

Norfolk Minerals and Waste Development Framework

Annual Monitoring Report
Waste Data 2016-17

December 2018



Norfolk County Council

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1. Introduction

Section 35 of the Planning and Compulsory Purchase Act 2004 (amended by the Localism Act 2011) requires every local planning authority to produce a monitoring report. The MR should contain information on the implementation of the Minerals and Waste Development Scheme (MWDS), the extent to which the policies set out in Local Development Documents are being achieved. The Monitoring Report for 2016-17 has been published in three parts, as follows:

1. Waste Data (this part of the Monitoring Report)
2. Minerals data is reported in the Local Aggregate Assessment and Silica Sand Assessment
3.
 - Review of the Norfolk Minerals and Waste Development Scheme
 - Policy performance and implementation
 - Monitoring and enforcement

Sections 13-16 of the Planning and Compulsory Purchase Act 2004 (amended by the Localism Act 2011) establishes a duty for waste planning authorities to keep planning issues under review. This Waste Data Monitoring Report presents information on the annual production and management of wastes at facilities in Norfolk. This information is then used to assess the delivery of the relevant local plan policies, particularly the waste management targets, waste management capacity requirements, and the estimated waste arisings these policies are based on.

2.0 Core Output Indicators: Waste

2.1 Waste Categories

The List of Wastes Regulations 2005 defines the way waste types are categorised. These terms are outlined in the table below and have been used throughout this document. However when reporting on new capacities as a result of approved planning permissions, the terminology used in the application is retained and therefore varies between the previous and current categories.

New Waste Categories	New Definitions
Inert	Non-hazardous waste as defined by The List of Wastes Regulations 2005 (excluding construction and demolition waste) which will not decompose. Includes: subsoil, concrete, hard-core, brickwork, stone, glass, concrete, tiles, ceramics.
Construction and Demolition	Non-hazardous construction and demolition waste as defined by the List of Wastes Regulations 2005. Including: bricks, concrete, wood, metal, soil, glass, tiles, ceramics, plastic.
Non-Hazardous	All non-hazardous waste as defined by The List of Wastes Regulations 2005 not included in other sections. Therefore this category excludes inert and construction/ demolition waste. This category includes, for example: municipal (household), commercial and industrial wastes, and scrap metal.
Hazardous	All hazardous waste (except hazardous clinical waste) as defined by The List of Wastes Regulations 2005. For example: asbestos, acids, oils, petroleum products, paint, mercury, solvents, undepolluted end-of-life vehicles.
Clinical	Hazardous and non-hazardous human and animal healthcare wastes as defined by the List of Wastes Regulations 2005.

Annual surveys of waste inputs have been carried out since 1995. The last survey was carried out for the period April 2016 to March 2017. Data has been obtained on the quantity of waste recovered, quantity of waste disposed of (within and outside the County) and the remaining airspace capacity of landfill sites. This monitoring report also lists the quantity of waste imported into the County, the quantity of energy recovered from landfill sites and new capacity permitted in 2016/17.

Waste operators with an environmental permit from the Environment Agency are required by law to submit, to the Environment Agency, information relating to the throughput of waste at their site; this information has been requested from the Environment Agency to fill in the gaps left by operators not responding to Norfolk County Council's own survey. This information is not in the precise format that would be ideal for our purposes and so some assumptions based on past survey returns have been necessary; the overall volume of waste is correct but the precise origins or destinations of the waste have had to be estimated in some cases where they have been reported as 'not codeable' or 'east of England'. For sites where no up to date data is available estimates of volumes based on previous responses, and local site knowledge, have been made.

2.2 Landfill

Non-hazardous landfill sites

Non-hazardous waste comprises waste which decomposes and can include materials as diverse as household waste, paper, vegetable matter and food processing waste. Non-hazardous landfill sites also take a quantity of inert waste for restoration and engineering purposes. In the reporting year 129,990 tonnes of inert waste was taken by 2 non-hazardous landfill sites listed below.

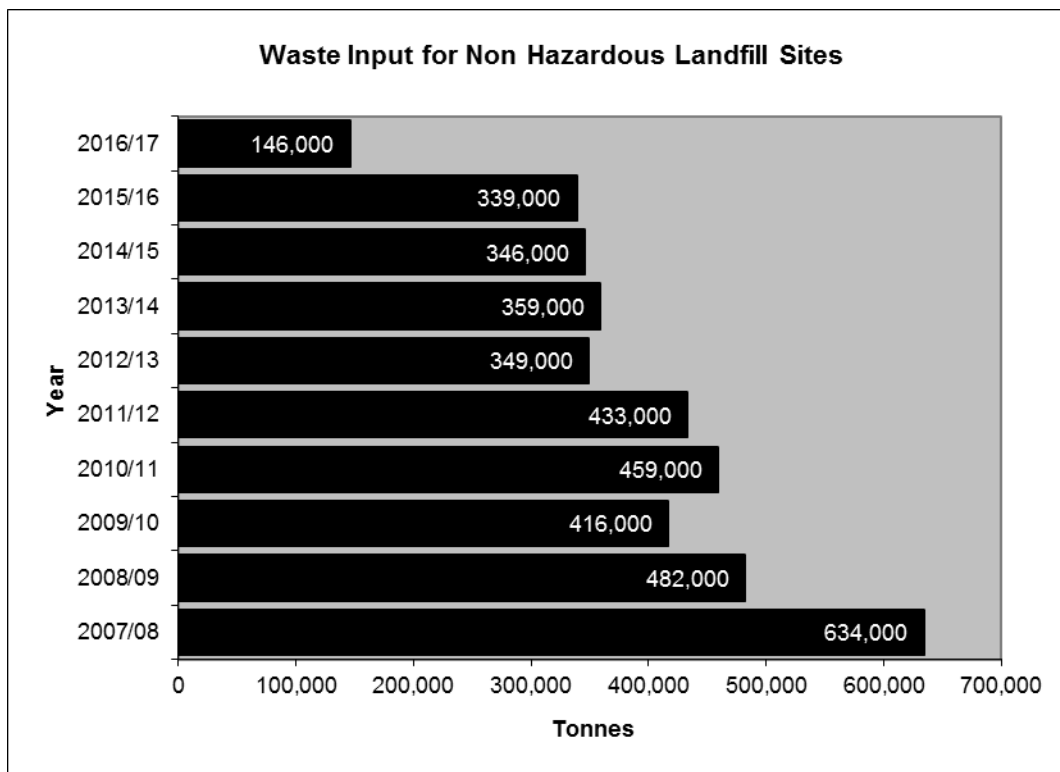
Aldeby	FCC Environment (UK) Ltd
Blackborough End	FCC Environment (UK) Ltd

The permitted landfill site at Feltwell, operated by FCC Environment (UK) Ltd is currently inactive and did not receive any waste during 2016/17. Therefore only two landfill sites in Norfolk received non-hazardous waste in 2016/17.

Waste input in 2016/17 into non-hazardous landfill sites was 146,000 tonnes. This is a 57% decrease on the quantity landfilled in 2015/16, and 250,300 tonnes below the 10 year average of 396,300 tonnes. The average input over the last three years has been 277,000 tonnes.

At 31/03/17 the volume of permitted void capacity (remaining landfill space) was estimated to be 5.09 million cubic metres.

- Planning Application C/2/2009/2011 contains the most recent publicly available information on the remaining landfill space in Blackborough End landfill site. This planning application, dated May 2009, states (in a report provided by GP Planning Ltd, on behalf of the operator) that "remaining void for the site is currently calculated at 6.5 million cubic metres."
- At the end of July 2016 Aldeby landfill permanently ceased taking waste for disposal and has no remaining capacity.
- There are no recent planning applications providing capacity information for Feltwell.
- Some information about remaining capacity for individual sites is gathered as part of the County Council's annual survey. Some landfill sites choose not to provide this information. The information contained in any survey responses provided to the County Council is considered to be confidential and commercial information. If capacity information is not provided, then the remaining capacity is calculated, using the quantity of waste received at the site.



To calculate how long the remaining non-hazardous landfill voidspace will last, conversion factors have been applied for the density of inert waste (1 tonne occupies 0.67 cubic metres) and non-hazardous waste (1 tonne occupies 1 cubic metre).

The length of time that the remaining non-hazardous landfill voidspace will last has been calculated using the forecast waste arisings for Municipal, Commercial and Industrial and imported London waste in the Norfolk “Core Strategy and Minerals and Waste Development Management Policies DPD”. Table A.2 of the Core Strategy forecasts the annual quantity of non-hazardous waste disposal to landfill until 2026/27. This table has been updated in Appendix A of this AMR, taking into account the non-hazardous landfill void capacity as at 31/03/2017. **With the current void capacity and the forecast non-hazardous waste disposal quantities to landfill, the existing landfill capacity is calculated to last until 2032/33.**

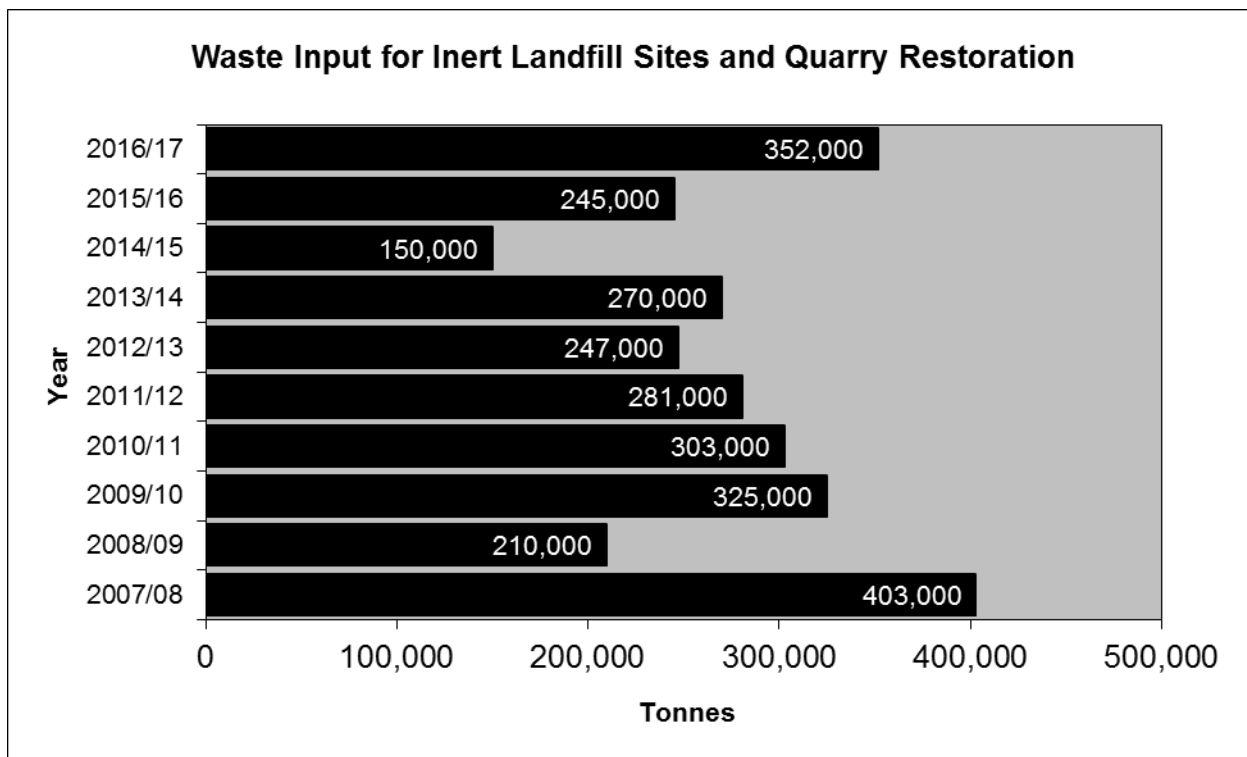
It should be noted that, as at the end of April 2016 Blackborough End landfill site stopped taking waste and is currently inactive, although the site has a large remaining void capacity. Feltwell landfill site is also currently inactive (and has been since 2012), although it has remaining void capacity. Therefore, there are currently no active non-hazardous landfill sites in Norfolk.

Inert landfill sites and quarry restoration using inert waste

Waste input in 2016/17 into inert landfill sites and for quarry restoration was over 352,000 tonnes. This compares with 245,000 tonnes in 2015/16 and 150,000 tonnes in 2014/15. The 352,000 tonnes deposited in 2016/17 consisted of 257,250 tonnes used in quarry restoration and 94,750 tonnes deposited in inert landfill sites. At 31 March 2017 the volume of permitted air-space was estimated to be 1,307,360 cubic metres.

After applying a conversion factor for the density of inert waste (1 tonne occupies 0.67 cubic metres), and assuming that waste inputs remain the same as the average for the last three years (249,000 tonnes), it is calculated that inert landfill and quarry restoration sites will last 7.8 years, until early 2025.

However, evidence for the Minerals and Waste Core Strategy uses a Government survey forecast of a 40% increase in construction and demolition waste over the plan period (to 2026). Assuming the 40% increase occurs as an incremental year on year increase of 2.5% per annum in inert waste requiring inert landfill/quarry restoration, it is calculated that existing **inert landfill and quarry restoration sites will last 4 years, until 2020**. Inert waste is also used for engineering works, including the capping of non-inert landfill sites and the restoration of mineral workings. It is important to note that the actual quantity of construction and demolition waste arising in the future will be subject to economic conditions.



2.3 Imported Waste to landfill

Waste imported to Norfolk's landfill sites and for quarry restoration, from outside the county, in 2016/17 was as follows:

Inert landfill sites and quarry restoration		Non-hazardous landfill sites	
From within the region, but outside the county	From outside the region	From within the region, but outside the county	From outside the region
48,460 tonnes	3,264 tonnes	13,163 tonnes	261 tonnes

The quantity of waste imported from outside the county and deposited at inert landfill sites and quarry restoration sites is equivalent to 14% of the total deposited at these sites. The vast majority of this waste went into a single site that has been moth-balled for a considerable time leading up to this reporting period. For non-hazardous landfill sites the equivalent is 9%.

The majority of the waste imported to Norfolk's non-hazardous landfill sites originated in Suffolk and was received to the non-hazardous landfill site that is closest to the Suffolk border. Almost all of this waste was construction and demolition waste used for engineering / capping of the landfill site.

2.4 Renewable energy generation

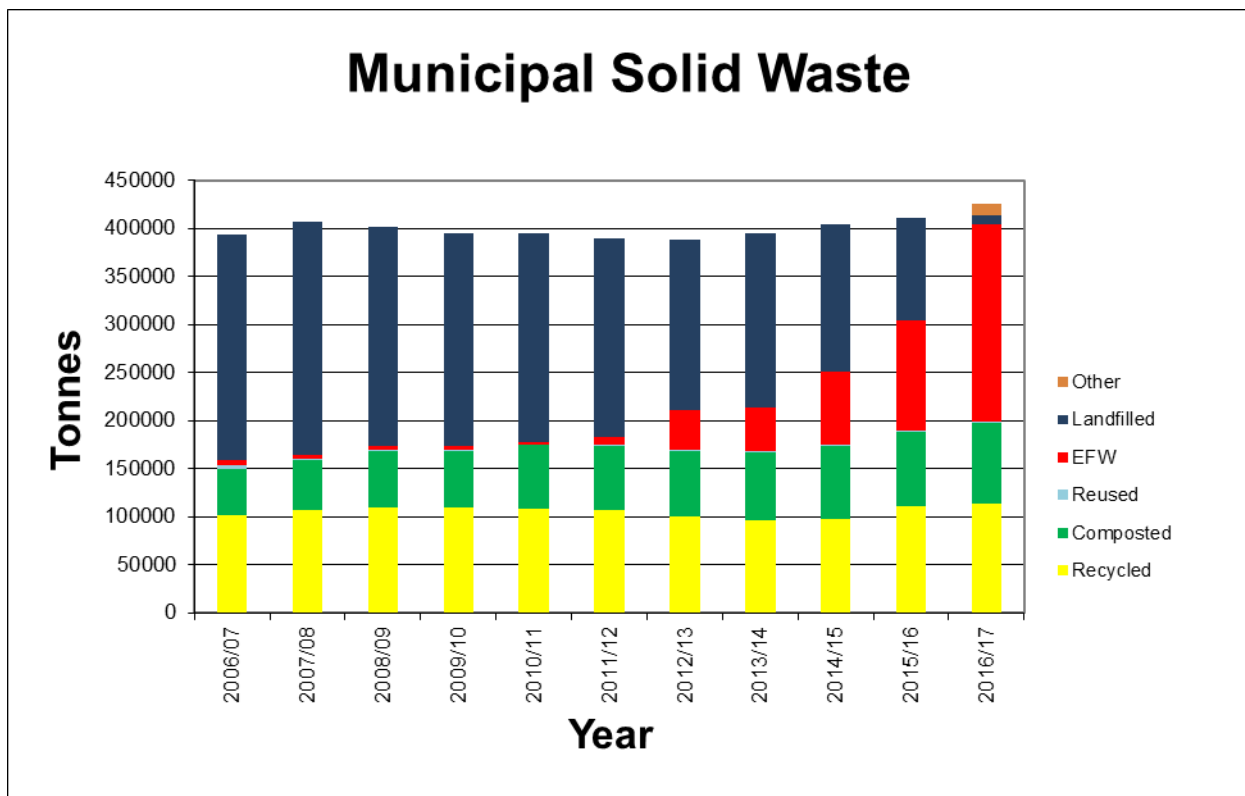
The current installed capacity for energy generation at Norfolk's landfill sites in 2016/17 was the equivalent of 11.614 megawatt hours (MWh).

SITE	Current maximum capacity MWh	Actual MWh generated in 2015/16
Beetley	0.2	567
Blackborough End	3.3	18795
Costessey	1.15	2485
Mayton Wood	0.33	2409
Strumpshaw	0.014	35
Docking	0.1	433
Edgefield	1.21	3694
Attlebridge	1.2	3740
Feltwell	2.06	5951
Aldeby	2.0	18920
TOTAL	11.614 at March 2017	56737

2.5 Local Authority Collected Municipal Waste

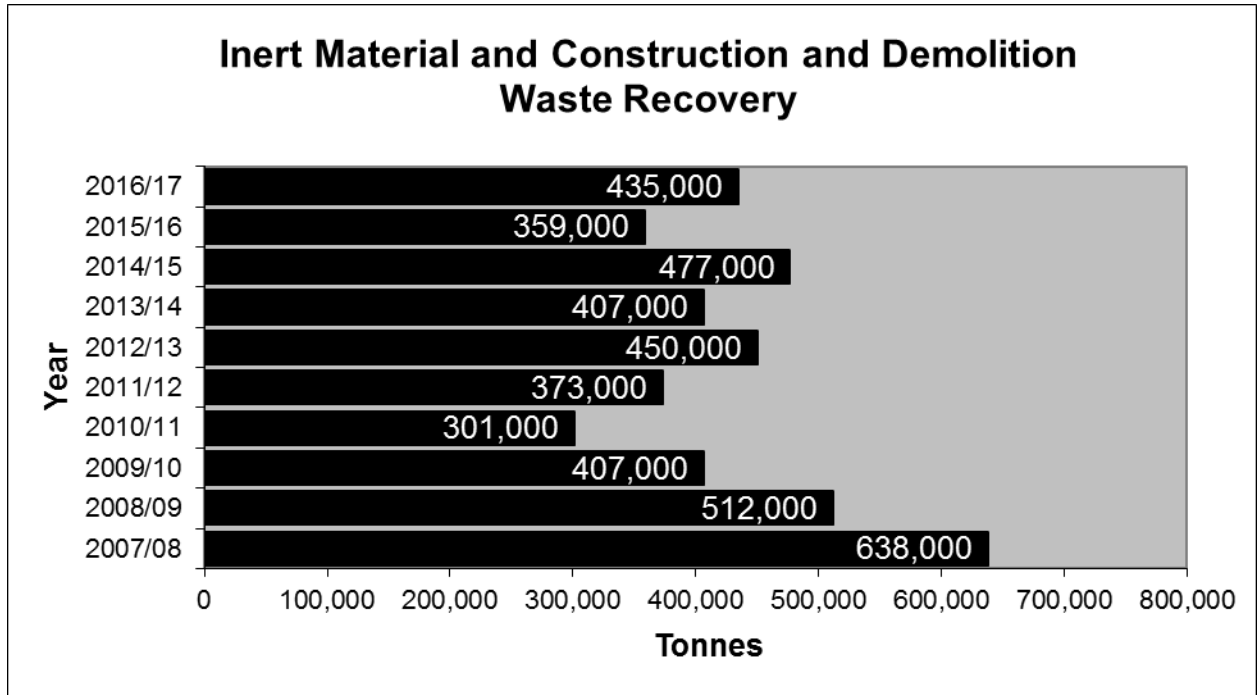
Below is a table outlining the quantity of local authority collected municipal waste (LACMW) arising in Norfolk and how it was managed in 2016/17. The proportion of LACMW sent to landfill came to 2.1%; which is considerably lower than in any previous year on record. This reduction in LACW disposed of to landfill is due to a significant increase in the quantity and percentage of waste recovered as either Refuse Derived Fuel or by incineration with energy recovery. The category of 'other' is predominantly street sweepings which are treated to recover aggregates and other recyclables with other fractions being disposed of. LACMW in Norfolk over the reporting year totalled 425,657 tonnes, a 3.5% increase compared with the previous year (411,406) and the highest amount arising since 2004/5. The lowest amount of LACWM arising in the intervening years was 388,579 tonnes in 2012/13.

Management type	Quantity managed	
	Tonnes	Percentage
Recycled	113,072	26.5
Composted	84,263	19.8
Reuse	1,154	0.3
Refuse Derived Fuel	166,356	39.1
Incinerated with energy recovery	40,136	9.4
Landfilled	8,849	2.1
Other	11,827	2.8
TOTAL	425,657	100

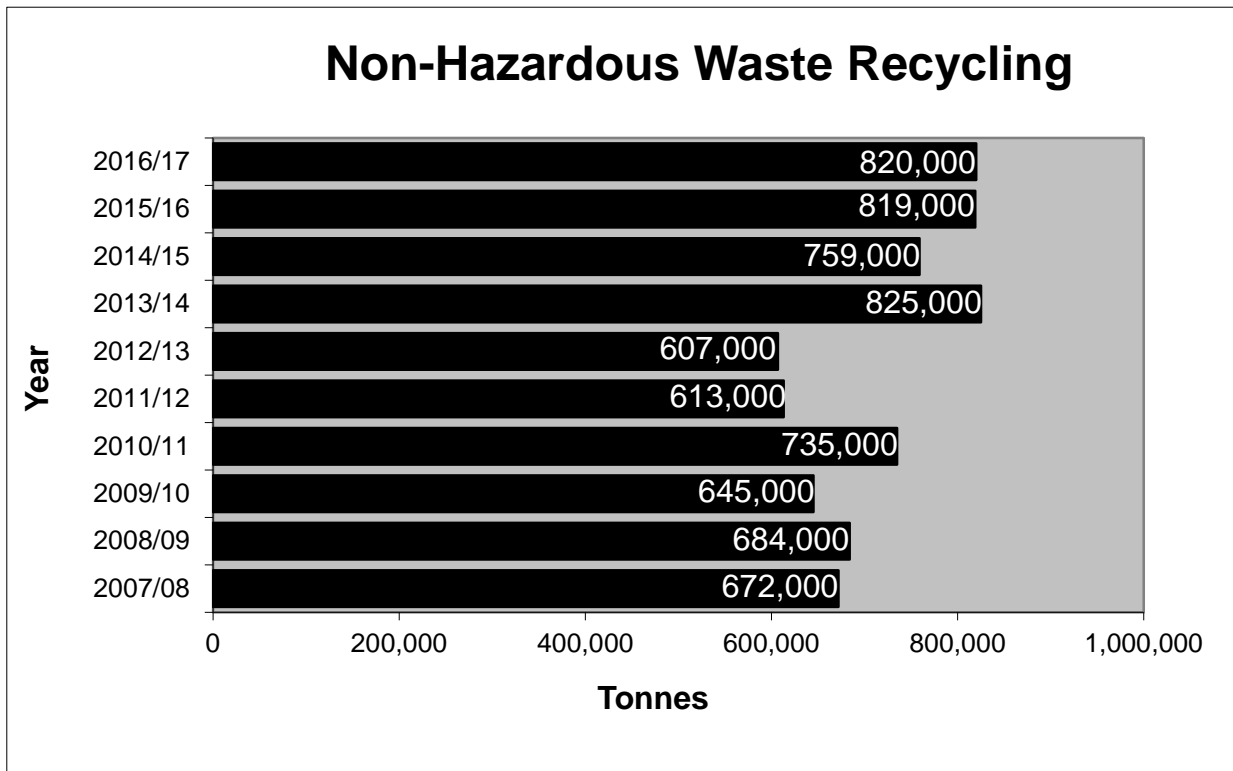


2.6 Waste Recovery

It is estimated that in 2016/17 over 435,000 tonnes of the inert and construction & demolition waste, received at transfer stations and recycling centres, was recovered. This includes waste recovered at quarries as well as waste management facilities.



The quantity of non-hazardous waste recycled/composted in 2016/17 was over 820,000 tonnes. This compares with over 819,000 tonnes in 2015/16 and 759,000 tonnes in 2014/15.



The origins of waste received at Norfolk's transfer stations, treatment and recovery facilities in 2016/17 were as follows:

	Waste type (quantity in tonnes)					
	Inert	C&D	Non-hazardous	Hazardous	Clinical	Total
Received from within Norfolk	120,830	367,760	1,528,077	65,381	1,079	2,083,127
Received from outside Norfolk, but within the region	15,039	30,118	261,889	13,002	192	320,241
Received from outside the region	0	303	38,447	3,721	215	42,685
TOTAL WASTE RECEIVED	135,869	398,181	1,828,413	82,104	1,486	2,446,053

In 2016/17 imported waste represented 15% of the total waste received at transfer stations and recovery facilities in Norfolk. There has been a decrease of 1,963 tonnes in the quantity of waste imported to Norfolk facilities in 2016/17 compared to 2015/16. Imports from outside the region have increased by 17,000 tonnes which is a 48% increase. There has been a 92% increase in non-hazardous waste imported to Norfolk from outside the region; the vast majority of this increase is accounted for by imports of waste to one particular site.

After being sorted and/or treated at Norfolk's transfer stations, treatment and recovery facilities, the destination of waste outputs from these sites in 2016/17 was as follows:

Waste management method	Waste type (quantity in tonnes)					
	Inert	C&D	Non-hazardous	Hazardous	Clinical	Total
Disposal to landfill within Norfolk	26,640	11,913	0	0	4	38,557
Exported for disposal to landfill within the region	1,118	4,411	87,298	4,898	528	98,253
Disposal to landfill outside the region	0	0	6,054	1,053	166	7,273
TOTAL WASTE TO LANDFILL	27,758	16,324	93,352	5,951	698	144,083
Incineration/ power station within Norfolk *	0	0	467,078	0	371	467,449
Exported for energy recovery by incineration within the region	0	8,272	106,066	20	71	114,429
Energy recovery by Incineration outside the region	0	24,885	160,134	138	0	185,157
TOTAL WASTE TO ENERGY RECOVERY	0	33,157	733,278	158	442	767,035
Recycled or composted in Norfolk	95,357	190,430	443,847	42,966	0	772,600
Exported for recycling or composting within the region	23,428	2,970	121,901	3,011	0	151,310
Recycling or composting outside the region	0	4,014	254,329	4,433	0	262,776
TOTAL RECYCLED OR COMPOSTED	118,785	197,414	820,077	50,410	0	1,186,686

*The majority of waste recorded in the 'incineration/power station in Norfolk' row of the above table, was received at the EPR renewable energy plant at Thetford which burns poultry litter.

The quantity of waste exported for disposal to landfill outside of Norfolk increased by 195% from 35,800 tonnes in 2015/16 to 105,000 tonnes in 2016/17.

The quantity of waste exported for energy recovery by incineration outside of Norfolk increased by 75% from 171,000 tonnes in 2015/16 to 299,000 tonnes in 2016/17.

The quantity of waste exported for recycling outside of Norfolk increased by 19% from 349,000 tonnes in 2015/16 to 414,000 tonnes in 2016/17.

The following table shows the quantity of waste handled in Norfolk by each type of waste management facility. The table does not include any End-of-Life Vehicle depollution sites because the majority of these sites have planning permission granted by the relevant district council instead of the County Council.

Waste may be handled at more than one facility. For example, green waste received at a household waste recycling centre will also be composted at one of the compost facilities.

Facility Type	Compost	HWRC	Incineration/ Power station	Transfer / Treatment of inert waste	Metal Recycling	Transfer / treatment of waste
No. of sites	10	20	6	24	8	61
Input from outside Norfolk but within region (tonnes)	14,608	0	95,200	14,386	89	195,957
Input from outside region (tonnes)	23	0	215	0	0	42,447
Input from within Norfolk (tonnes)	114,996	75,874	381,080	116,362	62,290	1,332,524
Recycled or compost (tonnes)	113,752	53,308	8,316	124,612	60,416	826,282
Sent to landfill within Norfolk (tonnes)	0	5,277	17	450	0	32,813
Sent to landfill outside Norfolk (tonnes)	46	5	308	0	0	105,165
Incineration / Power Station within Norfolk * (tonnes)	0	0	467,447	0	0	0
Energy recovery by Incineration outside Norfolk (tonnes)	543	16,904	25	0	0	282,115

It should be noted that the inputs are unlikely to match the outputs for all facility types. For example, at composting facilities a portion of the weight of waste input is lost through the composting process; other facilities may have recycled previously stockpiled waste.

*The majority of waste recorded in the incineration/power station row of the above table, was received at the EPR renewable energy plant at Thetford which burns poultry litter. The exact origin of this material is difficult to ascertain as material from within the region and within Norfolk may be mixed before its origin can be accurately identified.

2.7 Waste Managed in Norfolk

The total waste managed in 2016/17 was 2,209,281 tonnes.

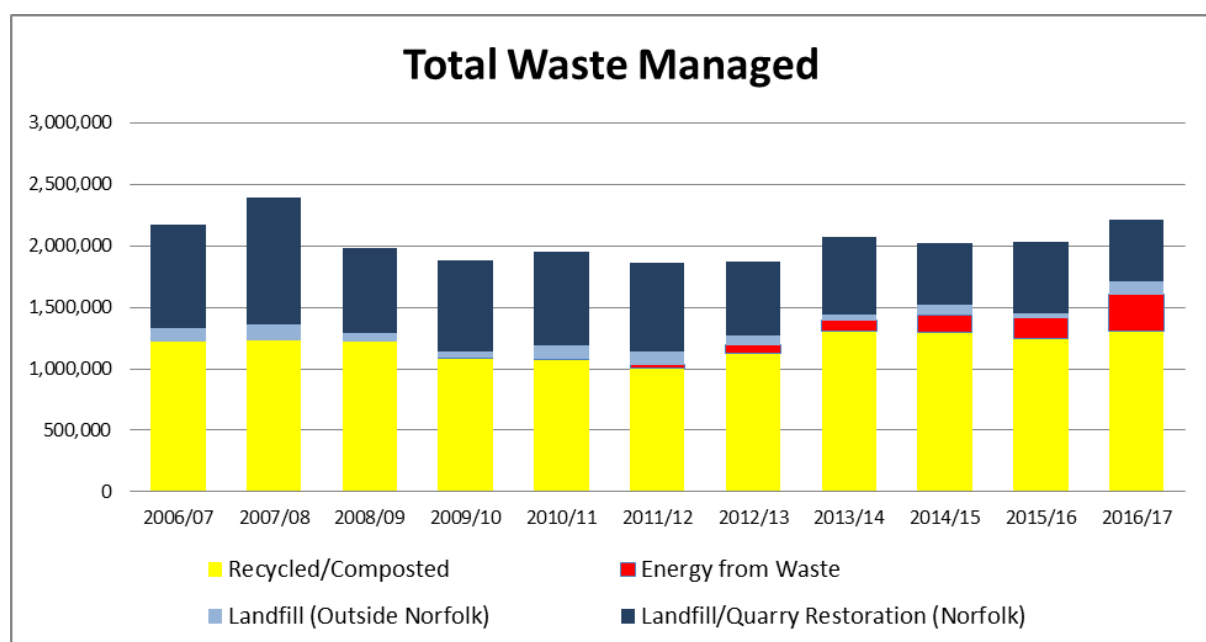
To reduce double counting waste that may be handled at more than one facility, this figure is calculated from:

- the total amount of waste landfilled in Norfolk
- the total amount of waste handled at waste management facilities in Norfolk that was then disposed of in landfill sites located outside Norfolk
- the total amount of waste recycled/composted or segregated for recycling/composting at waste management facilities in Norfolk
- the total amount of waste handled at waste management facilities in Norfolk that was then sent to energy from waste facilities

Management type	Quantity managed	
	Tonnes	Percentage
Recycled / Composted	1,306,054	59.1
Energy from waste	299,587	13.5
Landfill (outside Norfolk)	105,527	4.8
Landfill/ quarry restoration (in Norfolk)	498,113	22.6
TOTAL	2,209,281	100

In addition to the total waste recorded in the graph below, the EPR Thetford renewable energy plant has been operational for over 10 years and burns between 360,000 - 450,000 tonnes of poultry litter per annum.

The quantity of waste recycled or composted in 2016/17 was the highest that it has been over the 10 year period. The quantity of waste sent for recovery at energy from waste facilities in 2016/17 was the highest that it has been over the ten year period. The total quantity of waste managed at facilities in Norfolk in 2016/17 was approximately 175,000 tonnes higher than in 2015/16, which was an increase of 8.6%.



2.8 New Capacity in Norfolk

The table below demonstrates the increased waste management capacity as approved in the period between 1 April 2016 and 31 March 2017. These sites were:

Location	Applicant	Type of facility	Anticipated throughput (tonnes per annum)	Type of waste (waste class)
Bridge Industrial Estate, Silfield Road, Wymondham	Aggmax Transport Ltd	Transfer/storage and distribution (no processing)	10,000 tpa aggregate 10,000 tpa inert waste	inert
Snettisham Quarry, Norton Hill, Snettisham	Frimstone Ltd	Inert recycling	15,000	Inert CD&E
Pump Lane, Caister-on-Sea	Carters of Caister	Waste transfer and recycling	10,000	Inert CD&E
Holt Quarry, Hunworth Road, Holt	Cemex UK Operations Ltd	Inert recycling Part-retrospective C/1/02/1011 had expired, no new capacity Existing site	75,000	Inert CD&E
Hamlin Way, Hardwick Narrows, King's Lynn	NEWS	Transfer Existing site	Addition of 1,500	Road sweepings
St Johns Way, Downham Market	Mr & Mrs Bishop (Red Skips 2 You)	Waste transfer	468	Non-hazardous (mixed skip waste)
Freedom Farm, Cowles drove, Hockwold cum Wilton	Freedom Recycling Ltd	Waste treatment (pyrolysis) Existing site	No increase in throughput or waste types in wider facility. Treatment of 700 tonnes of plastics by pyrolysis which would otherwise be landfilled	plastics

In addition to the above facilities, the following additional sewage treatment capacity received planning permission in 2016/17:

Location	Applicant	Type of facility	Anticipated throughput (tonnes per annum)	Type of waste (waste class)
C/1/2016/1007 Withergate Lane, Worstead	Anglian Water Services Ltd	Sewage pumping station	Not specified	Sewage
C/3/2016/3008 Hingham Road, Little Ellingham	Anglian Water Services Ltd	Sewage pumping station	Not specified	Sewage
C/3/2016/3007 Anchor Corner, Little Ellingham	Anglian Water Services Ltd	Sewage pumping station	Not specified	Sewage
C/6/2016/6006 Tower Road, Repps with Bastwick	Anglian Water Services Ltd	Sewage pumping station	Not specified	sewage
C/3/2016/3025 Rear of Manor Farm, The Street, Bridgham	Anglian Water Services Ltd	Sewage pumping station	Not specified	sewage
C/3/2016/3024 The Street, Bridgham	Anglian Water Services Ltd	Sewage pumping station	Not specified	sewage
C/1/2016/1015 Pond Road, North Walsham	Anglian Water Services Ltd	Sewage pumping station	Not specified	sewage
C/1/2016/1016 Chapel Road, North Walsham	Anglian Water Services Ltd	Sewage pumping station	Not specified	sewage
C/1/2016/2017 The Street, Swaffield, North Walsham	Anglian Water Services Ltd	Sewage Pumping station	Not specified	sewage

2.9 Assessment of progress against Policy CS4

The Minerals and Waste Core Strategy Policy CS4 states that between 2010 and the end of 2026 “there is a need to provide about 163,000 tonnes of new recycling, composting and source-segregated anaerobic digestion capacity, about 703,000 tonnes of recovery (residual waste) infrastructure and about 2,060,000 tonnes of new inert landfill/quarry restoration voidspace.”

These figures were calculated on the basis of the existing capacity in the financial year 2008/9. This included 684,000 tonnes of non-hazardous waste recycling and composted, plus the composting facility for 20,000 tpa at Bracon Ash permitted in 2008. In the nine years from 2008/9 to 2016/17 the average quantity of non-hazardous waste recycled at Norfolk facilities was 723,000 tonnes per annum, although this has fluctuated and also increased in the last four years. It should be noted that this is likely to double count material that is treated at more than one facility (for example green waste segregated at a transfer station and then composted at a separate facility).

The recycling/composting and recovery (residual waste treatment) capacities required are based on forecast municipal and commercial and industrial waste arisings (detailed in Appendix A of the Core Strategy). Facilities to treat sewage or natural agricultural waste (such as manure and silage) were not included in the calculations for need in policy CS4.

Additional non-hazardous landfill capacity was calculated to not be needed in the plan period. The existing capacity is now calculated to last until 2032/33, but the landfill sites with remaining void capacity are currently inactive and not accepting any waste.

Additional recycling/recovery capacity for C&D waste was not calculated to be needed in the plan period, therefore additional permitted facilities for this waste type are not detailed below.

Since 2009/10 the following additional waste management capacity has been permitted by Norfolk County Council:

Recycling/composting facilities

Year	Recycling capacity permitted (tonnes)	Composting capacity permitted (tonnes)
2009/10	3,500 = 50% of throughput at transfer station in Frans Green	45,000 (Marsham)
2010/11	3,000 = 50% of new HWRC throughput at Dereham	0
2011/12	13,500 = 50% of throughput of transfer station at Sculthorpe = wood recycling, Mattishall = 50% of additional HWRC capacity at Thetford 25,000t <i>Material recycling facility at Attlebridge.</i>	40,000 <i>(TMA Bark supplies, Hockering)</i> <i>This permission was not implemented and therefore is not included in the total.</i>

Year	Recycling capacity permitted (tonnes)	Composting capacity permitted (tonnes)
	<i>This permission was not implemented and therefore is not included in the total.</i>	
2012/13	12,500 = plastic & card, Shropham (<i>this operation ceased in 2016</i>) = end-of-life vehicles, North Walsham	12,500 (expected green waste input to Anglian Water, Kirby Bedon facility)
2013/14	Total 82,000 consisting of: 7,500 = 50% additional capacity for transfer/treatment Carl Bird Ltd, North Walsham 3,750 = 50% transfer/treatment Skippy Skip Hire, West Winch 12,500 = 50% transfer/treatment Monk Plant Hire Hockering 6,250 = 50% transfer/treatment Monk Plant Hire Dereham 2,000 = aircraft components, KLM, Norwich 50,000 = 50% additional capacity at M Gaze and Co Ltd, Thurlton	0
2014/15	15,000 = 50% additional capacity for transfer/treatment at Pips Skips, East Tuddenham = 50% additional capacity for AR Kent & Son, Pulham Market	50 (community composting, Roughton) 30,000 anaerobic digestion (Buyinfo Ltd, Edgefield) <i>This permission was not implemented and therefore is not included in the total</i>
2015/16	32,000 1,000 = ELV dismantling, Norman Wenn Ltd, East Tuddenham (<i>this permission has not yet been implemented</i>) = 50% transfer/ treatment at Attleborough Skip Hire 30,000 = tyre recycling, Mr Gawn, Tattersett <i>This permission was not implemented and therefore has not been included in the total</i>	25,000 composting Edgefield (<i>this is a permanent permission on an existing temporary site and therefore does not increase the permitted capacity and is not included in the total</i>)
2016/17	984 = 50% of additional capacity for road sweepings at King's Lynn, NEWS = 50% transfer station at Downham Market	0
TOTAL	132,484	57,550

Where a facility is a transfer station, it has been assumed that a minimum of 50% of the throughput will be recycled/composted, however it is recognised that this figure may be higher. Transfer stations are likely to be taking a percentage of construction and demolition waste as well as the household, commercial and industrial waste that policy CS4 plans for.

In addition, planning permission was granted in 2011/12 for an anaerobic digestion facility with an annual throughput of 360,000 tonnes at British Sugar's Wissington site. This facility is permitted to treat pressed sugar beet and vinasses from the production process. This facility has not been included in the additional capacity because the waste treated was previously used as animal feed and did not enter the waste stream. Therefore, it is considered that this capacity is in addition to the requirements in Policy CS4.

There is the potential for part of the additional capacity permitted at M Gaze and Co Ltd in 2013/14 to be for composting, but the additional capacity is for the site as a whole which comprises of waste transfer/treatment, composting, oil recovery and waste water treatment operations.

There is calculated to be an additional 57,550 tpa composting capacity and 132,484 tpa recycling capacity for household, commercial and industrial waste which received planning permission in the period 2009/10-2016/17. **Therefore, the additional recycling/ composting capacity requirements over the plan period have now been met.**

Recovery (residual waste treatment) infrastructure

No additional recovery (residual waste treatment) infrastructure was permitted in 2009/10 or 2010/11.

A biomass CHP plant fuelled by waste wood with an annual throughput of 20,000 tonnes was permitted in 2011/12. No additional recovery (residual waste treatment) infrastructure has been permitted in 2012/13, 2013/14 or 2014/15.

Permission was granted in 2015, to increase the throughput of an existing waste management facility at Rackheath (PHS Environmental Ltd) from 75,000 tpa to 150,000 tpa. The permitted operations include processing waste (mainly local authority collected municipal waste) into Refuse Derived Fuel (RDF) prior to energy recovery off-site. This permission would provide 75,000 tonnes of additional residual waste treatment capacity to continue to move the management of waste up the hierarchy, by diverting it from landfill.

Permission was granted in 2016 for the pyrolysis of 700 tonnes of plastic per annum.

Therefore there remains a need for nearly 608,000 tpa additional recovery (residual waste treatment) infrastructure capacity over the plan period in accordance with policy CS4. There is the potential for some of this capacity to be provided by recycling/composting facilities instead of recovery (residual waste treatment) facilities if necessary. Some of this forecast capacity need is for pre-treatment prior to disposal only and the existing transfer stations would be providing part of this service.

It should also be noted that there is a waste management facility producing Refuse Derived Fuel (RDF), at Costessey, with a permitted throughput of 219,000 tpa in their Environmental Permit. Planning permission (ref. C/7/2012/7015) was granted for RDF production to take place at this existing waste management facility in September 2012. This planning permission did not increase the throughput or types of waste that could be treated at the facility and the RDF is produced from residual waste which would previously have been treated at the facility, but then sent to landfill. Therefore the change in the treatment process at an existing waste

management facility is not considered to provide any additional recovery (residual waste treatment) infrastructure.

Existing **inert landfill and quarry restoration** capacity is recorded in section 2.2 as 1,307,360 cubic metres on 31 March 2017. This capacity is calculated to last until between 2021 and 2025. Therefore there is still insufficient capacity for the plan period (until the end of 2026).

2.10 Conclusions for waste management

A summary of the main waste data to be drawn from the 2016/17 survey of waste management facilities is as follows:

- The total amount of Local Authority Collected Municipal Waste increased in the year 2016/17 compared to 2015/16;
- Waste input into non-hazardous landfill sites in 2016/17 was 146,000 tonnes, a decrease of approximately 57% on the 2015/16 figure and about 131,000 tonnes below the 3 year average of 277,000 tonnes;
- Norfolk's non-hazardous landfill capacity is calculated to last until 2032/33 based on the forecasts of waste arisings in the Minerals and Waste Core Strategy;
- The landbank for inert landfill and quarry restoration sites stands at 7.8 years, assuming waste inputs remain the same as the average for the last three years, or 4 years assuming waste inputs increase by 2.5% per annum;
- The quantity of inert and construction & demolition waste recovered in 2016/17 was 435,000 tonnes; which is similar to the 10 year average of 435,900 tonnes;
- The quantity of non-hazardous waste recycled/composted in 2016/17 (820,000 tonnes) was slightly higher than the quantity recycled in 2015/16, and was about 102,100 tonnes higher than the 10 year average of 717,900 tonnes; and
- The overall quantity of waste handled in Norfolk in 2016/17 (2,209,281 tonnes) was 175,131 tonnes more than 2015/16 (an increase of 8.6%), and 180,833 tonnes more than the 10 year average of approximately 2,028,448 tonnes.
- The Norfolk Waste Site Specific Allocations Plan was adopted on 28 October 2013. The plan covers the period until the end of 2026 and allocates specific sites that are considered suitable in principle and available for development as waste management facilities. The allocated sites would provide for enough waste management capacity to meet the needs within Norfolk for the plan period.

Waste is produced as the result of human activity. As economic activity increases, along with a consequent increase in house building, population and household formation it is to be expected that amounts of waste generated would increase. The figures of total waste managed in Norfolk would seem to reflect this with amounts increasing to a high point in 2007/2008 before falling during subsequent years of lower economic activity, followed by an increase in 2013/14. However, the total waste managed reduced again in 2014/15, mainly due to a reduction in inert waste used in quarry restoration in that year. In 2015/16 the total waste managed increased slightly and in 2016/17 the total waste managed has increased again to the highest level since 2007/08. Therefore, the total waste managed will need to be monitored over subsequent years to see if an upward trend develops or if the previous decreases since 2007/08 are re-established. Waste planning should be trend based as any individual year can contain anomalies due to the methods of data collection and the impacts of individual events which may generate large amounts of waste. A review of the Waste and Minerals Core Strategy began in 2017 and this will provide an appropriate point for reassessing waste trends.

APPENDIX A

Non-hazardous landfill capacity assessment

Table A1

Year	MSW & C&I and imported London waste to landfill (Table A.2 of the Core Strategy)	Remaining non-hazardous landfill capacity (starting at 4,536,330m ³)
2017/18	417,589	4,118,741
2018/19	393,468	3,725,273
2019/20	372,012	3,353,261
2020/21	349,131	3,004,130
2021/22	327,852	2,676,278
2022/23	305,278	2,371,000
2023/24	282,708	2,088,292
2024/25	260,142	1,828,150
2025/26	237,518	1,590,632
2026/27	215,023	1,375,609
2027/28	Estimate 215,000	1,160,609
2028/29	Estimate 215,000	945,609
2029/30	Estimate 215,000	730,609
2030/31	Estimate 215,000	515,609
2031/32	Estimate 215,000	300,609
2032/33	Estimate 215,000	85,609
2033/34	Estimate 215,000	-129,391
TOTAL		

Non-hazardous landfill capacity at 31/03/2017 was 5,097,000m³. 11% of non-hazardous voidspace is assumed to be taken up by inert waste (560,670 m³, leaving 4,536,330 m³ voidspace for non-hazardous waste.

The adopted Norfolk Minerals and Waste Core Strategy only contains forecast waste arisings and the associated need for landfill capacity covering the period up to 2026/27. Therefore, an assumption that a maximum of 215,000 tonnes per annum would continue to be disposed of to landfill in the years after 2026/27 has been used for the purposes of calculating how long the existing landfill capacity will last.

Inert landfill and quarry restoration capacity assessment

Table A2

Year	Inert waste (tonnes)	Inert waste (m3)	Remaining inert landfill and quarry restoration capacity (starting at 1,307,360 m ³)
2017	407,000	273,000	1,034,360
2018	415,000	278,000	756,360
2019	424,000	284,000	472,360
2020	433,000	290,000	182,360
2021	441,000	295,000	-112,640

The forecast inert waste arisings detailed in the table above are the same as those used to assess the need for additional inert landfill/quarry restoration capacity in the Norfolk Minerals and Waste Core Strategy.

It should be noted that non-hazardous landfill sites also received a proportion of inert waste (historically approximately 11% of the waste they receive). Therefore, there is the potential for an additional 560,670m³ to be available for inert waste disposal in Norfolk's existing non-hazardous landfill sites, which would provide around two years' additional capacity.