

# **Lincolnshire Minerals and Waste Local Plan Evidence Base**

Lincolnshire Waste Needs Assessment 2021 – Report 4

Lincolnshire Hazardous Waste Management  
Requirements

**Final Issue v1.2**

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# Abbreviations and Glossary of Terms

## Abbreviations

Abbreviation	Explanation
APCr	Air Pollution Control Residues
ATF	Authorised Treatment Facility
C, D & E / CDEW	Construction, Demolition and Excavation Waste
CFC	Chlorofluorocarbon (gases)
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
ELVs	End of Life Vehicles
EWC	European Waste Catalogue
GVA	Gross value added
HTI	High Temperature Incineration
HWI	Hazardous Waste Interrogator
HWRCs	Household Waste Recycling Centres
IED	Industrial Emissions Directive
LACW	Local Authority Collected Waste
LDF	Local Development Framework
MRS	Metal Recycling Sites
nPPG	National Planning Practice Guidance
PI	Pollution Inventory
WDI	Waste Data Interrogator
WEEE	Waste Electrical & Electronic Equipment
WNA	Waste Needs Assessment
WPA	Waste Planning Authority

## Glossary of Terms

Term	Explanation
Construction, Demolition and Excavation Waste	Controlled waste arising from the construction, repair, maintenance and demolition of buildings and structures.
DEFRA	The UK Government department responsible for developing national waste management policy.
Duty to Cooperate	The Duty to Cooperate is a legal test that requires cooperation between local planning authorities and other public bodies to justify and maximise the effectiveness of Local Plan policies on strategic matters including waste.
End of Life Vehicles	Vehicles classed as waste having been declared as no longer usable and for which a Certificate of Destruction has been issued by DVLA. Deemed hazardous until hazardous components removed via depollution processes.
Environment Agency	The body responsible for the regulation of waste management activities through issuing permits to control activities that handle or produce waste. It also provides up-to-date information on waste management matters and deals with other matters such as water issues including flood protection advice.
Hazardous Waste	Waste requiring special management under the <i>Hazardous Waste Regulations 2005</i> due to it posing potential risk to public health or the environment (when improperly treated, stored, transported or disposed). This can be due to its quantity or characteristics.
Hazardous Waste Landfill	Sites where hazardous waste may be disposed by landfill. This can be a dedicated site or a single cell within a non-hazardous landfill, which has been specifically designed and designated for depositing hazardous waste.
Household Waste	Waste from households collected through kerbside rounds, bulky items collected from households and waste delivered by householders to household waste recycling centres and "bring recycling sites" along with waste from street sweepings and public litter bins.
Household Waste Recycling Centres	A facility that is available to the public to deposit waste not collected through kerbside collection (otherwise known as a civic amenity site).
Incineration	The controlled combustion of waste. Energy may also be recovered in the form of heat (see Energy from Waste).
Landfill (including land raising)	The permanent disposal of waste to land, by the filling of voids or similar features, or the construction of landforms above ground level (land-raising).
Recovery	Subjecting waste to processes that recover value including recycling, composting or 'other recovery' processes such as thermal treatment to recover energy.
Recycling	The sorting and separate storage of materials extracted from the waste stream for reprocessing either into the same product or a different one.
Vehicle depollution	Removal of hazardous components e.g. oils, batteries, from End of Life Vehicles (ELV). May only take place at authorised treatment (ATFs) facilities permitted to do so.
Waste Planning Authority (WPA)	The local authority responsible for waste development planning and control, in this case Lincolnshire County Council.
Waste Transfer Station	A site to which waste is delivered for bulking prior to transfer to another place for further processing or disposal.

# 1 Introduction

1.1 The Lincolnshire Waste Needs Assessment 2021 consists of an overall main report and five waste stream specific supporting reports, namely:

1. Local Authority Collected Waste (LACW)
2. Commercial and Industrial Waste (C&I)
3. Construction, Demolition and Excavation Waste (C, D & E)
4. Hazardous Waste and
5. Review of management requirements for 'Other' Waste

This supporting report details the background work undertaken in relation to the Hazardous Waste stream.

1.2 The term 'hazardous waste' is used to describe waste considered to possess properties that pose a threat to human health and/or the environment such as toxicity, flammability, corrosiveness and carcinogenicity. Hazardous waste arises from different sources so does not occur as a discrete waste stream, being more a collection of different materials which are generally collected and managed separately due to their hazardous properties. For example, fridges containing CFC gases and cathode ray tubes used in TV and computer monitor screens are classed as hazardous, as are oily water, interceptor wastes and undepolluted scrap ('End of Life') vehicles. Each of these waste types require management by distinctly different methods and hence provision of different types of facilities, regardless of their origin. Hence the hazardous component of each origin stream i.e. LACW, C&I, Agricultural and C, D & E waste are considered together in this report. To avoid double counting, the quantity of hazardous waste arising in each origin stream has been deducted when assessing the arisings of each origin stream in the stream specific separate reports.

## **Previous Assessments of Lincolnshire Hazardous Waste**

1.3 The Lincolnshire Waste Needs Assessment Update 2017 (WNA) draws on data from the 2015 Environment Agency (EA) Hazardous Waste Interrogator (HWI). This generated a baseline value for hazardous waste arising in Lincolnshire of 93,207 tonnes in 2015 of which 65% (60,943 tonnes) was managed within Lincolnshire and some 32,264 tonnes managed outside. In addition to the 60,943 tonnes of Lincolnshire hazardous waste managed within Lincolnshire, some 39,376 tonnes of hazardous waste was imported for management. A comparison of the Lincolnshire hazardous waste arisings of 93,207 tonnes with the quantity managed - 100,319 tonnes (60,943 + 39,376) overall – indicated that Lincolnshire was a net importer of hazardous waste in 2015. However, in light of the fact that economies of scale mean

hazardous waste is generally managed on a 'larger than local' basis, the WNA update concluded that *"It is likely to remain the case that management requirements for most hazardous waste arisings from Lincolnshire will be met in specialised facilities outside of the County."*

- 1.4 The 2015 arisings value of 93,207 tonnes was used as a baseline to generate forecasts for potential management requirements applying growth factors identical to those applied to commercial and industrial waste. The growth factors applied are shown in Table 1 below:

**Table 1: Lincolnshire Hazardous Waste Arisings Growth Factors**

Source: Lincolnshire Waste Needs Assessment Update 2017

<b>Growth Scenario</b>	<b>Per annum growth rate</b>	<b>Justification</b>
no growth	0%	Not stated
growth	0.55%	Based on LCC demographic projections of 11% employment increase over 20 years
minimised growth	0.275%	Not stated

- 1.5 The only capacity gap identified through this exercise was for hazardous waste landfill. The capacity gap modelled for the three growth scenarios at the end of the forecast period (i.e. in 2031) is as shown in Table 2 below.

**Table 2: Lincolnshire Hazardous Waste Forecast Capacity Gap (tonnes)**

Source: Lincolnshire Waste Needs Assessment Update 2017

<b>Growth Scenario</b>	<b>Baseline</b>	<b>Maximised recycling</b>	<b>Median recycling</b>
no growth	9,496	8,883	8,883
growth	10,314	9,912	9,912
minimised growth	7,500	7,500	7,500

- 1.6 This report updates and supersedes Lincolnshire County Council's previous assessment for hazardous waste by using the latest available data. The report also provides a more comprehensive assessment of future waste management capacity requirements by considering all forms of hazardous waste management.



## 2 Calculating a Baseline Arisings Estimate

- 2.1 To generate a baseline arisings value for hazardous waste in Lincolnshire the following datasets have been accessed:
1. The EA Hazardous Waste Interrogator 2019 – movements between sources and management points.
  2. The EA Waste Data Interrogator 2019 – inputs to permitted management sites.
  3. The EA Waste Data Interrogator 2019 – outputs from permitted management sites.

At the time of writing the 2019 datasets were the most current available.<sup>1</sup>

### The EA Hazardous Waste Interrogator (HWI) 2019

- 2.2 Legislation requires that the waste regulation authority<sup>2</sup> be notified when hazardous waste is moved. The notification takes the form of a 'consignment note' that details the quantities and destinations of the waste. This means that the following movements of hazardous waste are recorded and reported to the regulatory body:
- From production sites directly to disposal/treatment facilities;
  - from production sites to intermediate locations for bulking up and onward management; and,
  - from treatment facilities to final disposal sites.

This data is then aggregated by the Environment Agency and made available in the HWI that is published on an annual basis<sup>3</sup>.

- 2.3 The reporting method means that the dataset may be incomplete for the following reasons:
- Consignment notes are not issued when hazardous waste is managed on the site of its production i.e. when hazardous waste is managed onsite by the producer.
  - Where the producer of hazardous waste is a householder the requirement to consign the waste does not apply. Therefore, hazardous waste produced from households will only be recorded on arrival at the receiving site itself, where the site operates under an Environmental Permit. For example, End of Life Vehicles (ELVs), which are classed as hazardous waste by virtue of the presence of oils, fluids and batteries, will often not be consigned to a vehicle de-pollution site because the owner of the vehicle is not required to do so and hence it is not recorded in the HWI. However, as vehicle de-pollution sites are required to keep records in accordance with their Environmental Permits, it should be recorded as hazardous waste on arrival and, subsequently, reported within the separate

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<sup>1</sup> Under normal circumstances the Environment Agency's Pollution Inventory would also be cross referenced, but its release has been delayed due to the Covid pandemic.

<sup>2</sup> For England this is The Environment Agency

<sup>3</sup> Data is by calendar year and is normally released by the EA in the Autumn of the following calendar year

Environment Agency Waste Data Interrogator (WDI). Given the tonnage of ELVs from private households scrapped in a year, this is a significant omission.

Both of the above can result in under-reporting of hazardous waste arisings in the HWI. However, this may be balanced by aspects of the hazardous waste consignment process that allows for the possibility of over-reporting. For example, if waste is moved to an intermediate management site within Lincolnshire and then moved on to a further site it will be consigned twice as waste arising in Lincolnshire and so double counted.

2.4 The EA Hazardous Waste Interrogator 2019 indicates the following:

- In 2019 125,023 tonnes of hazardous waste (of all types) were produced in Lincolnshire
- Of this, 78,377 tonnes were managed in Lincolnshire; with
- 46,646 tonnes managed outside Lincolnshire i.e. exported.
- 42,253 tonnes of hazardous waste was imported to Lincolnshire for management.

The above data suggests that, in 2019, overall there was a near balance between the amount of hazardous waste being produced and that managed in Lincolnshire, with slightly less managed than produced (120,630t (78,377t + 42,253t) vs 125,023t).

#### **The EA Waste Data Interrogator (WDI) 2019**

2.5 To address the limitations associated with the HWI outlined above, and ensure utilisation of the best available data as required by national Planning Practice Guidance (PPG), data from the WDI has also been consulted.

#### **Inputs from Lincolnshire to permitted sites reporting through WDI**

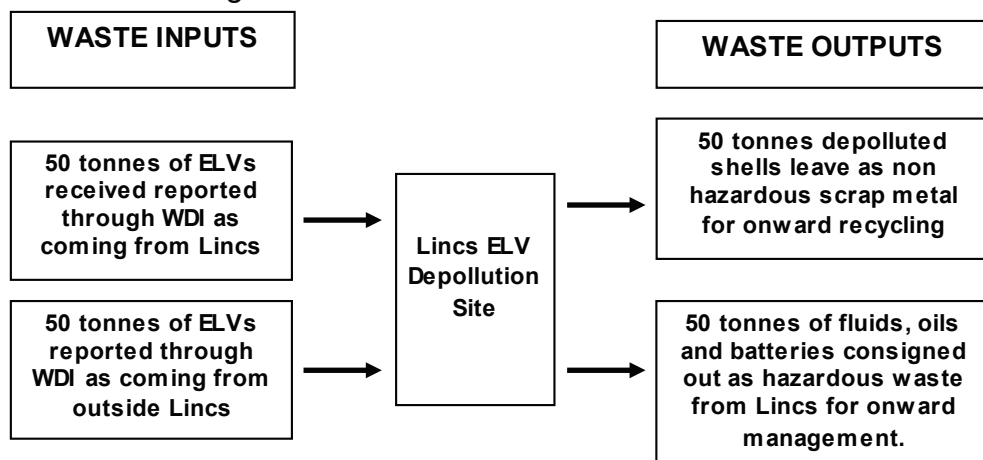
2.6 The EA WDI 2019 indicates the following:

- In 2019, 103,373 tonnes of hazardous waste managed at permitted sites (both within and beyond Lincolnshire) were attributed to Lincolnshire as its source;
- of this, the EA WDI indicates that, 27,674 tonnes were managed in Lincolnshire with the difference (75,700 tonnes) being managed outside Lincolnshire; and,
- 38,042 tonnes were imported for management in Lincolnshire.

The above data suggests that, in 2019, substantially less hazardous waste was managed in Lincolnshire than was produced (65,716t vs 103,373t).

## Outputs from permitted sites in Lincolnshire

- 2.7 The suggestion above that significantly more hazardous waste is produced in Lincolnshire than managed may be due to double counting as hazardous waste produced in Lincolnshire may pass through intermediate management sites in Lincolnshire, being reported as Lincolnshire waste, and then be reported as Lincolnshire waste again at the receiving facility.
- 2.8 Hazardous waste received at Lincolnshire permitted sites sent on for further management i.e. outputs, will be identified as arising within Lincolnshire at the final receiving site (regardless of its original source) and hence may contribute towards waste to be provided for in the Local Plan. For example, following depollution of an ELV the extracted hazardous components will leave the depollution site as hazardous waste for onward management, leaving the shell of the ELV which ceases to be hazardous on their removal. Those components that arise from depollution sites operating in Lincolnshire will be reported as hazardous waste arising in Lincolnshire requiring onward management regardless of where the ELV originated. This is illustrated in Figure 1.



**Figure 1: Schematic of Flows of ELVs to, and resulting waste from, an ELV depollution site.**

Figure 1 shows example inputs and outputs for a Lincolnshire ELV depollution site:

- Waste Inputs = 50 tonnes of ELVs from Lincs + 50 tonnes of ELVs from outside Lincs.
- Waste Outputs = 50 tonnes depolluted shells as non-hazardous scrap metal for recycling + 50 tonnes of fluids, oils and batteries as hazardous waste for onward management.

- 2.9 The WDI 2019 indicates that 65,716 tonnes of hazardous waste was managed within Lincolnshire and 52,361 tonnes of hazardous waste was removed from permitted sites operating within Lincolnshire. The outputs of these permitted sites will be reported as arising in Lincolnshire. Given that of the 65,716 tonnes received, only 27,674 tonnes originated from Lincolnshire itself, it is apparent that some of the

waste from outside Lincolnshire has become classified as Lincolnshire waste by virtue of its management at Lincolnshire facilities. Moreover 23,726 tonnes of the output went on for further management at sites within Lincolnshire. To avoid double counting, this latter value should be discounted from the output total as it will have been recorded as an input from Lincolnshire already (i.e. will be included in the tonnes of Lincolnshire arisings managed within Lincolnshire). This gives a net output value of 28,635 tonnes (52,361t to 23,726t).

### Summary of Headline Data

2.10 The data from the HWI and WDI shows that:

- WDI input of hazardous waste arising in Lincolnshire to all sites: 103,373 tonnes.
- HWI movements of waste arising in Lincolnshire: 125,023 tonnes.

The management routes as indicated by the WDI and HWI is displayed in Table 3.

**Table 3: Lincolnshire Hazardous Waste Arisings and Management Data**

#### 3a: Lincolnshire Hazardous Waste Arisings (tonnes)

Data source	Quantity Managed Attributed to Lincolnshire	Of which Quantity Managed outside Lincolnshire (exports)	Quantity Managed in Lincolnshire Attributed to Lincolnshire
HWI	125,023	46,646	78,377 <sup>4</sup>
WDI	103,373	75,700	27,674

#### 3b: Hazardous Waste Managed in Lincolnshire (tonnes)

Data source	Quantity Managed in Lincolnshire Attributed to Lincolnshire	Quantity Managed in Lincolnshire from outside (imports)	Total Managed in Lincolnshire
HWI	78,377	42,253	120,630
WDI	27,674	38,042	65,716

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<sup>4</sup> Likely to include an amount of waste already counted at a previous point of management.

2.11 Table 2 clearly shows that more waste is recorded in the HWI as arising in Lincolnshire than the WDI input (125,023 vs 103,373 tonnes) and significantly more waste was managed within Lincolnshire according to HWI (120,630 vs 65,716 tonnes). This exercise confirms that the HWI dataset for Lincolnshire hazardous waste arising has not under-reported arisings, as has sometimes found to be the case. Given that nPPG advises reliance on the HWI as a data source it has taken to be the 'best available' data for the purposes of forward planning for the stream in Lincolnshire.

### Conclusion on Plan Area Arisings

2.12 Hazardous waste arisings attributable to Lincolnshire for 2019 are reported to be c125,000 tonnes. This value is significantly greater than the baseline tonnage used in the 2017 assessment of c93,000 tonnes which also relied on the HWI as its data source. To understand why such an increase has occurred requires a more in depth understanding of the types of waste (recorded by EWC code) arising in Lincolnshire in 2019 and then a comparison with data from past years.

### Composition of Lincolnshire Hazardous Waste

2.13 Table 4 below presents the principal arisings for 2019 based on the assessed HWI dataset. Hazardous waste types arising in a quantity greater than 1,000 tonnes have been listed. The categories listed account for 92% of arisings.

**Table 4: Principal Hazardous Waste Types arising in Lincolnshire in 2019**

Source: HWI 2019, Environment Agency

Hazardous Waste Type/Source	Tonnes
Construction, Demolition and Excavation Waste	74,779
Vehicle oils inc ELV components	9,775
Aqueous waste from industrial processes destined for off-site treatment	8,294
Gas Cleaning Waste (APCr)	7,218
WEEE inc Fridges with CFCs	6,466
Oil and concentrates from treatment	4,282
Oily Waste from site drainage	2,710
Waste from mechanical treatment of waste	1,417
<b>Total</b>	<b>114,942</b>

- C, D & E waste consists of:
  - c65,000 tonnes of bituminous mixtures containing coal tar (EWC 17 03 01);
  - c5,350 tonnes contaminated soil (EWC 17 05 03); and,
  - c4,300 tonnes of asbestos contaminated wastes (EWC 17 06 05).

The principal value relates to waste tar bound road planings arising from highway maintenance. This accounts for nearly half of total reported hazardous waste arisings in 2019. The contaminated soil and asbestos contaminated wastes will likely have arisen from a variety of sources involving the remediation of a specific contaminated sites and the demolition/refurbishment of asbestos contaminated building stock.

- 9,775 tonnes of vehicle waste including End of Life Vehicles and components rank second. The predominant wastes are undepolluted end of life vehicles (EWC 16 01 04) at 3,598 tonnes, 'mineral-based non-chlorinated engine, gear and lubricating oils' (EWC 13 02 05) at 2,860 tonnes, lead acid batteries (EWC 16 06 01) 1,930 tonnes and 'fuel oil and diesel' (EWC 13 07 01) at 1,387 tonnes. Data in the WDI indicates that around 2,600 tonnes of these latter waste types were reported as outputs from waste management sites in Lincolnshire indicating a significant proportion of arisings came from intermediate management facilities.
- The HWI shows 8,294 tonnes of aqueous waste from industrial processes destined for off-site treatment (EWC 16 10 01) were consigned in Lincolnshire in 2019. This appears in the 2019 dataset as coming from Lincolnshire for the first time and hence is an entirely new waste stream. Further examination of data for the management of this waste type shows that this waste arose in East Lindsey District and was managed at a facility operated by Sterling Pharma Solution in Dudley Northumberland.
- A total of 7,218 tonnes of gas cleaning waste (Air Pollution Control Residues (APCr)) (EWC 10 01 18 and EWC 19 01 07) arose from Sleaford Renewable Energy Plant (3,210 tonnes), and the EfW Plant at North Hykeham as a consequence of waste being combusted.
- 6,466 tonnes waste electrical and electronic equipment (WEEE) was consigned which consisted primarily of discarded electrical and electronic equipment (EWC 20 01 35) (5,176 tonnes) and discarded equipment containing chlorofluorocarbons (EWC 20 01 23) (1,289 tonnes). Comparison of the data for these wastes in the HWI with the dataset for outputs shown for Lincolnshire sites reporting through the WDI shows that over half of these waste (3,812 tonnes) actually arose from the HWRCs that solely receive LACW. These sites don't record inputs separately but it may be assumed that the majority of inputs arise from within Lincolnshire.
- 4,282 tonnes of oil and concentrates from treatment (EWC 19 02 07) arising from a single waste management facility (MRF) located at Caythorpe.
- 2,710 tonnes of oily waste from site drainage consists of emptyings from grit chambers and oil/water separators (EWC 13 05 07).

- 1,417 tonnes of waste from mechanical treatment of waste (EWC 19 12 11) appears in the HWI for the first time in 2019. Further examination of data for the management of this waste type shows that this arose in West Lidsey and went for recovery within West Lidsey. Examination of WDI input data shows that this waste was not managed through a permitted facility reporting through the WDI subsequently. This is confirmed by the WDI site output data, suggesting that the HWI is only recording an internal transfer between points of management for which additional management capacity would not be required.

### **Conclusion on Plan Area Arisings Composition**

- 2.14 The bulk of the hazardous waste arisings attributable to Lincolnshire for 2019 fall into eight categories. Of the arisings over 50% are attributed to a single waste type - bituminous mixtures containing coal tar. Direct enquiry of the Highway Authority has confirmed that this material is consigned into highway depots and then consigned on to its final fate, which is reincorporation into highway surfaces. Hence this value has been double counted. Moreover, given that this waste is initially stored at existing highway depots<sup>5</sup> and then recycled into road surfaces it will not require identification of additional waste management capacity, inclusion of the value would create a false picture of future demand.
- 2.15 In addition, in relation to the aqueous waste from industrial processes destined for off-site treatment, direct inquiry of the Environment Agency has revealed that none of this waste was reported as arising in Lincolnshire in 2020. Given that the value only appears in 2019 this has been considered to be a one-off arising, and hence this is not taken forward in the forecasting section of this report.
- 2.16 Finally, it is notable that a significant quantity of hazardous waste (12,917 tonnes) requiring management arises from waste management facilities within Lincolnshire as a consequence of waste being managed.
- 2.17 Taking the above into account a revised baseline arisings value of 51,600 tonnes has been taken for use in forward planning. This has been calculated as shown in Table 5 below:

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<sup>5</sup> These depots operate under permitting exemptions, so inputs are not reported through the WDI. This largely explains the significant discrepancy between the arisings values reported through the HWI and that generated from the WDI data.

**Table 5: Principal Hazardous Waste Types arising in Lincolnshire in 2019 inc revised (tonnes)**

Source: HWI 2019, Environment Agency

<b>Hazardous Waste Type/Source</b>	<b>Tonnes</b>	<b>Amended Value</b>
Construction, Demolition and Excavation Waste	74,779	9,650
Vehicle oils inc ELV components	9,775	-
Aqueous waste from industrial processes	8,294	0
Gas Cleaning Waste (APCr)	7,218	-
WEEE inc Fridges with CFCs	6,466	-
Oil and concentrates from treatment	4,282	-
Oily Waste from site drainage	2,710	-
Waste from mechanical treatment of waste	1,417	-
Remainder (sub 1000 tonnes)	10,082	-
<b>Totals</b>	<b>125,023</b>	<b>51,600</b>



### 3 Forecasting Future Hazardous Waste Arisings

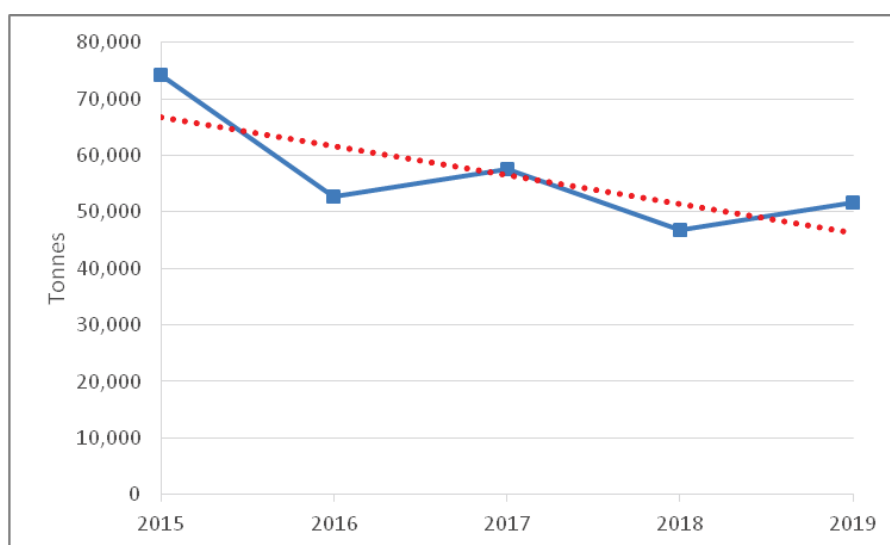
3.1 Planning Practice Guidance advises that future hazardous waste arisings be estimated by extrapolating time series data drawn from the HWI. However, given the findings of the composition assessment set out in the previous section, it is apparent that it would not be appropriate to simply extrapolate historical data to establish possible future trends. In particular it would not be appropriate to include two of the waste types (bituminous mixtures containing coal tar and aqueous waste from industrial processes) when determining trends in arisings. In order to ensure that the time series data is not distorted the values have been adjusted to exclude these wastes for all five years. The resulting values are displayed in final column of Table 6.

**Table 6: Hazardous Waste Arising In Lincolnshire By Year (tonnes)**

Source: HWI

Year	Initial value	Adjusted Value
2015	93,207	74,239
2016	69,505	52,834
2017	88,222	57,640
2018	82,316	46,723
2019	125,023	51,600

3.2 Plotting the adjusted values (see Figure 3) along with the data trend line, illustrates a falling trend in arisings over the 5 year period.



**Figure 2: Hazardous Waste arising (tonnes) in Lincolnshire as recorded by the HWI in 2015 to 2019 (adjusted).**

Source: HWI 2015-19

- 3.3 The annual growth rate implied by the trend is -2% per annum. If that were projected forward to the end of the Forecast period (2045), it would suggest that the tonnage of hazardous waste requiring management in the final year would have fallen to 30,700 tonnes.
- 3.4 While it is considered that overall arisings are likely to fall over the Forecast period, a simple reduction in arisings of 40% on the 2019 value by the end of the Forecast period based on the five year trend may not be reliable. In order to check the reliability and arrive at a forecast to help assess future management requirements based on waste type the factors affecting the production of each principal component of the hazardous waste stream in Lincolnshire have been assessed.

### **Forecasting Arisings of Lincolnshire Hazardous Waste by Type**

- 3.5 To discern possible trends the data for arisings of different types of hazardous waste over the past 5 years reported through the HWI has been reviewed and is presented in Figure 3.

### **Figure 2: Trends in Arisings of Principal Hazardous Waste Types Arising in Lincolnshire 2015-2019 (adjusted values)**

Source: Environment Agency HWI

3.6 The above data shows arisings overall are fairly static, excepting 2015 due to a anomalous value for oily waste from site drainage. In order to forecast arisings it is normal to correlate predicted economic activity in each sector over the Forecast period. However, this level of granularity does not exist in the economic forecasting undertaken for Lincolnshire in relation to the Waste Local Plan. Therefore qualitative consideration of likely trends in arisings in each of the principal components has been undertaken, as laid out below:

- C, D and E waste. There is a reasonable expectation that over time arisings of this component will reduce as historical land contamination (source of contaminated soils) is remediated and the amount of asbestos present in the building stock is removed. However, in the short to medium term it is expected to remain static overall, with year to year variation as specific brownfield contaminated sites are subject to redevelopment.
- Oils arising from conventional vehicle maintenance and depollution activities can be expected to fall with the transition to electric vehicles. Electric vehicles are expected to account for 20% of car sales at 2025<sup>6</sup>, with a ban on sales of conventional vehicles by 2035 now proposed by Government. While some of the current conventional vehicle stock will remain in use beyond 2035 the gradual shift can be expected to depress any growth in arisings in this sector.
- Gas Cleaning Waste (APCr) that arises from the combustion of waste is expected to remain stable unless additional capacity is developed during the Forecast period.
- While WEEE arisings can be expected to increase with growing sales of electronic devices in line with disposable income, the bulk of arisings currently requiring management as hazardous waste are fridges containing CFCs, and TV/monitor screens using CRT technology. Both technologies have been phased out, and hence the tonnage of this component can be expected to fall over time while the existing stock diminishes.
- Oil and concentrates from treatment arise from the operation of a single waste management site classed as a MRF. It is not clear why such significant quantities should arise from this single source but this is taken to remain static.
- Oily waste from site drainage: Given emptyings from grit chambers and oil/water separators will arise from petrol station forecourts and other industrial type sites including waste management facilities where oil bearing waste are handled (such as metal recycling sites undertaking vehicle depollution), arisings of this component can be expected to fall in line with the vehicle type transition discussed above.

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<sup>6</sup> Waste electric vehicle batteries are not classed as hazardous at present.

- Waste from mechanical treatment of waste. Given that the HWI appears to be recording an internal transfer for which additional management capacity would not be required this value may be disregarded for the purposes of forecasting.

3.7 Given the above it is considered prudent to apply a zero growth forecast on a conservative basis for the initial decade of the Forecast period (to 2030), with a fall of half percent per annum in the latter decade (2031 to 2040) and then a fall of one and half percent in the final five year period reflecting the factors discussed above. Given the principal types represent 90% of total arisings of hazardous waste in Lincolnshire in 2019, the other waste contributions have been held constant over the Forecast period. The growth forecasts based on these assumptions are presented in Table 7:

**Table 7: Forecast Hazardous Waste Arisings in Lincolnshire Extrapolating Sector Total**

Source: Baseline Arising plus discussion above

Shown for each Plan Milestone Year

Hazardous Waste Type/Source	2019	2025	2031	2035	2040	2045
Construction, Demolition and Excavation	9,658	9,658	9,610	9,372	9,140	8,475
Vehicle Maintenance inc ELV components	9,775	9,775	9,726	9,485	9,251	8,577
Gas Cleaning Waste (APCr) from the combustion of waste	7,430	7,430	7,393	7,210	7,032	6,520
WEEE inc Fridges with CFCs	6,466	6,466	6,433	6,274	6,119	5,674
Oil and concentrates from treatment	4,282	4,282	4,261	4,155	4,053	3,758
Oily Waste from site drainage	2,710	2,710	2,697	2,630	2,565	2,378
<b>Subtotal</b>	<b>40,322</b>	<b>40,322</b>	<b>40,120</b>	<b>39,127</b>	<b>38,159</b>	<b>35,382</b>
Other wastes	9,869	9,869	9,869	9,869	9,869	9,869
<b>Total Projected Arisings</b>	<b>50,191</b>	<b>50,191</b>	<b>49,989</b>	<b>48,996</b>	<b>48,028</b>	<b>45,250</b>

## Conclusion

3.8 It is considered that projecting the value of c51,500 tonnes forward to 2026 and then applying a declining growth rate through to 2045 to arrive at a final value of c 45,000 tonnes, reflects the best available data combined with an understanding of factors likely to affect arisings. These values have therefore been used to project capacity requirements based on an assessment of existing capacity within Lincolnshire and management routes followed, that follows.

## 4 Hazardous Waste Management Capacity in Lincolnshire

- 4.1 This section considers the availability of capacity within Lincolnshire for managing hazardous waste<sup>7</sup>. It provides the basis from which the existing baseline hazardous waste management capacity may be established and, subsequently, from which specific management capacity requirements might be identified.
- 4.2 Quantities of hazardous waste inputs to sites regardless of its origin recorded in the WDI have been used to assess existing capacity, instead of the HWI, because the HWI does not identify receiving sites, just the host WPA. Inputs to HWRCs have been ignored as they are accounted for in the LACW stream capacity assessment.

**Table 8: Lincolnshire Facilities accepting 100t or more of Hazardous Waste in 2019 (tonnes)**

Source: WDI, 2019 Environment Agency

Activity Type	Facility Name or Operator	Tonnes received
CFC removal and WEEE Treatment	Environcom Spittlegate Level Grantham	28,576
Physical Treatment of waste lamps	Balcan Engineering Banovallum Court, Horncastle	1,524
Oily Water Treatment	Alpheus Environmental Canwick Waste Treatment Centre	6,347
Clinical Waste Incineration	Lincolnshire EfW	2,072
End of Life Vehicle Depollution (Dedicated ELV depollution site)	Brown's Autobreakers, Quarry Ind Est, Waddington	732
End of Life Vehicle Depollution (Dedicated ELV depollution site)	I Mole Autospares, Old Wood, Skellingthorpe	132
End of Life Vehicle Depollution (Dedicated ELV depollution site)	Traynors Ltd, The Boundary, Grantham	2,132
End of Life Vehicle Depollution (Dedicated ELV depollution site)	Global Auto Salvage, Henry Lane, Bardney	699
End of Life Vehicle Depollution (Dedicated ELV depollution site)	Riverside Auto Breakers, Riverside Ind Est, Boston	126
End of Life Vehicle Depollution (Dedicated ELV depollution site)	Fenside Motors, The Workshop, Bourne	290
End of Life Vehicle Depollution (Dedicated ELV depollution site)	Windleys Salvage Ltd, Lodge Rd Tattershall	983
End of Life Vehicle Depollution (Metal Recycling site with ELV)	B W Riddle A T F And Scrap Yard, Bourne	655

<sup>7</sup> Based on the latest data available i.e. 2019

Activity Type	Facility Name or Operator	Tonnes received
End of Life Vehicle Depollution (Metal Recycling site with ELV)	EMR Beevor St, Lincoln	114
End of Life Vehicle Depollution (Metal Recycling site with ELV)	City Scrap Ltd Plot 7 (aka 6a ) Dale Street, Lincoln	2,853
End of Life Vehicle Depollution (Metal Recycling site with ELV)	T Shooter (Boston) Limited, Wyberton, Boston	1,304
Metal Recycling/WEEE ATF	Sims Group ATF & Fridge Storage Site Lincoln	4,316
Haz Waste Transfer	Rilmac Holding Skip Allenby R Ind Est Lincoln	188
Non Haz Waste Transfer	Sid Dennis & Sons Ltd, Holly Tree Farm, nr Skegness	198
Non Haz Waste Transfer	Mid UK Recycling, Recycling Centre, Mkt Deeping	2,323
Waste oil storage	Lincolnshire Waste Oil Ltd Whisby Way, Lincoln	5,109
<b>All Types</b>	<b>Total</b>	<b>60,673</b>

4.3 Comparing the total managed value reported in the WDI (c66,000 tonnes) Table 3, to the final arising value derived for Lincolnshire (c51,500 tonnes) suggests a greater amount of hazardous waste is managed within Lincolnshire than is produced. Therefore, on this basis it may be said that net self sufficiency in hazardous waste management overall in Lincolnshire was exceeded in 2019. Moreover, given the inputs to sites in 2019 may be lower than the actual site capacity as indicated by the peak input over a period or the theoretical capacity as defined by a planning consent or permit, a review of each site's capacity has been undertaken based on 3 years WDI data, and the Lincolnshire County Council list of sites. Where a site has a limit specified in planning it is used in preference to permit limits which are considered to be less reliable. Sites identified as non hazardous waste transfer stations have been ignored as any hazardous inputs will only be accepted on an incidental basis.

**Table 9: Notional Capacity of Facilities Permitted to Manage Hazardous Waste in Lincolnshire (tonnes)**

Source: WDI 2014-19 + Environment Agency Permit Listing, Lincolnshire CC Master Site Listing

Activity Type	Facility Name/Operator	WDI 5 yr peak	Planning /Permit Limit	Preferr ed Value	Comment
CFC removal and WEEE Treatment	Environcom Grantham	31,476	42,456	42,456	Tonnage in planning app but not conditioned
Physical Treatment of waste lamps	Balcan Engineering, Horncastle	1,960	4,999	1,960	WDI 5 yr peak
Oily Water Treatment	Alpheus, Canwick Waste Treatment Centre	87,849	n/a	8,785	WDI 5 yr peak. 10% of capacity assumed to be dedicated to haz, with remainder to C&I
Clinical Waste Incineration	Lincolnshire EfW	n/a	n/a	n/a	Capacity counted in LACW and C&I assessment
End of Life Vehicle Depollution (Dedicated site)	Brown's Autobreakers	1,040	125	1,040	WDI 5 yr peak
End of Life Vehicle Depollution (Dedicated site)	I Mole Autospare	367	2,500	367	WDI 5 yr peak
End of Life Vehicle Depollution (Dedicated site)	Traynors Ltd,	2,878	5,000	2,878	WDI 5 yr peak
End of Life Vehicle Depollution (Dedicated site)	Global Auto Salvage	699	74,999	699	WDI 5 yr peak
End of Life Vehicle Depollution (Dedicated site)	Riverside Auto Breakers	126	1,200	1,200	Planning Limit
End of Life Vehicle Depollution (Dedicated site)	Fenside Motors,	353	-	353	WDI 5 yr peak
End of Life Vehicle Depollution (Dedicated site)	Windleys Salvage Ltd	1,941	5,000	1,941	WDI 5 yr peak
End of Life Vehicle Depollution (Metal Recycler)	BW Riddle ATF & Scrapyard	n/a	n/a	n/a	Capacity counted in C&I assessment

Activity Type	Facility Name/Operator	WDI 5 yr peak	Planning /Permit Limit	Preferr ed Value	Comment
End of Life Vehicle Depollution (Metal Recycler)	EMR Lincoln	n/a	n/a	n/a	Capacity counted in C&l assessment
End of Life Vehicle Depollution (Metal Recycler)	City Scrap Ltd	n/a	n/a	n/a	Capacity counted in C&l assessment
End of Life Vehicle Depollution (Metal Recycler)	T Shooter (Boston) Ltd	n/a	n/a	n/a	Capacity counted in C&l assessment
Metal Recycling/WEEE ATF	Sims Group ATF & Fridge Storage Site Lincoln	n/a	n/a	n/a	Capacity counted in C&l assessment
Haz Waste Transfer (asbestos)	Rilmac Holding Skip	206	3,650	206	WDI 5 yr peak
Waste oil storage	LWOL Whisby Way	5,109	5,000	5,000	Planning Limit
<b>All Types</b>	<b>Total</b>	<b>n/a</b>	<b>n/a</b>	<b>66,885</b>	

4.4 Comparing the notional capacity value (c.67,000 tonnes) to the peak arising value for Lincolnshire at the start of the Forecast period (approx. 51,500 tonnes) suggests a surplus of management capacity (c94,500tpa) for hazardous waste exists within Lincolnshire.

#### Management Capacity Conclusion

4.5 Lincolnshire hosts a number of facilities that manage hazardous waste. The combined capacity offered by facilities within Lincolnshire that may be considered to be dedicated to the management of hazardous waste equates to at least 67,000 tonnes per annum. This includes a number of niche operators which provide capacity that can be considered strategically significant such as Envirocom at Grantham, Balcan at Horncastle (WEEE ATF), Alpheus at Canwick (Liquid Waste Treatment) and LWOL in Lincoln (Waste Oil Transfer for Recovery).

4.6 Given the overall capacity exceeds the total projected arisings of hazardous waste. this suggests that overall Lincolnshire will continue to be net self sufficient in hazardous waste for the Forecast period. Lincolnshire can also be expected to continue to make a contribution to regional needs, which is consistent with patterns for hazardous waste management given that, to be viable operations require a critical mass of waste that normally exceeds that produced within a single WPA area.



4.7 However, it is important to ensure that hazardous waste types produced within Lincolnshire in significant quantities will be adequately catered for throughout the Forecast period. For this reason the role of facilities beyond Lincolnshire in the management of certain types hazardous waste arising in the area but not catered for within Lincolnshire is considered in the following section.

## 5 Lincolnshire Hazardous Waste Management Routes

5.1 This section assesses the management routes followed by hazardous waste that arises in Lincolnshire. The HWI is used as the primary data source, but cross checked with the WDI to identify specific receiving sites where possible. This exercise is important to assess whether there are any apparent stresses in the current arrangements. It also identifies WPAs hosting receiving facilities with whom Lincolnshire should engage under the Duty to Co-operate to establish if the current patterns of management can continue for the Forecast period.

### Fate of Principal Waste Types

5.2 The initial assessment focuses on identifying the principal fates followed by the principal hazardous waste types arising in Lincolnshire in 2019 utilising the revised data presented in Table 5. The findings of this assessment is presented in Table 10 below. From this it can be seen that the only waste stream dependant on landfill for management is asbestos based C, D & E waste. It is reasonable to expect that arisings of this waste stream will decline over time as the amount in the building stock falls. Moreover provision of landfill capacity for this waste steam is less problematic as separate cells can be created within a non-hazardous waste landfill should the need arise.

**Table 10: Fate of Principal Hazardous Waste Types arising in Lincolnshire in 2019 as revised (tonnes)**

Source: HWI 2019, Environment Agency

Hazardous Waste Type/Source	Total Tonnes	Principal Fate Recovery	Principal Fate Treatment	Principal Fate Landfill	Principal Fate Transfer
Construction, Demolition and Excavation	9,650	2,785	189	3,657 (asbestos)	2,948
Vehicle Oils inc ELV components	9,775	7,305	0	0	2,000
Gas Cleaning Waste (APCr)	7,218	0	5,856	0	1,362
WEEE inc fridges with CFCs	6,466	3,121	0	0	3,328
Oil and concentrates from treatment	4,282	4,249	0	0	0
Oily Waste from site drainage	2,710	1,804	184	0	1,364
Waste from mechanical treatment of waste	1,417	1,350	0	0	0

### Destination of Lincolnshire Waste Managed outside Lincolnshire

- 5.3 According to the HWI, of the 125,023 tonnes of hazardous waste produced in Lincolnshire in 2019, 46,646 tonnes ultimately left Lincolnshire for management. The HWI shows that facilities receiving hazardous waste from Lincolnshire were located in 99 WPA areas. Applying a significance threshold to a movement, whereby WPAs receiving 500 tonnes or more of hazardous waste per fate are considered, reduces the number of receiving WPAs down to 13 (as shown in Table 11).
- 5.4 Table 11 shows that North Tyneside is the principal recipient (8,174 tonnes) of hazardous waste from Lincolnshire, followed by Northamptonshire (6,043 tonnes), Kingston upon Hull (5,369 tonnes), Leeds (4,202 tonnes), Cambridgeshire (3,304 tonnes) and Peterborough (3,045 tonnes). These WPAs together account for nearly 70% of exports. The receiving WPAs are ranked in Table 11 according to the WPA tonnage (vertical).

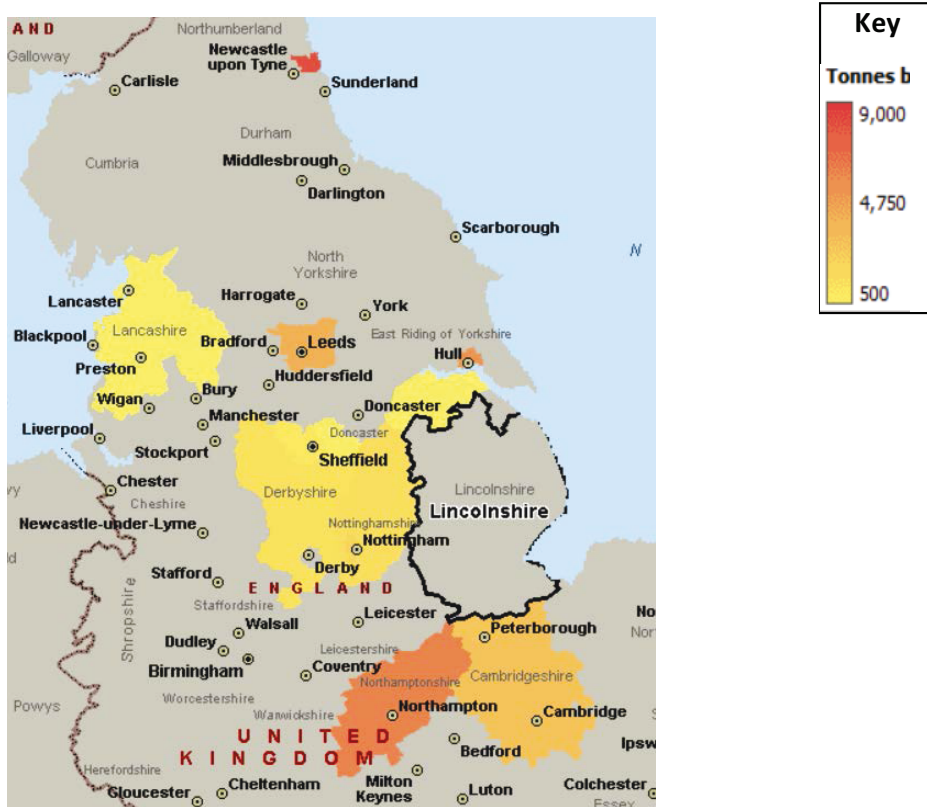
**Table 11: WPAs receiving 500 tonnes + of Hazardous Waste from Lincolnshire per fate (in rank order)**

Source: HWI 2019 Environment Agency

Deposit WPA	Recovery	Treatment	Landfill	Transfer for Recovery	Transfer for Disposal	Grand Total
North Tyneside	0	8,174	0	0	0	8,174
Northamptonshire	117	1,954	69	2,373	1,530	6,043
Kingston Upon Hull	5,019	0	0	323	27	5,369
Leeds	5	3,638	0	164	31	4,202
Cambridgeshire	2,908	25	248	62	61	3,304
Peterborough	0	0	3,001	39	5	3,045
Nottingham City	2,443	0	0	20	4	2,467
Nottinghamshire	1,356	0	0	201	334	1,892
Derbyshire	1,027	79	255	180	124	1,665
Sheffield	124	1,031	0	233	38	1,427
North Lincolnshire	0	0	67	656	0	723
Lancashire	619	0	24	59	0	702
Rotherham	136	0	0	513	1	650

- 5.5 These WPAs have been mapped on Figure 4 below with an indication of how much hazardous waste from Lincolnshire is being managed in their respective areas.

**Figure 3: Map of Waste Planning Areas Receiving 500 t or more of Hazardous Waste from Lincolnshire**



## 6 Conclusion on Lincolnshire's Hazardous Waste Management Capacity Requirements

- 6.1 Approximately 51,500 tonnes of hazardous waste was produced in Lincolnshire in 2019. This is predicted to fall to c45,250 tonnes by the end of the forecast period. Currently all reported hazardous waste arising in Lincolnshire appears to be effectively managed and there are no obvious stresses in the system.
- 6.2 The capacity assessment indicates that the combined notional capacity of the principal sites receiving hazardous waste in Lincolnshire is around 67,000 tpa, indicating a theoretical 'surplus' of waste management capacity for the management of Lincolnshire's hazardous waste during the whole of the forecast period assuming all sites identified continue to offer capacity for the duration. It is recommended that the sites continue to be safeguarded through policy whereby potential loss of capacity, through either redevelopment or constraints, is discouraged unless equivalent compensatory capacity is provided. This would be an expansion of the protection conferred by Policy W8 of the adopted Lincolnshire MWLP Core Strategy (June 2016).
- 6.3 Notwithstanding the above, given the varying management requirements of particular waste types it is recommended that the continued availability of capacity at facilities outside the Plan area currently managing significant quantities for the forecast period be confirmed under the Duty to Cooperate through contact with the host Waste Planning Authorities named in Table 11. If such engagement suggests that certain types of waste cannot continue to be managed at certain facilities in future, then this may require Lincolnshire to plan for the management of that specific waste type within its own boundaries.