Aggregated Capacity for Comparison with Arisings Data

		Operational	Non operational	Total (inc. currently non operational sites)
MSW/C&I	Recycling*	48,333	500	48,833
waste	Recovery	69,973	-	69,973
C&D waste	C&D Recycling	1,325,000	-	1,325,000

*Not including capacity at Nordic Recycling MRF, Tilbury Docks.

Table 4.3 Landfill Capacity Table (tonnes)

	Operational with p/p	Operational plus w/o pp	Operational/planned	All including potential
Non Haz	5,600,000	5,600,000	5,600,000	7,600,000
Inert	3,830,000	4,230,000	5,900,000	9,400,000

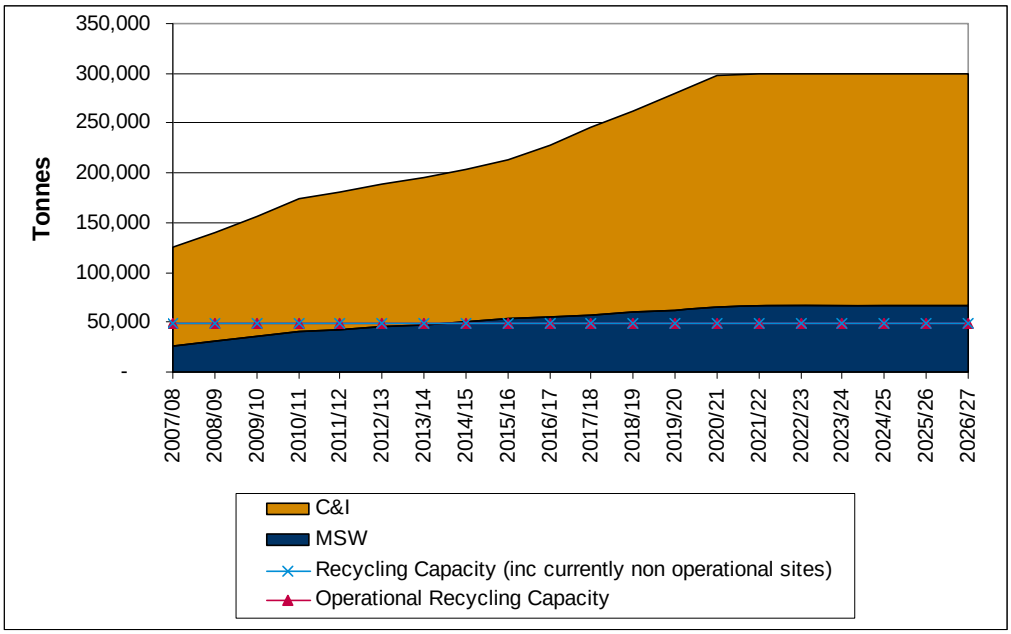
5 CAPACITY GAP ANALYSES

5.1 RSS CONFORMITY SCENARIO

5.1.1 Recycling and Composting

Recycling capacity versus those arisings identified in the RSS for recycling and composting shows that by 2021 there is a gap identified of up to 250,000 tonnes per annum. The recycling capacity used did not include the Nordic Recycling MRF at Tilbury Docks that could potentially take up to 100,000 tonnes of recyclable wastes, thus reducing this gap to only 150,000 tonnes per annum.

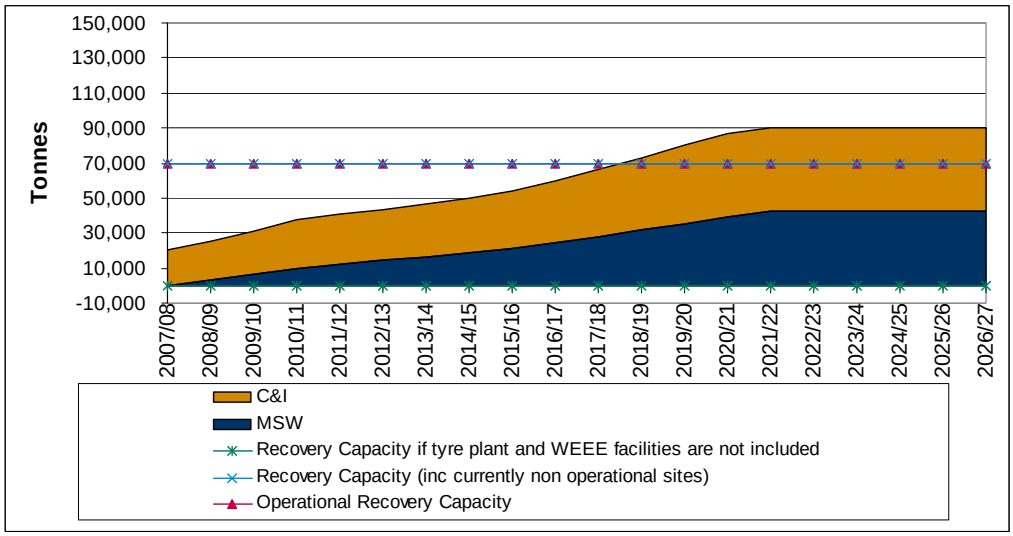
Figure 5.1 RSS Recycling Capacity Gap



5.1.2 Recovery

Recovery capacity is required in Thurrock of up to 90,000 tonnes in 2021. The reason the recovery requirements are slightly higher for the RSS scenario than the scenarios in *Section 3* is the fact the total recovery requirement increases to 98% under the RSS scenario, rather than allowing Thurrock to meet their LATS targets, as is the case in the other scenarios.

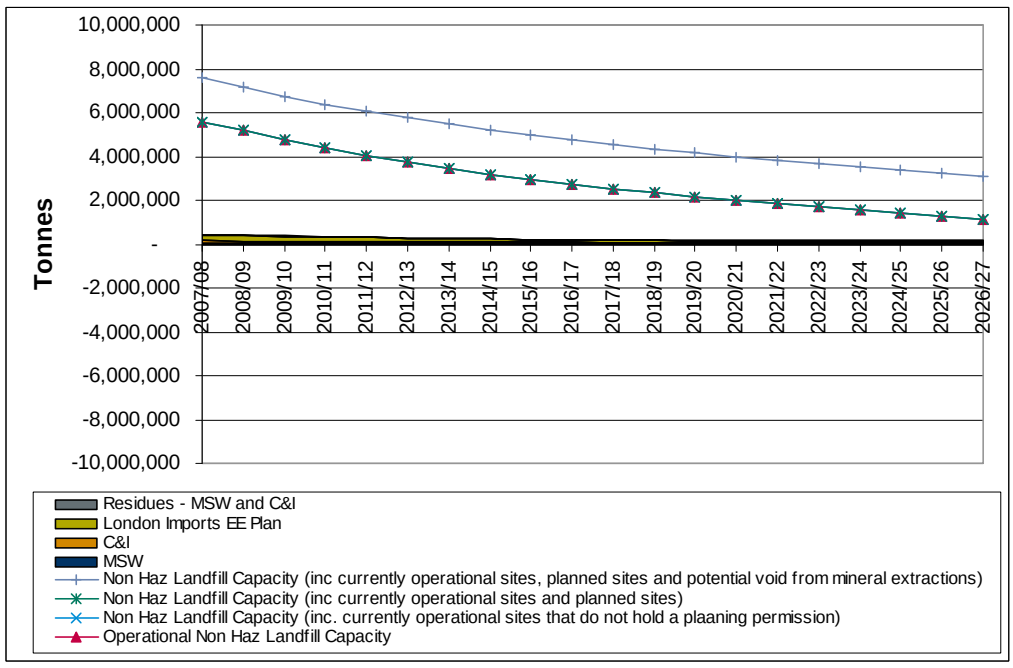
Figure 5.2 RSS Recovery Capacity Gap



5.1.3 Landfill

Non hazardous landfill is forecast to be sufficient to deal with the arisings forecast in the RSS, including the apportionment of London's waste to Thurrock. The importing of more waste from London than is identified in the RSS, as is the current situation, would lead to a deficit of landfill voidspace. This is discussed further in *Section 5.2.4*.

Figure 5.3 RSS Non Hazardous Landfill Capacity Gap



* Three scenarios are shown on the chart as the same line, as capacity does not change between these scenarios. The only scenario with extra capacity is the scenarios including potential void from mineral extractions.

5.2 ALTERNATIVE SCENARIOS

5.2.1 MSW and C&I Waste Recycling and Composting

The level of recycling and composting capacity currently operational, and also including that with permission that is non operational, is insufficient to deal with the waste forecast to be managed via recycling and composting in Thurrock. A best and worst case scenario has been used throughout these sections. The worst case incorporates the upper bound of both the MSW and C&I waste arisings forecasts, whilst the best case uses the combined lower bounds.

Thurrock will require a further 110,000 tonnes per annum of capacity, on top of that already provided in the year 2021 (the final year of the RSS) to deal with the forecast waste under the best case scenario. The requirement remains at 110,000 tonnes until the end of the forecasting at 2026/27. For the worst case scenario, the requirement steadily increases to 220,000 tonnes per annum in 2021, and this goes up to 270,000 tonnes per annum by the end of the forecasting period.

There are significant additional capacities required. Clearly, currently there is waste that must be being managed elsewhere, in Essex or further afield. A MRF is now operational in Thurrock (Nordic Recycling, Tilbury Docks) that is not included in the capacity level in the charts. It will accept up to 100,000 tonnes of mixed recyclables and 100,000 tonnes of paper. This capacity is not all available to Thurrock, as the facility will be accepting waste from London and other sources. However, it could potentially accept some of the recyclable MSW and C&I wastes, filling some of the gap presented below.

Figure 5.4 Need for Recycling and Composting Capacity (Best Case)

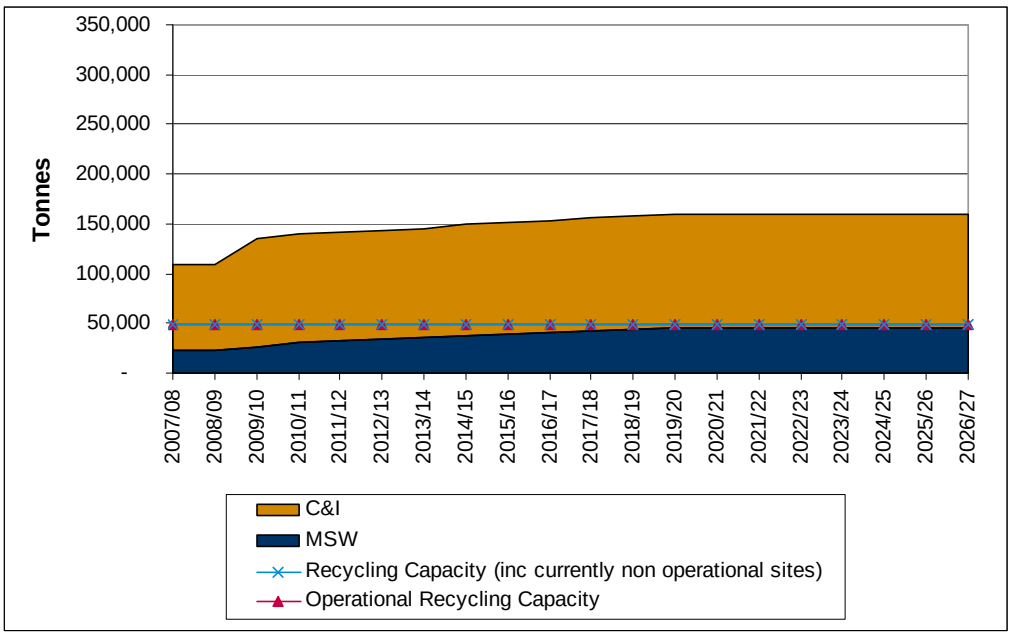
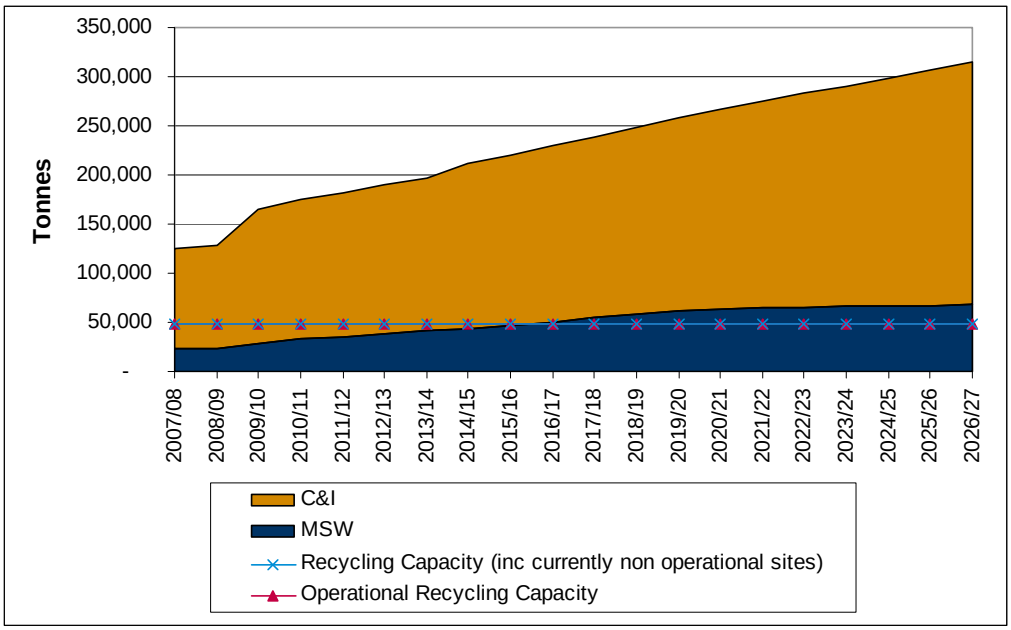


Figure 5.5 Need for Recycling and Composting Capacity (Worst Case)



The reason the recycling requirement is slightly lower in this scenario than in the RSS scenarios (*Section 2*), is a combination of there being a slightly lower forecast of arisings of MSW and the increased level of total recovery (including recycling) of both MSW and C&I wastes.

5.2.2 *C&D Waste Recycling*

On the face of it, there appears to be a significant amount of C&D recycling capacity in Thurrock. However, the sites that provide >90% of this capacity are wharf-side facilities accepting dredging wastes. This capacity is not therefore available to the C&D waste market and, as such, should not be considered as appropriate for inclusion in this assessment. With these sites excluded, current capacity would be slightly insufficient for current needs although only a further 20,000 tonnes would be required in the best case scenario. A further 200,000 tonnes would be required in the worst case scenario. The 150,000 tonnes capacity is made up of two sites, one of which has no capacity data. The capacity of the site with no data has been estimated based on the other C&D recycling facility.

Figure 5.6 *Need for C&D Waste Recycling Capacity (Best Case)*

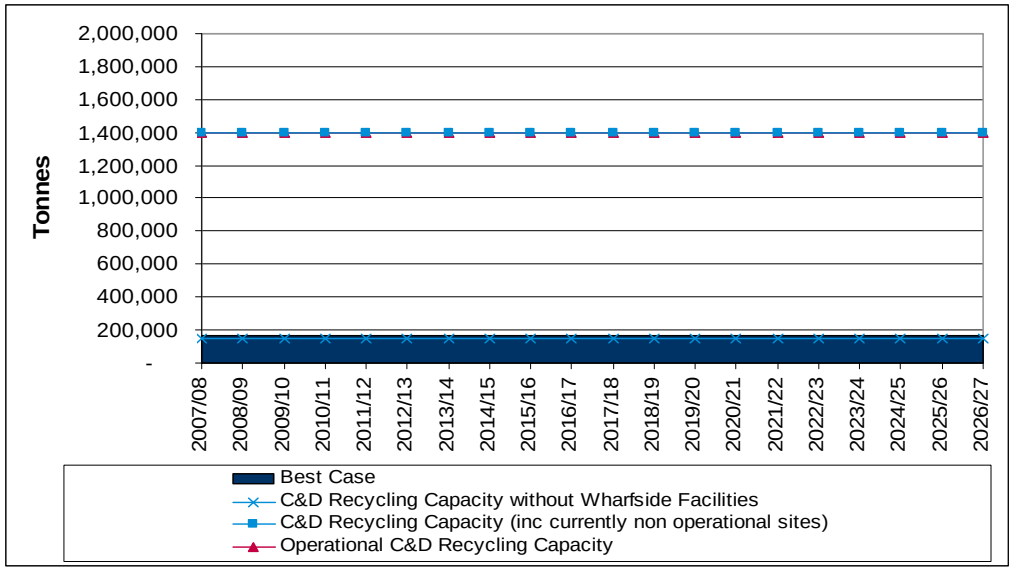
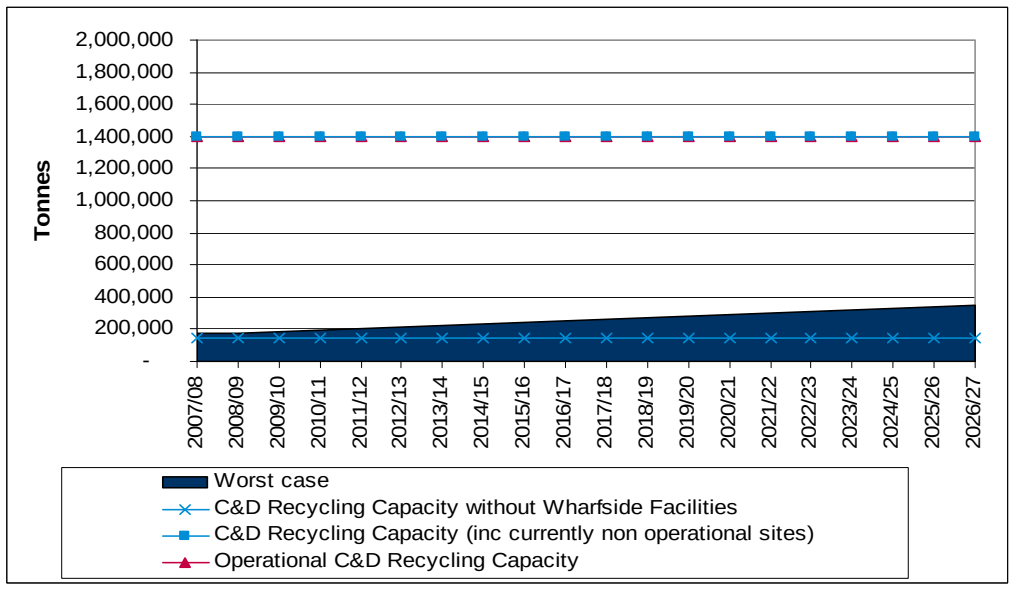


Figure 5.7 *Need for C&D Waste Recycling Capacity (Worst Case)*



5.2.3 *MSW and C&I Waste Recovery*

The recovery capacity figures below appear to show a current surplus when compared to need. However, the significant majority of this capacity is provided by a tyre recovery facility. This clearly does not provide recovery capacity for general MSW and C&I waste and, as such, is not compatible with the management needs of these tonnages.

Also included in the figures are WEEE facilities which offer niche capacity. The total capacity presented includes a figure for a site for which capacity data were not provided, and where capacity has been extrapolated from the capacity of the tyre plant and the WEEE sites. As such, this is not a reliable figure.

The conclusion is that, despite the existing recovery capacity, Thurrock still requires further facilities to deal with the forecast wastes requiring recovery. This is due to the unsuitability of the existing capacity. Under the worst case scenario, in the year at the end of the RSS forecast period (2021) the requirement under the best case scenario is 50,000 tonnes and under the worst case scenario it is 70,000 tonnes per annum. As the forecast continues on to 2026/27 the capacity gap grows up to 85,000 tonnes under the worst case scenario. The requirement remains at the 50,000 tonnes level under the best case scenario

Figure 5.8 *Need for Recovery Capacity (Best Case)*

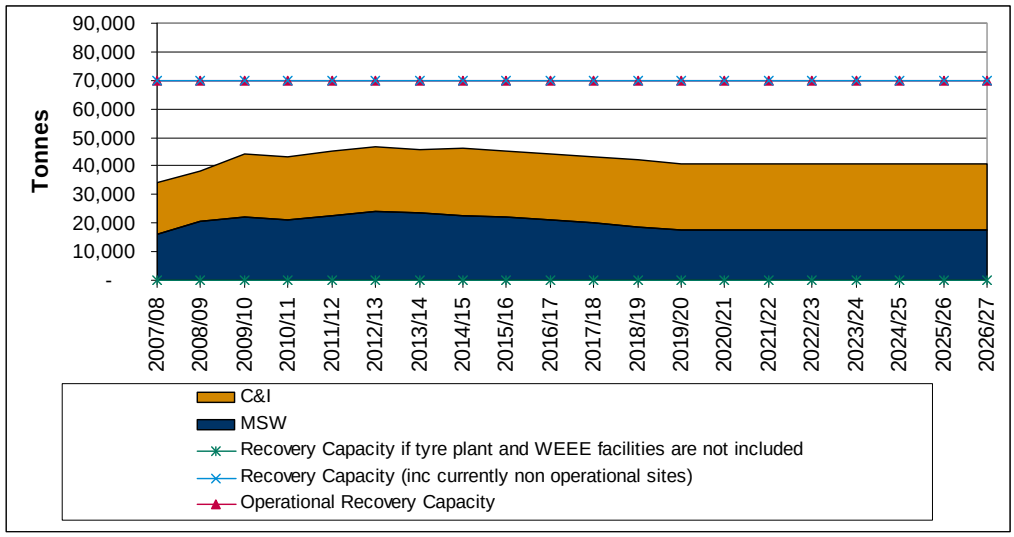
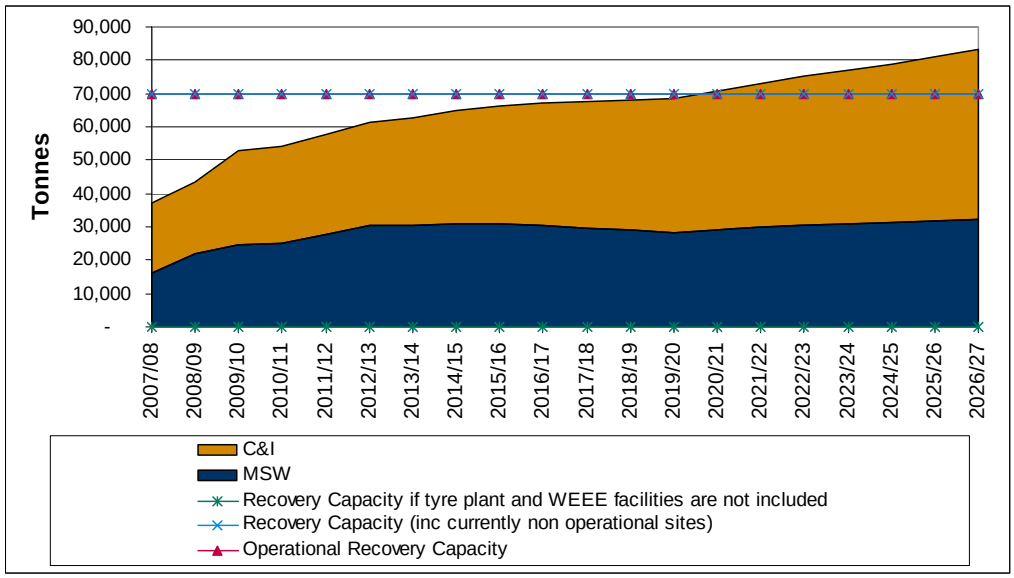


Figure 5.9 Need for Recovery Capacity (Worst Case)



5.2.4 Non Hazardous Landfill

There are some relatively large landfills within the Thurrock borders. These currently accept waste from London and surrounding areas. The figures below show the situation if the apportionment of London's waste is maintained at the level set out in the East of England Plan and the MSW and C&I waste arisings from Thurrock that are not recycled or recovered are sent to these landfills (see targets in *Section 3.1.1*). Also included in these charts are the residues assumed to come from 'recovery'. This is assumed to be 30% of the total sent for recovery. The figures show that, whilst the void will be depleted over time, there is sufficient available to remain in surplus up to 2027 in both the best and worst case scenarios.

Figure 5.10 Need for Non-Hazardous Landfill Capacity (Best Case)

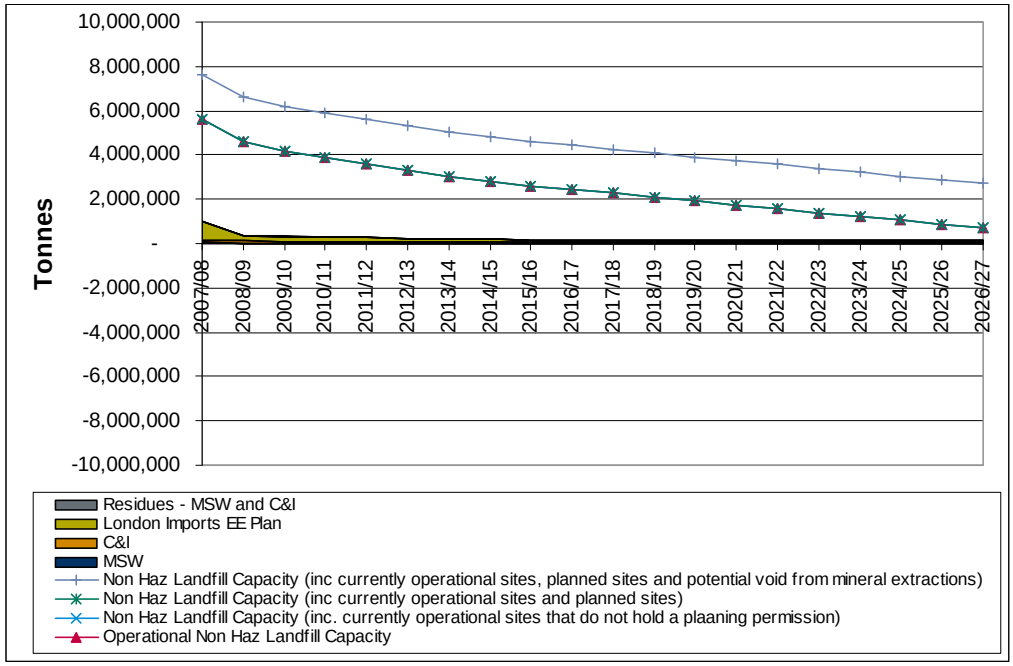
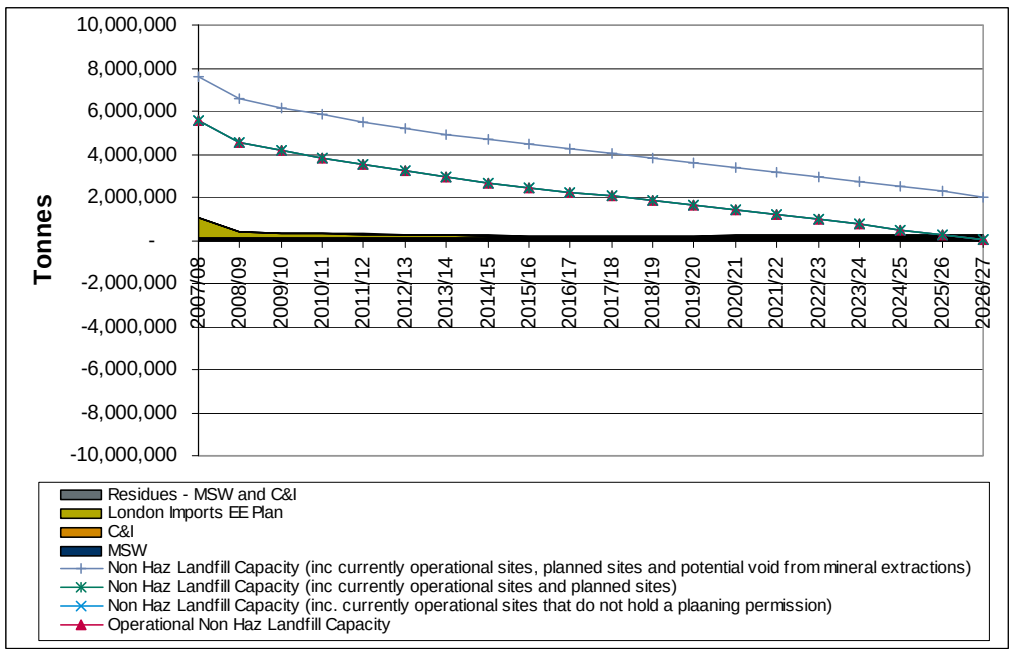


Figure 5.11 Need for Non-Hazardous Landfill Capacity (Worst Case)



However, this would seem to be an overly optimistic view, even in the worst case scenario. Thurrock landfills have actually accepted over a million tonnes of waste per annum from London in the recent past - four times the allocation for this year in the East of England Plan, at an average of 0.88 million tonnes per annum. If this rate was to continue, the remaining landfill void will be depleted very quickly indeed, reducing the time horizon for exhaustion of current void to approximately 2014.

The charts below show the difference to the results presented in *Figures 4.9* and *4.10* made by this tonnage from London, beyond Thurrock's apportionment. Should the imports continue at this rate, then a further 13 million tonnes of voidspace would be required over the forecasting period. This situation is not sustainable and unlikely to occur as it is not in accordance with the RSS. If Thurrock does continue to receive waste above the RSS levels, but lower than this 1m tonne per annum scenario, then Thurrock may still require further non hazardous landfill capacity to meets its own residue needs for landfill if there are sites available.

Figure 5.12 ***Need for Non-Hazardous Landfill Capacity Assuming London Imports Continue at Current Rate ~1 Million Tonnes per Annum (Best Case)***

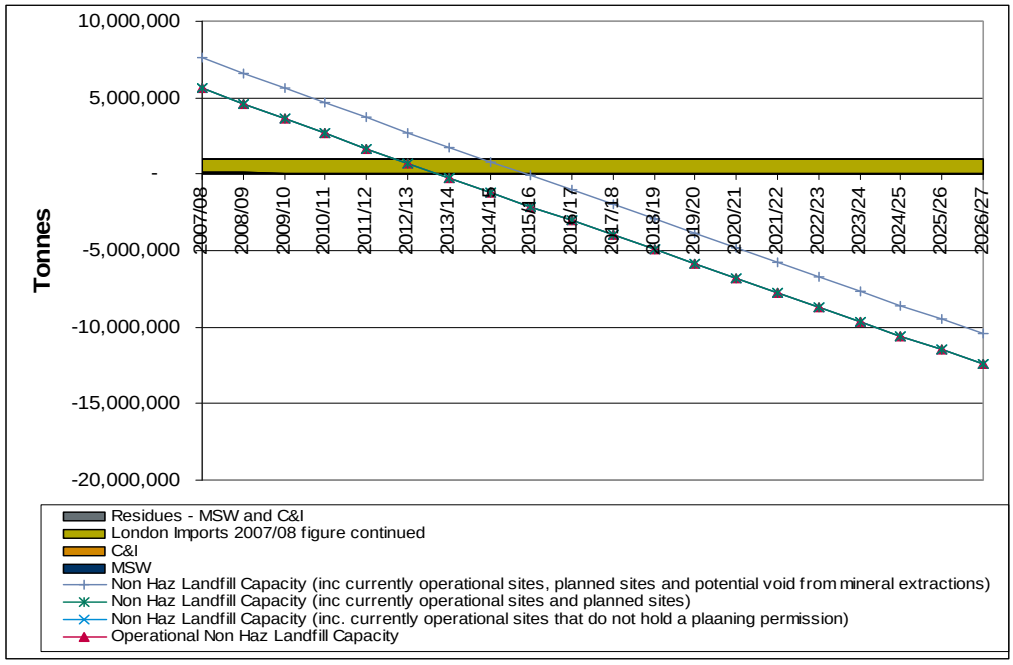
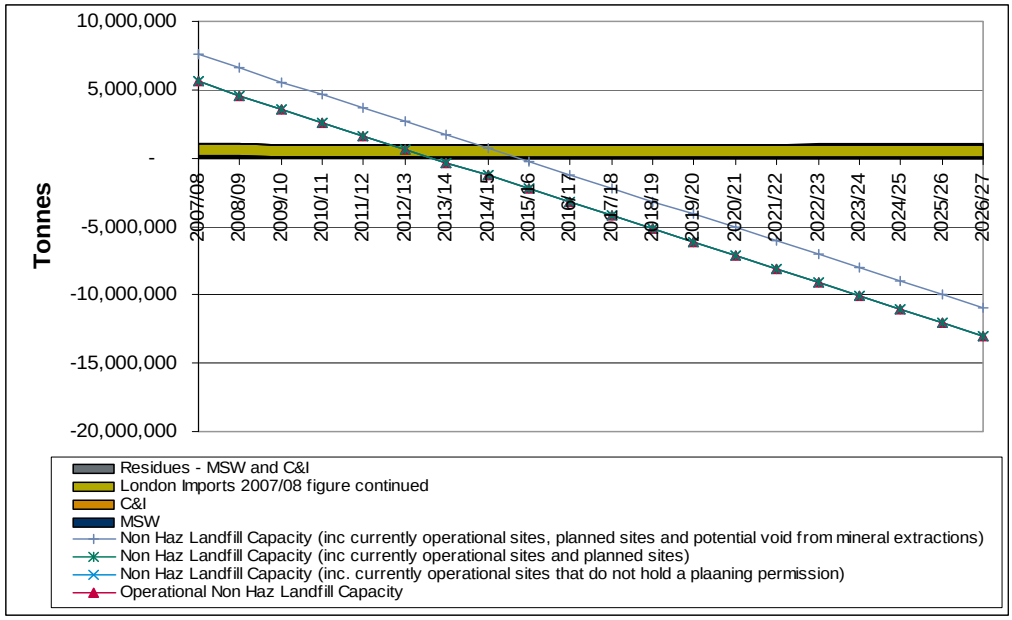


Figure 5.13 Need for Non-Hazardous Landfill Capacity Assuming London Imports Continue at Current Rate ~1 Million Tonnes per Annum (Worst Case)



5.2.5 *Summary of Landfill Scenarios*

Remaining voidspace in Thurrock is therefore sufficient to deal with the forecast imports of waste from London in the RSS. This is despite the fact that Thurrock has already landfilled the cumulative total of all of their apportionment of London's waste (2006-2021) in the past three years. The sites available for landfilling of London's waste (Mucking and Ockenden) will continue to take this waste, whilst Ockenden has potential to provide voidspace for Thurrock's waste in the future. If London continues to export more waste to Thurrock than is apportioned to them in the RSS, then Thurrock may require the extra potential landfill void in the charts above, or have a need for further non-landfill capacity to deal with the waste, preserving landfill for the disposal of residues.

5.2.6 *Inert Landfill*

There are over 3.8 million tonnes of voidspace in Thurrock. The figures below clearly show that this void is more than sufficient to deal with the forecast arisings that are assumed not to be sent to be sent for recycling.

There is a large amount of 'potential' void recorded in Thurrock. As the forecasts stand, this wouldn't be required over the forecasting period. However, this is only the case if only C&D wastes from Thurrock are sent there. In reality, there may be wastes from London, Essex and further afield being consigned to inert landfills in Thurrock.

Figure 5.14 Need for Inert Landfill Capacity (Best Case)

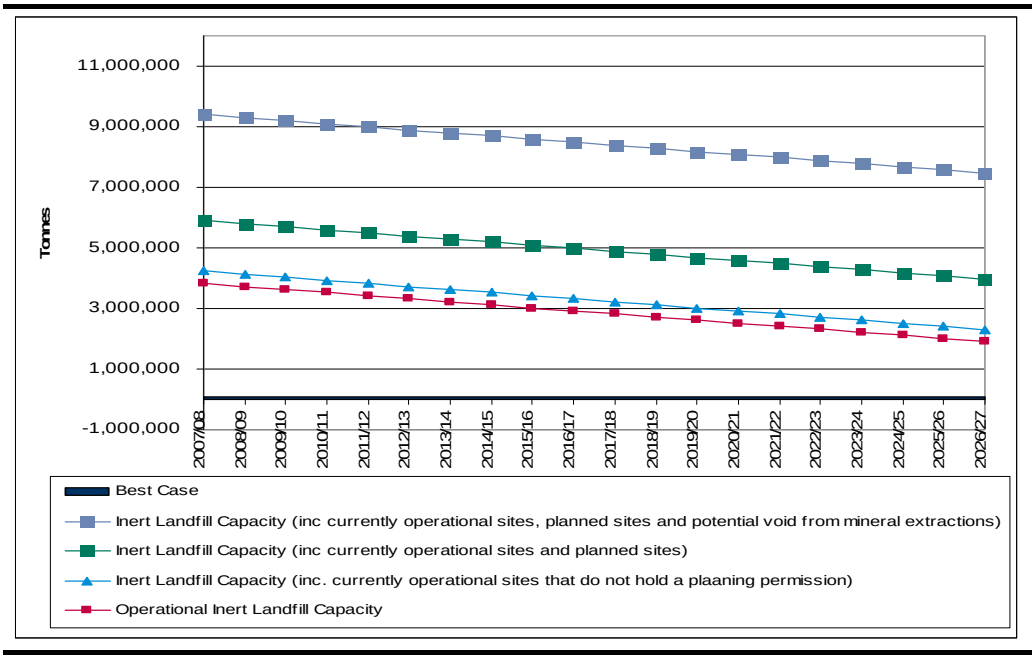
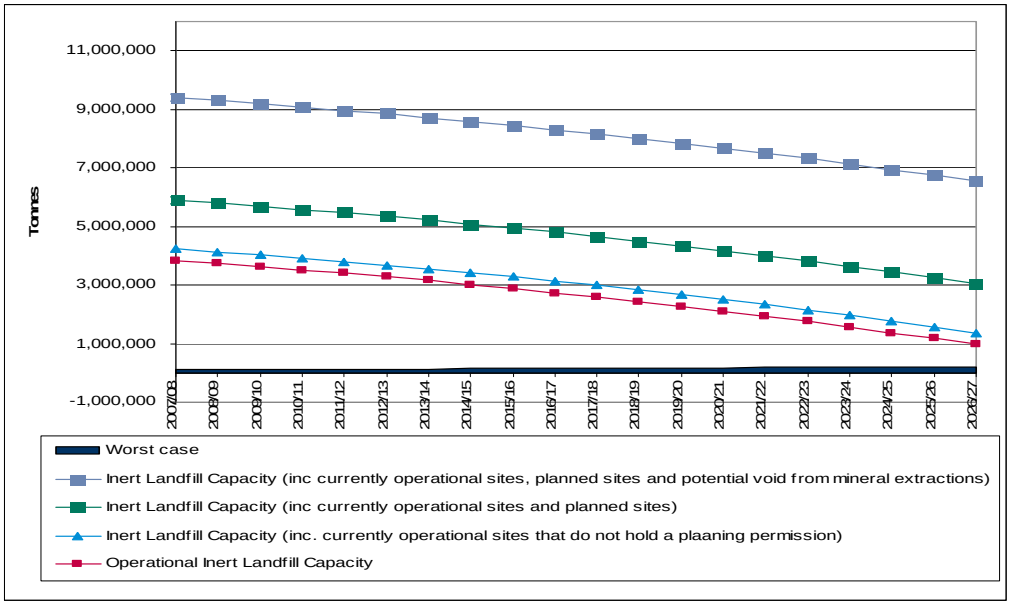


Figure 5.15 Need for Inert Landfill Capacity (Worst Case)



6 C&I WASTE MANAGEMENT METHOD VARIATION

6.1 INTRODUCTION

This section assesses the impact of changing the assumption of the amount of waste sent to recycling and recovery. The current assumptions are as follows:

Table 6.1 C&I Waste Management Methods – Current Assumptions

		Total Recovery		Landfill
		Recycling and Composting	Other Recovery	
RSS Targets	2009	57%		43%
	Proportion of Total Recovery	83%	17%	
	2010	72%		28%
	Proportion of Total Recovery	83%	17%	
	2015	75%		25%
	Proportion of Total Recovery	83%	17%	

Two scenarios have been forecast assuming higher rates of 'other recovery' than the 17% currently forecast. These are detailed in the following sections.

6.2 SCENARIO 1 – 50/50 SPLIT (RSS)

An assumption of a 50/50 split between recycling/composting and other recovery leads to the following results using the RSS Conformity figures from *Section 2*.

Figure 6.1 *Need for Recycling and Composting Capacity – New C&I Waste Management Method Assumption 50/50 Split (RSS Conformity)*

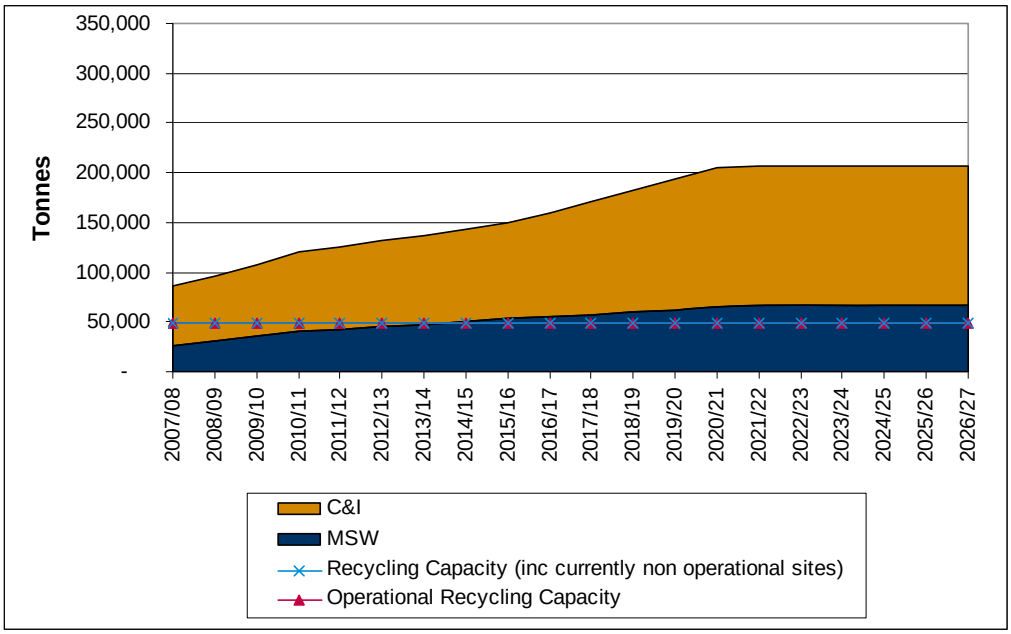
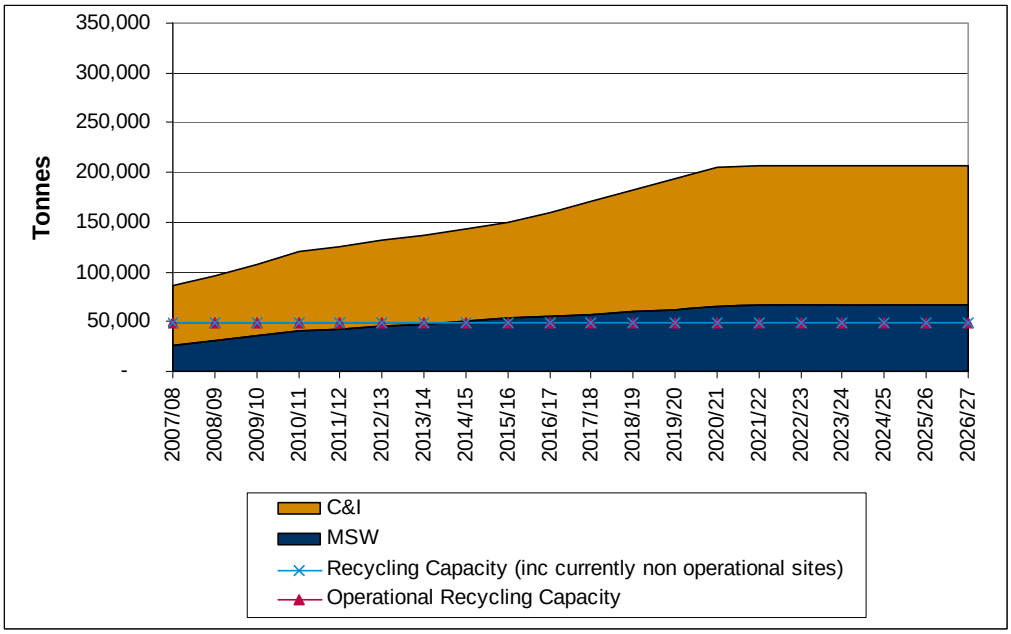


Figure 6.2 *Need for Recovery Capacity – New C&I Waste Management Method Assumption 50/50 Split (RSS Conformity)*

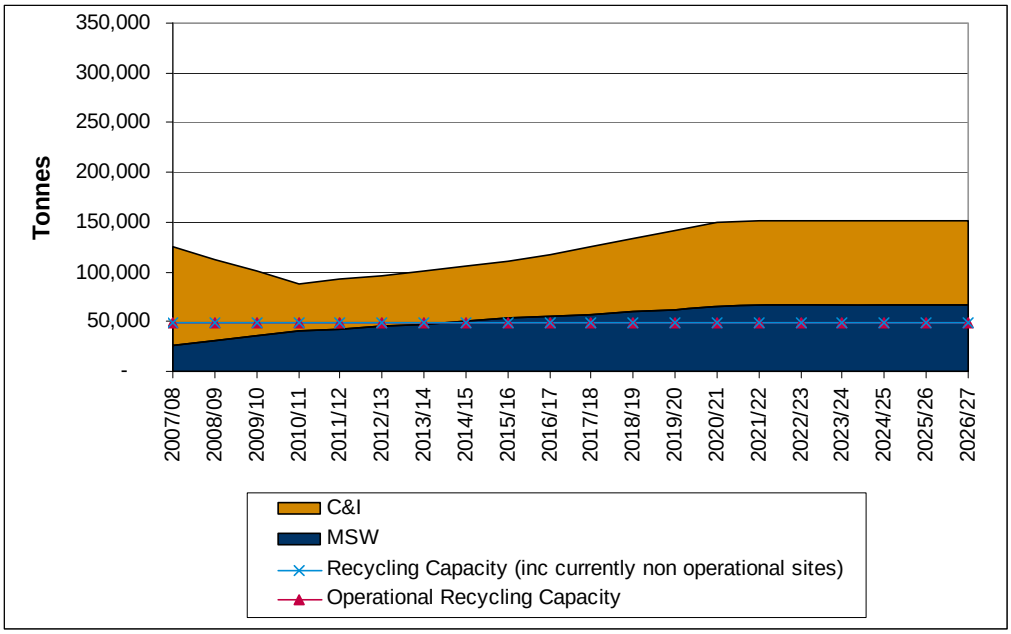


6.3 *SCENARIO 2 70/30 SPLIT (RSS)*

An assumption of a 70/30 split in favour of other recovery, between recycling/composting and other recovery leads to the following results using the RSS Conformity figures from *Section 2*.

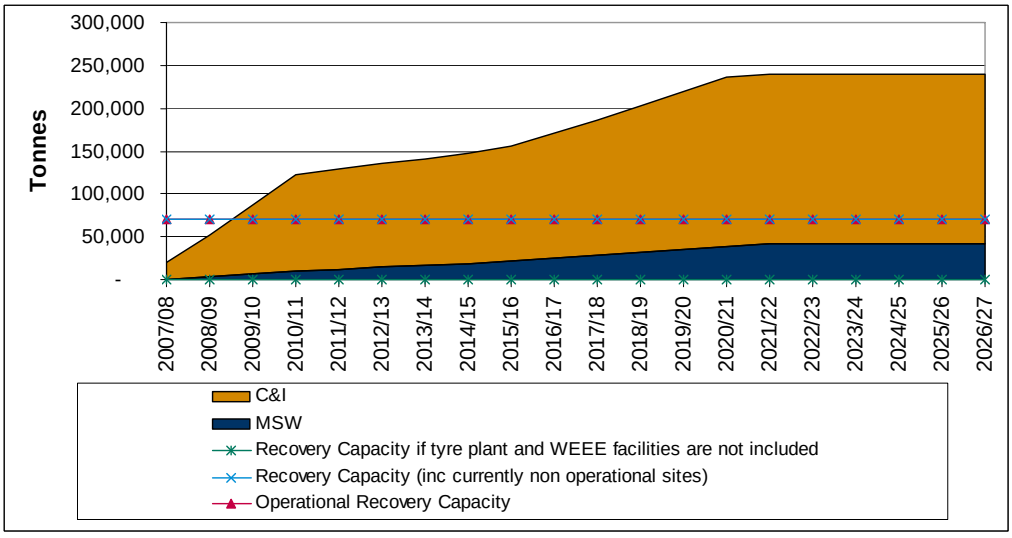
The need for recycling and composting capacity is 150,000 tonnes in total by 2026/27. Assuming 50,000 tonnes is currently available a further 100,000 tonnes is required by 2020/21, this requirement continues until 2026/27.

Figure 6.3 ***Need for Recycling and Composting Capacity – New C&I Waste Management Method Assumption 70/30 Split (RSS Conformity)***



The need for recovery capacity is up to 240,000 tonnes in 2020/21, the requirement continues at the same level up to the end of the forecast at 2026/27.

Figure 6.4 ***Need for Recovery Capacity – New C&I Waste Management Method Assumption 70/30 Split (RSS Conformity)***



6.4 SCENARIO 1 – 50/50 SPLIT (OTHER FORECASTS)

This section shows the results for this alternative split of recovery and recycling and composting using the best and worst case scenarios identified in *Section 3*.

The estimated capacity gap for recycling and composting reduces to between 65,000 tpa and 140,000 tpa in 2021, and between 65,000 tpa and 170,000 tpa in 2027. As in *Section 5* some of this gap could be provided for by the Nordic Recycling facility. These results are shown in the charts below and the tables containing these data are in *Annex D*.

Figure 6.5 Need for Recycling and Composting Capacity – New C&I Waste Management Method Assumption 50/50 Split (Best Case)

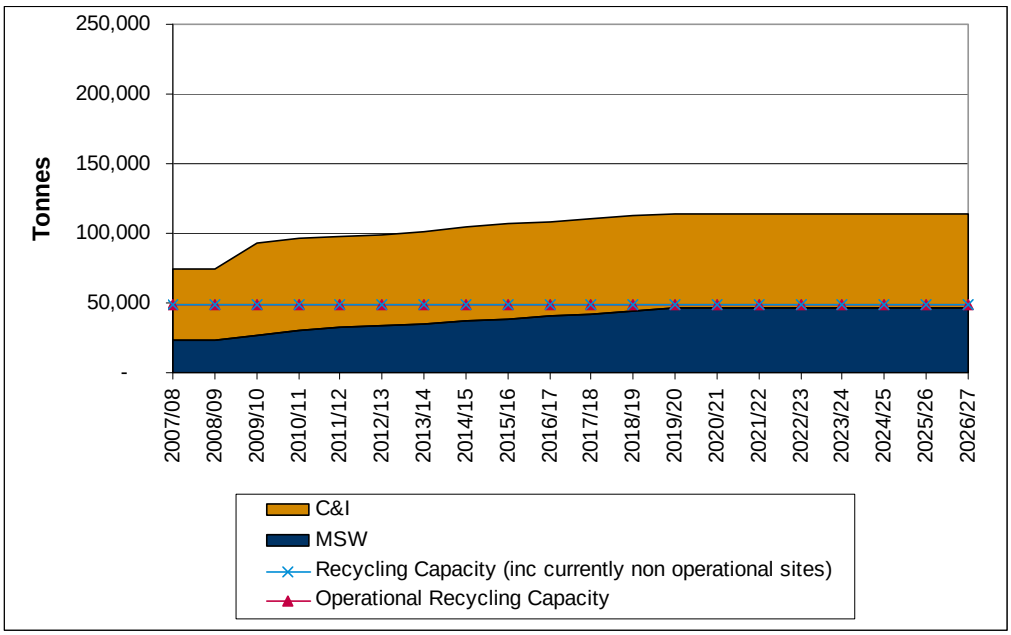
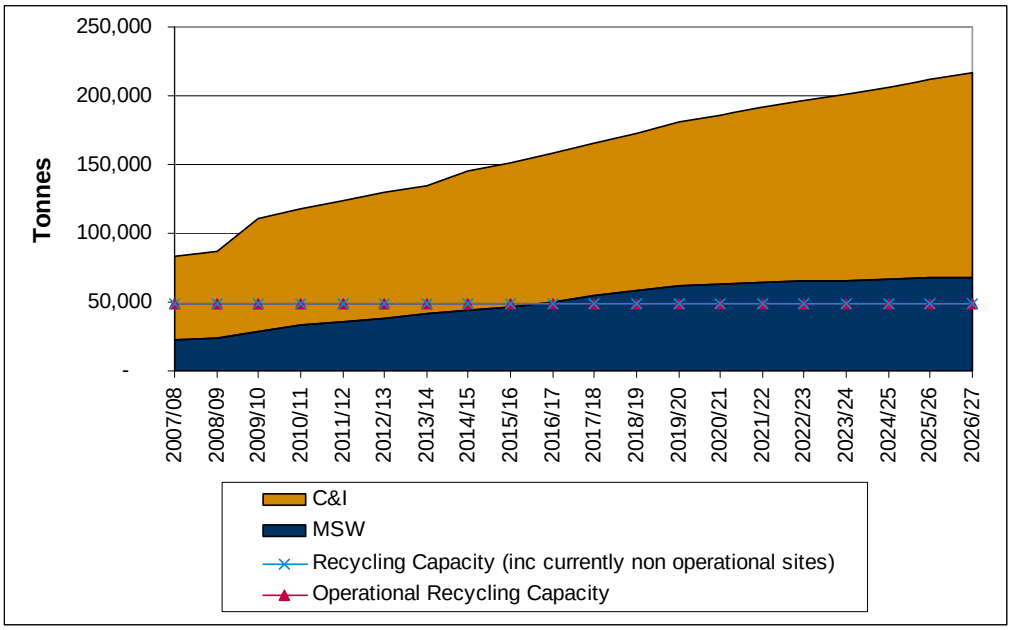


Figure 6.6 ***Need for Recycling and Composting Capacity – New C&I Waste Management Method Assumption 50/50 Split (Worst Case)***



The recovery capacity gap alters providing an increased need for recovery capacity of between 85,000 tpa and 150,000 tpa in 2021 and between 85,000 tpa and 180,000 tpa in 2027. These results are shown in the charts below and the tables containing these data are in *Annex D*.

Figure 6.7 ***Need for Recovery Capacity – New C&I Waste Management Method Assumption 50/50 Split (Best Case)***

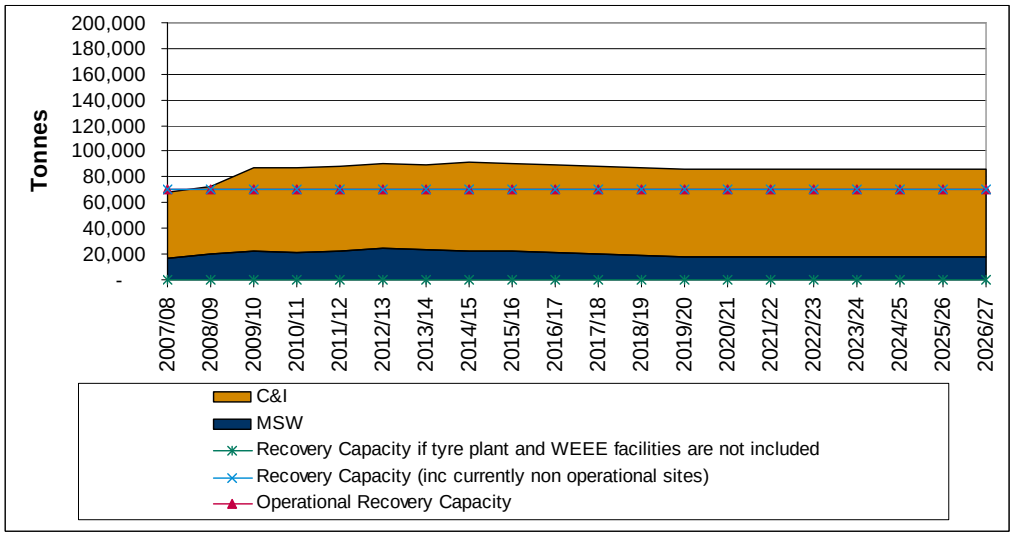
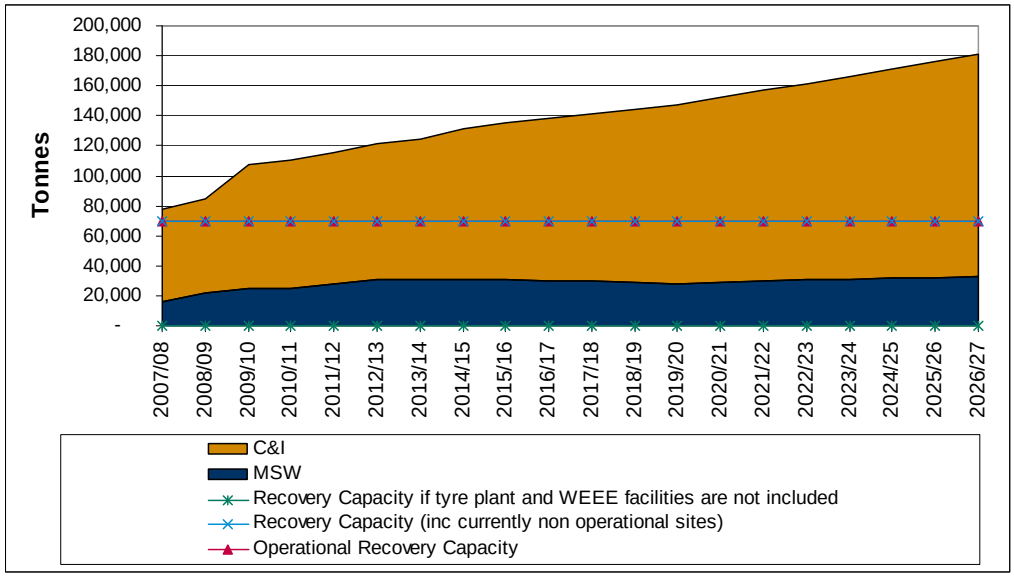


Figure 6.8 ***Need for Recovery Capacity – New C&I Waste Management Method Assumption 50/50 Split (Worst Case)***



6.5 *SCENARIO 2 – 70/30 SPLIT (OTHER FORECASTS)*

This section shows the results for this alternative split of recovery and recycling and composting using the best and worst case scenarios identified in *Section 3*.

The estimated capacity gap for recycling and composting reduces to between 40,000 tpa and 90,000 tpa in 2021, and between 40,000 tpa and 110,000 tpa in 2027. As in *Section 4* some of this gap could be provided for by the Nordic Recycling facility. These results are shown in the charts below and the tables containing these data are in *Annex D*.

Figure 6.9 ***Need for Recycling and Composting Capacity – New C&I Waste Management Method Assumption 70/30 Split (Best Case)***

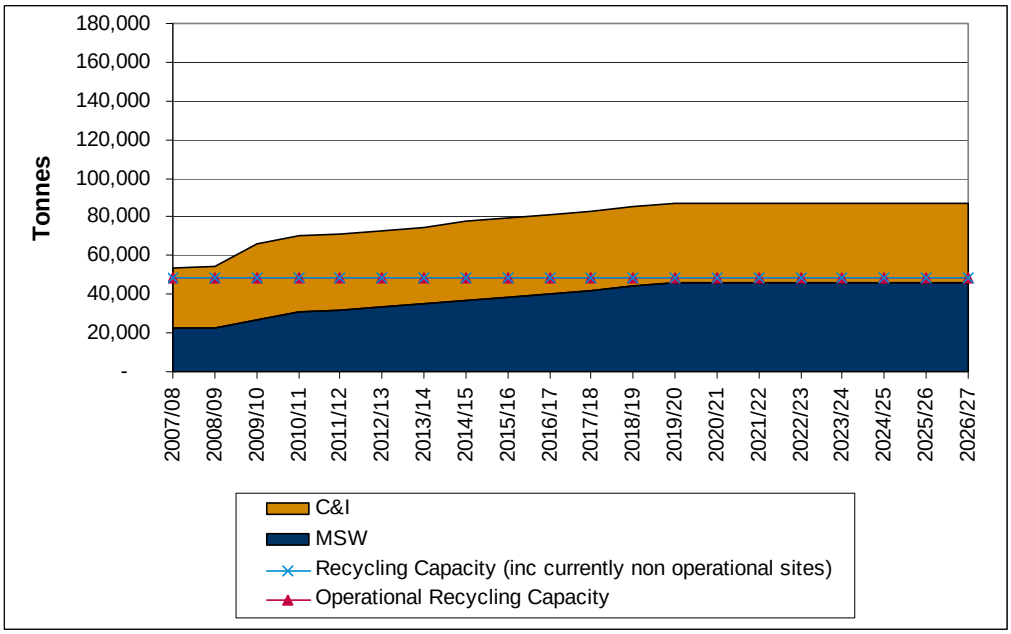
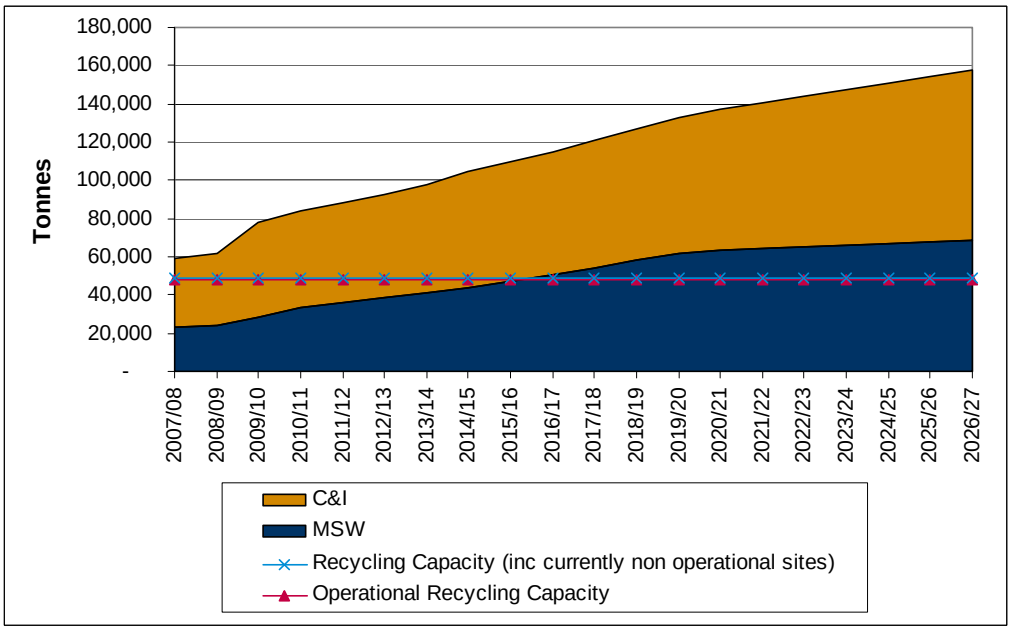


Figure 6.10 ***Need for Recycling and Composting Capacity – New C&I Waste Management Method Assumption 70/30 Split (Worst Case)***



The recovery capacity gap now shows an increased need for recovery capacity of between 115,000 tpa and 200,000 tpa in 2021 and between 115,000 tpa and 240,000 tpa in 2027. These results are shown in the charts below and the tables containing these data are in *Annex D*.

Figure 6.11 ***Need for Recovery Capacity – New C&I Waste Management Method Assumption 70/30 Split (Best Case)***

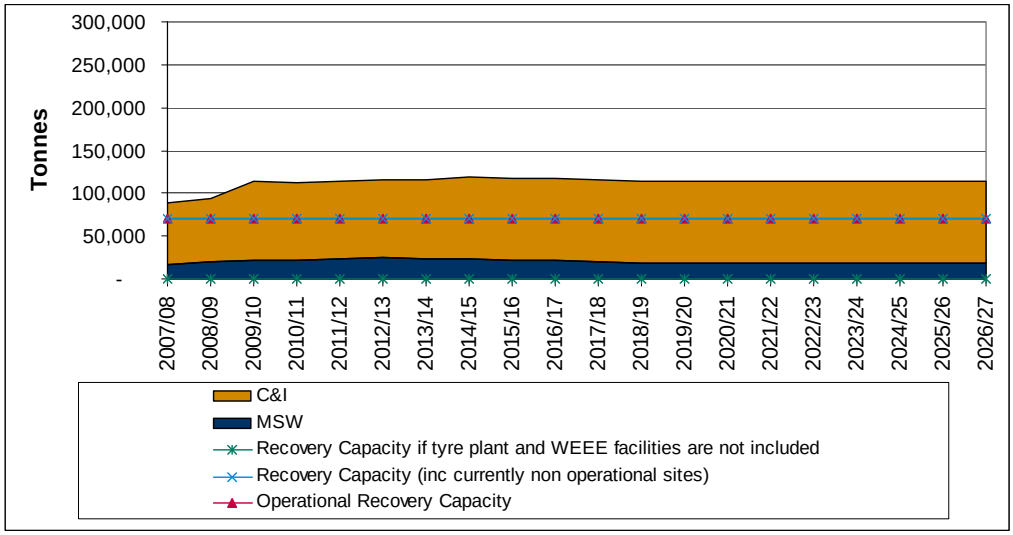
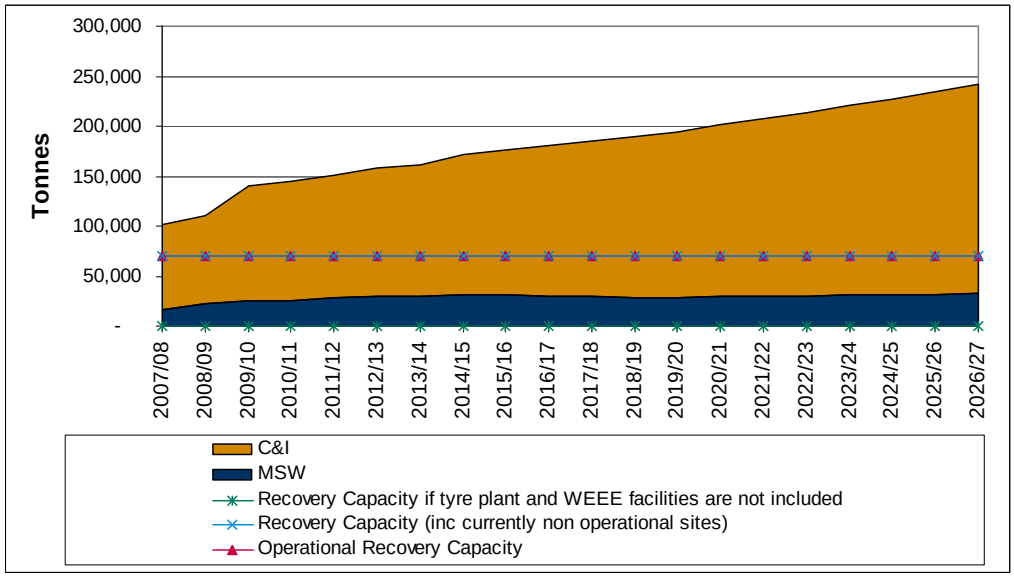


Figure 6.12 ***Need for Recovery Capacity – New C&I Waste Management Method Assumption 70/30 Split (Worst Case)***



Tables

The corresponding tables for the charts above can be found *Annex D*.

Thurrock has little in the way of non-landfill capacity that is not providing a specialist service. Consequently, Thurrock sites are in high demand providing niche market capacity. A greater quantity of general recycling/composting and recovery capacity is required, with estimates of the need ranging between 120,000 to 280,000 tonnes per annum for MSW and C&I waste.

Some of this capacity has been provided by the MRF at Tilbury Docks that has recently become operational. However, this site is a merchant facility and accepts wastes from elsewhere, such that not all of the capacity is available to Thurrock. The need for MSW and C&I waste recovery capacity is between 50,000 and 85,000 tonnes. For C&D waste recycling, the need is for between 100,000 to 300,000 tonnes of capacity.

There is a greater availability of landfill capacity in Thurrock. However, currently the use of this capacity is not in line with the forecasts in this report, with more non-hazardous MSW and C&I waste being sent to Thurrock landfills from London than the agreed apportionments. Consequently, the rate of depletion is considerably greater than forecast.

If the rate of depletion is brought into line with the forecasts in this report and the East of England Plan, then the current void will be sufficient to take all the waste required until beyond 2027. However, should the current rates of import from London continue, void will be exhausted by 2014. Inert landfill will not be exhausted over the forecasting period, assuming that the forecast levels of C&D waste are managed in the way expressed in the Symonds report from 2005. This shows that currently 30% of inert waste is landfilled.

Comparisons have been made using the figures set out in the East of England Plan. These show a slightly greater need for recycling capacity (c.30,000 tonnes per annum) and recovery capacity (c.15,000 tonnes per annum) by 2021. This is due in part to an increased forecast of MSW, but also to the assumption that 98% of wastes will be recovered.

Also assessed above are the impacts associated with a change in the proportion of C&I waste sent for recycling and recovery. The current split of recycling/composting and recovery is 83/17 in favour of recycling. This could be seen to be high in favour of recycling and thus the assessment was carried out to alter this. When the proportion is changed to a 50/50 split, the requirement for extra recycling/composting capacity reduces to between 65,000 tpa and 137,000 tpa in 2021, and between 65,000 tpa and 170,000 tpa in 2027. Conversely the requirement for recovery increases to between 85,000 tpa and 150,000 tpa in 2021, and between 85,000 tpa and 180,000 tpa in 2027. Assuming a higher split in favour of recovery (70/30) results in a higher need for extra recovery capacity of between 115,000 tpa and 200,000 tpa in 2021, and between 115,000 tpa and 240,000 tpa in 2027, whilst recycling/composting is

reduced to between 86,000 tpa and 137,000 tpa in 2021, and between 86,000 tpa and 157,000 tpa in 2027.

These results and conclusions are based on a number of assumptions. Two of the major assumptions have been tested through a sensitivity analysis to assess their impact on the overall results.

Economic growth has an impact on the forecast levels of the two largest waste streams, C&I and C&D wastes. The current economic downturn that is being experienced in the UK and globally presents us with much lower levels of economic growth than had been experienced, and that were previously used to forecast future waste arisings. ERM has carried out a crude sensitivity test to assess the effects of a reduction from a 3.3% rate of economic growth to a 1% rate of economic growth.

Also tested in the sensitivity analysis is the most recent C&I waste arisings data. The most commonly used data for C&I waste arisings come from the 2002/3 Strategic Waste Management Assessment (SWMA) carried out by the Environment Agency. Clearly this is now an old data set, and more recent data has been sought. A study has been carried out by ADAS for the East of England Regional Assembly, which extrapolates from a survey carried out in the North West by Urban Mines. The data for Thurrock in this report have been used as the basis for a sensitivity analysis.

The Urban Mines report acknowledges the limitations of the method used and suggests that caution is used when using the sub-regional level data. The data for Thurrock is highly uncertain, and thus the results of this sensitivity analysis should be regarded as providing only a useful indication of potential variability. ERM is sceptical both as to the accuracy of the original survey in the North West and as to the process of extrapolation.

7.1 SENSITIVITY ANALYSES

7.1.1 Lower Economic Growth Rate

By reducing the forecast economic growth rate, the upper bound for the C&I and C&D waste streams is reduced. These growth charts are shown below. For C&I waste, the RSS growth rate is now worse than the economic growth rate. This is expected, as the RSS growth rate forecasts are at a higher rate, broadly consistent with the previous forecasts. They run to 2021, with a 0% annual growth rate assumed thereafter.

Figure 7.1 *C&I Waste Growth Rates Scenarios With New Economic Growth Rate Assumption (1%)*

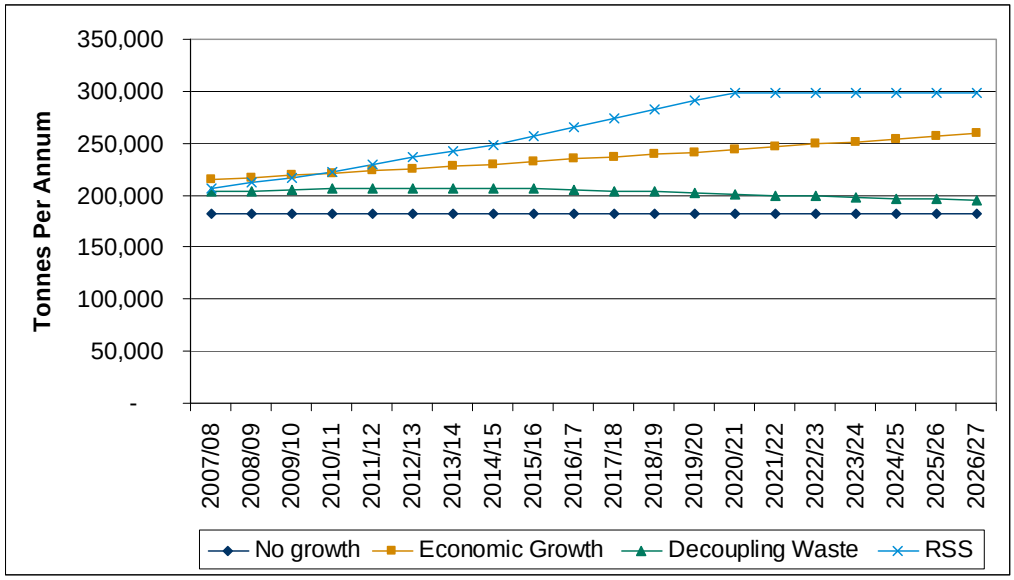
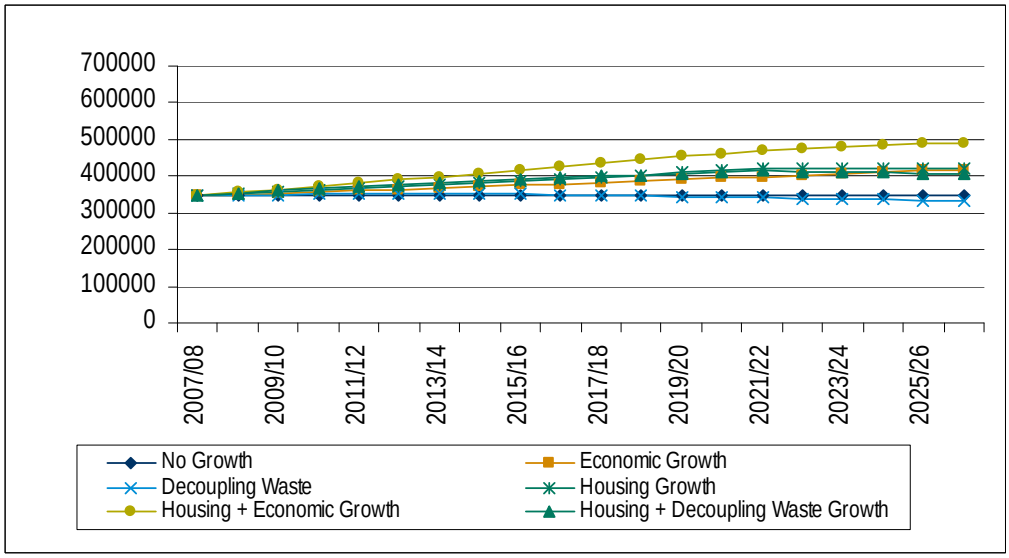


Figure 7.2 *C&D Waste Growth Rates Scenarios With New Economic Growth Rate Assumption (1%)*



The effects of these reductions in growth rates are shown graphically below. Only the worst case scenarios are affected by the change, and therefore they are the only charts presented below. There is a forecast need for 190,000 tonnes per annum of recycling and composting capacity by 2026/27. Extra C&D recycling capacity is also required, if the wharfside facilities are ignored, as before. The amount needed is almost 200,000 tonnes per annum. The need for recovery capacity, assuming the tyre facility and the WEEE facilities are excluded, is 70,000 tonnes per annum. Non-hazardous landfill remains in surplus under this new scenario, as does inert landfill.

Figure 7.3 *Need for Recycling and Composting Capacity for MSW and C&I Waste - Worst Case Scenario (New Data)*

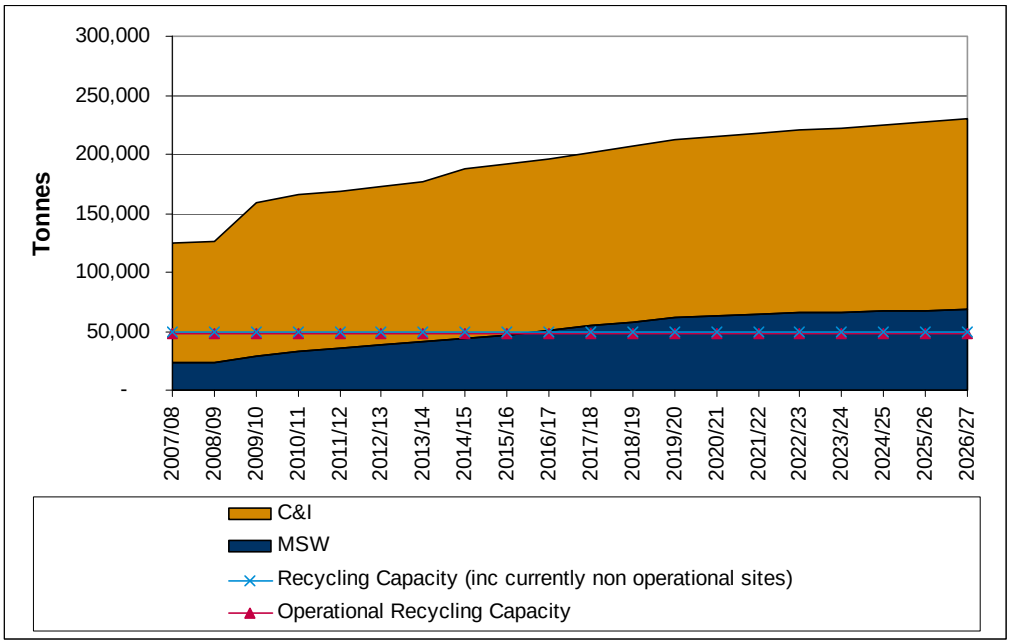


Figure 7.4 *Need for C&D Waste Recycling Capacity - Worst Case Scenario (New Data)*

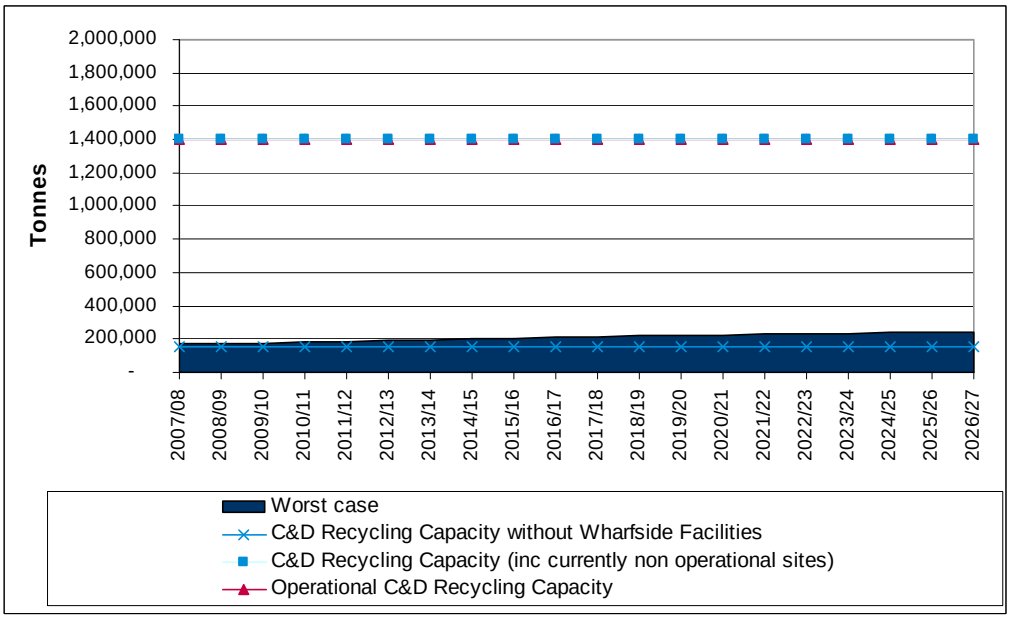


Figure 7.5 *Need for Recovery Capacity for MSW and C&I Waste - Worst Case Scenario (New Data)*

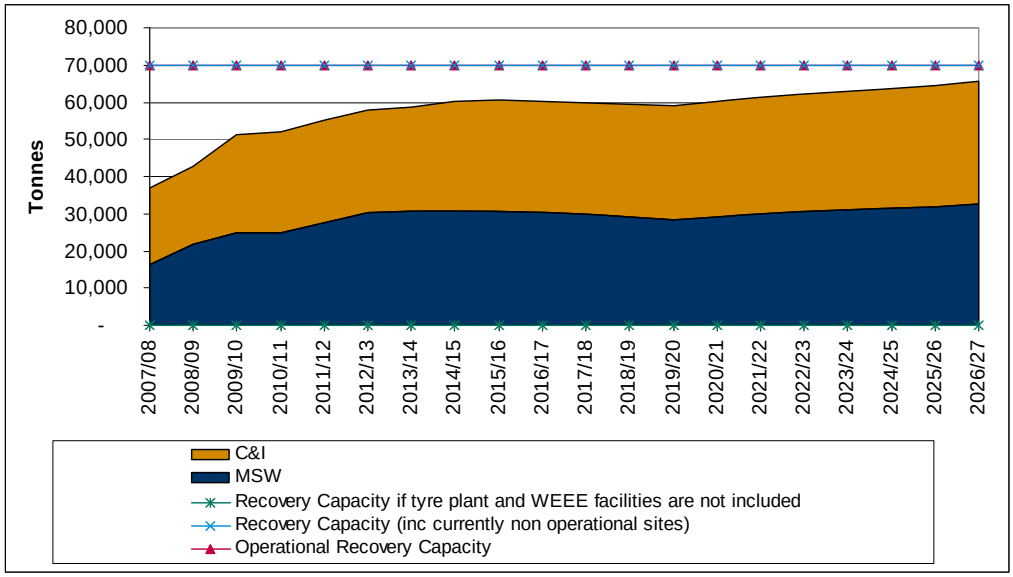


Figure 7.6 *Need for Non-Hazardous Landfill Capacity for MSW and C&I Waste - Worst Case Scenario (New Data)*

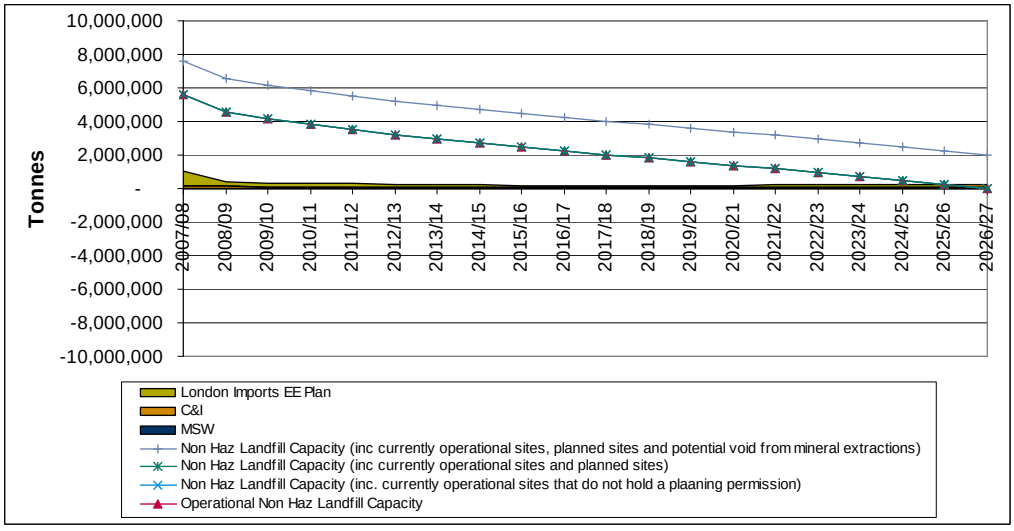
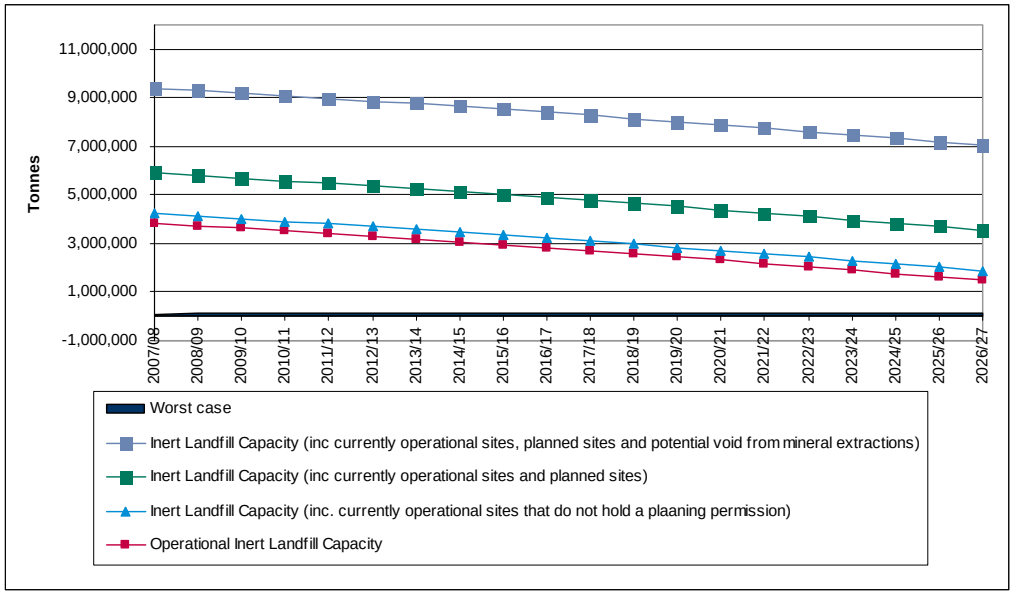


Figure 7.7 *Need for Inert Landfill Capacity for C&D Waste - Worst Case Scenario (New Data)*

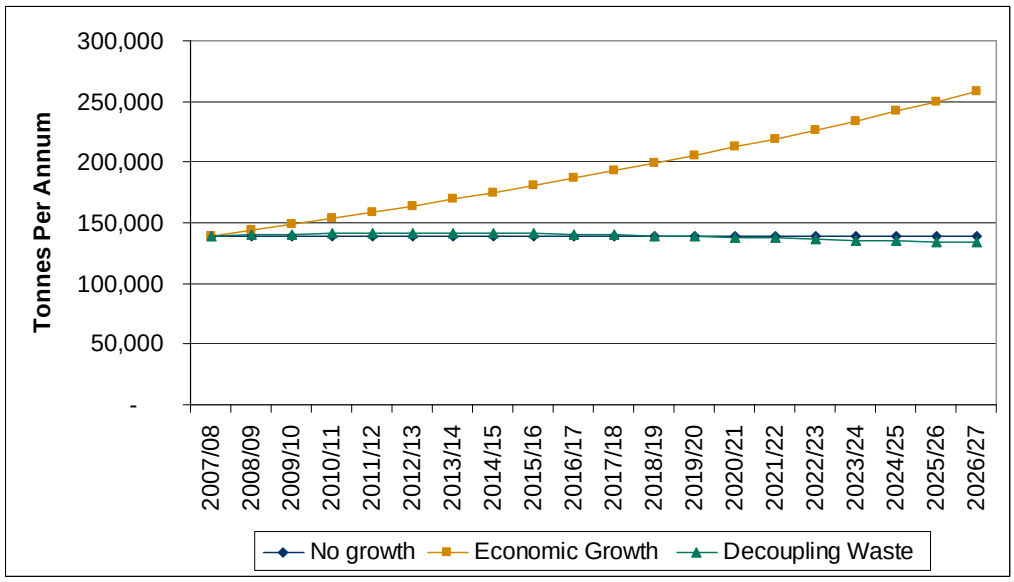


7.1.2 *New C&I Waste Baseline Data*

The recent study into C&I waste arisings suggests that arisings in Thurrock are slightly lower than those used above, which are drawn from the 2002/03 SWMA. Therefore, forecasts of waste arisings and the infrastructure required to deal with it, are both lowere.

New growth forecasts are presented below. The worst case (economic growth) scenario now forecasts slightly more than 250,000 tonnes in 2026/27.

Figure 7.8 *C&I Waste Growth Rates Scenarios Assuming New C&I Waste Baseline Data*



The effects on the capacity gap calculations are shown below. For the worst case scenario, recycling capacity required is now 180,000 tonnes per annum in 2026/27. For the best case scenario, it is 85,000 tonnes per annum. The requirement for recovery capacity is 65,000 tonnes per annum in 2026/27 for the worst case scenario, and 35,000 tonnes per annum for the best case scenario. Current non-hazardous landfill capacity is sufficient to deal with the forecast arisings until beyond the forecasting period.

Figure 7.9 ***Need for Recycling and Composting Capacity for MSW and C&I Waste - Worst Case Scenario (New Data)***

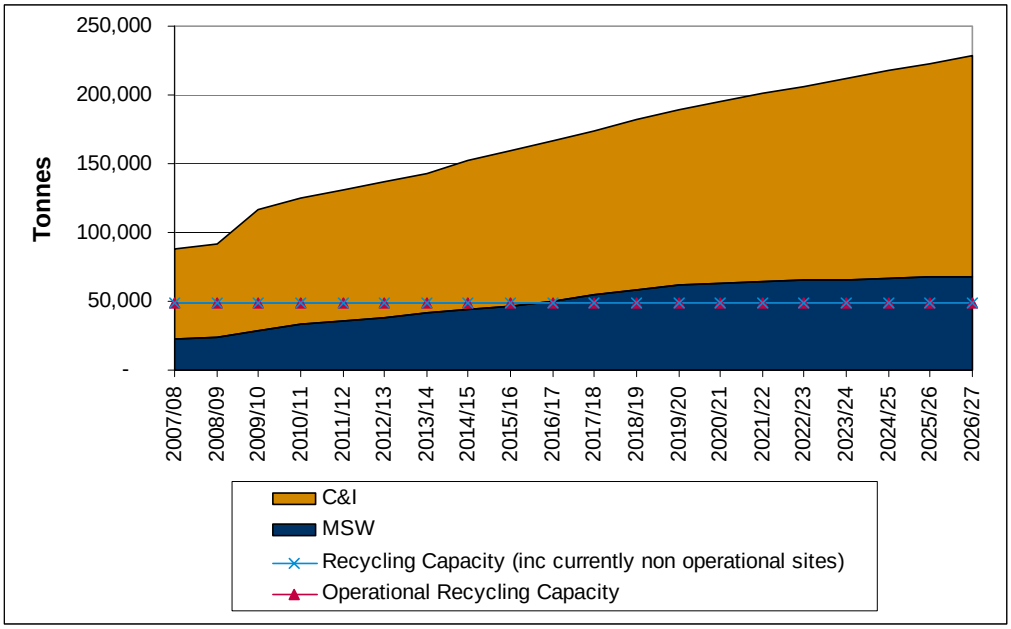


Figure 7.10 ***Need for Recycling and Composting Capacity for MSW and C&I Waste - Best Case Scenario (New Data)***

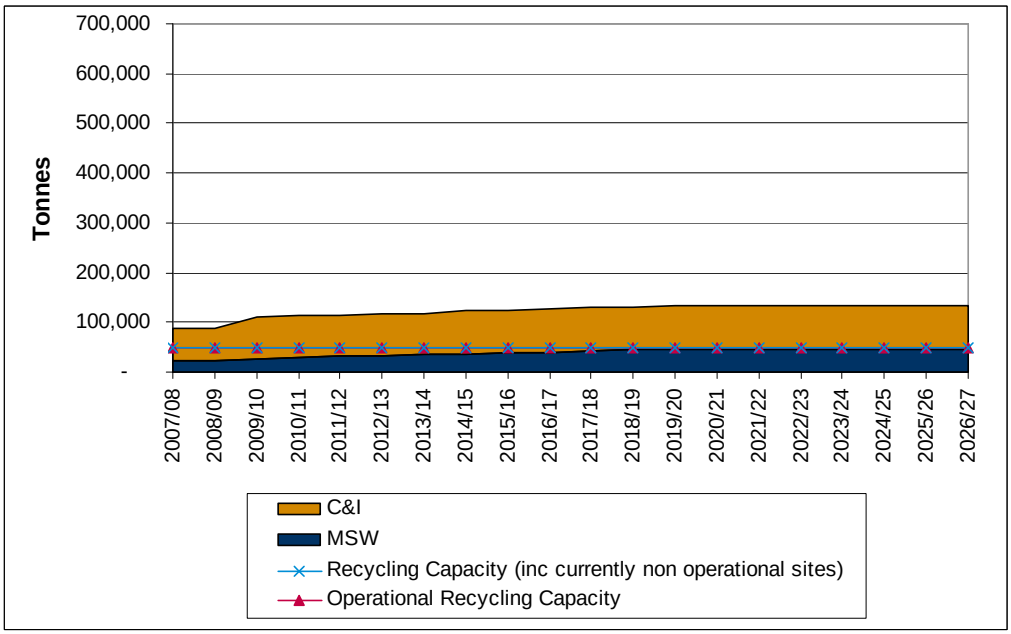


Figure 7.11 *Need for Recovery Capacity for MSW and C&I Waste - Worst Case Scenario (New Data)*

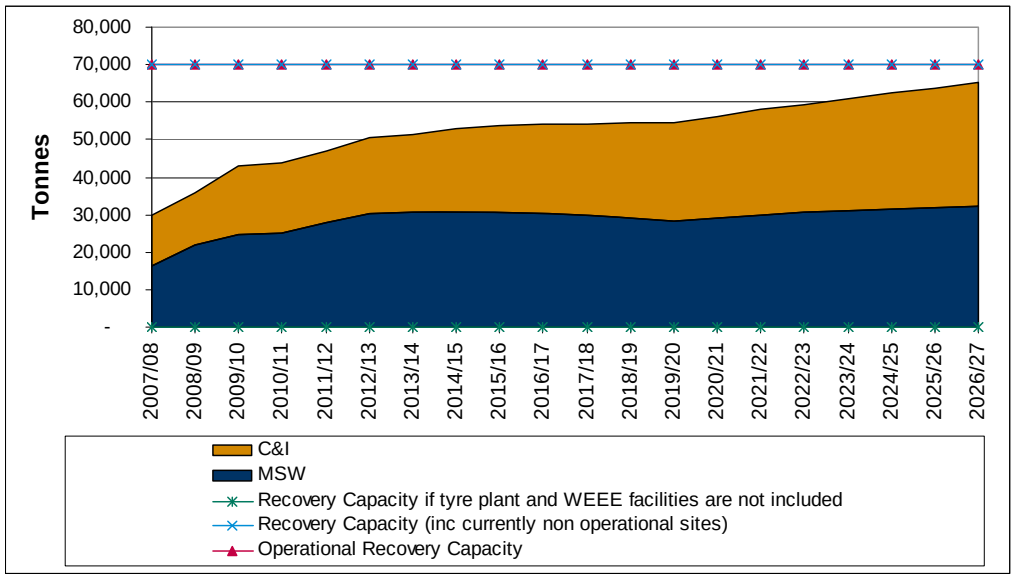


Figure 7.12 *Need for Recovery Capacity for MSW and C&I Waste - Best Case Scenario (New Data)*

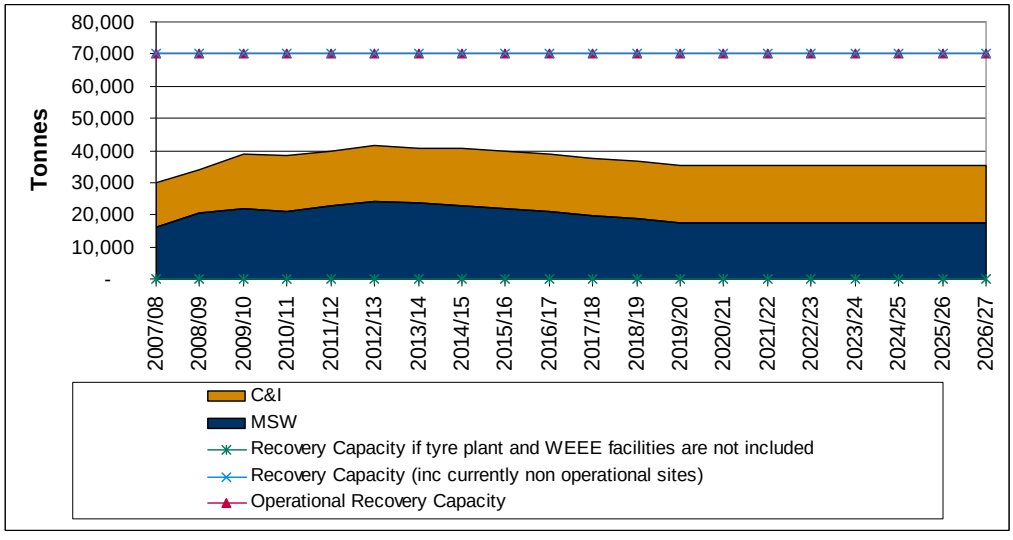


Figure 7.13 ***Need for Non-Hazardous Landfill Capacity for MSW and C&I Waste - Worst Case Scenario (New Data)***

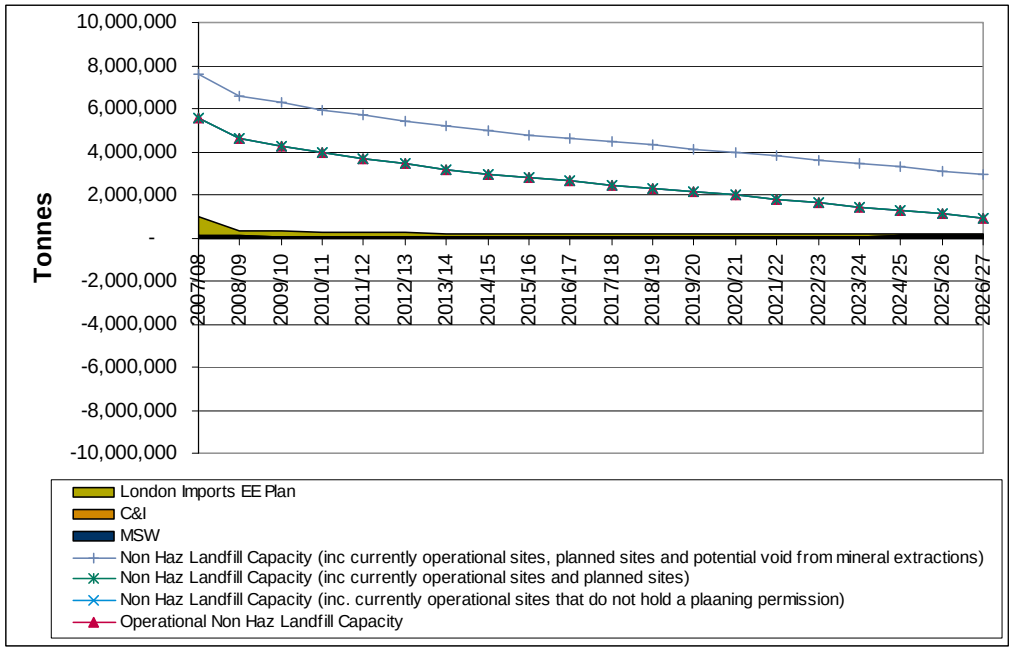
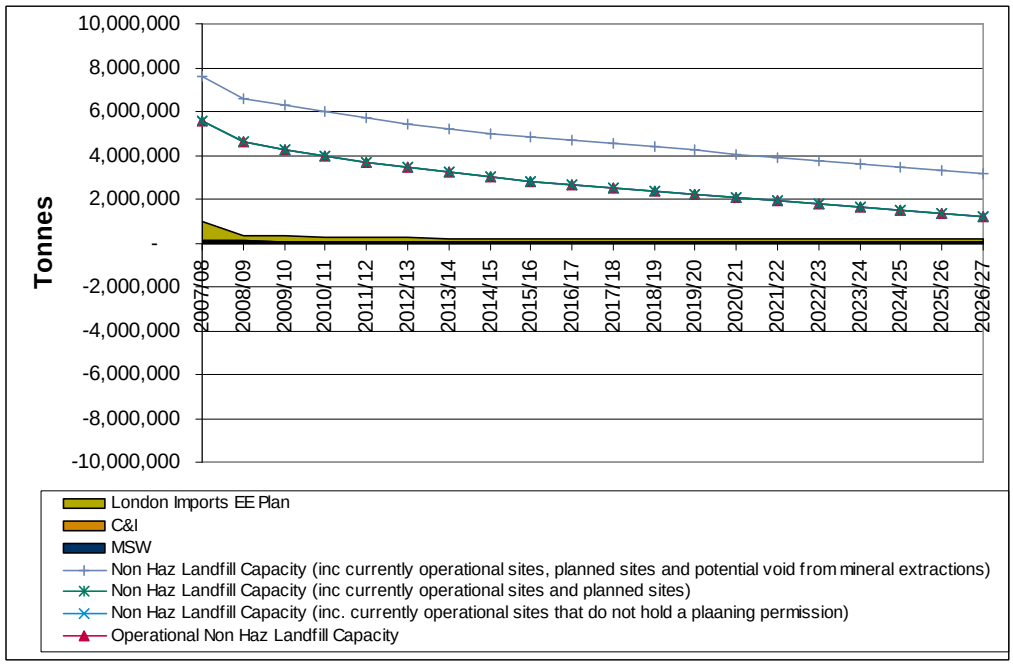


Figure 7.14 ***Need for Non-Hazardous Landfill Capacity for MSW and C&I Waste - Best Case Scenario (New Data)***



Annex A

Waste Arisings

A1 WASTE ARISINGS

A1.1 MSW

The table below are the estimates for MSW over the forecast period.

Table 1.1 MSW Forecasts

	Growth over 6 year period 2002-2008	No growth	Housing Growth	Housing + Current Growth	MWMS Growth	RSS Growth	Extended Housing	Extended Housing + Current Growth
2007/08	76,621	76,621	76,621	76,621	76,621	90,000	76,621	76,621
2008/09	77,595	76,621	77,778	78,752	77,595	93,000	77,778	78,752
2009/10	78,581	76,621	78,935	80,895	78,581	97,000	78,935	80,895
2010/11	79,580	76,621	80,092	83,050	79,367	101,000	80,092	83,050
2011/12	80,591	76,621	81,249	85,219	80,161	101,000	81,249	85,219
2012/13	81,615	76,621	82,406	87,400	80,962	102,000	82,406	87,400
2013/14	82,652	76,621	83,563	89,594	81,772	103,000	83,563	89,594
2014/15	83,703	76,621	84,719	91,801	82,589	105,000	84,719	91,801
2015/16	84,766	76,621	85,876	94,022	83,002	106,000	85,876	94,022
2016/17	85,844	76,621	87,033	96,256	83,417	107,000	87,033	96,256
2017/18	86,935	76,621	88,190	98,504	83,834	108,000	88,190	98,504
2018/19	88,039	76,621	89,347	100,765	84,254	109,000	89,347	100,765
2019/20	89,158	76,621	90,504	103,041	84,254	110,000	90,504	103,041
2020/21	90,291	76,621	91,661	105,331	84,254	111,000	91,661	105,331
2021/22	91,439	76,621	92,818	107,635	84,254	111,000	92,818	107,635
2022/23	92,601	76,621	92,818	108,797	84,254	111,000	93,975	109,954
2023/24	93,778	76,621	92,818	109,974	84,254	111,000	95,131	112,288
2024/25	94,969	76,621	92,818	111,166	84,254	111,000	96,288	114,637
2025/26	96,176	76,621	92,818	112,373	84,254	111,000	97,445	117,000
2026/27	97,399	76,621	92,818	113,595	84,254	111,000	98,602	119,379

A1.2 C&I WASTE

The table below are the estimates for C&I waste over the forecast period.

Table 1.2 C&I Waste Forecasts

	No growth	Economic Growth	Decoupling Waste	RSS
2007/08	182,341	214,479	203,009	207,000
2008/09	182,341	221,557	204,024	212,000
2009/10	182,341	228,868	205,045	217,000
2010/11	182,341	236,421	206,070	223,000
2011/12	182,341	244,223	206,070	230,000
2012/13	182,341	252,282	206,070	236,000
2013/14	182,341	260,607	206,070	242,000
2014/15	182,341	269,207	206,070	248,000
2015/16	182,341	278,091	206,070	257,000
2016/17	182,341	287,268	205,039	265,000
2017/18	182,341	296,748	204,014	274,000
2018/19	182,341	306,541	202,994	282,000
2019/20	182,341	316,657	201,979	291,000
2020/21	182,341	327,106	200,969	299,000
2021/22	182,341	337,901	199,965	299,000
2022/23	182,341	349,052	198,965	299,000
2023/24	182,341	360,570	197,970	299,000
2024/25	182,341	372,469	196,980	299,000
2025/26	182,341	384,761	195,995	299,000
2026/27	182,341	397,458	195,015	299,000

A1.3 C&D WASTE

The table below are the estimates for C&D waste over the forecast period.

Table 1.3 C&D Waste Forecasts

	No Growth	Economic Growth	Decoupling Waste	Housing Growth	Housing + Economic Growth	Housing + Decoupling Waste Growth
2007/08	346,253	346,253	346,253	346,253	346,253	346,253
2008/09	346,253	357,679	347,984	351,481	362,907	353,212
2009/10	346,253	369,483	349,724	356,709	379,939	360,180
2010/11	346,253	381,676	351,473	361,937	397,360	367,157
2011/12	346,253	394,271	351,473	367,165	415,183	372,385
2012/13	346,253	407,282	351,473	372,393	433,422	377,613
2013/14	346,253	420,722	351,473	377,621	452,090	382,841
2014/15	346,253	434,606	351,473	382,849	471,202	388,069
2015/16	346,253	448,948	351,473	388,077	490,772	393,297
2016/17	346,253	463,763	349,715	393,305	510,815	396,767
2017/18	346,253	479,067	347,967	398,533	531,348	400,247
2018/19	346,253	494,877	346,227	403,761	552,385	403,735
2019/20	346,253	511,208	344,496	408,989	573,944	407,232
2020/21	346,253	528,077	342,773	414,217	596,042	410,737
2021/22	346,253	545,504	341,059	419,445	618,696	414,252
2022/23	346,253	563,506	339,354	419,445	636,698	412,546
2023/24	346,253	582,101	337,657	419,445	655,293	410,850
2024/25	346,253	601,311	335,969	419,445	674,503	409,161
2025/26	346,253	621,154	334,289	419,445	694,346	407,481
2026/27	346,253	641,652	332,618	419,445	714,844	405,810

A1.4 HAZARDOUS WASTE

The table below are the estimates for hazardous waste over the forecast period.

Table 1.4 Hazardous Waste Forecasts

	Economic Growth	Decoupling Waste	No growth	Legislative drivers- 5% decrease	Legislative drivers - 10% decrease
2007/08	11,683	11,058	10,948	10,875	10,803
2008/09	12,068	11,113	10,948	10,839	10,731
2009/10	12,466	11,169	10,948	10,803	10,659
2010/11	12,878	11,225	10,948	10,767	10,588
2011/12	13,303	11,225	10,948	10,731	10,517
2012/13	13,742	11,225	10,948	10,695	10,447
2013/14	14,195	11,225	10,948	10,660	10,378
2014/15	14,664	11,225	10,948	10,624	10,308
2015/16	15,148	11,225	10,948	10,589	10,240
2016/17	15,647	11,168	10,948	10,553	10,171
2017/18	16,164	11,113	10,948	10,518	10,104
2018/19	16,697	11,057	10,948	10,483	10,036
2019/20	17,248	11,002	10,948	10,448	9,969
2020/21	17,817	10,947	10,948	10,413	9,903
2021/22	18,405	10,892	10,948	10,379	9,837
2022/23	19,013	10,838	10,948	10,344	9,771
2023/24	19,640	10,783	10,948	10,309	9,706
2024/25	20,288	10,729	10,948	10,275	9,641
2025/26	20,958	10,676	10,948	10,241	9,577
2026/27	21,649	10,622	10,948	10,207	9,513

A1.5 AGRICULTURAL WASTE

The table below are the estimates for agricultural waste over the forecast period.

Table 1.5 Agricultural Waste Forecasts

	Economic Growth	Decoupling Waste	No growth	Legislative drivers- 5% decrease	Legislative drivers - 10% decrease
2007/08	489	463	415	413	410
2008/09	505	465	415	411	407
2009/10	521	467	415	410	404
2010/11	539	469	415	409	402
2011/12	556	469	415	407	399
2012/13	575	469	415	406	396
2013/14	594	469	415	404	394
2014/15	613	469	415	403	391
2015/16	634	469	415	402	389
2016/17	654	467	415	400	386
2017/18	676	465	415	399	383
2018/19	698	462	415	398	381
2019/20	721	460	415	396	378
2020/21	745	458	415	395	376
2021/22	770	456	415	394	373
2022/23	795	453	415	393	371
2023/24	821	451	415	391	368
2024/25	849	449	415	390	366
2025/26	877	447	415	389	363
2026/27	906	444	415	387	361

Annex B

Arisings vs Capacity

B1 WASTE ARISISNGS VS CAPACITY

B1.1 RECYCLING

The assumed operational recycling capacity figure for recycling is 48,333. The recycling capacity including the current non operational sites is 48,333.

Table 1.1 Recycling Arisings vs Capacity

	MSW		C&I		Total	
	Best Case	Worst case	Best Case	Worst case	**Best Case**	**Worst case**
2007/08	22,720	22,720	86,265	101,470	**108,985**	**124,190**
2008/09	22,986	23,626	86,265	104,819	**109,252**	**128,444**
2009/10	26,817	28,313	108,967	136,772	**135,784**	**165,085**
2010/11	30,648	33,220	108,967	141,285	**139,615**	**174,505**
2011/12	32,181	35,792	108,967	145,947	**141,148**	**181,739**
2012/13	33,713	38,456	108,967	150,764	**142,680**	**189,220**
2013/14	35,246	41,213	108,967	155,739	**144,212**	**196,952**
2014/15	36,778	44,064	113,507	167,582	**150,285**	**211,646**
2015/16	38,311	47,011	113,507	173,112	**151,818**	**220,123**
2016/17	40,226	50,534	113,507	178,824	**153,733**	**229,359**
2017/18	42,142	54,177	113,507	184,726	**155,649**	**238,903**
2018/19	44,057	57,940	113,507	190,822	**157,564**	**248,762**
2019/20	45,973	61,825	113,507	197,119	**159,480**	**258,943**
2020/21	45,973	63,199	113,507	203,624	**159,480**	**266,822**
2021/22	45,973	64,581	113,507	210,343	**159,480**	**274,924**
2022/23	45,973	65,278	113,507	217,285	**159,480**	**282,563**
2023/24	45,973	65,984	113,507	224,455	**159,480**	**290,439**
2024/25	45,973	66,700	113,507	231,862	**159,480**	**298,562**
2025/26	45,973	67,424	113,507	239,513	**159,480**	**306,937**
2026/27	45,973	68,157	113,507	247,417	**159,480**	**315,574**

B1.2 C&D RECYCLING

The assumed operational C&D recycling capacity figure is 1,325,000.
The C&D recycling capacity including the current non operational sites is 1,325,000.
The C&D recycling capacity excluding the wharfside sites is 75,000.

Table 1.2 C&D Recycling Arisings vs Capacity

	Best Case	Worst case
2007/08	170,125	170,125
2008/09	170,125	178,308
2009/10	170,125	186,676
2010/11	170,125	195,236
2011/12	170,125	203,993
2012/13	170,125	212,954
2013/14	170,125	222,127
2014/15	170,125	231,517
2015/16	170,125	241,132
2016/17	170,125	250,980
2017/18	170,125	261,068
2018/19	170,125	271,405
2019/20	170,125	281,997
2020/21	170,125	292,855
2021/22	170,125	303,986
2022/23	170,125	312,831
2023/24	170,125	321,967
2024/25	170,125	331,405
2025/26	170,125	341,155
2026/27	170,125	351,226

B1.3 RECOVERY

The assumed operational capacity figure for recovery is 69,973.
The recovery capacity including the current non operational sites is 69,973.
The recovery capacity if tyre plant and WEEE facilities are not included is 0.

Table 1.3 Recovery Arisings vs Capacity

	MSW		C&I		Total	
	Best Case	Worst case	Best Case	Worst case	**Best Case**	**Worst case**
2007/08	16,279	16,279	17,669	20,783	**33,948**	**37,062**
2008/09	20,428	21,919	17,669	21,469	**38,097**	**43,388**
2009/10	21,895	24,673	22,318	28,013	**44,213**	**52,686**
2010/11	21,170	25,027	22,318	28,938	**43,488**	**53,965**
2011/12	22,744	27,731	22,318	29,893	**45,063**	**57,624**
2012/13	24,318	30,354	22,318	30,879	**46,636**	**61,233**
2013/14	23,583	30,589	22,318	31,898	**45,902**	**62,487**
2014/15	22,848	30,742	23,248	34,324	**46,096**	**65,065**
2015/16	22,114	30,814	23,248	35,457	**45,362**	**66,270**
2016/17	20,995	30,321	23,248	36,627	**44,243**	**66,948**
2017/18	19,878	29,725	23,248	37,835	**43,126**	**67,560**
2018/19	18,759	29,020	23,248	39,084	**42,007**	**68,104**
2019/20	17,640	28,208	23,248	40,374	**40,889**	**68,582**
2020/21	17,640	29,124	23,248	41,706	**40,889**	**70,830**
2021/22	17,640	30,046	23,248	43,082	**40,889**	**73,128**
2022/23	17,640	30,511	23,248	44,504	**40,889**	**75,015**
2023/24	17,640	30,982	23,248	45,973	**40,889**	**76,954**
2024/25	17,640	31,458	23,248	47,490	**40,889**	**78,948**
2025/26	17,640	31,941	23,248	49,057	**40,889**	**80,998**
2026/27	17,640	32,430	23,248	50,676	**40,889**	**83,106**

B1.4 NON HAZARDOUS LANDFILL

Table 1.4 Non Haz Landfill Arisings vs Capacity

	MSW		C&I		London Imports EE Plan	Residues - MSW and C&I	
	Best Case	Worst case	Best Case	Worst case		Best Case	Worst Case
2007/08	37,622	37,622	78,406	92,226	277,000	10,184	11,119
2008/09	33,207	33,207	78,406	95,269	255,000	11,429	13,016
2009/10	27,909	27,909	51,055	64,083	233,000	13,264	15,806
2010/11	24,803	24,803	51,055	66,198	212,000	13,046	16,190
2011/12	21,696	21,696	51,055	68,382	190,000	13,519	17,287
2012/13	18,590	18,590	51,055	70,639	168,000	13,991	18,370
2013/14	17,792	17,792	51,055	72,970	146,000	13,771	18,746
2014/15	16,995	16,995	45,585	67,302	125,000	13,829	19,520
2015/16	16,197	16,197	45,585	69,523	103,000	13,609	19,881
2016/17	15,400	15,400	45,585	71,817	103,000	13,273	20,084
2017/18	14,602	14,602	45,585	74,187	103,000	12,938	20,268
2018/19	13,805	13,805	45,585	76,635	103,000	12,602	20,431
2019/20	13,008	13,008	45,585	79,164	103,000	12,267	20,575
2020/21	13,008	13,008	45,585	81,777	103,000	12,267	21,249
2021/22	13,008	13,008	45,585	84,475	103,000	12,267	21,939
2022/23	13,008	13,008	45,585	87,263	103,000	12,267	22,504
2023/24	13,008	13,008	45,585	90,143	103,000	12,267	23,086
2024/25	13,008	13,008	45,585	93,117	103,000	12,267	23,684
2025/26	13,008	13,008	45,585	96,190	103,000	12,267	24,299
2026/27	13,008	13,008	45,585	99,364	103,000	12,267	24,932

Table 1.5 Total Arisings vs Non Haz Landfill (Decreasing Capacity)

	Total Arisings from Table Above		Operational Non Haz Landfill Capacity		Non Haz Landfill Capacity (inc. currently operational sites that do not hold a planning permission)		Non Haz Landfill Capacity (inc currently operational sites and planned sites)		Non Haz Landfill Capacity (inc currently operational sites, planned sites and potential void from mineral extractions)	
	Best Case	**Worst Case**	Best Case	Worst Case	Best Case	Worst Case	Best Case	Worst Case	Best Case	Worst Case
2007/08	**126,213**	**140,967**	5,600,000	5,600,000	5,600,000	5,600,000	5,600,000	5,600,000	7,600,000	7,600,000
2008/09	**123,042**	**141,493**	5,196,787	5,182,033	5,196,787	5,182,033	5,196,787	5,182,033	7,196,787	7,182,033
2009/10	**92,228**	**107,798**	4,818,745	4,785,541	4,818,745	4,785,541	4,818,745	4,785,541	6,818,745	6,785,541
2010/11	**88,905**	**107,190**	4,493,517	4,444,743	4,493,517	4,444,743	4,493,517	4,444,743	6,493,517	6,444,743
2011/12	**86,270**	**107,365**	4,192,612	4,125,552	4,192,612	4,125,552	4,192,612	4,125,552	6,192,612	6,125,552
2012/13	**83,636**	**107,599**	3,916,342	3,828,187	3,916,342	3,828,187	3,916,342	3,828,187	5,916,342	5,828,187
2013/14	**82,618**	**109,508**	3,664,705	3,552,588	3,664,705	3,552,588	3,664,705	3,552,588	5,664,705	5,552,588
2014/15	**76,409**	**103,816**	3,436,087	3,297,080	3,436,087	3,297,080	3,436,087	3,297,080	5,436,087	5,297,080
2015/16	**75,391**	**105,601**	3,234,678	3,068,263	3,234,678	3,068,263	3,234,678	3,068,263	5,234,678	5,068,263
2016/17	**74,258**	**107,302**	3,056,288	2,859,662	3,056,288	2,859,662	3,056,288	2,859,662	5,056,288	4,859,662
2017/18	**73,125**	**109,057**	2,879,029	2,649,361	2,879,029	2,649,361	2,879,029	2,649,361	4,879,029	4,649,361
2018/19	**71,992**	**110,871**	2,702,905	2,437,304	2,702,905	2,437,304	2,702,905	2,437,304	4,702,905	4,437,304
2019/20	**70,860**	**112,747**	2,527,912	2,223,432	2,527,912	2,223,432	2,527,912	2,223,432	4,527,912	4,223,432
2020/21	**70,860**	**116,034**	2,354,052	2,007,686	2,354,052	2,007,686	2,354,052	2,007,686	4,354,052	4,007,686
2021/22	**70,860**	**119,422**	2,180,193	1,788,652	2,180,193	1,788,652	2,180,193	1,788,652	4,180,193	3,788,652
2022/23	**70,860**	**122,775**	2,006,333	1,566,230	2,006,333	1,566,230	2,006,333	1,566,230	4,006,333	3,566,230
2023/24	**70,860**	**126,237**	1,832,473	1,340,455	1,832,473	1,340,455	1,832,473	1,340,455	3,832,473	3,340,455
2024/25	**70,860**	**129,810**	1,658,613	1,111,218	1,658,613	1,111,218	1,658,613	1,111,218	3,658,613	3,111,218
2025/26	**70,860**	**133,498**	1,484,753	878,408	1,484,753	878,408	1,484,753	878,408	3,484,753	2,878,408
2026/27	**70,860**	**137,304**	1,310,894	641,911	1,310,894	641,911	1,310,894	641,911	3,310,894	2,641,911

B1.5 INERT LANDFILL

Table 1.6 C&D Landfill Arisings vs Inert Landfill Capacity (Decreasing)

	Arisings		Operational Inert Landfill Capacity		Inert Landfill Capacity (inc. currently operational sites that do not hold a planning permission)		Inert Landfill Capacity (inc currently operational sites and planned sites)		Inert Landfill Capacity (inc currently operational sites, planned sites and potential void from mineral extractions)	
	Best Case	**Worst case**	Best Case	Worst case	Best Case	Worst case	Best Case	Worst Case	Best Case	Worst Case
2007/08	**101,157**	**101,157**	3,830,000	3,830,000	4,230,000	4,230,000	5,900,000	5,900,000	9,400,000	9,400,000
2008/09	**101,157**	**106,022**	3,728,843	3,728,843	4,128,843	4,128,843	5,798,843	5,798,843	9,298,843	9,298,843
2009/10	**101,157**	**110,998**	3,627,687	3,622,821	4,027,687	4,022,821	5,697,687	5,692,821	9,197,687	9,192,821
2010/11	**101,157**	**116,087**	3,526,530	3,511,824	3,926,530	3,911,824	5,596,530	5,581,824	9,096,530	9,081,824
2011/12	**101,157**	**121,294**	3,425,374	3,395,737	3,825,374	3,795,737	5,495,374	5,465,737	8,995,374	8,965,737
2012/13	**101,157**	**126,623**	3,324,217	3,274,442	3,724,217	3,674,442	5,394,217	5,344,442	8,894,217	8,844,442
2013/14	**101,157**	**132,076**	3,223,061	3,147,820	3,623,061	3,547,820	5,293,061	5,217,820	8,793,061	8,717,820
2014/15	**101,157**	**137,660**	3,121,904	3,015,743	3,521,904	3,415,743	5,191,904	5,085,743	8,691,904	8,585,743
2015/16	**101,157**	**143,377**	3,020,748	2,878,083	3,420,748	3,278,083	5,090,748	4,948,083	8,590,748	8,448,083
2016/17	**101,157**	**149,233**	2,919,591	2,734,706	3,319,591	3,134,706	4,989,591	4,804,706	8,489,591	8,304,706
2017/18	**101,157**	**155,231**	2,818,435	2,585,473	3,218,435	2,985,473	4,888,435	4,655,473	8,388,435	8,155,473
2018/19	**101,157**	**161,377**	2,717,278	2,430,242	3,117,278	2,830,242	4,787,278	4,500,242	8,287,278	8,000,242
2019/20	**101,157**	**167,676**	2,616,122	2,268,865	3,016,122	2,668,865	4,686,122	4,338,865	8,186,122	7,838,865
2020/21	**101,157**	**174,131**	2,514,965	2,101,189	2,914,965	2,501,189	4,584,965	4,171,189	8,084,965	7,671,189
2021/22	**101,157**	**180,750**	2,413,809	1,927,058	2,813,809	2,327,058	4,483,809	3,997,058	7,983,809	7,497,058
2022/23	**101,157**	**186,009**	2,312,652	1,746,308	2,712,652	2,146,308	4,382,652	3,816,308	7,882,652	7,316,308
2023/24	**101,157**	**191,442**	2,211,496	1,560,299	2,611,496	1,960,299	4,281,496	3,630,299	7,781,496	7,130,299
2024/25	**101,157**	**197,054**	2,110,339	1,368,858	2,510,339	1,768,858	4,180,339	3,438,858	7,680,339	6,938,858
2025/26	**101,157**	**202,851**	2,009,183	1,171,804	2,409,183	1,571,804	4,079,183	3,241,804	7,579,183	6,741,804
2026/27	**101,157**	**208,839**	1,908,026	968,953	2,308,026	1,368,953	3,978,026	3,038,953	7,478,026	6,538,953

Annex C

RSS Scenario Arisings vs Capacity

C1 RSS SCENARIO

C1.1 RECYCLING

The assumed operational recycling capacity figure for recycling is 48,333. The recycling capacity including the current non operational sites is 48,333.

Table 1.1 RSS Scenario Arisings vs Recycling Capacity

	MSW	C&I	Total
2007/08	26,685	97,932	124,617
2008/09	30,783	109,095	139,878
2009/10	35,454	120,674	156,127
2010/11	40,400	133,265	173,665
2011/12	42,420	138,593	181,013
2012/13	44,880	143,384	188,264
2013/14	47,380	148,235	195,615
2014/15	50,400	153,145	203,545
2015/16	53,000	159,983	212,983
2016/17	55,283	173,394	228,677
2017/18	57,600	188,001	245,601
2018/19	59,950	202,462	262,412
2019/20	62,333	218,182	280,515
2020/21	64,750	233,693	298,443
2021/22	66,600	233,693	300,293
2022/23	66,600	233,693	300,293
2023/24	66,600	233,693	300,293
2024/25	66,600	233,693	300,293
2025/26	66,600	233,693	300,293
2026/27	66,600	233,693	300,293

C1.2 RECOVERY

The assumed operational capacity figure for recovery is 69,973.
The recovery capacity including the current non operational sites is 69,973.
The recovery capacity if tyre plant and WEEE facilities are not included is 0.

Table 1.2 RSS Scenario Arisings vs Recovery Capacity

	MSW	C&I	Total
2007/08	-	20,058	**20,058**
2008/09	3,100	22,345	**25,445**
2009/10	6,467	24,716	**31,183**
2010/11	10,100	27,295	**37,395**
2011/12	12,120	28,387	**40,507**
2012/13	14,280	29,368	**43,648**
2013/14	16,480	30,361	**46,841**
2014/15	18,900	31,367	**50,267**
2015/16	21,200	32,768	**53,968**
2016/17	24,610	35,514	**60,124**
2017/18	28,080	38,506	**66,586**
2018/19	31,610	41,468	**73,078**
2019/20	35,200	44,688	**79,888**
2020/21	38,850	47,865	**86,715**
2021/22	42,180	47,865	**90,045**
2022/23	42,180	47,865	**90,045**
2023/24	42,180	47,865	**90,045**
2024/25	42,180	47,865	**90,045**
2025/26	42,180	47,865	**90,045**
2026/27	42,180	47,865	**90,045**

C1.3 NON HAZ LANDFILL

Table 1.3 RSS Scenario Arisings vs Non Haz Landfill Capacity

	MSW	C&I	London Imports EE Plan	Residues - MSW and C&I	Total
2007/08	63,315	89,010	277,000	6,017	**158,342**
2008/09	59,117	80,560	255,000	7,633	**147,310**
2009/10	55,080	71,610	233,000	9,355	**136,045**
2010/11	50,500	62,440	212,000	11,219	**124,159**
2011/12	46,460	63,020	190,000	12,152	**121,632**
2012/13	42,840	63,248	168,000	13,094	**119,182**
2013/14	39,140	63,404	146,000	14,052	**116,596**
2014/15	35,700	63,488	125,000	15,080	**114,268**
2015/16	31,800	64,250	103,000	16,190	**112,240**
2016/17	27,107	56,092	103,000	18,037	**101,236**
2017/18	22,320	47,493	103,000	19,976	**89,789**
2018/19	17,440	38,070	103,000	21,923	**77,433**
2019/20	12,467	28,130	103,000	23,966	**64,563**
2020/21	7,400	17,442	103,000	26,014	**50,856**
2021/22	2,220	17,442	103,000	27,013	**46,675**
2022/23	2,220	17,442	103,000	27,013	**46,675**
2023/24	2,220	17,442	103,000	27,013	**46,675**
2024/25	2,220	17,442	103,000	27,013	**46,675**
2025/26	2,220	17,442	103,000	27,013	**46,675**
2026/27	2,220	17,442	103,000	27,013	**46,675**

Table 1.4 RSS Scenario Arisings vs Decreasing Non Haz Landfill Capacity

	Operational Non Haz Landfill Capacity	Non Haz Landfill Capacity (inc. currently operational sites that do not hold a planning permission)	Non Haz Landfill Capacity (inc currently operational sites and planned sites)	Non Haz Landfill Capacity (inc currently operational sites, planned sites and potential void from mineral extractions)
2007/08	5,600,000	5,600,000	5,600,000	7,600,000
2008/09	5,164,658	5,164,658	5,164,658	7,164,658
2009/10	4,762,347	4,762,347	4,762,347	6,762,347
2010/11	4,393,302	4,393,302	4,393,302	6,393,302
2011/12	4,057,144	4,057,144	4,057,144	6,057,144
2012/13	3,745,512	3,745,512	3,745,512	5,745,512
2013/14	3,458,329	3,458,329	3,458,329	5,458,329
2014/15	3,195,733	3,195,733	3,195,733	5,195,733
2015/16	2,956,465	2,956,465	2,956,465	4,956,465
2016/17	2,741,225	2,741,225	2,741,225	4,741,225
2017/18	2,536,989	2,536,989	2,536,989	4,536,989
2018/19	2,344,200	2,344,200	2,344,200	4,344,200
2019/20	2,163,766	2,163,766	2,163,766	4,163,766
2020/21	1,996,203	1,996,203	1,996,203	3,996,203
2021/22	1,842,347	1,842,347	1,842,347	3,842,347
2022/23	1,692,672	1,692,672	1,692,672	3,692,672
2023/24	1,542,997	1,542,997	1,542,997	3,542,997
2024/25	1,393,322	1,393,322	1,393,322	3,393,322
2025/26	1,243,647	1,243,647	1,243,647	3,243,647
2026/27	1,093,972	1,093,972	1,093,972	3,093,972

Annex D

C&I Waste Management Methods Variation (Tables)

D1 C&I WASTE MANAGEMENT METHOD ASSUMPTION SENSITIVITY ANALYSIS

D1.1 70/30 SPLIT

D1.1.1 Recycling and Composting (alternative results)

The assumed operational recycling capacity figure for recycling is 48,333. The recycling capacity including the current non operational sites is 48,333.

Table 1.1 Recycling Arisings vs Capacity (70/30 split)

	MSW		C&I		Total	
	Best Case	Worst case	Best Case	Worst case	**Best Case**	**Worst case**
2007/08	22,720	22,720	31,180	36,676	**53,900**	**59,396**
2008/09	22,986	23,626	31,180	37,886	**54,167**	**61,512**
2009/10	26,817	28,313	39,386	49,436	**66,203**	**77,749**
2010/11	30,648	33,220	39,386	51,067	**70,034**	**84,287**
2011/12	32,181	35,792	39,386	52,752	**71,566**	**88,544**
2012/13	33,713	38,456	39,386	54,493	**73,099**	**92,949**
2013/14	35,246	41,213	39,386	56,291	**74,631**	**97,504**
2014/15	36,778	44,064	41,027	60,572	**77,805**	**104,636**
2015/16	38,311	47,011	41,027	62,571	**79,337**	**109,581**
2016/17	40,226	50,534	41,027	64,635	**81,253**	**115,170**
2017/18	42,142	54,177	41,027	66,768	**83,168**	**120,945**
2018/19	44,057	57,940	41,027	68,972	**85,084**	**126,912**
2019/20	45,973	61,825	41,027	71,248	**86,999**	**133,072**
2020/21	45,973	63,199	41,027	73,599	**86,999**	**136,797**
2021/22	45,973	64,581	41,027	76,028	**86,999**	**140,609**
2022/23	45,973	65,278	41,027	78,537	**86,999**	**143,815**
2023/24	45,973	65,984	41,027	81,128	**86,999**	**147,113**
2024/25	45,973	66,700	41,027	83,806	**86,999**	**150,505**
2025/26	45,973	67,424	41,027	86,571	**86,999**	**153,995**
2026/27	45,973	68,157	41,027	89,428	**86,999**	**157,585**

D1.1.2 Recovery

The assumed operational capacity figure for recovery is 69,973.
The recovery capacity including the current non operational sites is 69,973.
The recovery capacity if tyre plant and WEEE facilities are not included is 0.

Table 1.2 Recovery Arisings vs Capacity (70/30 split)

	MSW		C&I		Total	
	Best Case	Worst case	Best Case	Worst case	**Best Case**	**Worst case**
2007/08	16,279	16,279	72,754	85,577	**89,033**	**101,856**
2008/09	20,428	21,919	72,754	88,401	**93,182**	**110,320**
2009/10	21,895	24,673	91,900	115,350	**113,794**	**140,022**
2010/11	21,170	25,027	91,900	119,156	**113,069**	**144,183**
2011/12	22,744	27,731	91,900	123,088	**114,644**	**150,819**
2012/13	24,318	30,354	91,900	127,150	**116,217**	**157,504**
2013/14	23,583	30,589	91,900	131,346	**115,483**	**161,935**
2014/15	22,848	30,742	95,729	141,334	**118,577**	**172,075**
2015/16	22,114	30,814	95,729	145,998	**117,842**	**176,812**
2016/17	20,995	30,321	95,729	150,816	**116,724**	**181,137**
2017/18	19,878	29,725	95,729	155,793	**115,606**	**185,517**
2018/19	18,759	29,020	95,729	160,934	**114,488**	**189,954**
2019/20	17,640	28,208	95,729	166,245	**113,369**	**194,453**
2020/21	17,640	29,124	95,729	171,731	**113,369**	**200,855**
2021/22	17,640	30,046	95,729	177,398	**113,369**	**207,444**
2022/23	17,640	30,511	95,729	183,252	**113,369**	**213,763**
2023/24	17,640	30,982	95,729	189,299	**113,369**	**220,281**
2024/25	17,640	31,458	95,729	195,546	**113,369**	**227,005**
2025/26	17,640	31,941	95,729	201,999	**113,369**	**233,940**
2026/27	17,640	32,430	95,729	208,665	**113,369**	**241,095**

D1.2 50/50 SPLIT

D1.2.1 Recycling and Composting (alternative results)

The assumed operational recycling capacity figure for recycling is 48,333. The recycling capacity including the current non operational sites is 48,333.

Table 1.3 Recycling Arisings vs Capacity (50/50 split)

	MSW		C&I		Total	
	Best Case	Worst case	Best Case	Worst case	**Best Case**	**Worst case**
2007/08	22,720	22,720	51,967	61,127	**74,687**	**83,847**
2008/09	22,986	23,626	51,967	63,144	**74,953**	**86,769**
2009/10	26,817	28,313	65,643	82,393	**92,460**	**110,706**
2010/11	30,648	33,220	65,643	85,111	**96,291**	**118,332**
2011/12	32,181	35,792	65,643	87,920	**97,823**	**123,712**
2012/13	33,713	38,456	65,643	90,822	**99,356**	**129,277**
2013/14	35,246	41,213	65,643	93,819	**100,888**	**135,032**
2014/15	36,778	44,064	68,378	100,953	**105,156**	**145,017**
2015/16	38,311	47,011	68,378	104,284	**106,688**	**151,295**
2016/17	40,226	50,534	68,378	107,726	**108,604**	**158,260**
2017/18	42,142	54,177	68,378	111,281	**110,519**	**165,457**
2018/19	44,057	57,940	68,378	114,953	**112,435**	**172,893**
2019/20	45,973	61,825	68,378	118,746	**114,350**	**180,571**
2020/21	45,973	63,199	68,378	122,665	**114,350**	**185,863**
2021/22	45,973	64,581	68,378	126,713	**114,350**	**191,294**
2022/23	45,973	65,278	68,378	130,894	**114,350**	**196,173**
2023/24	45,973	65,984	68,378	135,214	**114,350**	**201,198**
2024/25	45,973	66,700	68,378	139,676	**114,350**	**206,375**
2025/26	45,973	67,424	68,378	144,285	**114,350**	**211,709**
2026/27	45,973	68,157	68,378	149,047	**114,350**	**217,204**

D1.2.2 Recovery

The assumed operational capacity figure for recovery is 69,973.
The recovery capacity including the current non operational sites is 69,973.
The recovery capacity if tyre plant and WEEE facilities are not included is 0.

Table 1.4 Recovery Arisings vs Capacity (50/50 split)

	MSW		C&I		Total	
	Best Case	Worst case	Best Case	Worst case	**Best Case**	**Worst case**
2007/08	16,279	16,279	51,967	61,127	**68,246**	**77,406**
2008/09	20,428	21,919	51,967	63,144	**72,395**	**85,063**
2009/10	21,895	24,673	65,643	82,393	**87,537**	**107,065**
2010/11	21,170	25,027	65,643	85,111	**86,812**	**110,139**
2011/12	22,744	27,731	65,643	87,920	**88,387**	**115,651**
2012/13	24,318	30,354	65,643	90,822	**89,960**	**121,175**
2013/14	23,583	30,589	65,643	93,819	**89,226**	**124,407**
2014/15	22,848	30,742	68,378	100,953	**91,226**	**131,694**
2015/16	22,114	30,814	68,378	104,284	**90,491**	**135,098**
2016/17	20,995	30,321	68,378	107,726	**89,373**	**138,047**
2017/18	19,878	29,725	68,378	111,281	**88,255**	**141,005**
2018/19	18,759	29,020	68,378	114,953	**87,137**	**143,973**
2019/20	17,640	28,208	68,378	118,746	**86,018**	**146,955**
2020/21	17,640	29,124	68,378	122,665	**86,018**	**151,789**
2021/22	17,640	30,046	68,378	126,713	**86,018**	**156,759**
2022/23	17,640	30,511	68,378	130,894	**86,018**	**161,405**
2023/24	17,640	30,982	68,378	135,214	**86,018**	**166,195**
2024/25	17,640	31,458	68,378	139,676	**86,018**	**171,134**
2025/26	17,640	31,941	68,378	144,285	**86,018**	**176,226**
2026/27	17,640	32,430	68,378	149,047	**86,018**	**181,477**

D2.1 50/50 SPLIT

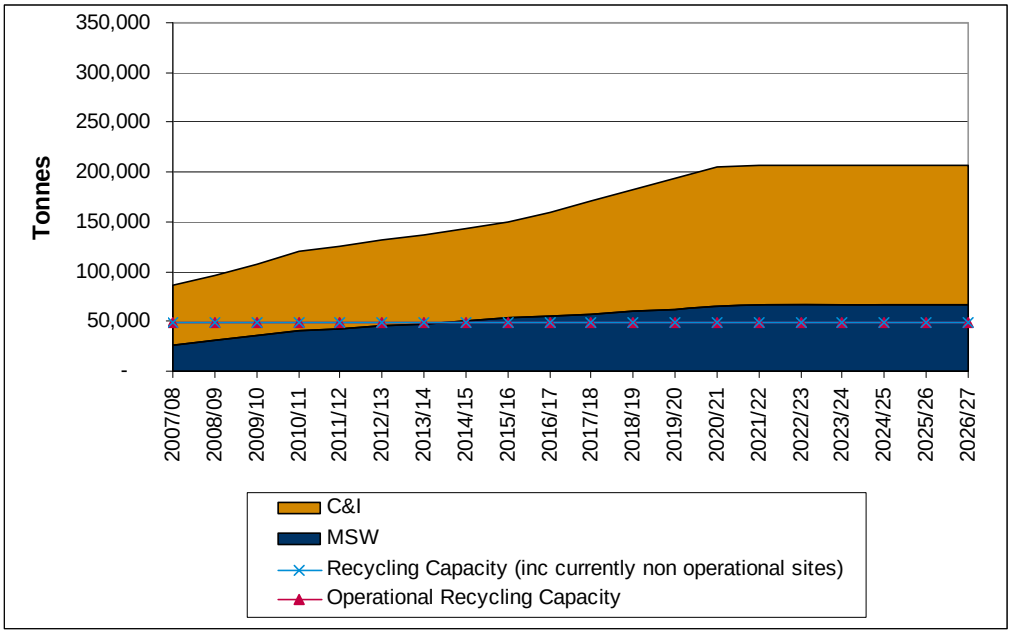
D2.1.1 Recycling

The assumed operational recycling capacity figure for recycling is 48,333. The recycling capacity including the current non operational sites is 48,333.

Table 2.1 RSS Scenario Arisings vs Recycling Capacity

	MSW	C&I	Total
2007/08	26,685	58,995	**85,680**
2008/09	30,783	65,720	**96,503**
2009/10	35,454	72,695	**108,149**
2010/11	40,400	80,280	**120,680**
2011/12	42,420	83,490	**125,910**
2012/13	44,880	86,376	**131,256**
2013/14	47,380	89,298	**136,678**
2014/15	50,400	92,256	**142,656**
2015/16	53,000	96,375	**149,375**
2016/17	55,283	104,454	**159,738**
2017/18	57,600	113,253	**170,853**
2018/19	59,950	121,965	**181,915**
2019/20	62,333	131,435	**193,768**
2020/21	64,750	140,779	**205,529**
2021/22	66,600	140,779	**207,379**
2022/23	66,600	140,779	**207,379**
2023/24	66,600	140,779	**207,379**
2024/25	66,600	140,779	**207,379**
2025/26	66,600	140,779	**207,379**
2026/27	66,600	140,779	**207,379**

Figure 2.1 Need for Recycling and Composting Capacity – New C&I Waste Management Method Assumption 50/50 Split (RSS Conformity)



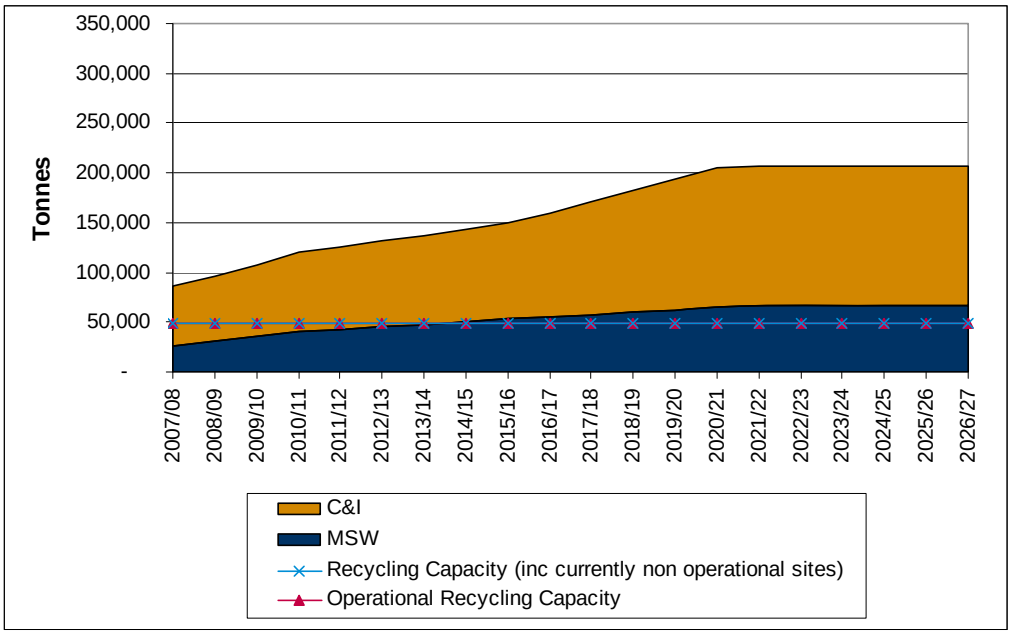
D2.1.2 Recovery

The assumed operational capacity figure for recovery is 69,973.
The recovery capacity including the current non operational sites is 69,973.
The recovery capacity if tyre plant and WEEE facilities are not included is 0.

Table 2.2 RSS Scenario Arisings vs Recovery Capacity

	MSW	C&I	Total
2007/08	-	58,995	**58,995**
2008/09	3,100	65,720	**68,820**
2009/10	6,467	72,695	**79,162**
2010/11	10,100	80,280	**90,380**
2011/12	12,120	83,490	**95,610**
2012/13	14,280	86,376	**100,656**
2013/14	16,480	89,298	**105,778**
2014/15	18,900	92,256	**111,156**
2015/16	21,200	96,375	**117,575**
2016/17	24,610	104,454	**129,064**
2017/18	28,080	113,253	**141,333**
2018/19	31,610	121,965	**153,575**
2019/20	35,200	131,435	**166,635**
2020/21	38,850	140,779	**179,629**
2021/22	42,180	140,779	**182,959**
2022/23	42,180	140,779	**182,959**
2023/24	42,180	140,779	**182,959**
2024/25	42,180	140,779	**182,959**
2025/26	42,180	140,779	**182,959**
2026/27	42,180	140,779	**182,959**

Figure 2.2 Need for Recovery Capacity – New C&I Waste Management Method Assumption 50/50 Split (RSS Conformity)



D2.2 70/30 SPLIT

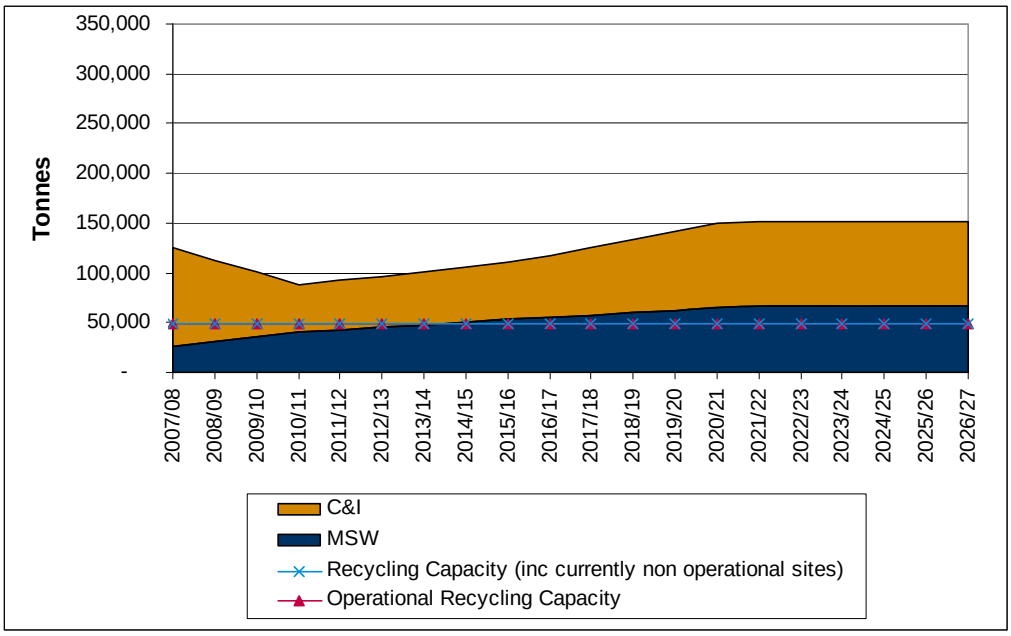
D2.2.1 Recycling

The assumed operational recycling capacity figure for recycling is 48,333. The recycling capacity including the current non operational sites is 48,333.

Table 2.3 RSS Scenario Arisings vs Recycling Capacity

	MSW	C&I	Total
2007/08	26,685	97,932	**124,617**
2008/09	30,783	82,129	**112,912**
2009/10	35,454	65,469	**100,922**
2010/11	40,400	48,168	**88,568**
2011/12	42,420	50,094	**92,514**
2012/13	44,880	51,826	**96,706**
2013/14	47,380	53,579	**100,959**
2014/15	50,400	55,354	**105,754**
2015/16	53,000	57,825	**110,825**
2016/17	55,283	62,673	**117,956**
2017/18	57,600	67,952	**125,552**
2018/19	59,950	73,179	**133,129**
2019/20	62,333	78,861	**141,194**
2020/21	64,750	84,468	**149,218**
2021/22	66,600	84,468	**151,068**
2022/23	66,600	84,468	**151,068**
2023/24	66,600	84,468	**151,068**
2024/25	66,600	84,468	**151,068**
2025/26	66,600	84,468	**151,068**
2026/27	66,600	84,468	**151,068**

Figure 2.3 Need for Recycling and Composting Capacity – New C&I Waste Management Method Assumption 70/30 Split (RSS Conformity)



D2.2.2 Recovery

The assumed operational capacity figure for recovery is 69,973.
The recovery capacity including the current non operational sites is 69,973.
The recovery capacity if tyre plant and WEEE facilities are not included is 0.

Table 2.4 RSS Scenario Arisings vs Recovery Capacity

	MSW	C&I	Total
2007/08	-	20,058	**20,058**
2008/09	3,100	49,311	**52,411**
2009/10	6,467	79,921	**86,388**
2010/11	10,100	112,392	**122,492**
2011/12	12,120	116,886	**129,006**
2012/13	14,280	120,926	**135,206**
2013/14	16,480	125,017	**141,497**
2014/15	18,900	129,158	**148,058**
2015/16	21,200	134,925	**156,125**
2016/17	24,610	146,236	**170,846**
2017/18	28,080	158,555	**186,635**
2018/19	31,610	170,751	**202,361**
2019/20	35,200	184,009	**219,209**
2020/21	38,850	197,091	**235,941**
2021/22	42,180	197,091	**239,271**
2022/23	42,180	197,091	**239,271**
2023/24	42,180	197,091	**239,271**
2024/25	42,180	197,091	**239,271**
2025/26	42,180	197,091	**239,271**
2026/27	42,180	197,091	**239,271**

Figure 2.4 Need for Recovery Capacity – New C&I Waste Management Method Assumption 70/30 Split (RSS Conformity)