Kent Waste Needs Assessment 2022 Update

Review of Waste Flows Between London and Kent

Report: Post Client Review

Version: 1.1

Issued: 4th November 2022

BPP Consulting Document Control

Project: Kent Waste Needs Assessment 2021 Update

Report: Review of Waste Flows Between London and Kent

Version Description: Post Client Review

Version No: 1.1

Date: 04.11.2022

Version No.	Version Description	Author	Date	Reviewed	Date
0.1	Draft for Internal review	Ella Mills (Data analyst)	20.10.2022	Alan Potter (Partner)	24.10.2022
1.0	Draft for Client review	Alan Potter (Partner)	28.10.2022	*Bryan Geake (Client Contact)*	03.11.2022
1.1	Post Client Review	Alan Potter (Partner)	04.11.2022		
1.2	Post Consultation				

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Abbreviations and Glossary of Terms

Abbreviations

CDEW	Construction, Demolition and Excavation Waste
DCO	Development Consent Order
EA	Environment Agency
EPR	Early Partial Review
EfW	Energy from Waste
KMWLP	Kent Minerals & Waste Local Plan (2020)
LACW	Local Authority Collected Waste
MSW	Municipal Solid Waste
WNA	Waste Needs Assessment

Glossary of Terms

Term	Definition
Energy from Waste	The conversion of the calorific value of waste into energy, normally heat or electricity through applying thermal treatment of some sort. May also include the production of gas that can be used to generate energy. In terms of the Waste Hierarchy, the management of waste by Energy from Waste is classed as 'other recovery'.
Inert Waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter that it comes into contact with, in a way likely to cause environmental pollution or harm to human health. Must meet the Waste Acceptance Criteria stated in the Landfill Directive if disposed to inert waste landfill.
Landfill (including land raising)	The permanent disposal of waste to land, by filling voids or similar features, or the construction of landforms above ground level (land-raising).
Landfill Directive	European Union law restricting the landfilling of biodegradable municipal waste and requiring pre treatment of all waste to be landfilled. It established a classification of landfills where the separate disposal of hazardous, and non-hazardous and inert wastes may take place.
Non-Hazardous Waste	Waste that neither displays hazardous properties or is sufficiently inactive to be classed as inert under the Waste Acceptance Criteria stated for disposal to inert waste landfill in the Landfill Directive. It may therefore only be disposed into a non-hazardous waste landfill. Residual waste is a subset of this stream.
Other Recovery	Processes such as energy from waste that recover value from waste other than recycling or composting. Situated below recycling and composting in the waste hierachy, but above disposal.
Recovery	Subjecting waste to processes that recover value including recycling, composting or thermal treatment to recover energy.
Recycling	Extracting materials from the waste stream for reprocessing into products (the same e.g. glass bottles or a different one e.g. aggregate).
Residual Waste	Waste remaining after waste that may be managed by re-use, recycling and composting/organic waste treatment have been removed from the non-hazardous waste stream.

1 Introduction

The Kent Waste Needs Assessment 2022 update consists of an overall main report and five waste stream specific supporting reports, namely;

1. Local Authority Collected Waste;
2. Commercial & Industrial Waste;
3. Construction, Demolition & Excavation Waste;
4. Hazardous Waste; and
5. Review of Flows between Kent and London.

This report is concerned with updating any future management requirements for waste from London made in the Kent Minerals and Waste Local Plan (KMWLP) as updated by the early partial review (EPR) in 2020. The report is made in the context of the five yearly review of the KMWLP and so proposals for updates to the KMWLP have been included as appropriate.

1.1 Current Provision for Waste from London in the Kent MWLP (2020)

Paragraph 2.4.7 of the KMWLP as updated by the Early Partial Review summarises the position regarding the management of waste from London in Kent at the time the KWMLP underwent examination in 2015 as follows:

> *"Construction waste comes into the county from London for disposal in inert landfill sites. MSW is also transported to Kent to take the spare capacity in Kent's new waste treatment infrastructure at the Allington EfW facility and the materials recycling facility in Sittingbourne."*

In addition to the above provision for the possible need to provide for waste sent from Kent to Rainham Landfill located in the London Borough of Havering that was due to close during the Plan period was also considered.

Table 1 below shows the quantities of waste from London and the quantity of Kent waste forecast to require management on closure of Rainham Landfill in London, accounted for in the calculation of Kent's capacity requirements as updated by the EPR:

Table 1: Planned provision for London's waste in KMWLP 2016-2031 (tonnes)

Source: WNA Update 2018

Source	Waste Type to be Managed	Plan Milestone Year				Total Over Plan Period
		2016	2021	2026	2031	
From London	**Inert Waste**	300,000	300,000	300,000	300,000	5.7 million
From London	**Non-Hazardous Waste**	34,500	34,500	35,000	36,000	
From London Landfill		0	20,000	20,000	20,000	

The rationale applied to arrive at these values was as follows:

1.1.1 Inert Waste

Paragraph 6.11.2 of the KMWLP as updated by the Early Partial Review states:

> *" The most recent capacity assessment shows that Kent has existing consented inert waste landfill capacity that is more than sufficient to meet Kent's need for the plan period. It is known that Kent receives a lot of waste originating out of the county, particularly from London, which goes into inert waste landfill in Kent. It has been concluded that continuation of this waste import throughout the plan period at a rate of 300,000 tpa can be accommodated by the existing consented capacity."*

1.1.2 Non-Hazardous Waste

Paragraph 6.3.3 of the KMWLP as updated by the Early Partial Review states:

> *" Specific provision in the calculations for capacity required for non-hazardous waste going to landfill or EfW has been made for waste from London. The reason for this is that due to land constraints London's residual waste cannot all be managed within London itself and so, as a neighbouring waste planning authority, Kent County Council has some responsibility to make provision for an element of this waste. Historical data indicates the tonnage to be provided for is in the region of 35,000 tonnes per annum. It is also recognised that closure of Rainham Landfill in the London Borough of Havering in 2026 may result in the displacement of waste from Kent currently managed there. Therefore, an additional tonnage of 20,000 tpa has been planned for on a contingency basis.*

As shown in Table 1 the updated WNA 2018 made provision for the management of up to 36,000 tpa of London's non-hazardous waste in the final year of the Plan period plus 20,000 tonnes of Kent waste managed at Rainham landfill anticipated at that time to close in 2020. The updated WNA 2018 also assumed that, given the limited void available at Kent's remaining non-hazardous waste landfills, the principal route through which imports of non-hazardous waste from London would be managed was via EfW. Hence the tonnages were expressly factored into the assessment of need for EfW capacity in Kent. Ultimately the WNA 2018 concluded that existing EfW capacity was sufficient to meet requirements in Kent including the additional tonnage predicted as coming from London.

1.1.3 The London Plan

The London Plan in place at the time the EPR KMWLP capacity provision was determined, was adopted in 2015. This set the target of achieving net self sufficiency for household and commercial waste and cease landfilling of biodegradable/recyclable wastes by 2026 for the capital as a whole. This meant that, after 2026, while movement to landfills outside the capital may continue (provided that they are offset by incoming flows), such waste must be non-biodegradable and/or non-recyclable (i.e., residual). This was expected to constrain exports of non-hazardous waste from London to landfill justifying reducing the forecast for London's non-hazardous waste needing management in Kent landfills. Since adoption of the EPR KMWLP the new London Plan has been adopted in 2021. This reflects the same aspiration regarding the cessation of export of biodegradable/recyclable waste destined for landfill from London by 2026. It does however introduce a distinction between the excavation component of construction, demolition and excavation waste including an expectation that all inert excavation waste be put to beneficial use.

2 Update on Provision for London's Waste

This section reviews the relevance of the values provided for London's waste in the evidence base underpinning the adopted EPR KMWLP as set out in the section above by considering the following:

1. Waste management data for the most recent year reported 2020;
2. Comparison with historic waste data.

2.1 Current Management of Waste from London in Kent

Examination of the Environment Agency data indicates the following imports of waste from London to Kent final fate facilities - landfills, EfW plants and recovery to land in 2020.

Table 2: Current Final Fate Management of London's waste in Kent 2020
Source: EA WDI 2020

Final Fate Facility Type/Name	Waste Type		Totals
	Non-inert	Inert/C+D	
Kemsley Sustainable Energy Plant (SEP) (K3)	82,498	0	82,498
Ridham Dock Biomass Facility	21,378	16,051	37,429
Allington EfW	5,859	0	5,859
Energy from Waste Total	**109,735**	**16,051**	**125,786**
Stone Pit 2 & Borough Green Inert LF	11,896	109,288	121,184
Greatness Quarry Non-Hazardous LF	448	4,609	5,057
Landfill Total	**12,344**	**113,897**	**126,241**
Stone Pit 1 Deposit to land	0	110,135	110,135
Recovery to Land Total	**0**	**110,135**	**110,135**
Grand Total	**122,079**	**240,083**	**362,162**

Comparison of the data in Table 2 above with data for 2015 used as the basis for the WNA 2018 values indicates the following:

- Imports for EfW have gone up from 13,513t to 125,786t. largely due to the coming on-stream of the Kemsley SEP. It should be noted that imports to the Ridham biomass plant are segregated wood (i.e., an element of Construction and Demolition waste) rather than mixed residual non-hazardous waste (mixed municipal);
- Deposit of non-inert waste to landfill has fallen marginally (from 20,817t to 12,344t); It should be noted that imports of non-inert waste for landfilling are predominately residues from the mechanical processing of waste. This waste is non-hazardous, and therefore might be counted as residual non-hazardous waste.
- Deposit of inert waste to land (including landfill and recovery to land) has fallen significantly (from 422,441t to 224,032t).

In order to identify trends, historical data of the management of inert waste and residual non-hazardous waste from London, has been considered in the next section.

2.2 Historic Inert Waste Imports from London for Permanent Deposit in Kent

Data for the permanent deposit of Construction, Demolition and Excavation Waste (taken to represent inert waste) from London to land in Kent between 2016 and 2020 is presented in Table 3 below.

Table 3: Permanent Deposit of London's C, D & E waste in Kent 2016-20
Source: EA WDI 2016-20

Site	2016	2017	2018	2019	2020
Stone Pit 1	116,805	77,367	73,802	87,775	110,135
Deposit of waste to land (recovery)	**116,805**	**77,367**	**73,802**	**87,775**	**110,135**
Borough Green Landfill	88,511	61,504	56,496	35,824	19,940
Stone Pit 2 - Inert Landfill	166,223	153,748	130,628	66,882	89,348
Inert LF	**254,734**	**215,252**	**187,124**	**102,706**	**109,288**
Greatness Quarry	2,131	1,028	4,402	3,419	4,609
Non-Hazardous LF	**2,131**	**1,028**	**4,402**	**3,419**	**4,609**
Grand Total	**373,670**	**293,646**	**265,328**	**193,900**	**224,032**

This shows:

- There was a slight increase in 2020 which broke the trend in year-on-year reduction in the tonnage of inert waste from London permanently deposited in Kent; and
- substantial reliance on 3 sites in Kent for permanent deposit across the categories of deposit to land and inert landfill - Stone Pit 1, Stone Pit 2 and Borough Green Landfill;

The overall values are plotted with data from 2011-2020 to show the overall trend in Figure 1.

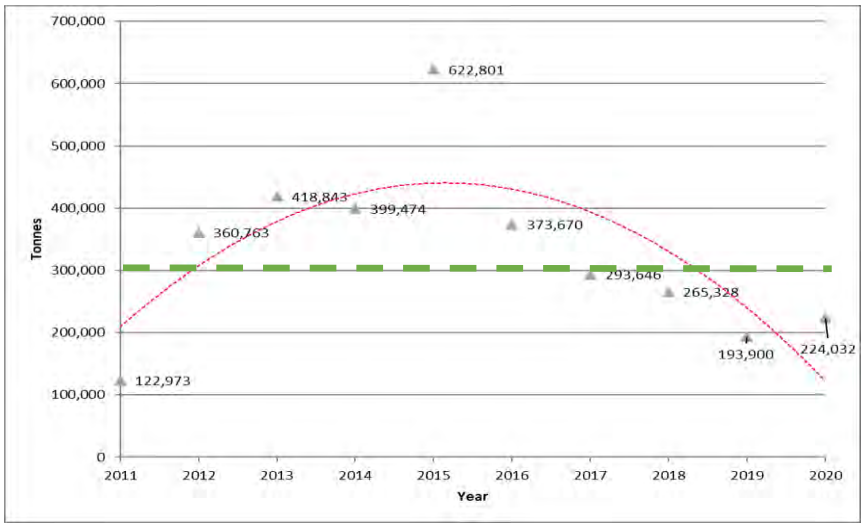

Figure 1: Trend for Imports of CDEW from London to Kent 2011-2019 (Source: EA WDI)
Horizontal green dashed line indicates provision made in adopted KMWLP

Figure 1 shows that while the values were initially rising, they peaked at 2015, and the 2016-2020 values represent a declining trend. This suggests that the provision within the EPR KMWLP for the permanent deposit of 300,000tpa of inert waste to land, may be excessive. This is supported by the fact that the London Plan applies targets for the conversion of inert C & D waste into recycled aggregate (95% recycled or reused by 2020) which should act as a brake against this form of inert waste being managed by landfill encouraging more local management. That would then leave London's inert excavation waste which is to go for beneficial use only, predominately outside London.

A five-year average of the input data yields a value of 270,000 tonnes per annum which is below the 300,000 tpa value for which provision is currently made within the adopted KMWLP. below the current provision.

2.3 Conclusion on Inert Waste imports for Permanent Deposit

Review of the historical data suggests that the current Plan provision of 300,000 tpa for the management of inert waste from London by permanent deposit to land may be above requirements. While the Plan area was projected to have an adequate supply of void at active and consented mineral workings to accommodate inert waste from Kent, this is no longer the case and given the void is a finite resource that will be reducing over time, it is considered that the level of provision committed to manage London's inert waste in any future version of the KMWLP ought to be reduced to ensure Kent's long-term needs are met in the first instance.

2.4 Management of Non-Hazardous Waste Imports from London in Kent

2.4.1 Non-Hazardous Waste Inputs to Landfill in Kent

Figure 2 compares inputs of non-hazardous waste arising in London managed at landfills in Kent in 2015 and 2020 by principal waste types.

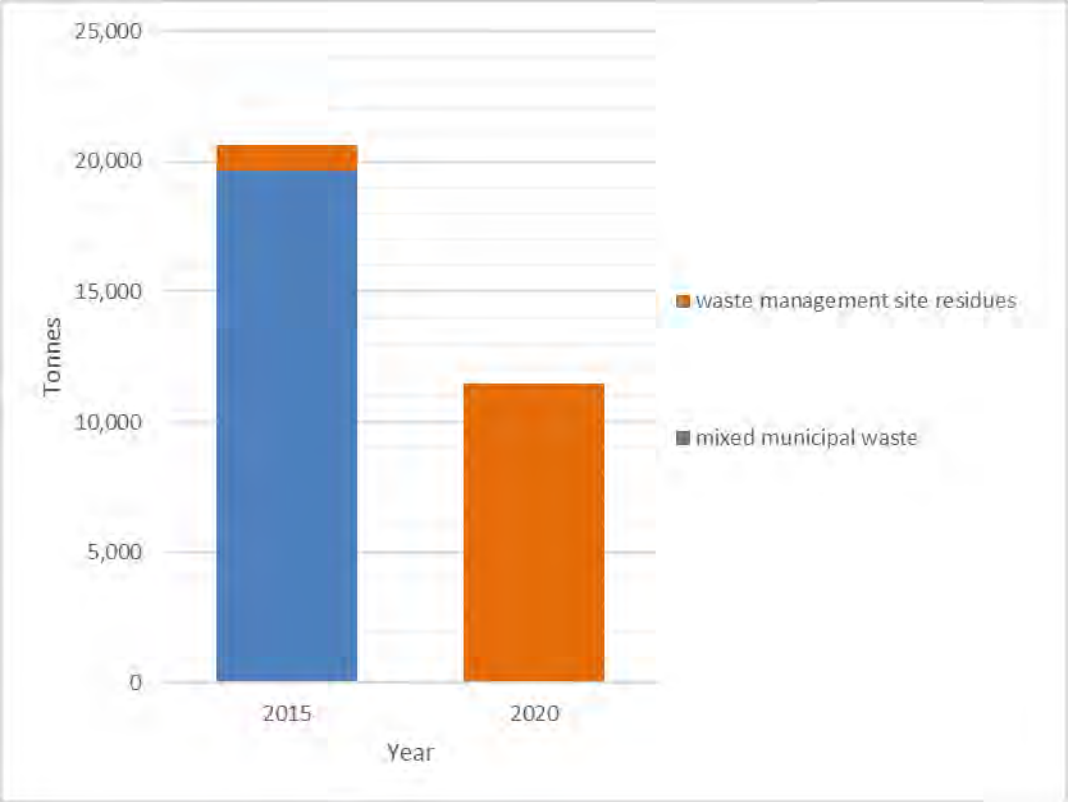

Figure 2: Non-hazardous waste from London disposed to landfill in Kent 2015 vs 2020 by waste type
(Source: EA WDI)

Figure 2 reveals a clear change in the predominant non-hazardous waste input to landfill from mixed municipal waste in 2015, to mostly waste management site residues[1]. Review of the 2015 dataset reveals that the value of mixed municipal waste sent to landfill was a peak on previous years, suggesting that it was an anomalous value in the first place. It should also be noted that since 2015 the Beddington EfW plant has been built in south London where the mixed municipal waste received in 2015 arose, and this has been operational since 2018. This suggests that any need has substantially reduced and may continue to do so.

[1] Note that there were smaller quantities of other wastes but none were at a significant amount.

2.4.2 Non-Hazardous Waste Inputs to Kent EfW

Data for the management of non-hazardous waste from London at Kent EfW plant in 2015 and 2020 is presented in Figure 3 below. This shows a substantial increase in inputs in 2020 compared to 2015. This is predominantly due to the commencement of operation of Kemsley SEP/K3 plant in 2020 which accounts for c82,500 tonnes (75%) of the inputs of non-hazardous waste from London managed at EfW plants in Kent. In addition, imports of waste wood for biomass have increased with commencement of operation of the MVV Biomass plant in Ridham.

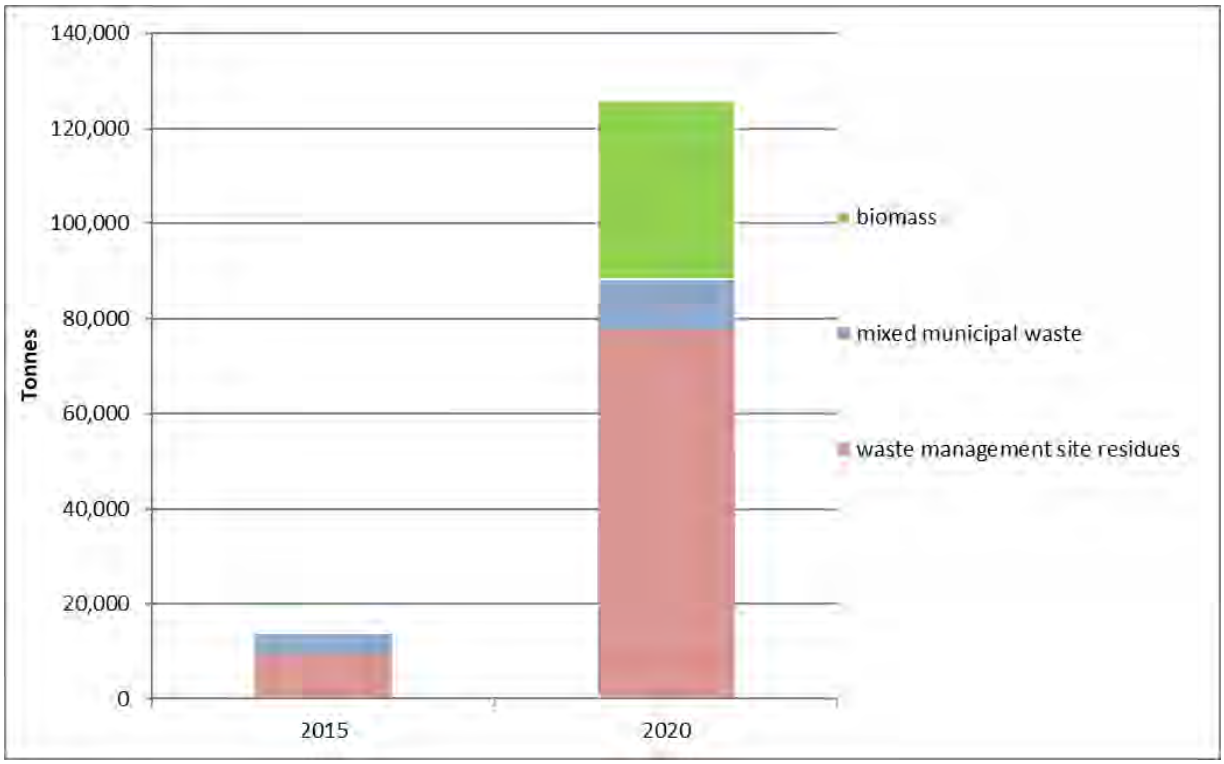

Figure 3: Imports of non-hazardous waste to Kent EfW from London 2015 vs 2020
Source: EA EfW data 2015 & WDI 2020

2.5 Projected requirement for London's Non-Hazardous Waste

2.4.1 Non-Hazardous Waste Inputs to Kent from London to 2040

Given the fall in landfill of non-hazardous waste from London as shown in Figure 2 and the substantial rise in the import of non-hazardous waste for EfW as shown in Figure 3, this suggests that no additional provision ought to be made. It should also be noted the recently consented Riverside Energy Park in LB Bexley could eliminate exports arising from London altogether, as it is likely to be a preferred facility by London authorities, as opposed to export outside London.

The above suggests that Kent County Council need no longer plan for the management of a specific quantity of residual non-hazardous waste from London.

2.6 The impact of closure of Rainham Landfill on Management of Kent waste

The adopted EPR KMWLP anticipated an increase in the amount of residual non-hazardous waste being managed in Kent from 2021 onwards following the anticipated closure of the non-hazardous landfill at Rainham in the London Borough of Havering at the end of 2020. As a consequence, for the period of 2021 to 2030, the Plan makes provision for the management of residual non-hazardous waste from London at non-hazardous landfill and EfW facilities in Kent of a further 20,000 tpa.

The need to continue to provide for waste arising in Kent historically managed at the Rainham site is considered below.

Figure 4 presents a comparative breakdown of the principal types of waste attributed to Kent accepted at Rainham landfill over a 5-year period (2016 – 2020). It shows that the bulk of inputs are either soils and stones or screenings from waste water or sewage treatment plants. This latter type would be classed as non-hazardous waste, although may not be classed as 'residual' as they come from a different source to mainstream non-hazardous waste and so may have not undergone pre-treatment in which recyclable materials have been extracted. Figure 4 also shows a change in profile of the waste types managed in smaller quantities from casting cores and moulds and infectious wastes to street cleaning residues, mixed municipal and bottom ash and slag in the last 3 years.

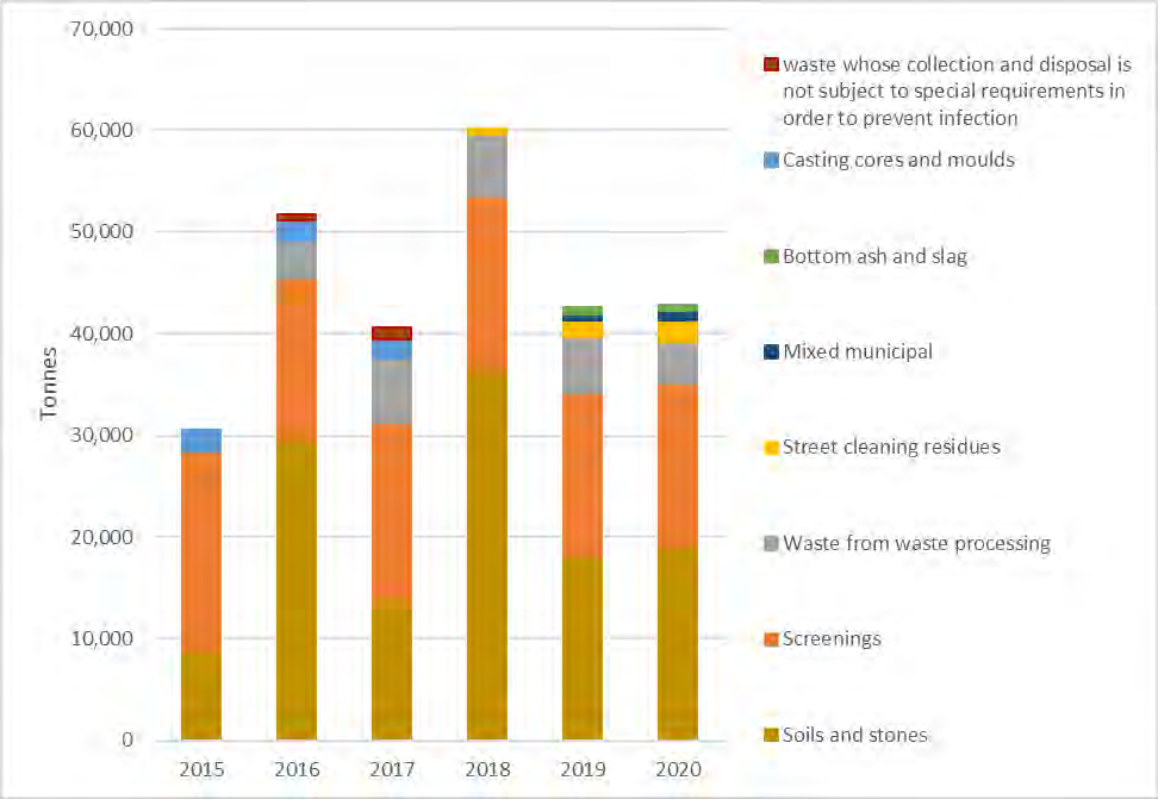

Figure 4: Exports of Kent waste (>500t) to Rainham landfill by waste type 2016 - 2020.
Source: WDI data

Permission has been granted to extend the operation of other uses at the Rainham landfill site to 2024. The application included "*re-profiling of final contours*" which implies the permission also relates to the landfill. In addition, the EA data set on remaining landfill at the end of 2020 shows that Rainham landfill still has over 1 million m^3 of void space remaining.

However, given the guiding principle of Plan provision is net self-sufficiency it is now considered that separate provision for an additional 20,000 tonnes per annum of Non-Hazardous waste within Kent after the expected closure date is no longer appropriate. This is because the Kent waste exported to Rainham has already been accounted for in the respective baseline reports, and given the relatively small tonnage would not affect the overall capacity requirement.

3 Conclusion on Provision of Capacity related to waste flows between London and Kent

3.1 Inert Waste

Review of the historical data suggests that the current Plan provision of 300,000 tpa for the management of inert waste from London by permanent deposit to land may be above requirements. While the Plan area was projected to have an adequate supply of void at active and consented mineral workings to accommodate inert waste from Kent, this is no longer the case and given the void is a finite resource that will be reducing over time, it is considered that the level of provision committed to manage London's inert waste in any future version of the KMWLP ought to be reduced to ensure Kent's long-term needs may be met in the first instance.

3.2 (Residual) Non-Hazardous Waste

Assessment of current net self sufficiency balanced for Kent residual Non-Hazardous waste combined with the London Plan commitment for London to achieve net self sufficiency 2026 means that specific provision in the Plan for managing London's residual non-hazardous waste in Kent is no longer appropriate. The commissioning of the Kemsley K3 EfW plant in 2019 and recent grant of a DCO to increase its throughput by up to 107,000 tpa flows of non-hazardous residual waste makes more than ample provision for non-hazardous waste from London.