

Lincolnshire Minerals and Waste Local Plan Evidence Base

Lincolnshire Waste Needs Assessment 2021 -
Report 3

Lincolnshire Management Requirements for
Construction, Demolition and Excavation Waste

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Abbreviations and Glossary

Abbreviations

Abbreviation	Explanation
BRE	Building Research Establishment
C, D & E Waste	Construction, Demolition and Excavation Waste
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EfW	Energy from Waste
EWC	European Waste Catalogue
LCC	Lincolnshire County Council
NPPF	National Planning Policy Framework
nPPG	National Planning Practice Guidance
MRS	Metal Recycling Site
rWFD	Revised Waste Framework Directive
SWMP	Site Waste Management Plans
WDI	Waste Data Interrogator
WNA	Waste Needs Assessment
WPA	Waste Planning Authority
WRAP	Waste Resources Action Programme

Glossary of Terms

Term	Explanation
Backfilling	Any recovery operation where suitable non- hazardous waste is used for purposes of reclamation in excavated areas or for engineering purposes in landscaping. Waste used for backfilling must substitute non-waste materials, be suitable for the aforementioned purposes, and be limited to the amount strictly necessary to achieve those purposes. (Revised Waste Framework Directive)
Construction, Demolition and Excavation Waste	Waste arising from construction and demolition activities, including excavation during construction, mainly consisting of inert materials such as soils, stone, concrete, and brick. This waste stream also contains non-inert elements such as wood, metals, plastics, cardboard and plasterboard.
Energy from Waste	The conversion of the calorific value of waste into energy, normally heat or electricity through applying thermal treatment. May also include the production of a syngas that can be used as an energy source.
Hazardous Waste	Waste requiring special management under the Hazardous Waste Regulations 2005 due to it posing potential risk to public health or the environment (when improperly treated, stored, transported or disposed) due to its concentration, or other characteristics e.g.toxicity
Inert Landfill	Landfill site permitted to only accept inert waste for disposal.
Inert Waste	Waste not undergoing significant physical, chemical or biological changes following disposal, and does not pollute surface or groundwater.
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).
LCC data sources	Compilation of site monitoring/planning records/estimates held by LCC
Local Aggregate Assessment	Annual assessment of aggregate availability and demand produced by each Mineral Planning Authority as required by the National Planning Policy Framework (NPPF)
Non Hazardous Landfill	A landfill permitted to accept non-inert (biodegradable) wastes e.g. household and commercial and industrial waste. Will also accept some inert waste. May only accept hazardous waste if a special cell is constructed.
Non Inert	Waste that is potentially biodegradable or may undergo significant physical, chemical or biological change once landfilled.
Recovery	Subjecting waste to processes that recover value including recycling, composting or thermal treatment to recover energy.
Recovery to land	Activities involving the permanent deposit of inert waste for specific purposes not classed as disposal. Generally subject to environmental permitting. May include backfilling of mineral workings (see backfilling).
Recycled Aggregate	Aggregates produced from construction and demolition waste such as crushed concrete, screened soils and planings from tarmac roads.
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
2. Commercial and Industrial Waste
3. Construction, Demolition and Excavation Waste
4. Hazardous Waste and
5. review of management requirements for 'Other Waste'.

This report is concerned with estimating Lincolnshire's future management requirements for Construction, Demolition and Excavation (C, D & E) Waste

1.2. The National Planning Practice Guidance chapter on Waste states that: "*Planned provision of new capacity and its spatial distribution should be based on robust analysis of best available data.*" (emphasis added) (Para 035). Therefore, this report is based upon a robust analysis of what be considered the "best available data" relating to C, D & E waste production and management.

1.3. Construction, Demolition and Excavation waste is described in the adopted Lincolnshire Minerals & Waste Local Plan (2016) as follows:

"wastes come from a wide range of new build and regeneration projects as well as road schemes and railway maintenance. Construction and Demolition wastes include structural and groundworks waste (bricks, asphalt, concrete, insulation material) and fittings (wood, plastic, glass, metal). Most of the waste is chemically inert but insulation materials are usually hazardous because they contain asbestos. Excavation waste is primarily soil and stones. As they are often bulky and of low value, these wastes tend to be recycled or re-used at or close to where they are created."

It should also be noted that waste arising from construction and demolition activities in particular may contain non-inert elements such as wood, metals, plastics, cardboard and plasterboard. Hazardous waste can arise from construction, demolition and excavation but as this is accounted for separately in the hazardous waste report, it is not considered in this report. For clarity the definition presented in the glossary to this report has been used.

1.4. This report reviews and updates the evidence base¹ supporting the review of the adopted Lincolnshire Minerals & Waste Local Plan (2016), using the following methodology:

1. Estimating C, D & E waste baseline arisings
2. forecasting arisings to 2045
3. profiling the existing management method; and,

¹ As set out in Lincolnshire Waste Needs Assessment Update 2017

4. identifying future management requirements by applying C, D & E waste management targets.

The approach taken, and the results, are described in detail in the following sections.

2. Estimating C, D & E Waste Baseline Arisings

Context

2.1. The Lincolnshire Waste Needs Assessment Update 2017 estimated that 670,647 tonnes of C, D & E waste was being produced in Lincolnshire each year. This was split between construction and demolition waste at 254,058 tonnes and excavation waste at 416,589 tonnes and was calculated using data from the Environment Agency Waste Data Interrogator (WDI) for 2015.

Methodology

2.2. The national methodology for estimating annual waste generation from the Construction, Demolition and Excavation (C,D & E) Sectors for England² uses information collected relating to four principal management routes:

1. Waste dealt with by transfer and treatment facilities (reporting through Environment Agency WDI)
2. Waste sent to landfill (reporting through Environment Agency WDI)
3. Waste managed at sites exempt from environmental permitting, referred to as 'exemptions'.
4. Waste recycled as aggregate (from national estimates produced by the Mineral Products Association)

2.3. The methodology applies a calculation relating to these management routes which, in summary, is as follows:

C, D & E waste generation =

- Inputs to final fate (ultimate point of management) permitted facilities (landfill and recovery to land operations) +
- outputs from intermediate permitted facilities (such as waste transfer sites) +
- inputs to final fate exemptions (facilities exempt from requiring an environmental permit for waste management) +
- the quantity of recycled aggregates produced.

2.4. In order to assess C, D & E waste arisings at Plan area level, the following data have been used:

- The number and type of exempt sites registered in Lincolnshire has been established through the Environment Agency exemption register. Then an

² This methodology was devised to report on progress made towards meeting the revised Waste Framework Directive (rWFD) target for C&D waste management
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/400594/CDE-generation-methodology.pdf

estimated value for the quantity of waste³ managed at the principal exemption type managing C, D & E waste ('U1'⁴) was applied; and,

- the quantity of waste converted into recycled aggregate has been estimated from inputs to sites accepting C, D & E waste rather than from the national estimates produced by the Mineral Products Association. This is in the absence of responses to an annual survey of recycled aggregate producers normally undertaken as part of compilation of an annual Local Aggregate Assessment for Lincolnshire.

2.5. The key steps in the methodology are:

Calculate total inputs of waste with European Waste Catalogue (EWC) codes which cover C, D & E waste, arising in Lincolnshire, to all permitted facilities

- Deduct EWC codes relating to hazardous waste (counted elsewhere).
- Deduct inputs of C, D & E waste to Lincolnshire intermediate facilities whose outputs are managed at 'downstream' permitted sites to avoid double counting.
- Add amount of inputs to intermediate sites that may be converted to recycled aggregate sold on as a product.
- Add waste managed at sites within Lincolnshire not attributed within the WDI below regional level
- Add figure for C, D & E waste sent to Energy from Waste (EfW) (if any)
- Add quantity of C, D & E waste estimated to be managed at exempt sites
- Sum the above to gain an overall figure

2.6. C, D & E waste is taken to comprise of wastes falling within the following List of Waste/European Waste Catalogue codes:

- Chapter 17 (Construction and Demolition Waste)
- 19 12 09 (minerals such as sand, stones)
- 20 02 02 (soil and stones)

2.7. The above methodology is applied in detail in the sections below.

³ This estimated value is derived from Waste Resources Action Programme (WRAP), 2013, *Review of the Factors Causing Waste Soil To Be Sent To Landfill; 2007 to 2011*.

⁴ The U1 permitting exemption covers the use of limited tonnages of specified inert waste in construction.

Total C, D & E waste arising in Lincolnshire, Managed at Permitted Facilities

Step 1: Calculate the tonnage of C, D & E waste from Lincolnshire in the Environment Agency WDI sent to permitted site exc hazardous wastes.

2.8. The total quantity of C, D & E waste exc hazardous, reported in the WDI 2019 as arising from Lincolnshire managed at permitted sites in 2019 is shown to be just over 1 million tonnes (1,057,805 tonnes). The breakdown and management routes are shown in Data Line 3 of Table 1 below. Waste identified as going to combustion is dealt with in a subsequent step so has been excluded from Table 1.

Table 1: C, D & E Waste from Lincolnshire Managed through Permitted Sites (tonnes)

Source: WDI 2019 excluding combustion

Destination	Non Haz Landfill	Inert Landfill	Recovery to Land	Metal Recycling Sites	Transfer	Treatment	Total
Lincolnshire arisings managed at Lincolnshire sites	163,020	77,773	20,759	20,971	281,071	134,563	698,156
Lincs arisings managed at sites outside Lincs	46,972	40,654	16,502	6,501	84,613	164,298	359,649
Totals	209,992	118,427	37,261	27,472	365,684	298,860	1,057,805

Step 2: Quantify waste going to its final fate or leaving the Plan area

2.9. As inputs to Landfill (non-hazardous and inert) and Recovery to Land involve the permanent deposit of the waste, they are regarded as final points of management, so these values are taken as final as follows: = 328,419 (209,992 + 118.427) + 37,261= 365,680 tonnes.

Table 2: Running total of C, D & E waste arisings from Lincolnshire 2019

Source: Table 1 Permanent Deposit

Component	Value (tonnes)	Cumulative Total (tonnes)
Permanent Deposit	365,680	365,680

2.10. As shown in Figure 1 below, waste from Lincolnshire managed at intermediate sites outside Lincolnshire ceases to be identified as coming from Lincolnshire once it has been received at the intermediate management facility. Hence the tonnage reported as sent to intermediate sites outside Lincolnshire for management is also taken to be a 'final value' as follows. $6,501 + 84,613 + 164,298 = 255,412$ tonnes. This is shown in Table 3.

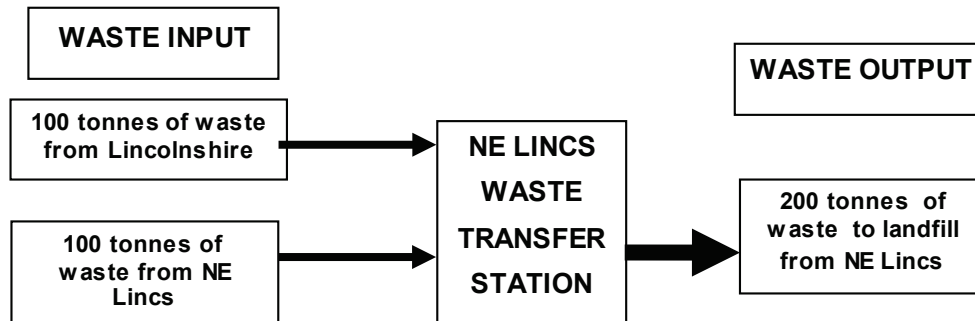


Figure 1: Schematic illustrating flows of Lincolnshire waste to sites outside Lincolnshire as reported in WDI

Figure 1 shows example inputs and outputs for a NE Lincs Waste Transfer Station:

- Waste Inputs = 100 tonnes of waste from Lincs + 100 tonnes of waste from NE Lincs.
- Waste Outputs = 200 tonnes of waste to landfill from NE Lincs.

Table 3: Running total of C, D & E waste arisings from Lincolnshire 2019

Source: Table 2 plus managed outside Lincolnshire

Component	Value (tonnes)	Cumulative Total (tonnes)
Permanent Deposit	365,680	365,680
Managed Out of Lincs	255,412	621,092

Step 3: Combustion plants taking C, D & E type waste from Lincolnshire.

2.11. The WDI 2019 shows waste going to combustion plant, incinerators and energy from waste plants. This reports 28,528 tonnes of C, D & E waste from Lincolnshire being managed in Immingham. Closer examination of the records reveals that the waste is in fact plasterboard waste being managed at the Knauf plasterboard production plant. Direct enquiry of the Environment Agency confirms that while the receiving site is classified as combustion in the WDI, because of the nature of the environmental permit that applies to the site, that waste is not actually going for combustion, rather it would be accepted as a feedstock to the plasterboard production process. Given that the site is located outside of Lincolnshire this tonnage has been added to the arisings value following the same logic as applied to waste managed outside of Lincolnshire category in Step 2. Other than inputs to the Knauf plant, no C, D & E waste is identified as going for use as a feedstock to combustion plant reported through the WDI.

Table 4: Running total of C, D & E waste arisings from Lincolnshire 2019

Source: Table 4 plus Combustion

Component	Value (tonnes)	Cumulative Total
Permanent Deposit	365,680	365,680
Managed Out of Lincolnshire	255,412	621,092
Inputs to 'Combustion' aka Knauf	28,528	649.620

Recycled Aggregate Production

Step 4: Estimating recycled aggregate production in Lincolnshire.

2.12. The quantity of waste converted into recycled aggregate is normally estimated through the annual survey of recycled aggregate producers for recycled aggregate sales conducted by the County Council as minerals planning authority and reported through its annual Local Aggregate Assessment. However, due to the poor quality of data obtained, reliance is placed on the WDI reported inputs of C,D & E type waste to known recycled aggregate production sites in the LAA. On this basis the throughput of waste to sites that carry out recycled aggregate production was reported in the Lincolnshire LAA (published in December 2019 (reporting 2018 data)) as being 242,218 tonnes although the LAA acknowledges that a "*..potentially significant volume of (recycled) aggregates may be produced through exempt sites*". The WNA Update 2017 does not include an estimation for recycled aggregate production.

2.13. Given that inputs of C, D & E waste to permitted sites do not necessarily represent actual outputs of recycled aggregate, the inputs of this waste stream to Lincolnshire treatment and transfer sites that might be suited to conversion into products have been assessed. This shows the following:

- 14 treatment sites received a total of c40,000 tonnes of bricks, concrete, and mixed hardcore. In addition they received 13,250 tonnes of mixed C&D waste e.g. skip waste. If 80% of mixed skip waste is taken to be hardcore that gives an overall total of 53,000 tonnes of suitable feedstock
- 5 transfer sites received a total of c2,000 tonnes of bricks, concrete, and mixed hardcore. In addition they received 51,000 tonnes of mixed skip waste. If 80% of mixed skip waste is taken to be hardcore that gives a total of 42,600 tonnes of suitable feedstock
- 4 sites received c16,000 tonnes of asphalt
- 8 sites received a combined tonnage c 180,000 tonnes of soil

When non Lincs inputs are deducted it leaves an overall total of 93,324 tonnes of hard materials (including 80% adjustment on mixed) plus 176,932 tonnes of soils. As shown in Table 5 below. The site by site breakdown is presented in Appendix 1.

Table 5: Quantities of suitable C, D & E waste converted into Recycling Aggregate at Lincs Permitted sites 2019 (total tonnes received)

Source: WDI 2019

Site Type	Hard Materials inc 80% mixed and asphalt	Soil	Hard Materials inc 80% mixed and asphalt	Soil
Transfer	45,073	111,794	45,073	111,794
Treatment	71,021	68,798	48,252	65,139
Total	116,094	180,592	93,324	176,932

2.14. It has been estimated that 70% of soils input is converted into material suitable for use as a product. This assumption is based upon reported levels being achieved by soil processing sites operational in Lincolnshire. Two of the four main recyclers that manage the greatest proportion of the soil waste stream are utilising wash plants with the remainder having reclaimed soils as a significant part of their operations (one having also more recently invested in a wash plant). Therefore in addition to 95% of hard materials (based on estimated 5% loss from metal rebar from reinforced concrete) this suggests

that up to c212,500 tonnes (123,800 + 88,650),of C,D & E waste ceases to be declared as waste when leaving Lincolnshire's intermediate processing sites. The value arrived at, compares with the operational capacity for recycled aggregate production within the county which has been determined to be c742,500 tpa., suggesting a c28% capacity utilisation rate.

2.15. In addition to the materials generated at permitted sites reporting through the WDI as C & D waste feedstock, an amount of feedstock material may also be managed through operations that are exempt from permitting as recognised in the LAA. In particular those that operate under the T7 exemption that covers activities involving the treatment by crushing, grinding or reducing in size of concrete, bricks, tiles and ceramics or mixtures of these materials (other than those containing dangerous substances, i.e. '17 01 06 mixtures'). These exemptions are registered with the local authority in whose area the plant is based. Such T7 activities typically involve the use of small-scale/micro crushers and can include some mobile plant and are exempt if they satisfy all of the following specific conditions:

- No more than 20 tonnes of waste are treated over any period of one hour
- No more than 200 tonnes of waste are stored at any one time
- The treatment is carried out at the place where the waste was produced or at the location where the processed material is to be used.

A search of the online registers kept by the local councils in Lincolnshire only indicated a single T7 exemption registered; that being in South Holland for CER Groundworks. This single exemption is not considered to make a significant contribution to recycled aggregate production.

Table 6: Running total of C, D & E waste arisings from Lincolnshire 2019

Source: Table 5 plus Recycled Aggregate

Component	Value (tonnes)	Cumulative Total (tonnes)
Permanent Deposit	365,680	365,680
Managed Out of Lincolnshire	255,412	621,092
Inputs to 'Combustion' aka Knauf	28,528	649.620
Recycled Aggregate Production	212,500	862,120

Lincolnshire C, D & E Waste going to other Exempt sites

Step 5: Apply factor for C, D & E type waste going to Lincolnshire registered exemptions.

2.16. The national *Planning Practice Guidance* (nPPG) advises that "*..when forecasting construction and demolition waste arisings, the following may be relevant:*

- *the fact that a sizeable proportion of construction and demolition waste arisings are managed or re-used on-site, or exempt sites, so it is critical that some provision is made for unseen capacity in this way."* Paragraph: 033 Reference ID: 28-033-20141016 (emphasis added)

2.17. The quantity of C, D & E waste managed through exemptions has changed since Regulations were introduced in 2011 which substantially reduced the maximum quantities from 50,000 tonnes to 5,000 tonnes. Despite this, some consideration is still taken of the contribution such activities may make to management of this stream, and hence to the calculation of arisings.

2.18. Paragraph U1 exemptions (that cover the use of limited tonnages of specified waste in construction) potentially account for the most significant quantities of C, D & E waste going to a final fate, as it relates to the use of waste in construction, which would primarily be hardcore from demolition used to create hard standing/roads or soils used in the construction of bunds. A report produced for WRAP⁵ estimated a mean quantity of waste managed by U1 exemptions as 600 tonnes per exemption. The number of U1 exemptions registered in the Plan Area involving waste from non-agricultural origins in 2017-2019 was 188 (see Table 7).

Table 7: Count of U1 exemptions with live registrations in Lincolnshire at end 2019

Exemption	2017	2018	2019	Total
Paragraph U1	41	86	61	188

2.19. Dividing this value across the three years gives an annual value of 62⁶. Applying the value of 600 tonnes per exemption to this number gives an estimated total tonnage from U1 exempt sites in Lincolnshire of 37,600 tonnes. This addition to the arisings total is shown in Table 8.

⁵ WRAP, 2013, *Review of the Factors Causing Waste Soil To Be Sent To Landfill*; 2007 to 2011

⁶ A survey undertaken by Surrey County Council of selected registered exemptions in Surrey indicated a high degree of redundancy in exemption registrations and that exemptions may only be used in the year in which they are registered.

Table 8: Running total of C, D & E waste arisings from Lincolnshire 2019
Source: Table 7 plus Exemptions

Component	Value (tonnes)	Cumulative Total (tonnes)
Permanent Deposit	365,680	365,680
Managed Out of Lincolnshire	255,412	621,092
Inputs to 'Combustion' aka Knauf	28,528	649,620
Recycled Aggregate Production	212,500	862,120
Input to U1 Exemptions	37,600	899,720

Accounting for Non Attributed Waste

Step 6: Accounting for tonnage attributed to regional level only.

2.20. The WDI 2019 reports total inputs of non hazardous C, D & E type waste to Lincolnshire sites having only been coded down to regional level as 5,571 tonnes. This input predominately arises from East of England (4,150 tonnes) and East Midlands (2,486 tonnes). Given that Lincolnshire falls within the East Midlands region, it may be assumed that waste coded to East Midlands managed at sites in Lincolnshire may actually relate to waste arising within Lincolnshire. Examination of the data shows that waste attributed to East Midlands was received at two sites with the tonnage received at each is shown in Table 9.

Table 9: C, D & E Waste inputs not attributed below local regional level to Lincolnshire Sites

Source: EA WDI 2019

Site	Value (tonnes)
The Scrapyard, Hemingby Lane, Horncastle	1,768
Colsterworth Landfill	718

Table 10: Running total of C, D & E waste arisings from Lincolnshire 2019

Source: Table 9 plus C, D & E Waste to Lincolnshire Plan Area Sites not attributed below regional level

Component	Value (tonnes)	Cumulative Total
Permanent Deposit	365,680	365,680
Managed Out of Lincolnshire	255,412	621,092
Inputs to 'Combustion' aka Knauf	28,528	649,620
Recycled Aggregate Production	212,500	862,120
Input to U1 Exemptions	37,600	899,720
Lincolnshire site inputs at Regional level only	2,486	902,206

2.21. The baseline arisings value generated from this exercise is shown above in Table 10 as c900,000 tonnes.

Discussion of C, D & E Waste Arising Baseline value

2.22. The baseline arising value generated of 900,000 tonnes for 2019, is significantly higher than the estimate cited for arisings in 2015 for Lincolnshire in the WNA Update 2017 of 670,647 tonnes. It is not entirely clear how the 2015 value was arrived at, other than it relied on data from the WDI. Given that, the baseline value arrived at in this report has been generated through the application of a tried and tested methodology it is considered to be relatively robust and to constitute a value based on the best available datasets. It is therefore proposed that this value be used as the starting point from which Lincolnshire's future management requirements for C, D & E waste be based.

3. C, D & E Waste Arising and Management Forecasts

3.1. Having established a baseline value for C, D & E Waste arisings in Lincolnshire, the future management capacity requirement has been determined by:

1. Deciding how much waste may be produced in future; and
2. How that waste might be managed.

3.2. The section that follows addresses both in turn. The latter point requires assessment of how the Plan might wish the waste to be managed through exerting influence on the types of capacity that come forward. For example, the estimate takes into account the level of recycling of C, D & E waste being aimed for.

Developing a C, D & E Waste Arising Forecast for Lincolnshire

3.3. The National Planning Practice Guidance on Waste⁷ recommends as follows:

"Waste planning authorities should start from the basis that net arisings of construction and demolition waste will remain constant over time as there is likely to be a reduced evidence base on which forward projections can be based for construction and demolition wastes. However, when forecasting construction and demolition waste arisings, the following may be relevant:

1. *annual existing returns from waste management facilities*
2. *data from site waste management plans (SWMPs) (where available)*
3. *the fact that a sizeable proportion of construction and demolition waste arisings are managed or re-used on-site, or exempt sites, so it is critical that some provision is made for unseen capacity in this way*
4. *any significant planned regeneration or major infrastructure projects over the timescale of the Plan."*

3.4. In view of the fact that the baseline generation exercise has accounted for points 1 (EA WDI) and 3 (exemptions), and there appears to be no additional data available from SWMPs, all that is left to consider is whether any significant planned regeneration or major infrastructure projects are scheduled to occur up to 2045.

Major Infrastructure Projects

3.5. The Lincolnshire Local Aggregate Assessment 2019 identifies a number of matters which are predicted to put increased pressure on the supply of aggregates from Lincolnshire. These include:

- Housing delivery across Lincolnshire: Includes in the region of 3,500 additional homes per annum (2011/12-2031/36) whilst noting that "*Despite*

⁷ Paragraph: 033 Reference ID: 28-032-20141016

the aspirations of Local Plan provision, housebuilding in Lincolnshire has seen a steep decline of almost 50% in completions from a high of 4,525 in 2007 to the current figure of 2,711 in 2017'.

- several infrastructure projects are identified but these are all scheduled to be completed within a few years so cannot be looked to as an indicator of future demand for management capacity.

Conclusion

Given the lack of expectation that specific planned regeneration or major infrastructure projects will give rise to additional C & D, E waste management needs over the timescale of the Plan, it is considered that a zero growth forecast ought to be the starting point as advised by the nPPG.. The nPPG advice is provided with due cognisance for the pressure for waste minimisation and reduction in off site management driven by:

1. The landfill tax improving site waste segregation and driving cost savings;
2. the continued use of Site Waste Management Plans as industry best practice;
3. the use of standards for new buildings and benchmarks for material usage and wastage from construction;
4. the tightening of regulatory control over the permanent deposit of waste on land;
5. the reduction in bulk of the building stock that may be demolished i.e. Victorian housing with internal brick wall replaced by stud walls; and
6. the drive to use recycled aggregates in construction, encouraging the processing of suitable arisings on the site of their production which aren't counted in the method used to derive the baseline value⁸.

3.6. Given the above factors, a drop in arisings might be expected however it is considered reasonable to assume that the downward pressure is likely to be offset by projected house building growth rates. Therefore a static growth rate is proposed; that is to say it has been assumed that arisings of C, D & E waste in Lincolnshire will amount to c900,000 tpa for the duration of the forecast period.

⁸ Data provided by the National Federation of Demolition Contractors indicates that 55% of demolition waste arising is managed on the site of production

4. C, D & E Waste Targets

4.1. The Lincolnshire Minerals and Waste Local Plan will have an underlying strategy reflecting the aspiration of how Lincolnshire County Council would wish to see future C, D & E Waste arisings managed within its area. This is normally achieved by setting targets for the management of proportions of a particular waste stream, which once converted into tonnages provide a basis against which management capacity requirements may be determined.

Baseline Profile

4.2. To assess the management requirement it is first necessary to understand how the C, D & E Waste produced within the Plan area is currently managed. By assessing the different management elements that contribute towards the baseline value it is possible to generate an existing management profile for this waste stream as presented in Table 11.

Table 11: C, D & E Waste Management Profile Actual Data 2019

Route	Purpose	Tonnes	%
Recycling and reuse	Recycled Aggregate (Table 11)	212,500	n/a
Recycling and reuse	Other Recycling (MRS inc reg+ Knauf) (Table 1+Table 11)	56,000	n/a
Recycling and reuse	Subtotal Recycling and Reuse	268,500	29%
Recovery	Exemptions (Table 11)	37,600	n/a
Recovery	Recovery to Land (Table1 Recovery to Land Total)	37,261	n/a
Recovery	Inert Landfill (backfill of mineral workings) (Table 1)	118,427	n/a
Recovery	Subtotal Recovery	193,288	21%
Non Inert Landfill	Restoration (Input of soil and stones plus hardcore for operational needs from Table 1)	209,992	n/a
Non Inert Landfill	Subtotal Non Inert Landfill	209,992	23%
Unknown	Exported to Treatment and Transfer Table 1	248,911	27%
All Routes	Total	920,691⁹	100%

4.3. Table 12 gives the following management profile for C. D & E Waste arising in Lincolnshire in 2019.

- 29% re-used and recycled,
- 21% recovered in some other way, and
- 23% going to landfill as restoration and engineering material
- 27% exported for treatment or transfer.

⁹ includes an element of double counting so does not correspond to baseline value of c902,000 tonnes

4.4. Given the significant contribution that the unknown component exported for treatment and transfer makes to the management of Lincolnshire C, D & E waste it is necessary to look further at the ultimate fate of the waste accepted at sites for treatment and transfer. As the WDI reports the fate that outputs follow when leaving a particular facility it is possible to identify a profile for the management route for the outputs of each facility type. The 415,634 tonnes of C, D & E waste arising in Lincolnshire ‘treated’ or transferred in Lincolnshire waste management facilities, was received at a total of 20 sites. After deduction of 35,000 tonnes of C,D & E waste managed at HWRC , as this is counted as LACW, these can be classified into 4 broad types according to the type of permit they hold as follows:

- Inert Waste Transfer/Treatment
- Material Recycling Facility
- Physical Treatment Facility inc Treatment of waste to produce soil & inert waste transfer and treatment
- Mixed Waste Transfer with Treatment.

The outcome of the exercise is shown in Table 12 below:

Table 12: Waste Management Profile by Fate for Lincs Transfer & Treatment Facilities receiving Lincs C, D & E Actual Data 2019 (tonnes)

Facility Type	Landfill	Recovery	Transfer	Treatment	Total
Mixed Waste Transfer or Treatment	4,631	115,054	12,698	154	132,537
Material Recycling Facility	0	5,293	0	0	5,293
Inert Waste Transfer or Treatment	0	213,404	0	0	213,404
Physical Treatment Facility	0	29,447	0	0	29,447
Total	4,631	363,198	12,698	154	380,681
Percentage	1%	95%	3%	0%	100%

4.5. Table 12 gives the following management profile for C, D & E Waste arising in Lincolnshire managed at Lincolnshire treatment and transfer sites in 2019.

- 1% going to landfill as restoration material or operational use
- 95% recovered in some other way and
- 3% going for onward transfer or treatment classed as ‘unknown’

Given there is no reason to suggest a similar management profile would not apply to the treatment and transfer facilities outside Lincolnshire, at which 248,911 tonnes of C, D & E Waste arising in Lincolnshire was managed, the same profile has been taken to apply. Analysis of the materials identified as

going to 'recovery' as a fate indicates that around 32% of this would be suitable for aggregate recycling rather than placement to land due to being hard rather than soft, with 15% being suited for recycling as separate materials. The factors derived for the profile of fates of Lincolnshire C,D & E waste going to intermediate treatment facilities shown above were applied to the total exported to intermediate treatment and transfer facilities in 2019 shown in Table 1 giving the revised overall management profile for Lincolnshire C, D & E waste shown in Table 13.

Table 13: C, D & E Waste Management Profile plus Treatment split - Actual Data 2019

Route	Purpose	Tonnes	%
Recycling and reuse	Recycled Aggregate (Table 11)+export	286,063	n/a
Recycling and reuse	Other Recycling (MRS inc reg+ Knauf) (Table 1+Table 11)+export	90,536	n/a
Recycling and reuse	Subtotal Recycling and Reuse	376,599	41%
Other Recovery	Exemptions (Table 11)	37,600	n/a
Other Recovery	Recovery to Land (Table 1 Recovery to Land Total)	37,261	n/a
Other Recovery	Inert Landfill (backfill of mineral workings) (Table 1)	118,427	n/a
Other Recovery	Lincs Outputs assumed not suited to recycling applied to input value to exports in Table 1	118,930	n/a
Other Recovery	Subtotal Other Recovery	311,218	34%
Non Inert Landfill	Restoration (Input of soil and stones + hardcore for operational needs from Table 1)	209,992	n/a
Non Inert Landfill	Treatment Outputs applied to export value Table 1	3,028	n/a
Non Inert Landfill	Subtotal Non Inert Landfill	213,020	23%
Unknown	Treatment outputs to unknown destination applied to input value	18,854	2%
All Routes	Total	920,691¹⁰	100%

4.6. Table 13 gives the following management profile for C, D & E Waste arising in Lincolnshire in 2019:

- 41% re-used and recycled
- 34% recovered through placement to land, and

¹⁰ includes an element of double counting so does not correspond to baseline value of c902,000 tonnes

- 23% going to landfill as restoration material plus some disposal; and
- 2% going to unknown fate from treatment facilities. These may be assumed to go to non hazardous waste landfill on a worst case scenario basis.

C, D & E Waste Composition

4.7. The principal distinction in the C, D & E waste stream in terms of management (and so targets) is between inert and non inert materials, with a further possible distinction between hard and soft inert materials. By considering what type of material would be suitable for which component of the management profile shown in Table 13 above, it is possible to arrive at an indicative breakdown by material type shown in Table 14. This can inform the setting of appropriate targets as some types of material are only suited to some types of management method. For example only hard inert material can be converted into recycled aggregate, and the majority of material used in backfill will be soils and sub-soils.

Table 14: C, D & E Waste Composition from Management Profile Actual Data 2019 (tonnes)¹¹

Hierarchy Tier	Management Route	Inert Hard	Inert Soft	Non Inert Separate	Non Inert Mixed
Recycling	Recycled aggregate and soils	211,502	123,800	0	0
Recycling	Other Recycling (MRS/Single Materials)	0	0	90,536	0
Other Recovery	Exemptions	0	37,600	0	0
Other Recovery	Use of Waste or Recovery to Land	0	37,261	0	0
Other Recovery	Inert Landfill	0	118,427	0	0
Other Recovery	Exports	0	198,615	0	0
Disposal	Non Inert Landfill Restoration inc dredging spoil	0	189,197	0	0
Disposal	Non Inert Landfill Operational Needs	20,683	0	0	0
Disposal	Exports	0	0	0	3,028
Unknown	Export Residues	0	0	0	18,854
All Tiers	Totals	232,185	704,900	90,536	21,882
All Tiers	Percentage Breakdown	22%	67%	9%	2%

¹¹ includes an element of double counting so overall total does not correspond to baseline value of c902,000 tonnes

4.8. In the absence of specific data, all treatment residues requiring further management are assumed to be non-inert. This gives an overall inert content of 89%, with 11% being non-inert. The proportion of non inert waste is comparable with the findings of compositional studies such as that undertaken by the Building Research Establishment¹² and values obtained in Waste Needs Assessments produced for other Plan areas such as Kent and Oxfordshire¹³.

Management Targets

4.9. The revised EU Waste Framework Directive sets a target for C & D waste of:

- A minimum of 70% by weight of non-hazardous construction and demolition waste prepared for re-use, recycling and other material recovery by 2020.

When applying this target the Directive recognises the following:

- Backfilling operations using waste to substitute other fill materials may be counted towards the target e.g. backfilling of mineral workings may be classed as recovery.
- Naturally occurring material categorised under EWC 17 05 04 (soil and stones) is excluded from the target i.e. its use is unconstrained by targets.

4.10. The Oxfordshire Minerals and Waste Local Plan adopted in 2017 includes the following targets for C, D & E waste. The targets were based on an assessment of composition with an 80% inert/20% non inert split. These targets are included below for illustrative purposes:

Table 15: Example C, D & E Waste Management Targets taken from Oxfordshire MWLP

'Recovery' taken to include backfilling of mineral workings for restoration purposes

Management	C, D & E waste fraction	Yr0	Yr5	Yr10	Yr15
Recycling	Inert (Recycled Aggregate)	44%	48%	52%	56%
Recycling	Non Inert (Source Separated)	11%	12%	13%	14%
Composting	Non Inert	1%	1%	1%	1%
Recovery	Inert (Recovery to land and backfill of mineral workings)	20%	20%	20%	20%

¹² <https://www.bregroup.com/buzz/improving-cd-waste-data/>

¹³ Construction, Demolition & Excavation Waste Management Needs - Kent Waste Needs Assessment 2017 (BPP Consulting November 2017) <http://consult.kent.gov.uk/file/4794626>

Baseline, Forecasts & Targets for Construction, Demolition & Excavation Waste Generated in Oxfordshire BPP Consulting February 2014 <https://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>

Management	C, D & E waste fraction	Yr0	Yr5	Yr10	Yr15
Recovery	Non Inert (Biomass)	3%	5%	5%	5%
Remainder to Landfill	Non Inert	21%	14%	9%	4%

4.11. C, D & E waste not recycled or recovered is expected to go to non-hazardous waste landfill for restoration, operational use or disposal as shown in the last line of Table 16. This is not a target as such but a product of the targets for other management routes being applied in priority order as per the Waste Hierarchy.

4.12. When considering the applicability of the above targets to the Lincolnshire situation the following matters are worthy of attention:

- Current recycling rates of non-inert materials are determined to stand at around 10% of arisings. Given that the non-inert component of the stream is considered to be 11%, this only leaves a further 1% of growth for recycling of this component to be maxed out. This aligns with the fact that the market will already be seeking to maximise recycling as a route to landfill diversion.
- Recycled aggregate production in Lincolnshire from Lincolnshire arisings in 2019 was estimated to be 212,500 hard materials and soils received at identified Lincolnshire intermediate sites is converted to product plus 73,500t exported. This represents up to 31% of arisings in year 0 rather than the illustrative initial target of 44%. It is therefore considered that an increase to 40% in year 5 is realistic. This will largely result from the management of demolition waste generated by clearance of brownfield sites prior to redevelopment and clean excavation waste from greenfield development sites.¹⁴
- Recovery via deposit to land accounted for 34% of arisings managed in 2019. This contrasts with the illustrative initial target of 20%. This will largely result from the management of excavation waste generated by construction of footings and foundations on greenfield sites.

Deposit to non -inert landfill accounts for up to 25% of current arisings, whereas the illustrative target for yr 0 is 32% reducing to 25% in year 5. In order to avoid any suggestion that the Plan strategy is planning to increase disposal to landfill the diversion targets have been adjusted accordingly. In reality it is not possible to determine whether all outputs from intermediate facilities went to landfill or not. This is of particular

¹⁴ Over time it is to be expected that the hard material content of this stream will reduce as the nature of the building stock requiring demolition changes with the brick content of buildings reducing.

significance when considering the final fate of processing residue for C, D & E waste referred to as 'trommel fines', which may normally go to non-inert landfill but their actual fate is not known in this case, as it is not actually declared in the WDI dataset.

- 4.13. In view of the annual variation between management needs and to confer flexibility it is suggested that the targets shown in Table 16 be adopted. Note that the targets for non-inert landfill gradually reduce to 5% in the final milestone years which is considered to represent the minimum achievable as it is anticipated there will always be some requirement for landfill, and capacity is in relatively plentiful supply in Lincolnshire.

Table 16: Proposed C, D & E Waste Management Targets

Yr0 represents 2020 applying 2019 baseline.

Fate	Yr0	Yr5	Yr10	Yr15	Yr20	Yr25
Source Separated Materials inc plasterboard and timber	10%	10%	10%	10%	10%	10%
Recycled Aggregate	31%	35%	40%	45%	50%	55%
Recovery to Land inc backfilling of mineral workings as inert landfill	34%	30%	30%	30%	30%	30%
Remainder to non-inert Landfill inc restoration and disposal of residue	25%	25%	20%	15%	10%	5%

Projected Management Requirement for Lincolnshire's C, D & E Waste

- 4.14. Applying the management targets in Table 16 to the updated baseline value of 901,000 tonnes gives the predicted management requirement at each of the Plan Milestone years shown in Table 16. For example, the recycled aggregate target in Table 16 for yr15 of 45% has been applied to the Lincolnshire baseline value to give the projected tonnage of 405,000 tonnes shown in dataline 2 column 4.

Table 17: C, D & E Waste Targets Applied to Forecast at Plan Milestone years (tonnes) rounded

Fate	Yr0¹⁵ (column 1)	Yr5 (column 2)	Yr10 (column 3)	Yr15 (column 4)	Yr20 (column 5)	Yr25 (column 6)
Materials Recycling (dataline 1)	90,500	90,100	90,100	90,100	90,100	90,100
Recycled Aggregate (dataline 2)	286,000	315,350	360,400	405,450	450,500	495,550
Recovery to Land inc inert landfill (dataline 3)	311,200	270,300	270,300	270,300	270,300	270,300
Remainder to non inert Landfill (dataline 4)	231,800	225,000	180,200	135,150	90,100	45,000

4.15. The values in Table 18 indicate that recycled aggregate production is set to increase, while the permanent deposit of inert excavation waste for recovery to land will stabilise. If the residual component of the C, D & E waste stream goes to landfill in accordance with the targets, this represents a cumulative non hazardous landfill requirement of 3.98 million tonnes to the end of the forecast period as shown in Table 18 below. The residual component of this material may be less suited to diversion to EfW due its less combustible nature.

¹⁵ combined values exceed baseline, subsequent target values adjusted to correspond to forecast baseline

Table 18: Projected C, D & E Waste Permanent Deposit to Land Requirements (tonnes)

Year	Non-inert Landfill Tpa	Non-inert Landfill Tonnes Cumulative	Inert Tpa	Inert Tonnes Cumulative
2020	231,874	231,874	311,218	311,218
2021	230,770	462,644	310,114	621,333
2022	229,666	692,310	309,010	930,343
2023	228,562	920,871	307,906	1,238,249
2024	227,458	1,148,329	306,802	1,545,052
2025	225,250	1,373,579	270,300	1,815,352
2026	216,240	1,589,819	270,300	2,085,652
2027	207,230	1,797,049	270,300	2,355,952
2028	198,220	1,995,269	270,300	2,626,252
2029	189,210	2,184,479	270,300	2,896,552
2030	180,200	2,364,679	270,300	3,166,852
2031	171,190	2,535,869	270,300	3,437,152
2032	162,180	2,698,049	270,300	3,707,452
2033	153,170	2,851,219	270,300	3,977,752
2034	144,160	2,995,379	270,300	4,248,052
2035	135,150	3,130,529	270,300	4,518,352
2036	126,140	3,256,669	270,300	4,788,652
2037	117,130	3,373,799	270,300	5,058,952
2038	108,120	3,481,919	270,300	5,329,252
2039	99,110	3,581,029	270,300	5,599,552
2040	90,100	3,671,129	270,300	5,869,852
2041	81,090	3,752,219	270,300	6,140,152
2042	72,080	3,824,299	270,300	6,410,452
2043	63,070	3,887,369	270,300	6,680,752
2044	54,060	3,941,429	270,300	6,951,052
2045	45,050	3,986,479	270,300	7,221,352

Capacity Assessment

Recycled Aggregate Production Capacity

- 4.16. The Lincolnshire LAA identifies 26 sites undertaking recycling of C, D & E waste assuming that all of these sites produce recycled aggregate. The sites are reported collectively to offer total processing capacity of 935,433 tonnes per annum. With peak demand under the proposed combined Recycled Aggregate production targets identified as being c495,500 tonnes this indicates that there is sufficient consented capacity in Lincolnshire to meet the proposed targets with a peak utilisation rate of around 53%. The limiting factor is likely to be the availability of suitable feedstock.

Recovery to Land Capacity

- 4.17. The WDI 2019 identifies 80,000 tonnes of C,D & E waste having been managed at four sites permitted as recovery to land operations within Lincolnshire. These are as follows:
- Creeton Quarry
 - Manby Airfield
 - South Thoresby Quarry
 - South Witham Quarry (East)
- 4.18. As three of the four sites are located at a quarry, these might actually be activities involving the backfilling of mineral workings that might be classed as inert landfill under the planning regime. Given they do not hold a landfill permit the remaining void capacity is not reported to and by the Environment Agency, leaving a data gap. However LCC sources give the capacity assessments presented in Table 20.

Inert Landfill Capacity

- 4.19. Given the limitation on identifying clear and certain opportunities for recovery to land operations for forward planning purposes, a review of inert landfill capacity within Lincolnshire has been undertaken. The Environment Agency dataset relating to remaining inert landfill capacity identifies 2 sites within Lincolnshire that are permitted as inert waste landfill with remaining capacity as follows:
- Harmston Quarry - 100,000 m³;
 - Braucewell Quarry - 1,230,832 m³
- In addition to the above, the sites in Table 19 are identified in LCC's own planning records that include a number of additional sites that have extant

planning permission or are operational but do not appear to have permits. Estimates of remaining capacity provided based on officer knowledge and site monitoring,

Table 19 brings together the remaining void data at the sites identified above:

Table 19: Consented Inert Void in Lincolnshire

Site	Remaining Capacity (m3)	Status
Brauncewell Quarry	1,230,832	Operational and permitted as inert landfill
Colsterworth Triangle	560,000	Operational
Creeton	275,000	Operational as recovery to land
Harmston Quarry	100,000	Operational and permitted as inert landfill
Manby Airfield	unknown	Operational as recovery to land
South Thoresby	70,000	Operational as Recovery to land
South Witham Quarry (East)	160,000	Operational as recovery to land
Warren Landfill	270,000	Dormant
Whisby Quarry	480,000	Dormant
Total	>3,145,832	Total

Hence the combined consented inert landfill capacity amounts to around c3.1Mm³.

Over the forecast period the overall permanent deposit to land requirement equates to 7.2m tonnes divided by 1.6 tonnes per m³ (the weight by volume of inert waste) = 4.5Mm³ void and hence the currently consented inert void will not suffice for the forecast period presenting a shortfall of c1.4Mm³..

Non Inert Landfill Capacity

- 4.20. The Environment Agency dataset relating to remaining landfill capacity identifies 8 sites within Lincolnshire that are permitted as non hazardous waste landfill capable of accepting non-inert waste and an amount of inert waste for restoration and operational purposes. The total remaining void identified at the end of 2019 amounts to 9.14Mm³. Allowing for a 15% surcharge of inert waste for restoration purposes provides c7.77Mm³ of disposal capacity. Given the cumulative disposal requirement for the non-inert C, D & E waste stream is quantified to be 3.99 M tonnes (estimated at 1 tonne per m³) this indicates sufficient capacity will exist to accommodate the Plan

area needs for non-inert C, D & E waste, leaving 3.8Mm³ of void to accommodate other waste streams namely Local Authority Collected Waste (LACW) and Commercial and Industrial (C&I) waste.¹⁶ In addition 1.37 Mm³ of void is assumed to be used by inert waste for restoration purposes.

4.21. So available void to accommodate inert waste is 3.1Mm³ inert plus 1.37Mm³ non-inert landfill restoration giving a total of 4.47Mm³. This is considered to meet the forecast requirement of 4.5 Mm³.

Conclusion

4.22. The overall outcome of the assessment is presented in Table 20 below.

Table 20: Lincolnshire C, D & E Waste Management Requirements vs Available Capacity

Built Capacity	Peak Annual Capacity Requirement (Table 18)	Capacity	Diff
Non-inert recycling/recovery	C90,000m ³	91,000m ³	0
Inert recycling	495,550m ³	742,500m ³	+247,000m ³
Balance	n/a	n/a	+0.247Mm ³

Void	Cumulative Capacity Requirement/ (Table 19)	Capacity	Diff
Recovery to Land inc inert landfill - (m ³)	4.5Mm ³	>3.14 Mm ³ inert	-1.36Mm ³
Remainder to Non-inert Landfill (cumulative m ³)	2.49Mm ³	7.8Mm ³	+5.31Mm ³ (minus inert 1.36Mm ³)
Balance	n/a	n/a	+3.95Mm ³

This shows that overall there is sufficient existing capacity in Lincolnshire to meet the equivalent of all future predicted management requirements for C, D & E waste arising in Lincolnshire and so net self sufficiency is predicted to be achieved for this stream throughout the forecast period.

¹⁶ The requirement for landfill of LACW and C&I waste is considered in separate LACW and C&I waste stream reports.

Flows Balance

4.23. The values in Table 1 show that around two thirds of the C,D & E waste reported in the WDI 2019 as arising from Lincolnshire was managed within Lincolnshire. It also shows that around 1 million tonnes of C,D & E waste was produced. The management profile is reproduced in Table 21. In contrast to this Table 22 shows the quantity of C,D & E waste actually managed within Lincolnshire. This gives a total of 0.87 million tonnes, a difference of 181,000 tonnes equating to 17% of arisings.

Table 21: C, D & E Waste from Lincolnshire Managed through Permitted Sites (tonnes)

Source: WDI 2019

Management	Non Haz Landfill	Inert Landfill	Recovery to Land	Metal Recycling Sites	Transfer	Treatment	Grand Total
Lincs arisings managed at Lincs sites	163,020	77,773	20,759	20,971	281,071	134,563	698,156
Lincs arisings managed at sites outside Lincs	46,972	40,654	16,502	6,501	84,613	164,298	359,649
Totals	209,992	118,427	37,261	27,472	365,684	298,860	1,057,805

Table 22: C, D & E Waste Managed through Lincolnshire Permitted Sites (tonnes)

Source: WDI 2019

Management	Non Haz Landfill	Inert Landfill	Recovery to Land	Metal Recycling Sites	Transfer	Treatment	Grand Total
Lincs arisings managed at Lincs sites	163,020	77,773	20,759	20,971	281,071	134,563	698,156
Arisings from outside Lincs managed at Lincs sites	5,982	0	57,540	51,684	34,834	28,617	178,657
Totals	169,002	77,773	78,299	72,655	315,905	163,180	876,813

4.24. The management profile and balance of flows by management route is illustrated in Figure 2 overleaf. This shows that the majority of C,D & E waste flowing out of Lincolnshire goes for treatment and transfer, The majority of incoming flows go to Recovery to Land and Metal Recycling sites. Waste also flows out to inert landfill with none flowing in, and for non-hazardous landfill although there is some compensatory inward flow. It is not possible to ascertain the reasons for flows observed, but they may arise as a consequence of geographical proximity of facilities close to the Lincolnshire border, attracting inward flows and encouraging outward flows respectively. Ultimately market forces will prevail.

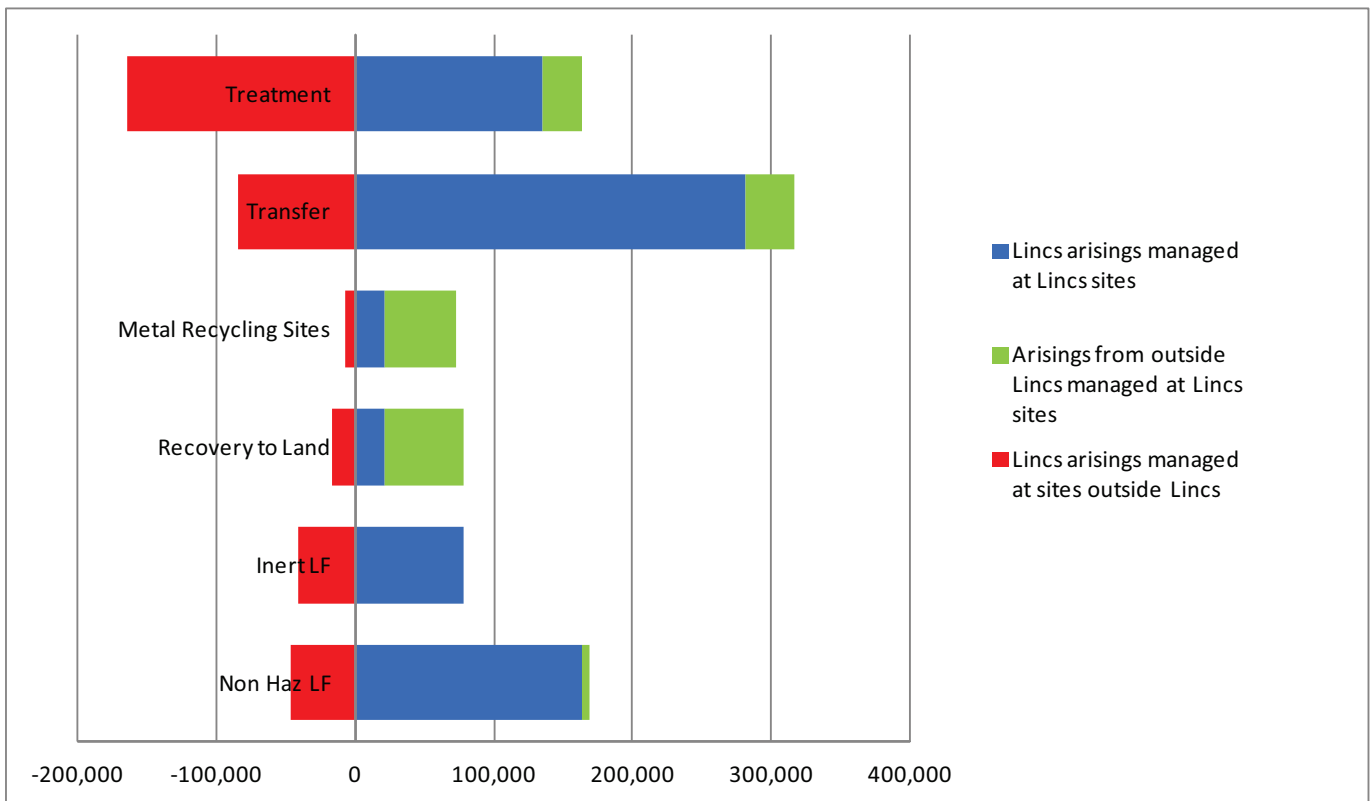


Figure 2: Profile of Management Flows for C,D & E waste arising in Lincolnshire vs managed within Lincolnshire

Conclusion

The overall conclusion is that Lincolnshire is net self sufficient for C,D & E waste management and is predicted to remain so, throughout the forecast period. Figure 2 suggests that there is no evidence of an imbalance of flows, and any flows that do occur are not due to a lack of provision of capacity within Lincolnshire. Given the overall balance the importance of confirming the availability of receiving capacity outside the Plan area through the Duty to Cooperate is less critical but contact is however recommended where specific vulnerabilities may emerge.

Appendix 1: Permitted Sites in Lincolnshire receiving C,D & E waste suitable for producing Recycled Aggregate and Soils

Site Name	Hard Materials	Mixed skip	80% mixed skip	Total (Hard+80%)	Soil	Asphalt
G B M Waste Management Bolingbrooke Road, Louth	1,468	13,936	11,149	12,616	2099	
Harmston Quarry	0	0	0	0	108,130	
Materials Recycling Facility (Mid UK)	0	23,572	18,858	18,858	0	
Part of O S Field No 0023 (Hemingby Lane Horncastle)	235	5,517	4,414	4,648	0	
T/a The Orange Skip Company	20	0	0	20	0	
Westville Waste Recycling Centre (Forceshift Contracting Ltd)	228	7,787	6,229	6,458	240	
Transfer Total	2,228	-	42,845	45,073	111,794	
(Aggregate Industries U K) Woodhall Spa Quarry	3,145	0	0	3,145	539	10,552
Baston Asphalt Plant	0	0	0	0	0	500
Bourne Waste Transfer Station	546	0	0	546	1,002	
Brauncewell Quarries Transfer Station	10,453	0	0	10,453	24,008	1,173
Caenby Hall Waste Transfer Station	3,136	0	0	3,136	3,548	225
Colsterworth Aggregates Recycling Facility	1,422	0	0	1,422	18	
Copper Hill Quarry	2,696	0	0	2,696	3,070	
Creeton Quarry, Grantham	2,971	0	0	2,971	732	
Dunston Quarry	0	11,552	9,242	9,242	22,350	
Highfield Quarry	13,055	0	0	13,055	9,941	
Hobleys Yard	1,825	0	0	1,825	800	
Longwood Quarry	0	0	0	0	2,528	
Sharpes Haulage	123	0	0	123	125	
Swinderby Quarry	0	0	0	0	0	5,497
The Recycling Centre, Market Deeping (New Earth)	0	5,038	4,030	4,030		
Toll Bar Road	0	0	0	0	136	
Treatment Total	39,799	-	13,272	53,071	68,798	17,950
Grand Total	42,027	-	56,117	98,144	180,593	17,950

