



Kirklees Council Waste Needs Assessment

Waste Arisings and Review of Cross-Boundary Movements

Resources



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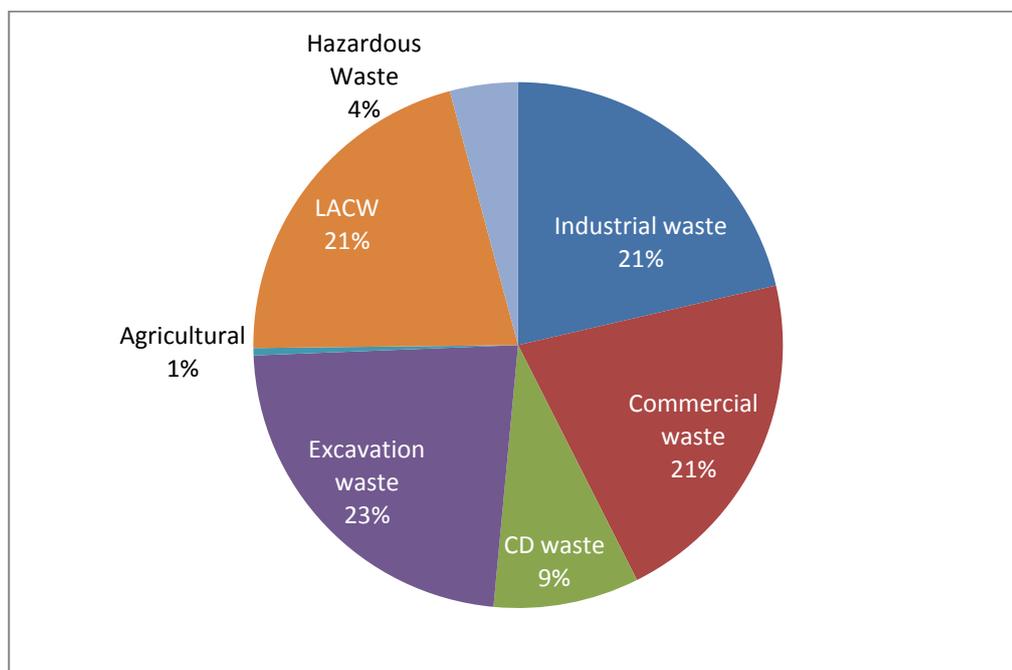
Stage 1a: Compiling a Baseline of Waste Arisings for Kirklees Council

A baseline review of the robustness and limitations of currently available information on current and expected arisings of waste from the geographical boundary of Kirklees Council (hereafter referred to as “Kirklees”) has been thoroughly carried out for each of the following controlled waste streams:

- Commercial and Industrial (C&I);
- Local Authority Collected Waste (LACW);
- Hazardous Waste;
- Construction, Demolition and Excavation Waste (CD&E);
- Agricultural;
- Low Level Non-Nuclear Radioactive Wastes; and
- Waste Water/Sewage Sludge.

Figure 1 summarises the principal arisings of waste in Kirklees in 2013 and the size, composition and methods of managing each stream are discussed in the subsequent chapters of this report.

Figure 1: Principal waste arisings for Kirklees in 2013¹



[Source: Environment Agency Waste Data and Hazardous Data Interrogators, 2013]

¹ The quantity of agricultural wastes refers only to material taken away from holdings to be managed elsewhere.

This report also contains an analysis of the movements of waste into and out of the authority in 2013. Analysis of capacity gaps is provided in a separate report drawing on the baseline arisings data identified in this report.

Details of data sources are provided in Appendix 1.

1. Commercial and Industrial Waste

1.1. DATA SOURCES

- 1.1.1. There have been no specific surveys of Commercial and Industrial (C&I) waste arisings in Kirklees and there is no straightforward method by which they can be measured on an annual basis. However, estimates can be extrapolated from surveys of this stream that have been undertaken at national and regional levels, the latter being undertaken for North West England. The surveys which have been used for this study use data collected in 2009 and 2008/9 respectively^{2,3}.
- 1.1.2. National data is available from a survey of 6,005 businesses with estimates of waste arisings in 2009 and Office of National Statistics (ONS) data on business size and numbers from 2009. Just over half the interviews were face-to-face with the remaining data collection based on telephone interviews, corporate data and Pollution Prevention Control (PPC) returns to the Environment Agency. In total, 7.77% of the sampled locations were in the Yorkshire and Humberside Region. PPC data was added to the published totals but this information was not statistically derived and it should be recognised combining data from multiple sources can produce distorted results.
- 1.1.3. The North West survey was completed by site visits undertaken in 2009 and sampled 1000 businesses. This survey was chosen as it is geographically close to Kirklees and the results were published in sufficient detail to allow customisation for the Plan area (details of waste arisings per C&I sector and business size allow data to be generated covering the number, sector and size of businesses operational in Kirklees).

1.2. COMPARISON OF ESTIMATED PROJECTIONS

- 1.2.1. Tables 1, 2 and 3 compare the estimated arisings for these streams derived from the two sources identified above. They show significant differences between the results in terms of how the material was managed, the composition of the streams and the industry sectors that generated them. Some variation is to be expected due to differences in the types and size of companies that were surveyed which will be

² Commercial and Industrial Waste Survey 2009 Final Report, May 2011 (Jacobs, for Defra).

³ North West of England Commercial and Industrial Waste Survey 2009 (Urban Mines, for the Environment Agency March 2010).

reflected in the extrapolation of results to estimate the quantity of wastes and types of materials arising. Nevertheless there are significant - and in some cases extreme - differences between the reported results which affect the current performance against the Waste Hierarchy (cf. quantities of waste recycled as estimated in Table 1) and the type of materials which will influence or restrict the management options available (cf. the respective quantities of mineral, metal and non-metallic wastes as estimated in Table 2).

1.2.2. It should also be noted that:

- The national survey predicts relatively high levels of mineral waste which contrast with the much lower arisings for the chemical/non-metallic minerals manufacturing sectors shown in Table 3 which can be the only source of these materials;
- The North West survey results correlate most closely with the quantity of waste landfilled as identified from a separate analysis using the Environment Agency’s Waste Data Interrogator (WDI) facility.

Table 1: Projected Arisings of C&I Wastes for Kirklees by Management Method Projected from the Defra and North West Surveys

Waste Management Method	Projected from Yorks & Humber data in Defra survey	Projected from the NW Survey
Land disposal (Landfill)	113,298	88,241
Land recovery	11,720	6,113
Thermal treatment with energy recovery	7,814	1,696
Thermal treatment without energy recovery	11,720	6,043
Non Thermal treatment	19,534	9,991
Transfer	3,907	7,038
Recycling	187,527	255,347
Composting	3,907	2,672
Unknown	31,255	17,752
Totals	390,681	394,892

[Sources as indicated in column headings – all figures in tonnes]

Table 2: Projected Arisings of C&I Wastes for Kirklees by Material Type Projected from the Defra and North West Surveys

Waste Substance Classification	Projected from Yorks & Humber data in Defra survey	Projected from the NW Survey
Animal & vegetable wastes	27,348	13,262
Chemical wastes	42,975	25,696
Common sludges	3,907	7,675
Discarded equipment	3,907	3,502
Healthcare wastes	11,720	6,102
Metallic wastes	19,534	55,382
Mineral wastes	148,459	22,611
Mixed wastes	70,323	112,648
Non-metallic wastes	62,509	148,014
Total	390,681	394,892

[Sources as indicated in column headings – all figures in tonnes]

Table 3: Projected Arisings of C&I Wastes for Kirklees by Industry Sector Projected from the Defra and North West Surveys

Originating Industry Sector	Projected from Yorks & Humber data in Defra survey	Projected from the NW Regional Survey
Food, drink and tobacco	21,540	15,990
Textiles/ wood/ paper/ publishing	119,734	56,348
Power & Utilities	2,999	11,469
Chemical/non-metallic minerals manufacturing	50,803	48,058
Metal manufacturing	26,024	26,097
Machinery & equipment (other manufacturing)	26,417	53,987
Retail & wholesale	70,082	96,894
Other services	45,698	52,215

Originating Industry Sector	Projected from Yorks & Humber data in Defra survey	Projected from the NW Regional Survey
Public sector	27,384	33,834
Totals	390,681	394,892

[Sources as indicated in column headings - all figures in tonnes]

- 1.2.3. The two approaches produce total estimates that differ by only 1% but there are much greater differences between the estimated sizes of the material streams that will have implications for how they are managed and the type of capacity that may be needed in the future, and which therefore impact priorities for new waste facilities in Kirklees.
- 1.2.4. As a result of these considerations and the bullet points shown above, the analysis is based on the North West survey results as they appear to be a more reliable and internally consistent estimate of the quantity, source and fate of these wastes.

1.3. CAVEATS AND LIMITATIONS

- 1.3.1. In estimating the size of the C&I stream it is necessary to take account of two issues that can affect the accuracy of the overall assessment of need. First, C&I arisings include a sub-category of waste that is defined as hazardous material. Hazardous wastes usually require specific treatment, recycling, recovery or disposal, which means they must be managed separately from other wastes. Section 3 of this report contains an analysis of the quantity of locally arising hazardous wastes.
- 1.3.2. Second, Table 4 shows the quantity of trade waste collected in Kirklees during 2013/14 was just over 25,000 tonnes.

Table 4: Trade Waste arising in Kirklees in 2013/14⁴

Trade Waste in Kirklees	Tonnes
Trade waste collected for recycling	1,594
Trade waste collected for recovery	20,150
Trade waste for Hazardous landfill	150
Trade waste for Landfill	3,102
Total	24,997

[Source: Defra, WasteDataFlow – all figures in tonnes]

1.3.3. Trade waste is collected by the local authority though it is generated in businesses and non-residential establishments. Such material will already be included in the extrapolated North West survey results and is therefore treated as part of the C&I stream in this assessment and deducted from the LACW stream (see Chapter 2) to prevent double-counting.

1.4. C&I SUMMARY

1.4.1. Whilst estimated total waste arisings from each survey are in close agreement, more detailed analysis of the results indicates that the slightly higher levels of arisings are shown in the NW projection with lower levels of landfill and higher levels of recycling.

1.4.2. The DEFRA survey indicates lower recycling level at 48% compared with the extrapolated NW at 65%, the DEFRA survey has a slightly higher percentage of material with no known management method (8% compared to 5% for the extrapolated NW survey). Table 5 compares the results.

⁴ These figures include waste collected from small businesses, council offices, schools and charities. Approximately 1000 tonnes of material collected for recycling is building rubble (or similar).

Table 5: Comparison of C&I Arisings by Management Route Projected from the Defra and North West Regional Surveys

Estimated Waste Arising by Management Method	Projected from Defra National Survey	%	Projected from NW Survey	%
Land disposal (Landfill)	112,355	29	88,241	22
Land recovery	13,390	3	6,113	2
Energy recovery	6,020	2	1,696	<1
Incineration	11,534	3	6,043	2
Non Thermal treatment	18,679	5	9,991	2
Transfer	4,388	1	7,038	2
Recycling	188,814	48	255,347	65
Composting	5,176	1	2,672	<1
Unknown	30,325	8	17,752	5
Totals	390,681	100	394,892	100

[Sources: see column headings – these figures are in tonnes]

- 1.4.3. Commercial waste originating in Kirklees was disposed to landfill though this figure includes an unspecified amount of LACW. A total of 230,589 tonnes originating somewhere in Yorkshire and Humberside was also landfilled and some of this material could have originated in Kirklees. The WDI results suggest both surveys over-estimated landfill rates but the NW survey appears to provide a more realistic baseline as the projections are closer to those reported to the Environment Agency. As a result the extrapolation of that survey implies that of C&I waste, 65% is recycled, 22% goes to landfill, 6% is managed by other treatment routes and it is not known how the other 7% is managed.
- 1.4.4. Table 6 shows the management routes for the commercial and industrial waste streams separately based on the same source information. Total arisings are lower than shown in preceding tables because these figures exclude hazardous waste (see Chapter 4). The figures below are taken forward into the baseline used in the capacity gap assessment.

Table 6: Management Routes for Commercial and Industrial Wastes

Waste Management Method	Industrial Waste	Commercial Waste
Composting	2,419	253
Don't know	4,192	13,551
Energy from Waste	-	1,329
Incineration without Energy Recovery	-	2,587
Land recovery	6,113	-
Landfill	41,328	41,616
Recycling	72,043	116,476
Recycling (metals) ⁵	55,382	-
Transfer stations (non-hazardous)	-	2,126
Treatment plant	366	2,882
Totals	181,844	180,819

[Sources: Extrapolated from NW regional survey – all figures in tonnes]

⁵ Recycling facilities that handle specific materials only (in virtually all cases they handle scrap metal or are vehicle dismantlers) are identified separately as any surplus capacity they offer cannot be used to manage mixed wastes.

2. Local Authority Collected Waste

2.1. WASTE STREAM

- 2.1.1. Previously the term 'Municipal Waste' (MW) was used in UK waste policies and nationally reported data to refer to waste collected by local authorities. In 2010, negotiations with the European Commission and consultation with the waste community redefined terms and waste management performance targets in order to ensure the UK complied with the EU Waste Framework and Landfill Directives and that calculation of landfill rates was based on an appropriate range of material and not just that collected from households and from the public realm⁶.
- 2.1.2. As a result the term MW was superseded in 2011 by Local Authority Collected Waste (LACW) which still refers to all of the waste collected by a local authority irrespective of the type of premises that generates the material. It includes waste from domestic properties and that from non-household sources such as road sweepings and litter collected from public highways. LACW also includes wastes generated by smaller businesses, institutions such as schools, prisons, camp sites, gypsy and traveller sites, hospitals and nursing homes.
- 2.1.3. However, as noted in the preceding chapter, the operations of LACW includes trade waste collected from businesses that have a contract with Kirklees Council's trade waste collection service. These wastes are treated in this study as part of the C&I waste stream and the quantity of this material arising locally (see Table 4) is deducted from the total amount of LACW to prevent double-counting.
- 2.1.4. The Controlled Waste Regulations (1992) set out the types of waste to be treated as household, industrial and commercial waste. Regulation 3, commonly known as Schedule 1, sets out under paragraph 4 those types of household waste for which a local authority may make a charge for collection. The LACW stream comprises wastes originating from three sources as described below and further references in the report will distinguish between them as appropriate:
- LACW(H) comprises all wastes collected directly from households and that collected from the household waste recycling centres (HWRCs). It excludes

⁶ <https://www.gov.uk/local-authority-collected-waste-definition-of-terms>

rubble, soil, plasterboard left at these sites which are counted as part of the CD&E stream (see Section 4 of this report). This material matches the 'waste from households' component of LACW which is used in the UK to assess recycling and composting performance for these materials against EU and national targets;

- LACW(other) which comprises all wastes collected from non-household sources such as that collected from road cleaning (sweepings and gullies), plasterboard, soil/rubble collected at HWRCs and green waste collected from public parks);
- LACW(secondary) which comprises by-products from energy recovery of household and non-household wastes and comprises metals, bottom ash and Air Pollution Control Residues (APCRs).

2.2. DATA SOURCES

2.2.1. As a unitary authority Kirklees Metropolitan Council is the responsible Waste Disposal and Collection Authority and data has been supplied by officers from the Council and confirmed by records in the national WasteDataFlow website which is supported by DEFRA. The latest available annual data covering the period April 2013 to March 2014 have been used.

2.3. LACW ARISING & MANAGEMENT

2.3.1. In 1998, Kirklees Council initiated a PFI (Private Finance Initiative) for a 25 year (with in option for a 5 year extension) waste management contract with Sita Kirklees Ltd. The contract covers:

- management of waste from 5 Household Waste Recycling Centres (HWRCs);
- recycling of the co-mingled recyclables from households delivered to the Huddersfield MRF (Materials Recycling Facility) and to the Thornhill Waste Transfer Station (WTS) in Dewsbury; and
- residual waste management at the Energy from Waste Plant (EfW) at Huddersfield.

2.3.2. The HWRCs manage general waste, inert waste, garden waste, recyclables, plasterboard and tyres while the facility at Emerald Street also accepts asbestos waste. There are also further transfer/recycling facilities at Emerald Street that are not provided at the other sites.

2.3.3. Sita Kirklees Ltd. is responsible for identifying and managing on-going markets for recyclables and compostable material. Residual waste and recyclates collected from northern Kirklees is taken to the Thornhill WTS. Reprocessing of separated recyclables occurs predominantly outside of Kirklees. Plasterboard is taken to a site outside the borough for recycling and hazardous asbestos is taken to an appropriate licensed landfill outside the borough.

2.3.4. Table 7 shows a summary of LACW waste arisings and current waste management routes for the principal sub-streams (excluding trade waste and Schedule 1 wastes as referred to above). This analysis shows that 63% of these materials are sent for energy recovery; 30% are recycled or composted, and 7% are sent to landfill.

Table 7: LACW Arisings in Kirklees in 2013/14

Arisings and Fate	Quantity	Management of LACW(H)
Total LACW arising	179,006	
Total LACW arisings excluding process losses	176,394	
Total LACW(H)	155,916	
Total LACW(Other)	20,478	
LACW(H) sent for recycling or re-use	33,723	22%
LACW(H) sent for composting	12,719	8%
LACW(H) sent to energy from waste facility	99,035	63%
LACW(H) sent to landfill	10,439	7%

[Source: Defra, WasteDataFlow – arisings figures in tonnes – percentages are rounded]

2.3.5. Waste treatment at the EfW facility generated an additional 27,636 tonnes of secondary materials which still fall within the legal and technical definition of waste and for which management facilities are needed if the Council is to be net self-sufficient in providing local waste management capacity. These are the materials referred to above as LACW (secondary).

2.3.6. Table 8 summarises the three types of secondary material produced, the quantities involved, and how they are managed. Even though these materials are recycled, the

government (Defra) does not allow these materials to contribute towards the Council's recycling rate. These tonnages are therefore not included in LACW recycling figures.

Table 8: Secondary Arisings from LACW Management in Kirklees in 2013/14

Material Type	Arisings	Management route
Inert Bottom Ash	20,766	100% recycled
Air Pollution Control Residues (APCR)	4,825	72% recycled; 28% to hazardous landfill
Metals	2,044	100% recycled
Total	27,636	

[Source: Defra, WasteDataFlow – arisings figures in tonnes]

2.3.7. The Council is currently undertaking a review of the existing Municipal Waste Management Strategy which was originally published in 2004 and underwent a further Technical Review in 2006.

2.4. CONCLUSIONS

2.4.1. Projections of LACW waste arisings are used to inform the Needs Assessment model. The data obtained from Kirklees Council has been cross-checked against records in the Defra WasteDataFlow website. LACW is separated in the subsequent needs assessment modelling so there is a clear distinction between LACW(H) wastes, to national recycling/composting targets apply, and other parts of the LACW stream.

2.4.2. The Council is continuing to work towards achieving the EU and national target for recycling, composting or re-using 50% of LACW(H) by 2020. It should be noted that the quantity counting towards this target only includes the relevant quantities shown in Table 7. The LACW (secondary) material in Table 8 that is recycled does not count towards the Council's recycling target, as clearly stated in Defra's Waste Data Flow calculations.

2.4.3. Furthermore the EU Landfill Directive requires Member States – and the constituent authorities within them – to have reduced the quantity of LACW sent to landfill in 2020 to a level equivalent to 35% of that reported in 1995. At the earlier date virtually all LACW (then Municipal Waste) will have been disposed to landfill. The final row in Table

7 shows that the quantity of material currently managed this way is very low and the Council is already exceeding the required performance well ahead of the target date.

3. Hazardous Waste

3.1. DATA SOURCES

- 3.1.1. The Hazardous Waste (England and Wales) Regulations 2005 and the List of Wastes (England and Wales) Regulations (2005) amended by the Waste (England and Wales) Regulations 2011 set out what is defined as hazardous waste. These regulations place strict requirements on the movement of hazardous wastes from source to an intermediate or final destination which must be reported to the Environment Agency.
- 3.1.2. Movements of these wastes is subsequently reported through its Hazardous Waste Data Interrogator (HWDI) which is the most accurate and authoritative source of this information although it has some limitations. It does not record the specific destination (name of facility) of the waste but does give its end location as to the authority in which it was disposed as well as identifying the quantity disposed off and its fate. Furthermore in some cases the type of material is not reported although this does not affect the total estimated arisings.
- 3.1.3. The more general WDI can also be used to estimate arisings and fate of this waste stream, but its output is not directly compatible with HWDI and the EA do not recommend its use for this purpose. Consequently the Environment Agency advises that the HWDI should be used in the first instance and it is the source of data used in this study.

3.2. HAZARDOUS WASTE ARISING

- 3.2.1. Hazardous waste is a subset of all waste streams, and the information presented here covers all known hazardous waste arising in Kirklees as reported through the EA's HWDI. The HWDI reports 35,390 tonnes of hazardous waste arisings in Kirklees in 2013 as shown in Table 9 with 9,001 tonnes of materials being managed locally as shown in Table 10.

Table 9: Hazardous Waste Arisings in Kirklees by Substance in 2013

Waste Substance	Tonnes
Organic Chemical Processes	13,697
Waste/Water Treatment and Water Industry	7,167
Not Otherwise Specified	3,490
C&D Waste and Asbestos	3,161
Oil and Oil/Water Mixtures	1,998
Municipal and Similar Commercial Wastes	1,605
Packaging, Cloths, Filter Materials	905
MFSU Paints, Varnish, Adhesive and Inks	902
Healthcare	769
Shaping/Treatment of Metals and Plastics	654
Agricultural and Food Production	375
Metal Treatment and Coating Processes	297
Inorganic Chemical Processes	170
Thermal Process Waste (inorganic)	96
Photographic Industry	72
Solvents	28
Leather and Textile Production	4
Total	35,390

[Source: Environment Agency Hazardous Waste Data Interrogator, 2013 – all figures in tonnes]

Table 10: Hazardous Waste Managed in Kirklees in 2013

Management Method	Total Hazardous Wastes	Imports from other WPAs	Material originating in Kirklees	% Originating Locally
Landfill	99,163	92,301	6,863	76%
Recovery	4,628	3,838	790	10%
Transfer (Disposal)	3,640	3,236	404	4%
Transfer (Recycling)	4,207	3,711	496	5%
Treatment	6,770	6,321	449	5%
Total	118,408	109,407	9,001	100%

[Source: Environment Agency Hazardous Waste Data Interrogator, 2013 – all figures in tonnes]

- 3.2.2. Table 11 shows the nature of the materials that arose and were managed locally. Waste water treatment and contaminated C&D waste predominate, but the table also illustrates the shortcomings referred to above as a substantial quantity of material is not identified (though it may comprise mixed wastes).

Table 11: Hazardous Waste arising and managed in Kirklees in 2013 by substance

Waste Substance	Arisings
Waste/Water Treatment and Water Industry	3,689
C&D Waste and Asbestos	1,808
Not Otherwise Specified	997
Packaging, Cloths, Filter Materials	640
Municipal and Similar Commercial Wastes	473
Organic Chemical Processes	444
MFSU Paints, Varnish, Adhesive and Inks	310
Oil and Oil/Water Mixtures	210
Shaping/Treatment of Metals and Plastics	150
Inorganic Chemical Processes	127
Thermal Process Waste (inorganic)	78

Waste Substance	Arisings
Agricultural and Food Production	27
Photographic Industry	19
Healthcare	13
Metal Treatment and Coating Processes	10
Leather and Textile Production	4
Solvents	1
Total	9,001

[Source: Environment Agency Hazardous Waste Data Interrogator, 2013 – all figures in tonnes]

- 3.2.3. It is typical that large proportions of the hazardous waste stream move between authorities because they have to be managed in specialised facilities each of which can only handle certain parts of the stream. Most authorities generate so little of each type of waste that facilities dedicated to local needs only are not cost-effective. As a result these materials are managed at a network of nationally and regionally significant facilities, each of which commands a wide geographical catchment. Moreover, the distance separating waste source and management destination often means materials are moved several times through transfer stations en route.
- 3.2.4. 3.2.4 There are two specialised Hazardous Waste Transfer Stations within Kirklees and some local treatment / recovery facilities handling this stream. There are also two landfill sites at Bradley Park (hazardous landfill) and Thornhill Quarry (non-hazardous landfill with a specially configured cell for hazardous waste disposal) however both permissions are time-limited.
- 3.2.5. 3.2.5 In 2013 75% of local arisings were exported for treatment or recovery in EfW or non-thermal facilities as shown in Table 12. Table 13 provides additional detail of the materials involved. However Table 10 shows that 109,407 tonnes of material was imported to Kirklees over the same period with the result that the authority is a net importer. Differences between the two totals are due to the rounding of some very small quantities of waste in each distribution.

Table 12: Hazardous Waste Arising in but Exported from Kirklees in 2013

Management Method	Arisings
Incineration with energy recovery	367
Incineration without energy recovery	3,456
Landfill	267
Recovery	10,656
Rejected	9
Transfer for eventual disposal	798
Transfer for eventual recovery	3,620
Treatment	7,215
Total	26,388

[Source: Environment Agency Hazardous Waste Data Interrogator, 2013 – all figures in tonnes]

Table 13: Hazardous Waste Arising and Exported from in Kirklees in 2013 by Substance

Substance	Arisings
Solvents	13,253
Municipal and Similar Commercial Wastes	3,478
Shaping/Treatment of Metals and Plastics	2,493
Oil and Oil/Water Mixtures	1,788
Leather and Textile Production	1,353
Metal Treatment and Coating Processes	1,131
Inorganic Chemical Processes	756
Thermal Process Waste (inorganic)	592
C&D Waste and Asbestos	504
Agricultural and Food Production	348
Photographic Industry	287
Packaging, Cloths, Filter Materials	265

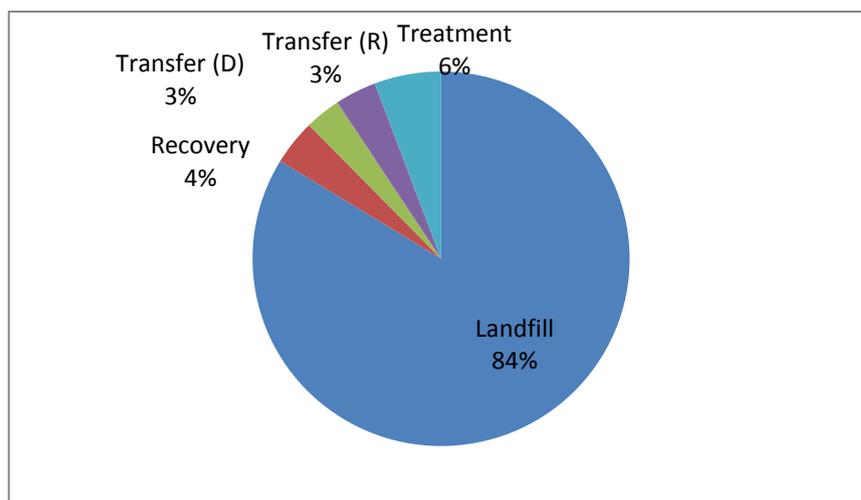
Substance	Arisings
Not Otherwise Specified	52
Organic Chemical Processes	43
Healthcare	28
Waste/Water Treatment and Water Industry	18
MFSU Paints, Varnish, Adhesive and Inks	-
Total	26,389

[Source: Environment Agency Hazardous Waste Data Interrogator, 2013 – all figures in tonnes]

3.2.6. Figure 2 shows the proportion of hazardous waste managed at different types of facility in Kirklees, reflecting both locally arising material and waste imported to be managed within the authority.

3.2.7. 3.2.6 Hazardous landfill accounts for 84% of hazardous waste managed in Kirklees with treatment, recovery and transfer being the other types of hazardous waste management site located within Kirklees. At present 75% of local arisings are managed at specialist landfill facilities, 10% by recovery, 5% via treatment and 9% through first stage waste transfer facilities (see Table 10).

Figure 2: Fate of All Hazardous Wastes Managed in Kirklees in 2013



[Source: Environment Agency Hazardous Waste Data Interrogator, 2013]

3.2.8. Table 14 shows those destination Waste Planning Authorities that received more than 100 tonnes of hazardous waste from Kirklees in 2013. With one exception (East Sussex) the receiving locations are in the North and Midlands.

Table 14: WPAs Receiving >100 tonnes of Hazardous Waste from Kirklees in 2013

WPA	Waste Received	WPA	Waste Received
Cheshire West and Chester	3,959	Sheffield	765
Wakefield	2,919	Sunderland	380
Lancashire	2,870	Cheshire East	280
Liverpool	2,634	Stoke-on-Trent City	273
Derbyshire	2,049	North East Lincolnshire	245
Leeds	1,925	Nottinghamshire	232
Staffordshire	1,846	Knowsley	207
Stockton-on-Tees	1,301	Walsall	193
Rotherham	1,203	Trafford	132
North Tyneside	1,051	East Sussex	124
Tameside	859	North Yorkshire	118

[Source: Environment Agency Hazardous Waste Data Interrogator, 2013 – all figures in tonnes]

3.3. CONCLUSION

- 3.3.1. The data on hazardous waste which will inform the Needs Assessment model will be based on the data from the 2013 Hazardous Waste Environment Agency Interrogator as this is the most accurate data available on this waste stream.

4. Construction, Demolition and Excavation Waste

4.1. DATA SOURCES

- 4.1.1. Accurate data on the quantity of Construction, Demolition & Excavation (CD&E) waste arisings has been poor historically. Since 1999, DCLG (Dept. for Communities and Local Government) and its predecessor departments have conducted periodic national surveys of arisings and use of recycled materials as an alternative to primary aggregates. The latest national survey in 2005 suggested that the production of recycled aggregate in the region had increased slightly since the previous 2003 survey. However, due to the limited level of returns the apparent changes in the 2003 and 2005 surveys are not considered to be statistically significant and data at regional level are even less robust.
- 4.1.2. An estimate of how much CD&E waste is produced in Kirklees can be made by reviewing CD&E waste managed through permitted waste sites in the Borough. Data has been published by the Environment Agency for 2013 and reported in the WDI. However this source gives quantities of CD&E waste deposited at only those sites which have been issued with an Environmental Permit. It provides some information on origin, material type, movement route and fate, but in some cases there is missing detail that affects the quality of the analysis.
- 4.1.3. Moreover there is no data available covering sites for which a Registered Exemptions has been issued. Exemptions for handling CD&E wastes are issued for activities such as burning waste on land, spreading it on land for reclamation, or sites used for the storage of CD&E materials. Information supplied by the EA indicates that in Kirklees in early 2015 there were 153 exemptions issued for managing non-agricultural wastes and a further 67 for managing both agricultural and non-agricultural wastes. The nature of materials handled can only be inferred from the identity of the holder of the exemption. Most of the sites handling both types of waste appear to be farms or the food processing sector and the non-agricultural material may be building rubble re-used for minor improvements on site. Exemptions for non-agricultural waste appear to be held by companies in the construction sector but a substantial number also appear to be held by companies generating C&I wastes, illustrating the difficulty of establishing what contribution these facilities make to handling locally arising wastes.

4.1.4. A further quantity of CD&E arisings are not reported to the EA because they are re-used in some way where they arise. This includes asphalt, bricks, concrete and other rubble which may be crushed and re-used as secondary aggregate or excavated soil and stones that are re-used in landscaping works on the site.

4.1.5. These limitations mean that estimates presented here should be regarded as a minimum level of arisings. However the 'missing' material (used at source or at exempt sites) generally makes no use of third party-provided facilities. Therefore, provided the proportions of CD&E waste managed through permitted sites, at exempt facilities, or re-used at source remains constant then the arisings from CD&E managed at permitted facilities can be projected to identify future requirements for CD&E waste management capacity in the Plan area.

4.2. CONSTRUCTION, DEMOLITION AND EXCAVATION WASTE ARISING

4.2.1. Table 15 shows total local arisings and whether the material was managed locally or in another authority. Total arisings of 76,724 tonnes of C&D waste and 194,907 tonnes of excavation waste were reported in 2013.

Table 15: CD&E Arisings in Kirklees in 2013

Management Method	Construction & Demolition			Excavation		
	Managed locally	Exported	Total	Managed locally	Exported	Total
Household Waste Recycling Site	188	-	188	4,040	-	4,040
Land recovery	-	-	-	25,694	-	25,694
Landfill (C+D)	10,403		10,403	64,084	25,852	89,936
Landfill (Hazardous)	1,013	6	1,020			
Reclamation	-	-	-	27,847	740	28,587
Recycling (C+D)	2,939	2	2,941	-	-	-
Transfer stations (hazardous)	109	21	131	-	-	-
Transfer stations	37,847	4,528	42,375	24,673	1,320	25,993

Management Method	Construction & Demolition			Excavation		
	Managed locally	Exported	Total	Managed locally	Exported	Total
(non-hazardous)						
Treatment plant	2,964	16,704	22,607	17,637	3,021	20,657
Totals	55,463	21,261	76,724	163,974	30,933	194,907

[Source: Environment Agency Waste Data Interrogator, 2013 – all figures in tonnes]

- 4.2.2. The current management mix for C&D wastes is 39% recycling, 29% treatment, 21% inert landfill and 11% other management routes (transfer facilities). Current management mix for excavation wastes are 56% landfill, 27% reclamation/recovery, 10% recycling and 7% other management routes (transfer facilities).
- 4.2.3. Kirklees at present has significant capacity for managing inert C&D and Excavation wastes although this is primarily in the form of landfill capacity, however, there is also some treatment plant, recycling and transfer facilities. Around 72% of C&D and 84% of excavation arose and was managed locally. C&D waste that arose locally and was then exported went mainly to treatment facilities (16,704 tonnes or 78% of exported C&D waste) while 84% of locally arising Excavation waste went to landfill.
- 4.2.4. Widespread use of asbestos in construction materials in the last century means that a substantial proportion of C&D waste is classed as hazardous. Deposits of asbestos-containing waste totalled 23,627 tonnes in 2013 and the main local site accepting these wastes is regionally important as it accepted approximately 66% of all C&D waste (hazardous and non-hazardous) imported into Kirklees as shown in Table 16.

Table 16: CD&E Deposits by Site Type in Kirklees in 2013

Management Method	C&D Waste Local Arisings & Imports	Exc. Waste Local Arisings & Imports	C&D Imports	Excavation Imports
HWRC	188	4,040	-	-
Land recovery	-	33,884	-	8,190
Landfill (C+D)	13,517	134,198	3,114	70,114
Landfill (Hazardous)	23,627	8,233	22,614	8,233
Reclamation	-	27,847	-	-

Management Method	C&D Waste Local Arisings & Imports	Exc. Waste Local Arisings & Imports	C&D Imports	Excavation Imports
Recycling (C+D)	2,939	-	-	-
Transfer stations (hazardous)	434	-	325	-
Transfer stations (non-hazardous)	44,476	24,673	6,629	-
Treatment plant	3,276	17,639	312	3
Total	88,457	250,514	33,994	86,540

[Source: Environment Agency Waste Data Interrogator, 2013 – all figures in tonnes]

- 4.2.5. The availability of inert landfill capacity has also resulted in significant levels of imports of soil for landfill with over 50% (70,114 tonnes) of inert soil deposits being imported.
- 4.2.6. Information on waste removed from waste transfer stations in Kirklees shows that 30,063 tonnes of C&D waste were removed for recycling whilst 6,120 tonnes were removed to be sent to landfill. This data indicates that at least 40% of C&D waste generated in Kirklees is recycled (out of a total of 76,724 tonnes), although this could be significantly higher as the ultimate fate of C&D sent to waste transfer stations and treatment facilities outside of Kirklees is unknown and most of these materials may have been recycled or re-used rather than disposed to landfill. Unfortunately, once a shipment of waste has been received at a transfer station in another authority it is not possible to establish subsequent treatment or movement. It is known that a total 19,707 tonnes of soil managed through waste transfer facilities were reported as destined for recycling outside of Kirklees.
- 4.2.7. An analysis of CD&E waste arisings over a 5 year period is shown in Table 17 and indicates there have been fluctuations but with C&D averaging approximately 76,000 tonnes and excavation waste averaging approximately 175,000 tonnes over the period.

Table 17: C&D and Excavation Waste managed in Kirklees and exported, 2009-2013

Year	C&D				Excavation			
	Home	Exported	Total	AV/5yrs	Home	Exported	Total	Av/5yrs
2013	55,463	21,261	76,724	75,972	163,974	30,933	194,907	174,681
2012	65,293	15,581	80,875		195,435	35,625	231,060	
2011	85,356	14,552	99,909		117,480	29,363	146,843	
2010	49,628	12,021	61,650		95,669	53,363	149,031	
2009	46,511	13,560	60,701		110,051	41,511	151,562	

[Source: Environment Agency Waste Data Interrogator, 2013 – all figures in tonnes]

4.3. CONCLUSION

4.3.1. The only quantitative data available for CD&E wastes is for waste deposited at permitted sites as reported by the Environment Agency’s WDI facility. An assumption can be made that wastes deposited are reasonably equivalent to arisings. Data from the 2013 WDI indicates that the total C&D waste arising from Kirklees was in the order of 77,000 tonnes per annum whilst excavation waste was in the order of 195,000 tonnes. These figures are close to the 5 years averages for arisings of these materials in the authority area and can be adopted as an appropriate figures for a baseline value for C&D and excavation waste.

5. Agricultural Waste

5.1. DATA SOURCES

- 5.1.1. Agricultural premises are defined in the Agriculture Act 1947 as land used for: horticulture, fruit growing, seed growing, dairy farming, livestock breeding and keeping, grazing land, meadow land, osier land (growing willow), market gardens and nursery grounds. It also includes woodlands where that use is ancillary to the use of land for other agricultural purposes.
- 5.1.2. In order to estimate agricultural waste arisings for the Plan area, it is possible to review the number of farm holdings within it and then estimate the associated waste produced based upon past agricultural waste surveys.
- 5.1.3. Table 18 shows farm holding numbers as reported by DEFRA refined by direct data obtained from Kirklees Council. The 2014 figure of 841 has been used in the calculations.

Table 18: Agricultural Land Holdings within Kirklees

Year of Survey and Source	No. of Farm Holdings
2010 Kirklees only as reported by DEFRA	458
2013 Kirklees, Calderdale & Wakefield as reported by DEFRA	1,113
2014 Kirklees only based on Council Farm Records	841

[Sources: DEFRA Local Authority Breakdown for key Crops and Livestock numbers on agricultural holdings - June 2012 and June 2013; Kirklees Council Internal Farm Records M3 PP]

- 5.1.4. The most useful agricultural waste surveys and reports were carried out in 2001 and 2003 with the former following an earlier survey in 1998⁷. Although the 2003 survey was carried out later, the practices generating agricultural waste are unlikely to have changed significantly since that time. However, it should be appreciated that the figures presented in the EA survey/report are **estimates at regional level** and the most appropriate regional comparison is that for Yorkshire and the Humber. In the original survey by the Environment Agency, an assessment of the likely accuracy of the

⁷ Towards Sustainable Agricultural Waste Management (Environment Agency, 2001) and Agricultural Waste and By-Products Survey, (Environment Agency, 2003).

estimates was undertaken which were defined as ‘High’, ‘Medium’ or ‘Low’. Agricultural waste arisings figures shown at regional level (including Yorkshire and the Humber) were estimated at predominantly medium accuracy level. Data has therefore been extrapolated from the regional level using the ratio between the number of farm holdings and associated waste arisings in the area generated by the estimated 841 farm holdings in Kirklees. It should be noted that the very limited precision and availability of some of the data means that the accuracy of the final estimates cannot be guaranteed and should be regarded as indicative arisings only based on the best information available at the time of this report.

5.1.5. There are an estimated 12,035 farm holdings in Yorkshire and the Humber region and 841 holdings in Kirklees⁸. Table 19 shows extrapolated waste arisings for the whole of Yorkshire and the Humber based upon farm holdings (12,035) using the 2001 Report and 2003 Environment Agency Agricultural Waste and By-Products Surveys.

Table 19: Agricultural Waste Arisings in Yorkshire and Humber Region, 2013

Waste type	Arisings
Plastic packaging	2,495
Cardboard and paper packaging	770
Metal, glass, wood and rubber packaging	195
Other non-packaging plastics	6,381
Agrochemicals	7,098
Animal health products	7,276
Machinery waste (oils, batteries, tyres, redundant machinery)	7,776
CD&E waste (asbestos cement bonded roof sheeting)	2,160
Organic by-products waste (slurry, waste milk, straw)	8,186,371
Animal By-products	24,260

[Source: Environment Agency Agricultural Waste Surveys, 2001 & 2003 – all figures in tonnes]

⁸ Source: Kirklees Council records.

- 5.1.6. Table 19 shows that virtually all locally arising wastes were organic by-products, which is consistent with analysis of this stream undertaken in other authorities irrespective of the level of local agricultural activity.
- 5.1.7. The estimates above are based upon the assumption that each farm holding produces the same proportion and quantity of each waste type - it has been necessary to make this assumption due to the limitations of the available data. The waste management options for each waste type has also been estimated based upon current practice.
- 5.1.8. Table 20 shows the extrapolations of waste arisings for Kirklees based upon the assumption stated. In all cases the potential waste management treatment options for each waste type has also been estimated based upon estimated current practice.

Table 20: Extrapolations of Agricultural Waste Arisings for Kirklees in 2013

Waste Type	Potential Waste Management Route	Arisings
Plastic packaging	Recycling/Landfill	174
Cardboard and paper packaging	Composting on site /Recycling/Landfill	54
Metal, glass, wood and rubber packaging	Recycling/Landfill	14
Other non-packaging plastics	Recycling/Landfill	446
Agrochemicals	Treatment/Incineration	496
Animal health products	Incineration	262
Waste oil, batteries, tyres and redundant machinery	Recycling/treatment	543
CD&E waste (asbestos cement bonded roof sheeting)	Hazardous Landfill	151
Organic by-products waste (slurry, waste milk, straw)	Composting/On-site Treatment /Land Recovery	572,060
Animal By-products	Specialised Treatment	1,695
Total arisings		575,895

[Source: Environment Agency Agricultural Waste and By-Products survey, 2001 – all figures in tonnes]

5.1.9. Table 21 summarises common treatment routes used for handling these waste. Unlike the principal streams (LACW, C&I, etc.) this analysis assumes materials are already managed at the highest feasible level in the Waste Hierarchy and that any further improvement in, for example, recycling rates is unlikely to occur. This analysis also distinguishes between waste that is currently managed within the farm holding, where it arises and those materials that are most likely to be managed off site.

Table 21: Potential Management Routes for Agricultural Waste Arisings in Kirklees, 2014

Optimal Waste Management Route	Arisings
Management within farm holding	
Composting on site/ Land recovery/treatment on site	572,060
Management off Farm Holdings	
Recycling	1,231
Treatment plant/Incineration	758
Animal By-Products incineration	1,695
Landfill	0
Hazardous Landfill	151
Total management off site	3,835
Total arisings	575,895

[Source: Environment Agency Agricultural Waste and By-Products surveys, 2001 & 2003 and Defra Agricultural Holdings Survey, 2010 all figures in tonnes]

5.1.10. It should be noted that a Farm Practices Survey was published in 2012⁹ which records waste management methods explicitly. Results from this survey are reported in percentages of farm holding practice at regional level (Yorkshire and Humberside) but the tonnages are not reported.

5.1.11. This survey indicates a substantial level of re-use on the farm holdings (in addition to stockpiling of individual wastes such as tyres, scrap metal and machinery) which

⁹ DEFRA Farm Practices Survey Autumn 2012

reflects the distribution above that shows most wastes are expected to be managed at source. Future capacity only needs to be identified for materials that need to be managed off-site in third party-provided facilities, and the quantity involved is only 3,835 tonnes.

5.2. CONCLUSION

5.2.1. Using the available information sources, agricultural waste arisings in Kirklees are estimated to be just under 576,000 tonnes of which only 3,835 tonnes (0.6%) required third party waste management capacity

5.2.2. New legislation came into force in April 2010 amending the existing system of waste exemptions, including agricultural waste exemptions currently undertaken by farmers. All farmers had to re-register their agricultural exemptions covering practices such as land spreading and depositing dredgings cleared from farm ditches along banks, etc. by 1st October 2013. In addition to re-registration, some of the exemptions have also changed. There are approximately 30 exemptions covering agricultural activities, although nearly all exemptions covered at present will still be covered in the new system. However, in some cases there may be slight changes to the limits and conditions within the waste exemption. There are also a number of new exemptions that could be applied to farming.

5.2.3. Information supplied by the Environment Agency indicates that in early 2015 there were 112 individuals or companies in Kirklees that currently hold exemptions for managing agricultural wastes and a further 67 holding exemptions for managing agricultural and non-agricultural wastes. Most exemptions have been issued for the same premises, covering a range of small-scale waste management and disposal activities including those referred to above, however the quantities involved cannot be established.

In addition to any effect of implementing the new exemption regulations it is likely that in the future more waste may be diverted from landfill due to the increasing awareness of the potential to recycle and the increasing cost of landfill. However, it is expected that the quantities involved will still be extremely small and will be of low significance compared to the other waste arisings in the Plan area. It is also likely that the majority of agricultural waste will still be managed within the farm holdings via land spreading, composting and anaerobic digestion. As a result it will not require waste management

capacity provided by public authorities or commercial waste companies for dealing with other waste streams that the Plan seeks to deliver.

6. Low Level Non-Nuclear Radioactive Wastes

6.1. DATA SOURCES

- 6.1.1. Information about these wastes is more limited than that for the principal controlled waste streams. Information is reported to the EA Pollution Inventory which includes the source, the materials produced and their radioactive emission rates, and how they were disposed. This information means it is not possible to estimate quantities by weight and it is not possible to identify where the materials were eventually disposed as there is no legal requirement to report this to the EA. Prior to 2013 producers had to report transfers of material to other sites but this information is no longer legally required and this means that in the future it will be increasingly difficult to establish what materials are being generated and what happens to them.
- 6.1.2. The information reported below has been provided by the EA in response to a bespoke data request.

6.2. WASTE ARISING & MANAGEMENT

- 6.2.1. These wastes are typically produced by hospitals, academic and medical research establishments and arise in very small quantities. They can include used x-ray plates and similar materials and often include non-radioactive hazardous materials such as medical sharps.
- 6.2.2. Data from the EA indicates that a single source in the Borough generated these wastes producing materials emitting 0.3 Gigabecquerels of radiation in 2012 and 2013. The exact physical nature of the waste containing the radioactive material is not recorded although the disposal method referred to below indicates it was liquid.
- 6.2.3. In general these wastes are disposed and the potential options include:
- Disposal of some liquid wastes as waste water;
 - Controlled burial at a very limited number of permitted landfill sites;
 - High temperature incineration at an even more limited number of specialised facilities; or in certain circumstances
 - Long-term storage at the UK Low Level Radioactive Waste Repository in Cumbria.

- 6.2.4. The first of these alternatives show that many of these materials are likely to be less harmful to the environment or human health than hazardous wastes enabling some of them to be disposed in the same way as other industrial wastes.
- 6.2.5. The data supplied by the EA indicates the material produced locally was disposed to foul sewer (as waste water) and therefore did not make use of any specialised handling facilities locally or in other authorities.
- 6.2.6. It is considered unlikely that new facilities generating these materials will emerge locally and there are no known plans to develop nuclear infrastructure that would provide an alternative source. As a result the pattern of use and disposal is not expected to change during the Plan period and it will not be necessary to include these wastes when consulting other authorities in discharging the Duty to Cooperate obligation.

7. Waste Water/Sewage Sludge

7.1. DATA SOURCES

- 7.1.1. Responsibility for providing and managing infrastructure for the supply of drinking water, provision of public sewerage and the treatment, disposal and recycling of waste water lies with the statutory undertaker, Yorkshire Water plc, which is the principal provider of information about the scale of arisings and infrastructure.
- 7.1.2. Yorkshire Water has been contacted to identify the scale of infrastructure and waste water arisings in the Plan area but at the time of completion of this report a response had not been received.

7.2. WASTE WATER ARISING & MANAGEMENT

- 7.2.1. The Plan does not have to make explicit provision for sufficient capacity to deal with waste water management reflecting projected growth in housing and changes in industrial requirements. Its main requirement is to ensure that sufficient land is available to provide the infrastructure identified by Yorkshire Water in its Asset Management Plans. The most recent of these (AMP-6) was completed at the end of 2014 and covers infrastructure requirements over the period 2015-2020.
- 7.2.2. Any additional requirement would be for land to accommodate waste water treatment facilities (sewage treatment works) and for sewage sludge plants which process semi-solid waste residues from treatment. At present it has not been possible to establish the number of waste water treatment facilities in the Plan area, but there is a single sewage sludge plant.
- 7.2.3. At the time of completion of this report Yorkshire Water has not communicated any requirement for additional land to be allocated in the Plan to allow physical expansion of existing infrastructure over the period covered by AMP-6, but further dialogue will be necessary to substantiate this matter. This situation may imply that there is sufficient capacity at present or that any additional capacity can be provided within the curtilage of existing sites.

7.2.4. Nevertheless it will be prudent for the Plan to include a generic strategic policy supporting future allocation of land to enable expansion of this infrastructure if this is required in the period after 2020 to meet an identified need.

8. Waste Imported and Exported, and the Duty to Co-operate

8.1. DATA SOURCES AND APPROACH TO ASSESSMENT

- 8.1.1. Information on waste removed from Kirklees for management at sites in other Waste Planning Authorities within England and Wales is available from the Environment Agency's WDI and HWDI databases.
- 8.1.2. Paragraph 181 of the National Planning Policy Framework (NPPF) expects local planning authorities "to demonstrate evidence of having effectively cooperated to plan for issues with cross-boundary impacts". This statement is referred to as the 'Duty to Cooperate (DtC) obligation and applies to development and use of certain infrastructure which involves two or more authorities and occurs on such a scale that it is considered to be strategic. Paragraph 156 of the document identifies those infrastructure developments that fall within the scope of the DtC, and this includes waste management facilities.
- 8.1.3. There is no formal guidance on what level of waste movement should be regarded as strategic and this is a matter of judgement applied by individual authorities. The Council is party to a Draft Memorandum of Understanding produced by the Yorkshire and Humber Waste Technical Advisory Body in July 2014 for meeting the DtC on planning issues that cross administrative boundaries however this document does not specify threshold levels defining what is strategic.
- 8.1.4. This assessment uses thresholds of 1000 tonnes for non-hazardous wastes exported from Kirklees to another authority in a single calendar year, and 100 tonnes of hazardous waste exported. These thresholds reflect emerging best practice and the approach adopted throughout the country based on discussion with other authorities including that at workshops on the DtC organised by the Planning Advisory Service in September 2014.
- 8.1.5. Continuing export of material may be commercially expedient in the short-term, possibly because of a lack of particular types of local capacity, or as a result of existing management contracts that will continue for several more years. However, even where a Waste Local Plan aims for net self-sufficiency there is no certainty that the facilities required to achieve this outcome will be available in the right quantity and at the right

time and it is realistic to assume that external capacity will continue to be used for some of the Plan period¹⁰. Therefore in order to meet its obligation under the DtC a waste planning authority needs to establish how long the external capacity that is currently used will be available. This requirement exists across all waste streams even if the export of materials results from commercial decisions by waste management companies over which the Waste Local Plan has limited control.

8.1.6. Finally, it should be noted that the WDI 2013 database provides information on the waste deposited at permitted waste sites including the origin of waste arisings by Waste Planning Authority (WPA), however it also contains waste deposits where the origin is only defined at regional level. This anomaly cannot be corrected from the available information sources and such material is excluded from this analysis which therefore refers to the minimum quantities exported where this is known to originate locally.

8.2. Waste Exports Recorded as Originating in Kirklees

8.2.1. Table 22 shows the quantities of non-hazardous waste originating in Kirklees but managed in other WPAs in 2013 where the movements exceeded the threshold referred to above. Most of the wastes went to neighbouring WPAs in Yorkshire and Humberside with two other movements of note leaving the region:

- Stockton on Tees (North East region) received over 29,000 tonnes as a result of an existing LACW management contract where secondary waste (bottom ash) is sent for recycling;
- Nottingham (East Midlands region) received almost 2,500 tonnes of metallic waste which is likely to reflect the way a single major metal recycling company organises its operations.

8.2.2. Table 22 shows that almost 75% of the exported material was LACW and C&I wastes (collectively referred to as HIC waste), nevertheless the majority of local arisings of the principal waste streams were also managed locally¹¹.

¹⁰ The destination and fate of wastes – particularly non-LACW – is determined by the commercial priorities of waste management companies and cannot be influenced directly by the Council. Net self-sufficiency means the Waste Local Plan provides capacity equivalent to the total quantity of locally arising wastes (both currently and over the Plan period). If this additional capacity is planned and delivered then it is reasonable to expect local management will be cheaper than continuing export even if the Plan cannot guarantee the type and timing of new facilities that will be delivered.

¹¹ Household, Industrial & Commercial – this is the aggregated stream as reported in the EA Waste Data Interrogator though it is not possible to separate materials into household and non-household accurately due to the similar composition of the LACW and commercial streams in particular.

Table 22: Non-Hazardous Waste Exported from Kirklees and Managed in Other WPAs in 2013

Location of Receiving WPA	Waste Stream				
	HIC	Metals	Construction &/Demolition	Excavation	Total Exported
Calderdale	12,236	895	8,809	26,152	48,092
Stockton-on-Tees	29,127	260	-	-	29,387
North Lincolnshire	18,634	-	-	-	18,634
Leeds	13,087	954	653	325	15,019
Wakefield	7,296	237	1,205	440	9,178
Sheffield	4,950	362	43	469	5,824
Rotherham	1	4,299	51	527	4,878
East Riding of Yorkshire	2,413	-	186	-	2,599
Nottingham City	-	2,492	-	-	2,492
North Yorkshire	110	-	-	2,216	2,326
Bradford City	31	1,527	-	-	1,558
Barnsley	1,137	-	32	-	1,169
Doncaster	1,143	-	20	-	1,163
Total	90,165	11,026	10,999	30,129	142,319
Proportion of all exported material	71%		8%	21%	
Proportion of local arisings that are exported	20%		14%	15%	

[Source: Environment Agency Waste Data Interrogator, 2013 – all figures in tonnes]

8.2.3. The corresponding pattern of exports of more than 100 tonnes of hazardous waste is shown in Table 23¹².

8.2.4. This analysis shows that 25,565 tonnes of hazardous waste originating in Kirklees is exported to other WPAs for management. Of this, 40% is for recovery, 28% for treatment, 16% for further transfer (with the eventual fate unknown) and 13% for incineration.

Table 23: All Hazardous wastes Originating in Kirklees but Exported to Other WPAs in 2013

Receiving WPA	Management method / waste fate						
	Energy recovery	Incineration	Landfill	Recovery	Transfer	Treatment	Total
Cheshire West and Chester		3,111		820	29		3,959
Wakefield	365			2,184	65	304	2,919
Lancashire			63	2,582	226		2,870
Liverpool				87	54	2,493	2,634
Derbyshire			13	100	7	1,928	2,049
Leeds		340		214	420	950	1,925
Staffordshire				1,752	91	3	1,846
Stockton-on-Tees			99	276	5	921	1,301
Rotherham				28	1,174	2	1,203
North Tyneside				1,051			1,051
Tameside					859		859
Sheffield					345	420	765
Sunderland				380			380
Cheshire East				53	227		280

¹² The Environment Agency advises that there are inconsistencies between the quantities of hazardous wastes recorded in the WDI and HWDI and that the latter provides a more reliable estimate. The data in Table 23 are based on the HWDI results.

Stoke-on-Trent City				136	135	2	273
North East Lincolnshire				245			245
Nottinghamshire				202	30		232
Knowsley				54	142	11	207
Walsall				6	187		193
Trafford					34	98	132
East Sussex				124			124
North Yorkshire	1			4	112		118
Total	366	3,451	175	10,298	4,142	7,132	25,565
	1%	13%	1%	40%	16%	28%	

[Source: Environment Agency Hazardous Waste Data Interrogator, 2013 – all figures in tonnes]

8.2.5. Table 24 shows movements out of Kirklees to specific licensed sites, where the combined movement of non-hazardous and hazardous waste in 2013 exceeded 1000 tonnes per annum. The table shows only those sites that received more than 1000 tonnes¹³. Note that the list excludes sites providing incineration capacity as these facilities are not recorded by the EA reporting mechanisms and there is no way of collecting the information by other means.

¹³ Note that in this case the quantities of hazardous waste are taken from the Waste Data Interrogator in this instance.

Table 24: Sites Receiving More than 1000 Tonnes of Non-Hazardous and Hazardous Wastes from Kirklees in 2013

Receiving WPA	Permit Number	Site Name	Operator	Permit Type	Waste Stream	Waste Received
Stockton-on-Tees	BB3838RX (103321)	Teeside I B A Facility	Ballast Phoenix Ltd	A16 : Physical Treatment Facility	Hhold/Ind/Com	29,102
Calderdale	BP3591SY (100648)	Clockface Quarry Inert Site	P Casey Enviro (Clockface) Ltd	L05 : Inert Landfill	Inert/C+D	25,412
North Lincolnshire	BU99471A	New Crosby Landfill	SITA UK Limited	L04 : Non Hazardous Landfill	Hhold/Ind/Com	18,634
Leeds	UP3892ZG (65268)	Timberpak	Timberpak Ltd	A16 : Physical Treatment Facility	Hhold/Ind/Com	8,841
Calderdale	AP3493SJ (60809)	Milner Royd Household Waste Site	Sita U K Ltd	A13 : Household Waste Amenity Site	Hhold/Ind/Com	5,266
Wakefield	WP3330BZ	Welbeck Landfill Site	Welbeck Waste Management Ltd	L04 : Non Hazardous Landfill	Hhold/Ind/Com	5,026
Sheffield	BP3635SB	Holmes Farm Landfill, Blackburn Meadows	Yorkshire Water Services Ltd	L04 : Non Hazardous Landfill	Hhold/Ind/Com	4,844
Leeds	MP3231SD	Knostrop Waste Treatment Facility	FCC Recycling (UK) Ltd	A21 : Chemical Treatment Facility	Hhold/Ind/Com	4,245
Calderdale	AP3493LE (60807)	Eastwood Household Waste And Recycling Centre	Sita U K Ltd	A13 : Household Waste Amenity Site	Hhold/Ind/Com	3,486
Calderdale	HP3296EW (101670)	West Yorkshire Water	Mr Matthew Berrett	S0811 : Inert & excavation Waste TS + treatment	Inert/C+D	2,906
Calderdale	AP3491SA (60804)	Halifax Bulk Transfer Station	Sita U K Ltd	A11 : Household, Commercial & Industrial Waste T Stn	Hhold/Ind/Com	2,648
Nottingham City	BP3790CG (43449)	Sims Group U K Ltd	Sims Group U K Ltd	A20 : Metal Recycling Site	Hhold/Ind/Com	2,492

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Receiving WPA	Permit Number	Site Name	Operator	Permit Type	Waste Stream	Waste Received
East Riding of Yorkshire	MB3634AC (102372)	Pollington Bio Energy Park	Stobart Biomass Products Ltd	SR2011 No4: Treatment of waste wood <75000 tps	Hhold/Ind/Com	2,407
Rotherham	JP3895ZS (61595)	C F Booth Ltd	C F Booth Ltd	A20 : Metal Recycling Site (mixed MRS's)	Inert/C+D	2,330
Calderdale	GB3638AN (104154)	Wood Top Quarry	Ace Recycle Ltd	S0811 : Inert & excavation Waste TS + treatment	Inert/C+D	2,219
North Yorkshire	FB3231RK (103918)	Skipton Recycling	Lafarge Tarmac Trading Limited	S0906: Inert and excavation WTS with treatment	Inert/C+D	2,216
Wakefield	NP3094ZC (65077)	Reuse Glass Uk Ltd	Reuse Glass U K Ltd	A15 : Material Recycling Treatment Facility	Inert/C+D	2,202
Rotherham	YP3095ZB (61579)	Sims Group Uk Ltd	Sims Group U K Ltd	A20 : Metal Recycling Site	Hhold/Ind/Com	1,963
Liverpool	QP3637SD	Lower Bank View Waste Management Facility	Veolia ES (UK) Limited	A17 : Physico-Chemical Treatment Facility	Hazardous	1,842
Staffordshire	LP3337ML	Stoke Waste Treatment & Transfer Facility	Castle Oils Ltd.	A17 : Physico-Chemical Treatment Facility	Hazardous	1,685
Wakefield	FP3198ZN (61833)	South Kirkby Plant	Reuse Collections Ltd	A15 : Material Recycling Treatment Facility	Inert/C+D	1,215
Doncaster	ZP3492ZM (65381)	Wheatley Cullet Processing Plant	Reuse Glass U K Ltd	A16 : Physical Treatment Facility	Inert/C+D	1,143

Receiving WPA	Permit Number	Site Name	Operator	Permit Type	Waste Stream	Waste Received
Leeds WPA	MP3231SD	Knostrop Treatment Facility	FCC Recycling (UK) Ltd	A21 : Chemical Treatment Facility	Hazardous	1,008

[Source: Environment Agency Waste Data Interrogator, 2013 – all figures in tonnes]

8.3. WASTE IMPORTS TO KIRKLEES

8.3.1. Imports of non-hazardous waste to Kirklees exceeding 1000 tonnes are identified in Table 25. Most of the incoming material is Household, Industrial and Commercial waste which is treated in local facilities, as well as quantities of Excavation waste deposited in local landfills. The largest importer is Barnsley with virtually all of the material being waste glass.

Table 25: Non-Hazardous Waste Imports to Kirklees Exceeding 1000 tonnes in 2013

Waste Category	Site Category	Originating WPA	Tonnes Received
Household/Ind/Com	Treatment	Barnsley	34,918
Household/Ind/Com	Treatment	Calderdale	6,682
Household/Ind/Com	Treatment	East Riding of Yorkshire	5,011
Household/Ind/Com	Treatment	Rochdale	2,602
Household/Ind/Com	Treatment	Scottish WPA	1,343
Household/Ind/Com	Treatment	Sheffield	1,117
Excavation	Landfill	Manchester	31,450
Excavation	Landfill	Bradford City	10,675
Excavation	Landfill	Bolton	9,988
Excavation	Landfill	Calderdale	8,529
Excavation	Landfill	Leeds	5,890
Excavation	Landfill	Barnsley	4,789
Excavation	Landfill	Wakefield	3,780
Excavation	Landfill	Rotherham	1,854
Excavation	Landfill	Stockport	1,179
Excavation	Landfill	Sheffield	1,116

[Source: Environment Agency Waste Data Interrogator, 2013 – all figures in tonnes]

8.3.2. The only significant movement of CD&E waste was soil which went into landfill sites where it was probably used for daily cover or engineering purposes at operational sites or for restoration at closed sites. There are no metal wastes imports exceeding the threshold. Most of the Household, Industrial & Commercial waste originates in West or

South Yorkshire with small quantities originating in Greater Manchester and an unidentified authority in Scotland. Similarly most inert waste originates elsewhere in Yorkshire with modest quantities also originating in three authorities in the neighbouring Greater Manchester sub-region.

8.3.3. The non-hazardous waste from the unidentified "Scottish WPA" is recorded as being mixed material comprising saline wastes, sludges and liquid waste from waste treatment, paints other non-hazardous chemical waste coming from various locations including Shetland, Aberdeenshire and other Scotland WPAs.

8.3.4. Table 26 shows that imports of hazardous waste exceeding the threshold stated above came from 62 WPAs in England Wales and Scotland.

Table 26: Hazardous waste Imports to Kirklees of more than 1000 tonnes in 2013

Arising WPA	Landfill	Recovery	Transfer (D)	Transfer (R)	Treatment	Total by WPA
Flintshire	56,830	3	1	6		56,841
Bradford	2,911	46	80	194	896	4,126
Leeds	2,573	50	86	144	209	3,062
Lancashire	2,378	49	24	92	60	2,603
Sheffield	1,261	39	117	193	724	2,334
Darlington	48	4	480	1,352	415	2,298
Doncaster	1,111	15	114	12	967	2,220
North Yorkshire	1,492	320	44	59	148	2,063
Stoke-on-Trent City	1,447	14	333	59	92	1,945
Manchester	1,646	8	0	22	4	1,680
East Riding of Yorkshire	857	5	367	28	383	1,640
Cheshire West and Chester	582	235	200	3	572	1,592
Trafford	1,457	7	2	16		1,482
Knowsley	867	68	24	14	251	1,223
Derbyshire	1,011	17	47	15	128	1,219
Barnsley	1,156	1	27	20	15	1,218

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Arising WPA	Landfill	Recovery	Transfer (D)	Transfer (R)	Treatment	Total by WPA
Bolton	1,162	5	2	17		1,187
Rotherham	1,062	4	32	0	82	1,181
Cheshire East	1,058	39	19	20	16	1,152
Wakefield	722	26	79	91	38	957
Essex	300	490	3	32		825
Rochdale	711	6	10	22	0	749
Salford	630	13	63	11		717
Halton	548	6	21	39	86	700
Cumbria	401	14	258	7		679
Liverpool	488	40	30	51	41	650
Staffordshire	557	26		42	25	650
Lincolnshire	608	16	1	1		626
Calderdale	355	16	118	68	49	607
Warrington	385	6		12	182	585
Kingston Upon Hull City	499	13	30	14	9	565
Gateshead	258	37	64	177	25	561
York, City of	496	7	14	21	1	539
Tameside	60	7	122	144	132	464
Wigan	432	9	0	5	0	447
Norfolk	16	410		2		427
Stockport	119	174	15	53	27	388
Wolverhampton	373	4				377
Nottinghamshire	187	13	14	82	80	376
Bury	315	2	1	8	43	368
County Durham	76	36	79	104	55	350
South Gloucestershire		346		1		347

Arising WPA	Landfill	Recovery	Transfer (D)	Transfer (R)	Treatment	Total by WPA
North Lincolnshire	256	12	19	55	4	346
Northamptonshire	228	93		20		340
North East Lincolnshire	250	4	41	4		298
North Tyneside	33	83	49	18	111	294
City of Derby	229	10		0		238
Oldham	204	6	1	6	14	232
Hampshire		106		8	103	217
St Helens	212	1				213
Birmingham City	92	36		20	40	188
Wrexham	182	4				185
Blackburn with Darwen	147	16		0		164
Surrey	128	13		10		151
Cambridgeshire	25	116	3	3		147
N Ireland		11	32	79	17	140
North Ayrshire	74		40	14	7	135
Blackpool	114	4				118
Sefton	110	1		0		112
Northumberland	49	6	16	0	39	110
Leicestershire	85	14		5		104
Wirral	52	3	31	13	3	102
Total	91,915	3,185	3,153	3,508	6,094	107,854
	85%	3%	3%	3%	6%	

[Source: Environment Agency Waste Data Interrogator, 2013 – all figures in tonnes]

8.3.5. The highest proportion of imported material (85%) goes to local hazardous landfill, which is unsurprising as such facilities are relatively scarce in England and Wales and it is inevitable the local sites will serve large catchments. Flintshire was the biggest source with the quantity received being an order of magnitude greater than any other authority.

Movement on this scale, possibly over a limited period, suggests this material may have arisen as a result of a specific development project and imports on a similar scale may be unlikely in the future, though this cannot be confirmed.

- 8.3.6. Table 26 shows that the large quantity of material received in Kirklees for disposal was from Flintshire. Bradford City was the single largest originator of hazardous waste brought to Kirklees for treatment but this fate represents only 6% of all the imported materials.

Appendix A – Data Source References

Commercial and Industrial Waste

Jacobs for Defra. May 2011. *Commercial and Industrial Waste Survey 2009*. Defra

Urban Mines for Environment Agency. March 2012. *North West of England Commercial and Industrial Waste Survey 2009*. Environment Agency

Local Authority Collected Waste

Waste Data Flow - www.wastedataflow.org

Hazardous Waste

2013 Hazardous Waste Environment Agency Interrogator - <http://www.environment-agency.gov.uk/>

Construction, Demolition and Excavation Waste

2013 Environment Agency Waste Interrogator - <http://www.environment-agency.gov.uk/>

Agricultural Waste

Defra Annual Agricultural Census - <https://www.gov.uk/government/statistical-data-sets/structure-of-the-agricultural-industry-in-england-and-the-uk-at-june>

Environment Agency. 2003. *Agricultural Waste Survey 2003: A Study of the Management of Non-Agricultural Waste on Farms*. Environment Agency.

Environment Agency 2001. *Towards Sustainable Agricultural Waste Management*, Environment Agency.