



Kirklees Council Waste Needs Assessment

Waste Arisings and Review of Cross-Boundary Movements

Resources



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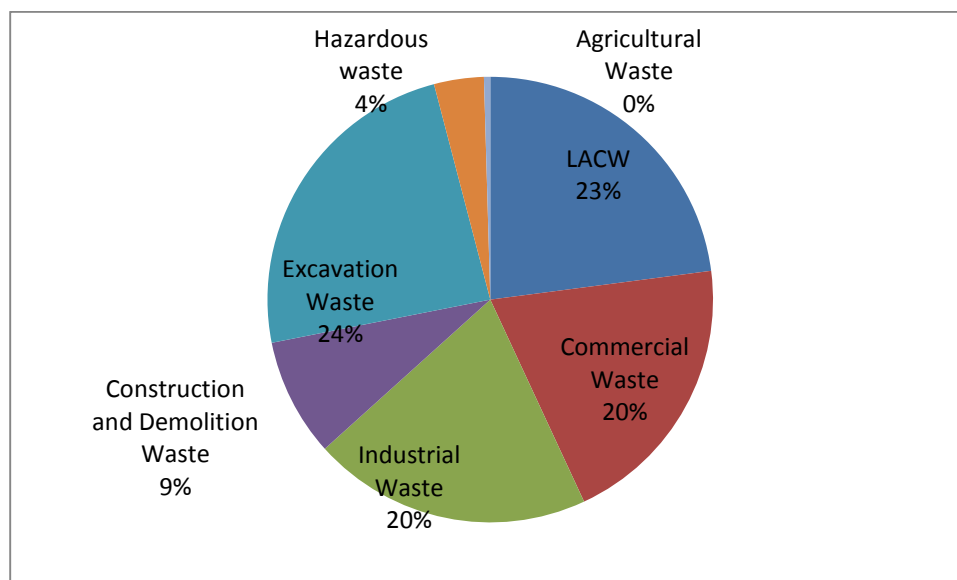
Stage 1a: Compiling a Baseline of Waste Arisings for Kirklees Council

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 2014 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 2014¹



[Source: Environment Agency Waste Data and Hazardous Data Interrogators, 2014]

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 2014. 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 government have indicated that any future surveys are unlikely. Recent methods of calculation have been based on extrapolating data 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}. More recently Defra has suggested that future calculations should be based on a method devised by Jacobs which takes information from the EA's WDI. This method has not been used in this latest report as this is updating previous work which used the national and regional surveys. Any future detailed updates should look at using this alternative approach.
- 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).

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).

1.2. COMPARISON OF ESTIMATED PROJECTIONS

1.2.1. Tables 1, 2 and 3 (overleaf) 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 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

Originating Industry Sector	Projected from Yorks & Humber data in Defra survey	Projected from the NW Regional Survey
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
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 2014/15 was just over 24,485 tonnes.

Table 4: Trade Waste arising in Kirklees in 2014/15⁴

Trade Waste in Kirklees	Tonnes
Trade waste collected for recycling	1,471
Trade waste collected for energy recovery	18,434
Trade waste for Hazardous landfill	90
Trade waste for Landfill	4,490
Total	24,485

[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. CONCLUSION

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. The 2014 WDI database identifies that only 29,625 tonnes of Household, Industrial & Commercial waste originating in Kirklees was disposed of to landfill, this figure also includes an unspecified amount of LACW. A total of 260,895 tonnes of waste 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 (recycling tends to be higher in Industrial waste and this sector is more important in the NW and Yorks and Humber side than in the National average), 22% goes to landfill, 6% is managed by other treatment routes and it is not known how the other 7% is managed. The quantity of waste identified as originating in Kirklees is incomplete as a significant quantity of waste is only coded at regional level. WDI data therefore cannot be fully relied on as a measure of arisings.

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:

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

- LACW(H) comprises all wastes collected directly from households and that collected from the household waste recycling centres (HWRCs). It excludes 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, incinerated 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 2014 to March 2015 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 64% of these materials are sent for energy recovery; 27% are recycled or composted, and 9% are sent to landfill.

Table 7: LACW Arisings in Kirklees in 2014/15 (excluding trade wastes)

Arisings and Fate	Quantity	Management of LACW(H)
Total LACW arising excluding process losses	179,861	
Total LACW(H)	160,9747	
Total LACW(Other)	17,4008	
LACW(H) sent for recycling	29,755	27%
LACW(H) sent for composting	13,588	

^{7/3} Taking into account process losses

LACW(H) sent to energy from waste facility	102,395	64%
LACW(H) sent to landfill	15,236	9%

[Source: Defra, WasteDataFlow/internal Kirklees records – arisings figures in tonnes – percentages are rounded]

2.3.5. Waste treatment by energy from waste generated an additional 27,734 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 2014/15

Material Type	Arisings	Management route
Inert Bottom Ash	20,497	100% recycled
Air Pollution Control Residues (APCR)	5,014	89% recycled; 11% to hazardous landfill
Metals	2,223	100% recycled
Total	27,734	

[Source: Defra, WasteDataFlow/internal Council records – arisings figures in tonnes]

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 the Agency's Hazardous Waste Data Interrogator (HWDI) which is the most accurate and authoritative source of this information although it has some limitations. The HWDI reports the Hazardous waste arisings in Kirklees end location as to the authority in which it was disposed as well as identifying the quantity disposed off and its management fate. It does not record the specific destination (name of facility) of the waste and 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 covered in this report (accept for Low Level Radioactive waste), and the information presented here covers all known hazardous waste arising in Kirklees as reported through the EA's HWDI. The HWDI reported 32,537 tonnes of hazardous waste arisings in Kirklees in 2014 as shown in Table 9 with 7,669 tonnes of these materials being managed locally as shown in Table 10. This is a reduction of 8% from the 2013 HWDI reports of 35,390 tonnes of hazardous waste arisings in Kirklees and a reduction of the amount of Kirklees arisings being managed locally, 23% (25%, 9,001 tonnes of materials being managed locally in 2013).

Table 9: Hazardous Waste Arisings in Kirklees by Substance in 2014

Waste Substance	Tonnes
Organic Chemical Processes	12,800
Waste/Water Treatment and Water Industry	6,092
Not Otherwise Specified	2,666
Municipal and Similar Commercial Wastes	2,514
C&D Waste and Asbestos	2,407
Oil and Oil/Water Mixtures	1,975
Packaging, Cloths, Filter Materials	1,102
MFSU Paints, Varnish, Adhesive and Inks	786
Healthcare	735
Thermal Process Waste (inorganic)	538
Shaping/Treatment of Metals and Plastics	513
Inorganic Chemical Processes	227
Metal Treatment and Coating Processes	87
Photographic Industry	39
Solvents	29
Wood and Paper Production	15
Agricultural and Food Production	9
Total	32,537

[Source: Environment Agency Hazardous Waste Data Interrogator, 2014 – all figures in tonnes]

Table 10: Hazardous Waste Managed in Kirklees in 2014

Management Method	Total Hazardous Wastes	Imports from other WPAs	Material originating in Kirklees	% Originating Locally
Landfill	109,959	105,736	4,223	4%
Recovery	8,844	6,167	2,677	30%
Transfer (Disposal)	1,712	1,418	295	17%
Transfer (Recycling)	1,505	1,248	256	17%
Treatment	6,290	6,071	219	3%
Total	128,309	120,640	7,669	6%

[Source: Environment Agency Hazardous Waste Data Interrogator, 2014 – all figures in tonnes]

3.2.2. Table 11 shows the nature of the materials that were managed in Kirklees including those which arose and were managed locally. Contaminated C&D waste and waste water treatment arisings predominate. Table 12 shows the totals hazardous waste managed in Kirklees by substance and management type.

Table 11: Hazardous Waste managed in Kirklees and arising in Kirklees 2014 by substance

Waste Substance	Managed in Kirklees Tonnes	Arisings in Kirklees Tonnes
C&D Waste and Asbestos	60,683	1,928
Waste/Water Treatment and Water Industry	43,706	2,295
Municipal and Similar Commercial Wastes	6,231	1,459
Thermal Process Waste (inorganic)	4,818	45
Metal Treatment and Coating Processes	2,941	3
Packaging, Cloths, Filter Materials	2,875	799
Shaping/Treatment of Metals and Plastics	2,239	100
Organic Chemical Processes	1,686	218
Not Otherwise Specified	1,231	639

Waste Substance	Managed in Kirklees Tonnes	Arisings in Kirklees Tonnes
Inorganic Chemical Processes	758	42
Oil and Oil/Water Mixtures	577	90
MFSU Paints, Varnish, Adhesive and Inks	329	39
Healthcare	177	11
Solvents	38	0
Agricultural and Food Production	11	0
Wood and Paper Production	6	0
Leather and Textile Production	2	0
Mining and Minerals	1	0
Photographic Industry	<1	0
Total	128,309	7,669

[Source: Environment Agency Hazardous Waste Data Interrogator, 2014 – all figures in tonnes]

Table 12: Hazardous Waste managed in Kirklees by substance and management type, 2014

Classification sector	Landfill	Recovery	Transfer (Disposal)	Transfer (Recycling)	Treatment
Mining and Minerals	0	0	0	0	1
Agricultural and Food Production	0	0	1	0	11
Wood and Paper Production	0	0	0	0	6
Leather and Textile Production	0	0	2	0	0
Inorganic Chemical Processes	75	0	28	2	653
Organic Chemical Processes	109	2	229	34	1,311
MFSU Paints, Varnish, Adhesive and	104	8	87	100	31

Classification sector	Landfill	Recovery	Transfer (Disposal)	Transfer (Recycling)	Treatment
Inks					
Photographic Industry	0	0	0	0	0
Thermal Process Waste (inorganic)	4,657	0	22	0	139
Metal Treatment and Coating Processes		13	43	2	2,882
Shaping/Treatment of Metals and Plastics	1,483	345	7	301	102
Oil and Oil/Water Mixtures	0	270	11	205	91
Solvents	0	0	15	22	0
Packaging, Cloths, Filter Materials	32	1,849	118	256	620
Not Otherwise Specified	132	438	171	220	271
C&D Waste and Asbestos	59,925	0	754	0	4
Healthcare	0	0	167	10	0
Waste/Water Treatment and Water Industry	43,440	0	54	49	163
Municipal and Similar Commercial Wastes	1	5,918	1	304	7
Totals	109,959	8,844	1,712	1,505	6,290

[Source: Environment Agency Hazardous Waste Data Interrogator, 2014 – 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 waste 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. There are two landfill sites in Kirklees at Bradley Park (hazardous landfill) and Thornhill Quarry (non-hazardous landfill with a specially configured cell for hazardous waste disposal) however both sites have permissions which are time-limited. The Bradley Park landfill has shown an increase in the disposal of hazardous waste from 2013 to 2014 data (92,000 tonnes in 2013 and 104,000 tonnes in 2014), whilst the hazardous waste accepted at Thornhill Quarry, recorded as asbestos waste has increased by 1000 tonnes (7000 tonnes in 2013 and 8000 tonnes in 2014). There are also two specialised Hazardous Waste Transfer Stations within Kirklees and some local treatment / recovery facilities handling this stream.
- 3.2.5. In 2014, 60% of local arisings were exported for recycling treatment or recovery in EfW or non-thermal facilities (information extracted from Table 12). Table 13 provides additional detail of the materials involved.

Table 13: Hazardous Waste Arising in, but Exported from, Kirklees in 2014

Management Method	Arisings Exported Tonnes
Incineration with energy recovery	327
Incineration without energy recovery	3,077
Landfill	194
Recovery	10,416
Rejected	21
Transfer for eventual disposal	1,142
Transfer for eventual recovery	34,357
Treatment	5,333
Total	24,867

[Source: Environment Agency Hazardous Waste Data Interrogator, 2014 – all figures in tonnes]

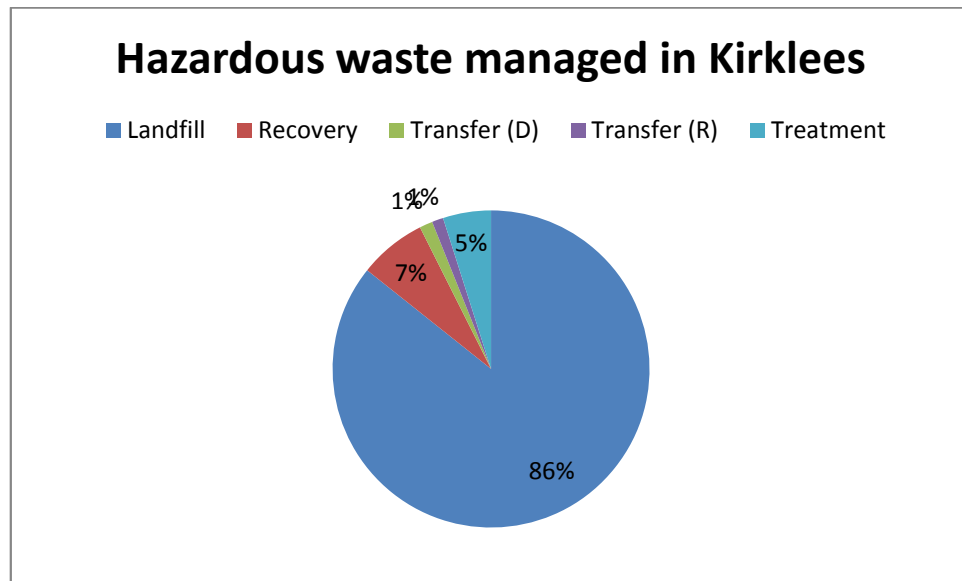
Table 14: Hazardous Waste Arising in and Exported from Kirklees in 2014 by Substance

Substance	Arisings Exported Tonnes
Organic Chemical Processes	12,582
Waste/Water Treatment and Water Industry	3,797
Not Otherwise Specified	2,027
Oil and Oil/Water Mixtures	1,885
Municipal and Similar Commercial Wastes	1,056
MFSU Paints, Varnish, Adhesive and Inks	747
Healthcare	724
Thermal Process Waste (inorganic)	493
C&D Waste and Asbestos	479
Shaping/Treatment of Metals and Plastics	413
Packaging, Cloths, Filter Materials	303
Inorganic Chemical Processes	186
Metal Treatment and Coating Processes	84
Photographic Industry	39
Solvents	29
Wood and Paper Production	15
Agricultural and Food Production	9
Total	24,867

[Source: Environment Agency Hazardous Waste Data Interrogator, 2014 – 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. Hazardous landfill accounts for 86% of hazardous waste managed in Kirklees with treatment, recovery and transfer being the other types of hazardous waste management site located within Kirklees.

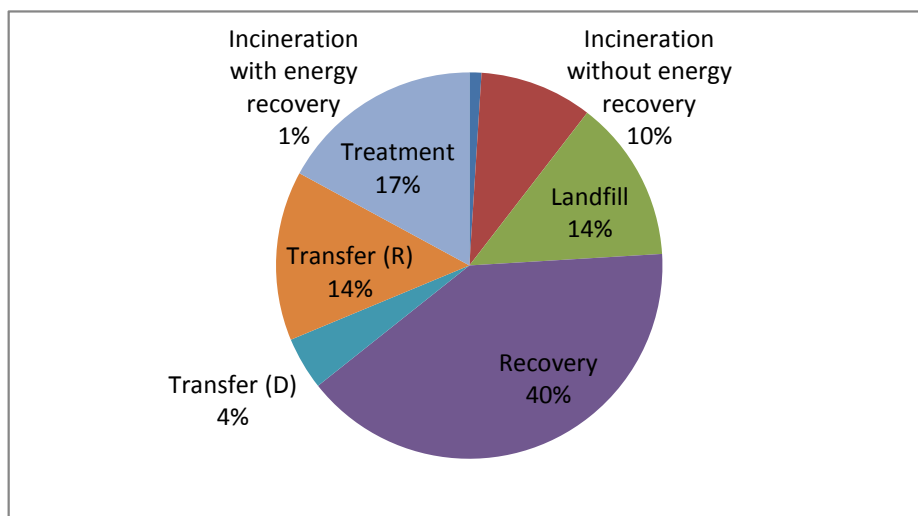
Figure 2: Fate of All Hazardous Wastes Managed in Kirklees in 2014 (128,309 tonnes)



[Source: Environment Agency Hazardous Waste Data Interrogator, 2014]

3.2.8. Figure 3 shows the fate of all hazardous wastes arising in Kirklees in 2014 (32,537 tonnes).

Figure 3: Fate of All Hazardous Wastes Arisings (32,537) in Kirklees in 2014



3.2.9. Table 14 shows those destination Waste Planning Authorities that received more than 100 tonnes of hazardous waste from Kirklees in 2014. 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 2014

WPA	Waste Received
Wakefield	3,342
Cheshire West and Chester	2,480
Lancashire	2,356
Liverpool	2,223
Staffordshire	2,196
Rotherham	1,829
Derbyshire	1,557
Leeds	1,348
North Tyneside	773
Sunderland	706
Sheffield	664
Trafford	626
Tameside	550
Knowsley	482
Stockton-on-Tees	473
Nottinghamshire	454
Walsall	443
Cheshire East	418
North East Lincolnshire	302
Hampshire	265
Sandwell	235
Wirral	152
Redcar and Cleveland	129

[Source: Environment Agency Hazardous Waste Data Interrogator, 2014 – 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 2014 Hazardous Waste Environment Agency Interrogator as this is the most accurate data available on this waste stream.
- 3.3.2. There was an 8% reduction in hazardous waste arisings in Kirklees between the year 2013 and 2014. However, the quantity of overall hazardous waste managed in Kirklees (including imports) has increased by 8% through the increased use of waste imported to hazardous landfill facilities within the authority.

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 2014 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 64,407 tonnes of C&D waste and 225,456 tonnes of excavation waste were reported in 2014.

Table 15: CD&E Arisings in Kirklees in 2014

Management Method	Construction & Demolition			Excavation		
	Managed locally	Exported	Total	Managed locally	Exported	Total
Household Waste Recycling Site	608	-	608	5,171	-	5,171
Land recovery	-	-	-	35,104	-	35,104
Landfill (C+D)	5,446	3	5,449	43,644	32,522	76,166
Landfill (Hazardous)	-	-	-	6,032		6,032
Reclamation	-	-	-	55,184		55,184
Recycling (C+D)	2,962		2,962	-	-	-
Transfer stations (non-hazardous)	27,899	4,202	32,101	46,335	562	46,897
Treatment plant	3,169	21,119	24,287	823	80	903

Management Method	Construction & Demolition			Excavation		
	Managed locally	Exported	Total	Managed locally	Exported	Total
Totals	40,084	25,324	65,407	192,293	33,164	225,456

[Source: Environment Agency Waste Data Interrogator, 2014 – all figures in tonnes]

4.2.2. The current management mix (2014) for C&D wastes is 49% transfer facilities, 37% treatment, 8% inert landfill, 5% recycling, and 1% through household waste recycling facilities. Current management mix for excavation wastes (2014) are 34% landfill, hazardous landfill 3%, 24% reclamation, 16% land recovery, 21% transfer station (non hazardous) and 2% through household waste recycling facilities.

4.2.3. Around 61% of C&D and 85% of excavation wastes arose and was managed locally. C&D waste that arose locally and was then exported went mainly to treatment facilities (21,119 tonnes or 83% of exported C&D waste) while 72% of locally arising excavation waste went to landfill, reclamation and land recovery.

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 and the quantities managed are addressed in section 3 of this report on Hazardous waste arisings. In 2014 the Environment Agency’s database shows that 1,441 tonnes of asbestos waste and 120 tonnes of hazardous construction waste arose in and was deposited in Kirklees. The total quantity of hazardous CD&E arisings are shown in the hazardous waste data as 2,407 tonnes indicating that in the order of 36% of hazardous CD&E waste arisings are “exported”. Hazardous CD&E waste is included in hazardous waste totals for modelling purposes and therefore the totals shown in these tables exclude hazardous waste.

4.2.5. Table 16: CD&E Deposits by Site Type in Kirklees in 2014

Management Method	C&D Waste Local Arisings & Imports	Exc. Waste Local Arisings & Imports	C&D Imports	Excavation Imports
HWRC	608	5,171	-	-
Land recovery	-	35,104	-	-
Landfill (C+D)	5,446	59,783	-	16,139

Landfill (Hazardous)	2,837	20,470	2,837	14,438
Reclamation	-	55,184	-	-
Recycling (C+D)	2,962	-	-	-
Transfer stations (non-hazardous)	32,431	46,335	4,532	-
Treatment plant	4,455	2,014	1,287	1,191
Total	48,740	224,061	8,656	31,768

[Source: Environment Agency Waste Data Interrogator, 2014 – all figures in tonnes]

- 4.2.6. The availability of inert landfill capacity has also resulted in significant levels of imports of soil for landfill with over 38% (30,577 tonnes) of inert soil deposits being imported.
- 4.2.7. Information on waste removed from waste transfer stations in Kirklees shows that of 39,236 tonnes of C&D waste were removed from waste transfer facilities 21,104 were recorded as removed for recycling in 2014 whilst 4,004 tonnes were removed to be sent to landfill. This data indicates that at least 53% of C&D waste processed through transfer facilities is recycled, although this could be significantly higher as the ultimate fate of the remaining C&D sent to waste transfer stations is unknown. Recorded for 2014 show that out of a total of 45,744 tonnes of excavation waste removed from transfer facilities, that a total 19,340 tonnes of soil managed through waste transfer facilities were reported as destined for recycling whilst 23,637 tonnes were removed to landfill, with the remaining waste destined for treatment or further transfer facilities
- 4.2.8. 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 77,000 tonnes and excavation waste averaging approximately 190,000 tonnes over the period.

Table 17: C&D and Excavation Waste managed in Kirklees and exported, 2010-2014(excluding hazardous)

Year	C&D				Excavation			
	Home	Exported	Total	AV/5yrs	Home	Exported	Total	Av/5yrs
2014	40,084	25,324	65,407	76,913	192,292	33,146	225,456	189,459

2013	55,463	21,261	76,724		163,974	30,933	194,907
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

[Source: Environment Agency Waste Data Interrogator, 2014 – 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. An assumption can be made that wastes deposited are reasonably equivalent to arisings. Data from the 2014 WDI indicates that the total C&D waste arising from Kirklees was in the order of 65,000 tonnes per annum whilst excavation waste was in the order of 225,000 tonnes. The 2014 data for C&D is below the 5 year average and in this case it is recommended that the 5 year average is used in the modelling projections.
- 4.3.2. With respect to excavation waste the 2014 data is higher than the 5 year average but close to an average for the 3 most recent years. It is therefore recommended that the 3 year average of 216,000 tonnes is used for modelling projections.

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 2016 figure of 856 has been used in the calculations.

Table 18: Agricultural Land Holdings within Kirklees

Year of Survey and Source	No. of Farm Holdings
2014 Kirklees as reported by DEFRA	444
2016 Kirklees on Council Farm Records	856

[Sources: DEFRA Local Authority Breakdown for key Crops and Livestock numbers on agricultural holdings –October2014; 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 1998⁹. 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

⁹ *Towards Sustainable Agricultural Waste Management* (Environment Agency, 2001) and *Agricultural Waste and By-Products Survey*, (Environment Agency, 2003).

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 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 856 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 856 holdings in Kirklees¹⁰. 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, 2015

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

¹⁰ Source: Kirklees Council records.

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

- 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 2016

Waste Type	Potential Waste Management Route	Arisings
Plastic packaging	Recycling/Landfill	177
Cardboard and paper packaging	Composting on site /Recycling/Landfill	55
Metal, glass, wood and rubber packaging	Recycling/Landfill	14
Other non-packaging plastics	Recycling/Landfill	454
Agrochemicals	Treatment/Incineration	517
Animal health products	Incineration	517
Waste oil, batteries, tyres and redundant machinery	Recycling/treatment	553
CD&E waste (asbestos cement bonded roof sheeting)	Hazardous Landfill	154
Organic by-products waste (slurry, waste milk, straw)	Composting/On-site Treatment /Land Recovery	582,263
Animal By-products	Specialised Treatment	1,725
Total arisings		586,429

[Source: Environment Agency Agricultural Waste and By-Products survey, 2001 – all figures in tonnes extrapolated using Kirklees Internal Farm records June 2016]

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, 2016

Optimal Waste Management Route	Arisings
Management within farm holding	
Composting on site/ Land recovery/treatment on site	582,263
Management off Farm Holdings	
Recycling	1,253
Treatment plant/Incineration	1034
Animal By-Products incineration	1,725
Landfill	0
Hazardous Landfill	154
Total management off site	4,166
Total arisings	586,429

[Source: Environment Agency Agricultural Waste and By-Products surveys, 2001 & 2003 and Kirklees Internal farm Records June 2016, 2010 all figures in tonnes]

5.1.10. It should be noted that a Farm Practices Survey was published in 2012¹¹ 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 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 4,166 tonnes.

5.2. CONCLUSION

5.2.1. Using the available information sources, agricultural waste arisings in Kirklees are estimated to be just under 586,500 tonnes of which only 4,166 tonnes (0.7%) 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,

¹¹ DEFRA Farm Practices Survey Autumn 2012

covering a range of small-scale waste management and disposal activities including those referred to above, however the quantities involved cannot be established

- 5.2.4. 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 February 2016 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 period¹². 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 2014 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 2014 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 24,000 tonnes as a result of an existing LACW management contract where secondary waste (bottom ash) is sent for recycling;
 - Waste exports to other WPAs where the total exceeds 1,000 tonnes show a significant reduction from 142,319 tonnes in 2013 to 99,182 tonnes in 2014.

¹² 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.

8.2.2. Table 22 shows that almost 41% of the exported material was LACW and C&I wastes (collectively referred to as HIC waste¹³).

Table 22: Non-Hazardous Waste Exported from Kirklees and Managed in Other WPAs in 2014

Waste Stream					
Location of Receiving WPA	HIC	Metals	Construction &/Demolition	Excavation	Total Exported
Calderdale	1,243	518	11,020	32,000	44,781
Stockton-on-Tees	24,055	-	-	-	24,055
Leeds	3,943	225	10,770	58	14,996
Wakefield	7,354	840	3	522	8,719
Sheffield	2,905	23	22	215	3,166
East Riding of Yorkshire	-	-	3,466	-	3,466
Total	39,500	1,606	25,281	32,795	99,182
Proportion of all exported material	41%		25%	33%	
Proportion of local arisings that are exported based on the total local waste managed at sites in Kirklees	10%		6%	8%	24%

[Source: Environment Agency Waste Data Interrogator, 2014 – all figures in tonnes]

¹³ 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.

8.2.3. The corresponding pattern of exports of more than 100 tonnes of hazardous waste is shown in Table 23¹⁴.

8.2.4. Analysis of table 23 shows that 24,846 tonnes of hazardous waste originating in Kirklees is exported to other WPAs for management. Of this, 59% is for recovery (40% 2013), 22% treatment (28% 2013), 5% for further transfer (16% 2014) (with the eventual fate unknown) and 12% for incineration (13% 2014).

Table 23: Hazardous wastes Originating in Kirklees but Exported to Other WPAs in 2014

Receiving WPA	Management method / waste fate						
	Energy recovery	Incineration	Landfill	Recovery	Transfer	Treatment	Total
Wakefield	327			2,693	72	249	3,342
Cheshire West and Chester		2,460		10	10		2,480
Lancashire			4	2,264	88		2,356
Liverpool				103	176	1,944	2,223
Staffordshire				2,193	0	3	2,196
Rotherham				1,685	143	1	1,829
Derbyshire			3	121	1	1,432	1,557
Leeds		351		334	25	638	1,348
North Tyneside				773			773
Sunderland				706			706
Sheffield				160	126	377	664
Trafford				237	1	368	606
Tameside				550			550

¹⁴ 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.

Knowsley				459	23	1	482
Stockton-on-Tees			32	264	3	174	473
Nottinghamshire				440	14		454
Walsall				243	199		443
Cheshire East				266	152		418
North East Lincolnshire				302			302
Hampshire		265		0			265
Sandwell				226	9		235
Wirral				152			152
Redcar and Cleveland			101	13		15	129
WPAs less than 100 tonnes in 2014	0	55	576	100	152		862
Total	327	3,077	194	14,773	1,163	5,333	24,846
	1%	12%	1%	59%	5%	22%	

[Source: Environment Agency Hazardous Waste Data Interrogator, 2014 – 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 waste in 2014 exceeded 1,000 tonnes per annum. Note that the list excludes sites providing incineration capacity as these facilities are not recorded by the EA reporting mechanisms (unfortunately there is no way of collecting the information by other means).

Table 24: Sites Receiving More than 1000 Tonnes of Non-Hazardous and Hazardous Wastes from Kirklees in 2014

Receiving WPA	Permit Number	Site Name	Operator	Permit Type	Waste Stream	Waste Received
Calderdale WPA	BP3591SY (100648)	Clockface Quarry Inert Site	P Casey Enviro (Clockface) Ltd	L05 : Inert LF	Inert/C+D	32,000
Stockton-on-Tees WPA	TP3438EG	Ballast Phoenix - Cleveland Facility	Ballast Phoenix Limited	A15 : Material Recycling Treatment Facility	Hhold/Ind/Com	22,388
Leeds WPA	UP3892ZG (65268)	Timberpak	Timberpak Ltd	A16 : Physical Treatment Facility	Hhold/Ind/Com	10,560
Calderdale WPA	HP3296EW (101670)	West Yorkshire Water	Berrett Mr Matthew	S0811 : Inert & excavation Waste TS + treatment	Inert/C+D	6,152
Wakefield WPA	WP3330BZ	Welbeck Landfill Site EPR/WP3330BZ/V006	Welbeck Waste Management Ltd	L04 : Non Hazardous LF	Hhold/Ind/Com	5,887
Calderdale WPA	PP3796ZK (65523)	Alder Street Depot	Kirklees Metropolitan Council	A11 : Household, Commercial & Industrial Waste T Stn	Inert/C+D	4,008
Leeds WPA	MP3231SD	Knostrop Waste Treatment Facility	FCC Recycling (UK) Limited	A21 : Chemical Treatment Facility	Hhold/Ind/Com	3,837
Sheffield WPA	BP3635SB	Holmes Farm Landfill, Blackburn Meadows	Yorkshire Water Services Ltd	L04 : Non Hazardous LF	Hhold/Ind/Com	2,387

Receiving WPA	Permit Number	Site Name	Operator	Permit Type	Waste Stream	Waste Received
East Riding of Yorkshire WPA	MB3634AC (102372)	Pollington Bio Energy Park	Stobart Biomass Products Ltd	SR2011 No4: Treatment of waste wood <75000 tps	Hhold/Ind/Com	2,204

[Source: Environment Agency Waste Data Interrogator, 2014 – 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 2014

Origin WPA	Site Category	Origin Region	Tonnes Received
Rotherham	Landfill	Yorks & Humber	5,498
Calderdale	Landfill	Yorks & Humber	4,691
Stockport	Landfill	North West	3,950
Doncaster	Treatment	Yorks & Humber	3,535
WPA Not Codeable (Yorks & Humber)	Transfer	Yorks & Humber (Est'd)	3,506
Sheffield	Treatment	Yorks & Humber	3,418
East Riding of Yorkshire UA	Treatment	Yorks & Humber	3,227
WPA not codeable (North East)	Treatment	North East	3,157
Doncaster	Landfill	Yorks & Humber	3,114
Sheffield	Landfill	Yorks & Humber	2,669
WPA not codeable (Yorks & Humber)	Treatment	Yorks & Humber	2,629
East Riding of Yorkshire UA	Landfill	Yorks & Humber	2,169
WPA Not Codeable (Not Codeable)	Treatment	Not Codeable	1,880
Manchester	Treatment	North West	1,845
York UA	Landfill	Yorks &	1,680

Origin WPA	Site Category	Origin Region	Tonnes Received
		Humber	
Wakefield	Treatment	Yorks & Humber	1,573
Barnsley	Landfill	Yorks & Humber	1,551
WPA not codeable (Cheshire)	Treatment	North West	1,534
Nottingham UA	Landfill	East Midlands	1,500
Cheshire West and Chester	Landfill	North West	1,425
Sheffield	MRS	Yorks & Humber	1,283
WPA not codeable (Merseyside)	Treatment	North West	1,275
Stoke-on-Trent UA	Landfill	West Midlands	1,232
Bradford City	Treatment	Yorks & Humber	1,219
WPA Not Codeable (Not Codeable)	Transfer	Not Codeable	1,143
Manchester	MRS	North West	1,141
York UA	Treatment	Yorks & Humber	1,077
Bolton	Treatment	North West	1,043

[Source: Environment Agency Waste Data Interrogator, 2014 – 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 2014

Arising WPA	Landfill	Recovery	Transfer (D)	Transfer (R)	Treatment	Total
Flintshire	41,845	65		2		41,912
Liverpool	19,651	12	0	13	14	19,690
Bradford City	6,274	174	44	148	545	7,186
Leeds	4,718	66	81	74	29	4,968
Trafford	4,584	4	1	1		4,590
Doncaster	1,750	70	41	5	1,856	3,722
Stockport	3,507	7	0		23	3,537
East Riding of Yorkshire	1,209	257	145	42	893	2,546
North Yorkshire	2,275	19	191	14	6	2,505
Sheffield	1,546	102	48	80	491	2,268
Derbyshire	1,532	20	33	14	69	1,669
Wakefield	1,404	56	24	51	15	1,550
Lancashire	997	320	21	44	20	1,402
Cheshire West and Chester	486	402	3	12	347	1,249
Knowsley	232	351	34	3	623	1,243
Rotherham	698	276	153	1	77	1,205
Kingston Upon Hull City	824	153	45	17	21	1,060
Stoke-on-Trent City	982	44		0		1,026

[Source: Environment Agency Waste Data Interrogator, 2014 – 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

2014 Hazardous Waste Environment Agency Interrogator - <http://www.environment-agency.gov.uk/>

Construction, Demolition and Excavation Waste

2014 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.