

# Minerals and Waste Joint Plan Evidence Paper: Waste Specific Evidence for NYCC

**North Yorkshire County Council**

**August 2015**

**Minerals and Waste Joint Plan**  
**Evidence base**

**Evidence Paper: Waste Specific Evidence**

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# 1. Introduction

This chapter forms the waste specific element of the five part Evidence Base which will support the preparation of the Minerals and Waste Joint Plan. The five evidence papers are as follows;

- Demographic & Economic Evidence
- Minerals Specific Evidence
- Cross-Cutting Issues
- Waste Specific Evidence
- Environmental Evidence

These broad themes are broken down into specific topics that will help provide a robust evidence base which will contribute to the justification of policy choices within the Minerals and Waste Joint Plan. The National Planning Policy Framework (NPPF), which was published in March 2012 and replaces a wide range of national planning policy, requires Local Plans to be justified and ‘based on proportionate evidence’<sup>1</sup>. In addition the NPPF also requires Local Plans to be based on ‘adequate, up-to-date and relevant evidence’<sup>2</sup>. Therefore, the key aim of this report is to present evidence which is;

- Proportionate
- Adequate
- Up-to-date, and
- Relevant to North Yorkshire

North Yorkshire County Council is the Minerals and Waste Planning Authority for those parts of the County outside the Yorkshire Dales and North York Moors National Parks. This is referred to as the North Yorkshire Plan area which is shown on Figure 1 below. The Minerals and Waste Joint Plan will cover up until 2030, therefore, where possible any data projections will be up to this year.

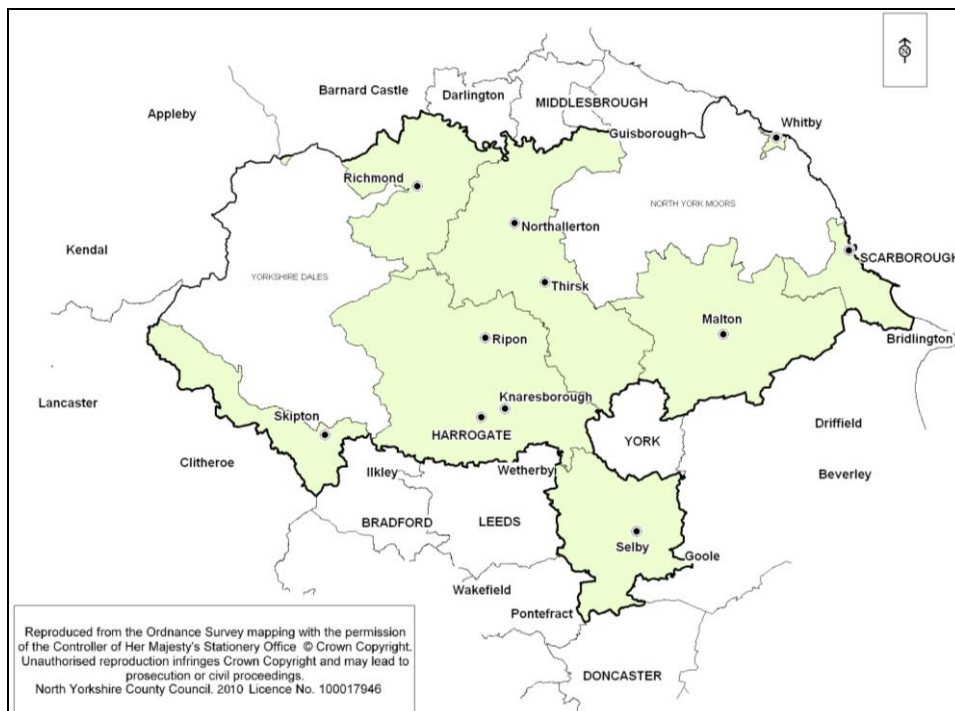


Figure 1 – The North Yorkshire Plan area in its wider context

<sup>1</sup> DCLG, National Planning Policy Framework, March 2012 (para 182)

<sup>2</sup> *Ibid* (para 158)

**North Yorkshire County Council, City of York Council and North York Moors National Park Authority** are producing a **Minerals and Waste Joint Plan** so that strategic issues can be addressed on a greater than local level and to help comply with the 'duty to co-operate'. Production of a Joint Plan is also expected to be more efficient than producing three separate plans. The Joint Plan area is shown in figure 2 below.

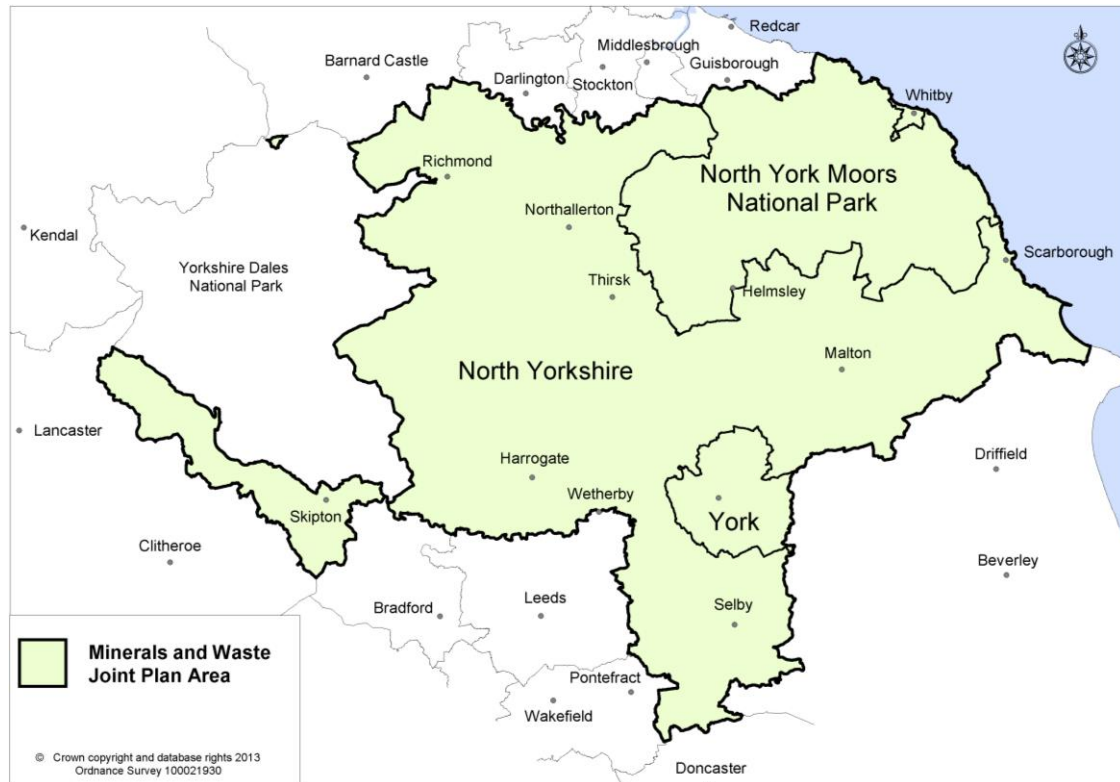


Figure 2 – The North Yorkshire, City of York and North York Moors National Park Joint Plan area

New advice and guidance produced by the Government seeks to move towards enhanced working between local authorities on areas of common interest to achieve sustainable development. The nature of minerals and waste developments mean that often there are implications beyond individual planning authorities' boundaries.

**However, for the purposes of supporting the Joint Plan each of the three authorities has produced a separate waste evidence base paper applicable to their respective area. Therefore, where possible this waste evidence base paper is specific to the North Yorkshire waste planning authority area.**

Please note that due to limitations on the recording of waste information the data provided in this document commonly applies to the administrative boundary for the whole of North Yorkshire, i.e. including the Yorkshire Dales and North York Moors National Parks. Data only applies to the 'North Yorkshire Plan area' where this is specifically stated. The reason for this is the availability of specific data at varying levels. Parts of the eastern and western boundaries of the Plan area are defined by the National Parks. However, these boundaries do not follow ward boundaries, which are often the lowest spatial level of data, especially economic data, provided by the Office of National Statistics. Therefore, so as not to provide data which excludes wards which cross the national park boundaries data is shown, unless otherwise stated, for the whole of the County, including the National Parks.

For the sake of clarity, the '**North Yorkshire Plan area**' refers to the Waste Planning authority area of North Yorkshire (which excludes the National Parks) and the '**Joint Plan area**' refers to the combined waste planning authority areas of North Yorkshire, City of York and North York Moors National Park.

The content of this report is derived primarily from factual sources, and is an 'evolving document' which will be updated as more contemporary evidence and legislation emerges. The interpretation of this evidence base and how it is represented in the Minerals and Waste Joint Plan is to be consulted upon as widely as possible. This will be carried out through a number of consultation exercises.

If you consider that there are additional or alternative sources of information which would be of benefit to the production of the Minerals and Waste Joint Plan we welcome your comments and these will be utilised in future updates of the Evidence Base Papers.

Please note that with effect from 22<sup>nd</sup> February 2013 the Government formally revoked the Regional Strategy for the Yorkshire and Humber Region (RSS), with the exception of Green Belt policies relevant to York. From the 22<sup>nd</sup> February 2013 development plans across the former government office region, with the exception of York, will comprise the relevant local plan, and where they exist, neighbourhood plans. In York, the development plan will continue to include the Regional Strategy's Green Belt policies.

If you have any comments about any of the information in this report, or are able to help with additional data, please let us know at [mwdf@northyorks.gov.uk](mailto:mwdf@northyorks.gov.uk)

## 1.1 Evidence Sources

The bullet points below set out a number of evidence topics, sources and reports that the Councils consider to be particularly important in assisting with the preparation of the Waste policies within the Minerals and Waste Joint Plan.

- North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Interim and Final Reports (Oct 2013) and updated Addendum Report (May 2015) produced by Urban Vision and 4Resources on behalf of North Yorkshire County Council, City of York Council, North York Moors National Park Authority and Yorkshire Dales National Park Authority
- Correspondence with Waste Planning Authorities
- Waste Operator Survey of all known waste operators within the Plan area
- Waste Baseline Review of existing permissions, infrastructure, capacity and movement across authority boundaries
- Government Review of Waste Policy in England 2011 produced by Defra
- Waste Management Plan for England (Dec 2013) produced by Defra
- National Planning Policy Framework (March 2012) produced by DCLG
- National Planning Practice Guidance produced by DCLG
- National Planning Policy for Waste (Oct 2014) produced by DCLG
- Waste Position Statements produced by the Environment Agency
- Yorkshire & Humber Waste Position Statement produced by the Waste Planning Authorities of Yorkshire & Humber (July 2014)
- Waste Data Interrogator produced by the Environment Agency
- Waste Data Modelling Project of the Yorkshire and Humber Region produced by the Environment Agency
- Municipal waste data published by the County Council

- York and North Yorkshire Municipal Waste Management Strategy
- Various Defra advisory notes on waste management methods
- Annual Reports of the Yorkshire and Humber Regional Technical Advisory Body for Waste
- Annual Reports of adjacent North East and North West Regional Technical Advisory Body for Waste
- Annual Monitoring Reports of the Yorkshire and Humber Regional Aggregates Working Party (may have relevance to assessment of minerals and quarry waste)
- Annual Monitoring Reports of adjacent North East and North West Regional Aggregates Working Parties
- North Yorkshire Minerals and Waste Authorities Monitoring Reports
- Relevant evidence base information from waste DPDs produced by adjoining waste planning authorities
- EU Directives such as the Waste Framework Directive (2008) and the Landfill Directive (1999)
- Demographic data such as population projections
- Projections of future waste arisings generated by central Government

With regard to the Waste Specific evidence data the primary sources of information have been the North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Interim and Final Reports (Oct 2013) and updated Addendum Report (May 2015) produced by Urban Vision and 4Resources, the Environment Agency, who produce annual data summaries in the form of 'Waste Interrogators', North Yorkshire County Council through Waste Management and Planning Services and governmental departments such as Department for Communities and Local Government and Department for Environment, Food and Rural Affairs.

## **1.2 Duty to Cooperate**

It is a legal requirement that local plans are prepared having regard to the statutory Duty to Cooperate on strategic cross boundary issues. Cooperation with a range of organisations, including other planning authorities and certain statutory bodies, is required where necessary. Both minerals and waste development can give rise to strategic matters of importance to more than one local authority area. The decision to prepare the Plan on a joint basis is itself a response to the requirements of the Duty, reflecting the benefits of a consistent and coordinated approach which acknowledges existing cross-boundary issues and relationships.

With regard to waste a number of issues have been identified for which it will be necessary to cooperate with other bodies in order to ensure a coordinated approach. These include;

- Cross boundary movements of waste, particularly exports of waste from the Plan area to a range of other WPA areas.
- Safeguarding of waste sites and infrastructure within the two tier parts of the Joint Plan area.

Cooperation with a wide range of relevant organisations has taken place in relation to the above matters, resulting in the following specific actions so far:

- Preparation of a joint evidence study on waste capacity needs for the North Yorkshire sub-region

- Preparation of draft memoranda of understanding with the Yorkshire Dales National Park Authority and Redcar and Cleveland Borough Council in relation to arrangements for the management of waste
- Liaison with a wide range of specific waste planning authorities in relation to identified cross boundary movements of waste
- Liaison with relevant prescribed bodies in relation to the development of policies for inclusion in the Plan.
- Liaison with the waste management industry within the Plan area in relation to the status of existing waste management sites
- Yorkshire & Humber Waste Position Statement produced jointly by the Waste Planning Authorities of Yorkshire & Humber

Cooperation on these matters, and any other relevant matters that are identified, will continue throughout preparation of the Plan.



## 2. European, National and Regional Waste Policy

### 2.1 European Waste Policy

Policy deriving from the European Union is a key driver of national policy for waste. EU directives are transposed into national legislation and this in turn informs local policies, including those that affect waste collection and management.

The two most significant directives relevant to local waste policy are the 1999 Landfill Directive and the 2008 Waste Framework Directive.

#### 2.1.1 Waste Framework Directive

The Waste Framework Directive<sup>3</sup> (2008/98/EC) provides the legislative framework for the collection, transport, recovery and disposal of waste. The directive requires all EU Member States;

- to take the necessary measures to ensure that waste is treated and disposed of correctly,
- set targets for re-use and recycling, and
- draw up binding national programmes for waste prevention<sup>4</sup>.

The Waste Framework Directive provides a definition of waste as *'any substance or object which the holder discards or intends, or is required, to discard'*. This ultimately means waste, as a concept, is a subjective term and can only be determined on the facts of the case and in light of judgments issued by the European Court of Justice and our national Courts. The Waste Framework Directive also defines the term waste management as *'the collection, transport, recovery and disposal of waste, including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker'*<sup>5</sup>.

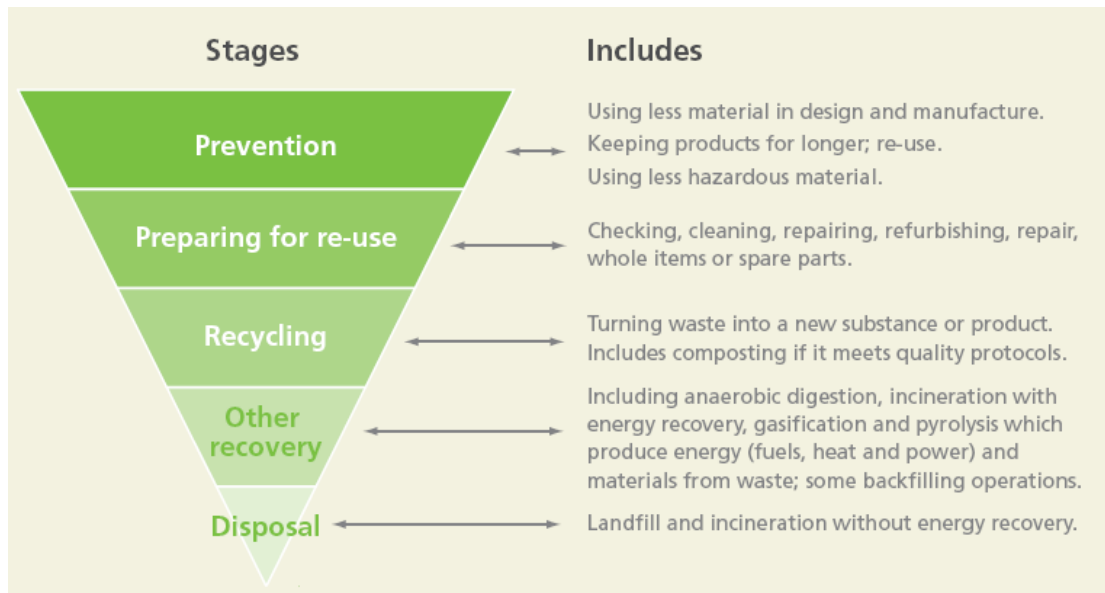
This Directive introduced the current 'Waste Hierarchy' (see the figure below), which places five categories of waste management in their order of priority: Prevention, Preparing for Re-Use, Recycling, Other recovery, Disposal. This concept continues to be a guiding theme for waste policy at all levels and places greatest emphasis upon preventing the production of waste at source, as a way of reducing the necessity to deal with it after disposal, as this offers the greatest environmental gains. The revised waste hierarchy has been incorporated in to the Waste Management Plan for England (Dec 2013) and the National Planning Policy for Waste (Oct 2014). Reflecting the principles of the waste hierarchy will be integral to preparation of the Minerals and Waste Joint Plan.

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<sup>3</sup> Council of the European Union, Council Directive on Waste and repealing certain Directives, November 2008

<sup>4</sup> House of Lords Parliamentary Select Committee on Science and Technology, Waste Reduction, August 2008

<sup>5</sup> Council of the European Union, Council Directive on Waste and repealing certain Directives, November 2008

Figure 3 – The Waste Hierarchy<sup>6</sup>

The Waste Framework Directive provides definitions of the terms used in the Waste Hierarchy:

- *Prevention - measures taken before a substance, material or product has become waste, that reduce:*
  - *the quantity of waste, including through the re-use of products or the extension of the life span of products*
  - *the adverse impacts of the generated waste on the environment and human health*
  - *the content of harmful substances in materials and products*
- *Re-use - any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.*
- *Preparing for re-use - checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing*
- *Recycling - means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials.*
- *Recovery - means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfill a particular function, or waste being prepared to fulfill that function, in the plant or in the wider economy.*
- *Disposal - means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I sets out a non-exhaustive list of disposal operations<sup>7</sup>*

The Waste Hierarchy concept is intended to be used in conjunction with 'lifecycle thinking'<sup>8</sup>, whereby the entire life of an item, including its production, distribution, use and finally its disposal is fully considered. The benefit of this approach is that it can have major improvements upon the overall environmental impact of waste disposal. Different products have different environmental impacts when they are disposed of and therefore by placing greater priority upon moving 'high-impact' items up the

<sup>6</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>7</sup> Council of the European Union, Council Directive on Waste and repealing certain Directives, November 2008

<sup>8</sup> Defra, Introductory Guide to Options for the Diversion of Biodegradable Municipal Waste from Landfill, 2007

waste hierarchy, this can have a positive effect upon the overall environmental impacts of waste management.

The Waste Framework Directive is also relevant to the definition of waste. The UK interpretation of the definition of municipal waste has been changed to bring it in line with the EU definition. This means that more waste from sources other than households, such as commercial sources, which are similar in nature and composition, will fall within the definition of municipal waste. This is likely to have implications for the overall volume of waste categorised as municipal waste.

The Directive sets targets for waste treatment in member states, including;

- Recycle 50% of household waste by 2020
- Recycle 70% of construction, demolition and excavation waste by 2020

With regard to the targets above the Government has stated that *'the most recent statistics show that the rate of recycling for waste from households in England continues to increase towards the EU target of recycling 50% of household waste by 2020 [and the] 70% target for recovering construction and demolition waste is already being exceeded'*<sup>9</sup>.

The Directive also includes a range of minimum producer responsibility targets covering packaging, Waste Electronic and Electrical Equipment (WEEE) and End of Life Vehicles (ELV).

The 'waste hierarchy', which has legal significance via the Waste Framework Directive, is enshrined in law through the Waste (England and Wales) Regulations 2011<sup>10</sup>.

### 2.1.2 Landfill Directive

The Landfill Directive<sup>11</sup> (1999/31/EC) was published on 16<sup>th</sup> July 1999 and requires that a strategy for biodegradable municipal waste (BMW) is put in place to achieve the progressive diversion of waste from landfill (Articles 5(1) & (2)). This requirement has been implemented in England through the Waste Strategy 2007 and across the UK through the Waste and Emissions Trading Act 2003<sup>12</sup>. The UK national targets to reduce the amount of BMW sent to landfill (based upon that produced in 1995) are:

- by 2010 reduce to 75%
- by 2013 reduce to 50%
- by 2020 reduce to 35%

England met its contribution to the UK BMW target for 2010 and the latest data, for 2012, shows BMW to landfill already within the requirements of the 2013 target and the 2020 target (10.2 mt). Based on the latest assumptions, levels of BMW to landfill in England are expected to be around 3.5 million tonnes in 2020.<sup>13</sup>

The Directive's overall objective is to prevent or reduce the negative effects of landfilling on the environment as well as any resultant risk to human health. It seeks to achieve this through specifying uniform technical standards and sets out

<sup>9</sup> Defra, Waste Management Plan for England, December 2013

<sup>10</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>11</sup> Council of the European Union, Council Directive on the Landfill of Waste, April 1999

<sup>12</sup> Defra, Environmental Permitting Guidance – The Landfill Directive, 2009

<sup>13</sup> Defra, Forecasting 2020 Waste Arisings and Treatment Capacity, October 2014

requirements for the location, management, engineering, closure and monitoring for landfills<sup>14</sup>.

The impact of this Directive is significant as it provides the basis for more localised policies, including the Council's joint local Municipal Waste Management Strategy with City of York Council.

## 2.2 National Waste Policy

The overall goal for Government with regards to waste management is to achieve a 'zero waste economy' whilst moving the management of waste as far up the waste hierarchy as possible. These goals are followed through into various channels of national waste policy.

The 2008 Waste Framework Directive requires each Member State to have one or more waste management plans in place. The Government met this requirement with the publication of the Waste Management Plan for England in December 2013 replacing the 2007 Waste Strategy. In October 2014 Government published the National Planning Policy for Waste, superseding Planning Policy Statement 10: Planning for Sustainable Waste Management, as the key national waste planning policy document.

The main elements that constitute current National Waste Policy consist of: National Planning Policy Framework (2012) and National Planning Policy for Waste (2014). Additional national guidance on planning for waste management includes: National Planning Practice Guidance, which is regularly updated, Waste Management Plan for England (Dec 2013) and the Government Review of Waste Policy in England 2011.

### 2.2.1 National Planning Policy Framework

In March 2012 the National Planning Policy Framework (NPPF) was published by the Coalition Government. This document replaced the vast majority of national planning policy, such as planning policy statements, planning policy guidance, minerals policy statements and minerals planning guidance with the exception of PPS10: Planning for Sustainable Waste Management which, as stated above, was replaced by a separate National Planning Policy for Waste published in October 2014.

The NPPF states; '*local authorities preparing waste plans and taking decisions on waste applications should have regard to policies in this Framework so far as relevant*'<sup>15</sup>. Therefore, it is important to consider the relevant policies within the NPPF and have regard to these when preparing the Minerals and Waste Joint Plan. These may include the presumption in favour of sustainable development; '*At the heart of the National Planning Policy Framework is a **presumption in favour of sustainable development**, which should be seen as a golden thread running through both plan-making and decision-taking. For **plan-making** this means that:*

- *local planning authorities should positively seek opportunities to meet the development needs of their area;*
- *Local Plans should meet objectively assessed needs, with sufficient flexibility to adapt to rapid change, unless:*
  - *any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this*

<sup>14</sup> Defra, Environmental Permitting Guidance – The Landfill Directive, 2009

<sup>15</sup> DCLG, National Planning Policy Framework, March 2012 (Para 5)

*Framework taken as a whole; or specific policies in this Framework indicate development should be restricted.*<sup>16</sup>

The Government's view of what sustainable development in England means in practice for the planning system is defined as '*the policies in paragraphs 18 to 219 [of the NPPF], taken as a whole*'<sup>17</sup>. The NPPF goes on to provide greater clarity on what sustainable development entails; '*There are three dimensions to sustainable development: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles:*

- **an economic role** – *contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;*
- **a social role** – *supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and*
- **an environmental role** – *contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.*<sup>18</sup>

This clarification suggests that the minimisation of waste is an important element of sustainable development which will need to be taken into account when developing policies in the Minerals and Waste Joint Plan.

In relation to the waste management industry as an important part of the economy, the NPPF places a prominence upon planning playing a proactive role to meet development needs; '*The Government is committed to ensuring that the planning system does everything it can to support sustainable economic growth. .... Therefore significant weight should be placed on the need to support economic growth through the planning system....To help achieve economic growth, local planning authorities should plan proactively to meet the development needs of business...*'<sup>19</sup>

This would suggest that the economic benefits of waste management development should be given significant weight when developing waste policies in the Minerals and Waste Joint Plan.

However, in relation to the planning system contributing to and enhancing the natural and local environment the NPPF also states that '*Local planning authorities should: set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure; and maintain the character of the undeveloped coast, protecting and enhancing its distinctive landscapes, particularly in areas defined as Heritage Coast, and improve public access to and enjoyment of the coast.*'<sup>20</sup>

<sup>16</sup> *Ibid (Para 14)*

<sup>17</sup> *Ibid (Para 6)*

<sup>18</sup> *Ibid (Para 7)*

<sup>19</sup> *Ibid (Para 19 and 20)*

<sup>20</sup> *Ibid (Para 114)*

The NPPF provides specific guidance for those producing Local Plans stating that ‘Crucially, Local Plans should:

- *plan positively for the development and infrastructure required in the area to meet the objectives, principles and policies of this Framework;*
- *be drawn up over an appropriate time scale, preferably a 15-year time horizon, take account of longer term requirements, and be kept up to date;*
- *be based on co-operation with neighbouring authorities, public, voluntary and private sector organisations;*
- *indicate broad locations for strategic development on a key diagram and land-use designations on a proposals map;*
- *allocate sites to promote development and flexible use of land, bringing forward new land where necessary, and provide detail on form, scale, access and quantum of development where appropriate;*
- *identify areas where it may be necessary to limit freedom to change the uses of buildings, and support such restrictions with a clear explanation;*
- *identify land where development would be inappropriate, for instance because of its environmental or historic significance; and*
- *contain a clear strategy for enhancing the natural, built and historic environment, and supporting Nature Improvement Areas where they have been identified.*<sup>21</sup>

In addition to this the NPPF also incorporates a Duty to Cooperate that Planning Authorities need to fulfil when preparing a Local Plan; ‘*Public bodies have a duty to cooperate on planning issues that cross administrative boundaries, particularly those which relate to the **strategic priorities**... The Government expects joint working on areas of common interest to be diligently undertaken for the mutual benefit of neighbouring authorities.*’<sup>22</sup>

Ultimately, for a Local Plan to be adopted the NPPF requires that it needs to have ‘*been prepared in accordance with the Duty to Cooperate, legal and procedural requirements. A local planning authority should submit a plan for examination which it considers is “sound” – namely that it is:*

- **Positively prepared** – *the plan should be prepared based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is reasonable to do so and consistent with achieving sustainable development;*
- **Justified** – *the plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence;*
- **Effective** – *the plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities; and*
- **Consistent with national policy**<sup>23</sup>

## 2.2.2 National Waste Planning Policy

The National Planning Policy for Waste, published in October 2014, supersedes PPS10: Planning for Sustainable Waste Management, as the key national waste planning policy document.

<sup>21</sup> *Ibid (Para 1)*

<sup>22</sup> *Ibid (Para 178)*

<sup>23</sup> *Ibid (Para 182)*

The document sets out *'detailed waste planning policies and should be read in conjunction with the NPPF, the Waste Management Plan for England and National Policy Statements for Waste Water and Hazardous Waste, or any successor documents. All local planning authorities should have regard to its policies when discharging their responsibilities to the extent that they are appropriate to waste management.'*<sup>24</sup>

The policy document provides more detail on the term 'proportionate evidence base' used in the NPPF and sets out what Waste Planning Authorities are responsible for when preparing Local Plans;

- *ensure that the planned provision of new capacity and its spatial distribution is based on robust analysis of best available data and information, and an appraisal of options. Spurious precision should be avoided;*
- *work jointly and collaboratively with other planning authorities to collect and share data and information on waste arisings, and take account of:*
  - *waste arisings across neighbouring waste planning authority areas;*
  - *any waste management requirement identified nationally, including the Government's latest advice on forecasts of waste arisings and the proportion of waste that can be recycled; and*
- *ensure that the need for waste management facilities is considered alongside other spatial planning concerns, recognising the positive contribution that waste management can bring to the development of sustainable communities.'*<sup>25</sup>

Waste Planning Authorities are advised that they should identify sufficient opportunities within their Local Plan that meet the identified needs of the area for the management of waste. It goes on to state that Waste Planning Authorities should:

- *undertake early and meaningful engagement with local communities so that plans, as far as possible, reflect a collective vision and set of agreed priorities when planning for sustainable waste management, recognising that proposals for waste management facilities such as incinerators can be controversial;*
- *drive waste management up the waste hierarchy (Appendix A), recognising the need for a mix of types and scale of facilities, and that adequate provision must be made for waste disposal;*
- *in particular, identify the tonnages and percentages of municipal, and commercial and industrial, waste requiring different types of management in their area over the period of the plan;*
- *consider the need for additional waste management capacity of more than local significance and reflect any requirement for waste management facilities identified nationally;*
- *take into account any need for waste management, including for disposal of the residues from treated wastes, arising in more than one waste planning authority area but where only a limited number of facilities would be required;*
- *work collaboratively in groups with other waste planning authorities, and in two-tier areas with district authorities, through the statutory duty to cooperate, to provide a suitable network of facilities to deliver sustainable waste management;*
- *consider the extent to which the capacity of existing operational facilities would satisfy any identified need.'*<sup>26</sup>

<sup>24</sup> DCLG, National Planning Policy for Waste, October 2014

<sup>25</sup> *Ibid*

<sup>26</sup> *Ibid*

The policy document sets out what Waste Planning Authorities should consider when identifying sites and/or areas for new or enhanced waste management facilities in their Local Plan:

- *identify the broad type or types of waste management facility that would be appropriately located on the allocated site or in the allocated area in line with the waste hierarchy, taking care to avoid stifling innovation (Appendix A);*
- *plan for the disposal of waste and the recovery of mixed municipal waste in line with the proximity principle, recognising that new facilities will need to serve catchment areas large enough to secure the economic viability of the plant;*
- *consider opportunities for on-site management of waste where it arises;*
- *consider a broad range of locations including industrial sites, looking for opportunities to co-locate waste management facilities together and with complementary activities. Where a low carbon energy recovery facility is considered as an appropriate type of development, waste planning authorities should consider the suitable siting of such facilities to enable the utilisation of the heat produced as an energy source in close proximity to suitable potential heat customers;*
- *give priority to the re-use of previously-developed land, sites identified for employment<sup>27</sup>*

Specific recognition is given to the protection of Green Belt designations and para 6 of the Policy states *'waste planning authorities ... should first look for suitable sites and areas outside the Green Belt for waste management facilities that, if located in the Green Belt, would be inappropriate development.'*<sup>28</sup>

### 2.2.3 National Planning Practice Guidance

On 6<sup>th</sup> March 2014 National Planning Practice Guidance (NPPG) was launched by DCLG as a web-based resource replacing a number of planning guidance documents including circulars, development orders, good practice guides; annexes and letters from the DCLG Chief Planner.

This guidance contains a waste section which provides further information in support of National Waste Planning Policy (Oct 2014). The NPPG states that a *'Local Plan relating to waste should identify sufficient opportunities to meet the identified needs of an area for the management of waste, aiming to drive waste management up the Waste Hierarchy. It should ensure that suitable sites and areas for the provision of waste management facilities are identified in appropriate locations'*<sup>29</sup>.

The NPPG sets out what Local Plans should include to meet the requirements of the Waste Framework Directive;

- *Details of existing major disposal and recovery installations*
- *An assessment of the need for the closure of existing waste management facilities and the need for additional waste installation infrastructure*
- *Sufficient information on the location criteria for site identification and on the capacity of future disposal or major recovery installations.*<sup>30</sup>

With regard to Duty-to-Cooperate obligations, the NPPG sets out the specific requirements for Waste Planning Authorities: *'Waste is a strategic issue which can*

<sup>27</sup> *Ibid*

<sup>28</sup> *Ibid*

<sup>29</sup> DCLG, National Planning Practice Guidance, Accessed 1<sup>st</sup> June 2015 (Para 11)

<sup>30</sup> *Ibid* (Para 14)



be addressed effectively through close co-operation between waste planning authorities and other local planning authorities and public bodies to ensure a suitable and sustainable network of waste management facilities is in place. There is no definitive list of actions that constitute effective cooperation under the duty. However, it may include:

- gathering, evaluating and ensuring consistency of data and information required to prepare Local Plans. This may include joint commissioning of studies or the joint preparation of an evidence base
- engaging actively in dialogue, particularly on those types of wastes or waste facilities that will impact most on neighbouring authorities
- active engagement, where necessary, with planning authorities wider than just those who are their more immediate neighbours, particularly if dealing with waste streams for which there is a need for few facilities
- jointly monitoring waste arisings and capacity.<sup>31</sup>

The NPPG also sets out the evidence required by Local Plans to identify waste requirements, including guidance on calculating forecasts for specific waste streams: *'Information on the available waste management capacity in the relevant area will help inform forward planning in Local Plans of waste infrastructure required to meet need. It will also require an assessment of future requirements for additional waste management infrastructure, with reference to forecasts for future waste arisings. Assessing waste management needs for Local Plan making is likely to involve:*

- understanding waste arisings from within the planning authority area, including imports and exports
- identifying the waste management capacity gaps in total and by particular waste streams
- forecasting the waste arisings both at the end of the period that is being planned for and interim dates
- assessing the waste management capacity required to deal with forecast arisings at the interim dates and end of the plan period.<sup>32</sup>

The Minerals and Waste Joint Plan, and its accompanying evidence base, will meet the national policy and guidance requirements set out above.

#### 2.2.4 Waste Management Plan for England

A new Waste Management Plan for England (WMPE) was published in December 2013 which replaces the 2007 Waste Strategy. The WMPE provides an *'analysis of the current waste management situation in England and evaluates how it will support implementation of the objectives and provisions of the Waste Framework Directive'*<sup>33</sup>.

The WMPE applies specifically to waste streams identified within the Waste Framework Directive, namely:

- *Municipal waste – household waste and commercial waste similar to household waste*
- *Industrial (including agricultural) and commercial waste*
- *Construction and demolition waste*
- *Hazardous waste*<sup>34</sup>

<sup>31</sup> *Ibid* (Para 15)

<sup>32</sup> *Ibid* (Para 22)

<sup>33</sup> Defra, Waste Management Plan for England, December 2013

<sup>34</sup> *Ibid*

Other waste streams, such as radioactive waste and waste water, are outside the scope of the Waste Framework Directive and therefore the WMPE.

The WMPE states that the Governments principal commitment is to work towards ‘a longer term vision of a zero waste economy, focussing on sustainable use of materials and on improving services to householders and businesses, while delivering environmental benefits and supporting economic growth’. The Plan also supports the implementation of the Waste Hierarchy stating that it is ‘both a guide to sustainable waste management and a legal requirement, enshrined in law through the Waste (England and Wales) Regulations 2011’<sup>35</sup>.

The WMPE also supports the polluter-pays principle stating that ‘the costs of waste management shall be borne by the original waste producer or by the current or previous waste holders, ensuring that those responsible for producing and holding waste are incentivised to reduce and/or manage their waste in a way that reduces impacts on the environment and human health’. As a way of implementing the polluter-pays principle ‘The UK has established a “Producer Responsibility” regime which implements the EU Directive on Packaging and Packaging Waste [including] Producer Responsibility Obligations (Packaging Waste) Regulations 2007 which set targets for the recycling and recovery of packaging waste [from obligated businesses]. New packaging recovery targets for 2013–17 came into force in December 2012.: 2013 - 74%; 2014 – 75; 2015 - 76%; 2016 - 78%; 2017 - 79%. The new targets will mean an increase in recycling for plastics, aluminium and split targets for glass based on the end use (i.e. remelt or aggregate). The new targets will deliver environmental and economic benefits as well as ensure the UK continues to meet the EU Directive targets over the next five years.’<sup>36</sup>

The Plan provides information on the import and export of waste to and from the UK; ‘in 2011 the UK imported nearly 0.25 mt of waste materials and exported approximately 15 mt of materials for recycling, ensuring that much of the recyclable waste collected by local authorities and waste management companies was ultimately recycled. The largest volume of materials exported for recovery is metals, followed by paper and cardboard, whilst plastics and glass are also exported for recovery in significant volumes’<sup>37</sup>.

### 2.2.5 Government Review of Waste Policy in England 2011

In June 2011 Government published its ‘Review of Waste Policy in England 2011’, which supports the Waste Management Plan for England (Dec 2013). The publication of the National Waste Review was accompanied by an Action Plan and an Anaerobic Digestion Strategy and Action Plan.

The Review of Waste Policy in England 2011 sets out the vision for waste management policy in England where it states that England ‘needs to move beyond our current throwaway society to a “zero waste economy” in which material resources are re-used, recycled or recovered wherever possible, and only disposed of as the option of very last resort. This requires a new public awareness in our attitude to waste. It means reducing the amount of waste we produce and ensuring that all material resources are fully valued – financially and environmentally – both during their productive life, and at ‘end-of-life’ as waste. We will see the benefits not only in a healthier natural environment and reduced impacts on climate change, but also in

<sup>35</sup> Defra, Waste Management Plan for England, December 2013

<sup>36</sup> *Ibid*

<sup>37</sup> *Ibid*

*the competitiveness of our businesses through better resource efficiency and innovation*<sup>38</sup>.

The Governments' aim of a 'zero waste economy' is one in which "...waste is prevented wherever it occurs...and...material resources are re-used, recycled or recovered wherever possible, and only disposed of as the option of very last resort. However, a vision of a 'zero waste economy' acknowledges that there will continue to be a long-term market in "waste" materials, with significant opportunities for growth in the collection, recycling, reprocessing and recovery of waste"<sup>39</sup>. Defra has stated that the government does not consider a zero waste economy to be an economy where no waste is produced. It envisages that, amongst others, it will have the following characteristics:

- *Resources are fully valued – financially and environmentally*
- *One person's waste is another's resource*
- *Over time, we get as close as we possibly can to zero landfill*
- *A new public consciousness in our attitude to waste*<sup>40</sup>.

The Review sets out a number of principal commitments which have relevance to planning for waste management infrastructure in England;

- *Prioritise efforts to manage waste in line with the waste hierarchy and reduce the carbon impact of waste;*
- *Develop a range of measures to encourage waste prevention and reuse, supporting greater resource efficiency;*
- *Develop voluntary approaches to cutting waste, increase recycling, and improve the overall quality of recyclate material, working closely with business sectors and the waste and material resources industry;*
- *Support energy from waste where appropriate, and for waste which cannot be recycled;*
- *Work to overcome the barriers to increasing the energy from waste which Anaerobic Digestion provides, as set out in the new Anaerobic Digestion strategy;*
- *Consult on restricting wood waste from landfill and review the case for restrictions on sending other materials to landfill.*
- *Encourage councils to sign the new Recycling & Waste Services Commitment, setting out the principles they will follow in delivering local waste services;*
- *Support councils and the waste industry in improving the collection of waste from smaller businesses*<sup>41</sup>

The Review also provides a number of policy directions which may have an impact upon the development of waste policies in the Minerals and Waste Plan;

- *Target those waste streams with high carbon impacts, both in terms of embedded carbon (food, metals, plastics, textiles) and direct emissions from landfill (food, paper and card, textiles, wood)*
- *Promote the use of life cycle thinking in all waste policy and waste management decisions*
- *The Government will develop a comprehensive Waste Prevention Programme*
- *On recycling, continue to increase the percentage of waste collected from both households and businesses which is recycled, at the very least meeting*

<sup>38</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>39</sup> *Ibid*

<sup>40</sup> Defra, Background Information to the National Waste Strategy Review, 2010

<sup>41</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

*the revised waste framework directive target to recycle 50% of waste from households by 2020*

- *Working closely with businesses to develop new voluntary responsibility deals in a range of sectors focussed on reducing and recycling waste*
- *The Government will work with and support businesses, local authorities and third sector organisations to help reduce avoidable food waste, which is currently estimated to 16 million tonnes a year in Britain*
- *Identify how the burden of waste management compliance on legitimate business can be reduced, with enforcement targeted even more clearly against those who consistently operate outside the law*
- *The Government will be working with local councils to increase the frequency and quality of rubbish collections and make it easier to recycle*
- *Remove some of the burdens and barriers which prevent local authorities from focussing on local priorities, principally the Landfill Allowance Trading Scheme from 2013*
- *Households and businesses often produce similar types of waste and, where it makes sense to do so, materials should be collected and treated together*
- *Government supports efficient energy recovery from residual waste which can deliver environmental benefits, reduce carbon impacts and provide economic opportunities*
- *Government will ensure the correct blend of incentives are in place to support the development of recovery infrastructure as a renewable energy source*
- *Whilst remaining technology neutral, look to identify and communicate the full range of recovery technologies available and their relative merits*
- *Local communities should benefit from hosting waste infrastructure and be involved from an early stage in planning for infrastructure.*
- *The Government will publish data on likely waste arisings and treatment capacity in future years*
- *Seek to reduce commercial barriers to the effective financing of infrastructure*
- *There is no requirement for individual authorities to be self-sufficient in terms of waste infrastructure and transporting waste to deliver the best environmental solution should not be considered a barrier*
- *The Government will publish a National Waste Management Plan<sup>42</sup>*

Whilst the Minerals and Waste Joint Plan will not be able to directly address all these issues and initiatives it does provide an opportunity to consider the spatial and land-use implications that arise and develop an appropriate spatial strategy in response to them.

### *Landfill Tax*

The Landfill Tax is a rate of tax attributed to the amount of active and inert waste deposited at Landfill sites. The current rate of Landfill Tax for active waste is £82.60 per tonne and the 2015 Budget announced that both rates of Landfill Tax will increase in line with RPI from April 2016.<sup>43</sup>

The standard landfill tax rate above applies to 'active waste' streams. However, there is a lower rate of £2.60 per tonne, introduced in April 2008, which applies to those inactive (or inert) wastes listed in Schedule 2 of the Landfill Tax (Qualifying Material) Order 1996. There are also a number of exemptions to the tax including the landfilling of waste arising from quarrying and mining<sup>44</sup>.

<sup>42</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>43</sup> HMRC, 2015 Budget, March 2015

<sup>44</sup> WRAP, [www.aggregain.wrap.co.uk](http://www.aggregain.wrap.co.uk), Waste Management Regulations, 2010

The Government has indicated that the landfill tax is the key driver to divert waste from landfill to ensure that the EU targets under the Landfill Directive are met<sup>45</sup>.

### *Landfill Allowance Trading Scheme*

The Landfill Allowance Trading Scheme (LATS) was launched on 1<sup>st</sup> April 2005 and has been a key tool in meeting landfill diversion targets set by the European Landfill Directive.

However, the 2011 Review of Waste Policy in England announced the ending of the Landfill Allowance Trading Scheme (LATS) after the 2012/13 scheme year in England, with reliance remaining on the Landfill tax system as a key incentive for local authorities to reduce the waste they send to landfill.<sup>46</sup>

### 2.2.6 National Infrastructure Plan

In October 2010 the UK Government published a National Infrastructure Plan (NIP) which has subsequently been updated annually, the most recent of which in 2014. This document focuses on economic infrastructure: the networks and systems in energy, transport, digital communication, flood protection, water and waste management. The NIP states that these elements are all critical to support economic growth and to improve the quality of life of everyone in the UK<sup>47</sup>.

With regard to waste the National Infrastructure Plan supports the move towards a 'circular economy' where material resources are valued and kept in circulation. The Plan states that in 2012 England produced approximately 42 million tonnes of Municipal Solid Waste (including 19.1 million tonnes of Commercial and Industrial waste similar in nature to household waste), 16.2 million tonnes of which went to landfill. The Plan seeks to ensure the best use of materials and resources, and that waste in England is dealt with as efficiently as possible, in a way that meets EU targets. With regard to government funding of new waste infrastructure the Plan confirms that all grant funding has been allocated, with 20 existing waste Private Finance Initiative and Public-Private Partnership projects in the infrastructure pipeline. The government is not currently planning to fund any new projects through Waste Infrastructure Credits.<sup>48</sup>

In July 2014, the European Commission published proposals as part of a review of resource and waste management policy and legislation, including key targets in EU waste legislation. The government is committed to the implementation of proportionate EU agreements, and has made clear that it would not support new targets at an EU-level unless there is a clear economic and environmental case to do so. Negotiations on the European Commission proposals are expected to conclude between 2016 and 2018 and once these have substantively concluded the government expects to have sufficient clarity to decide what further action, including on infrastructure, will be necessary to meet any revision of the targets.<sup>49</sup>

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<sup>45</sup> Defra, Waste Management Plan for England, December 2013

<sup>46</sup> Defra, [www.defra.gov.uk](http://www.defra.gov.uk), June 2011

<sup>47</sup> HM Treasury, National Infrastructure Plan, December 2014

<sup>48</sup> *Ibid*

<sup>49</sup> *Ibid*

### 2.2.7 National Policy Statements

The Planning Act 2008 provides for the production of National Planning Statements (NPS) to sit within a National Planning Framework (NPF). These provisions are primarily for guidance when dealing with Nationally Significant Infrastructure Projects (NSIPs) such as;

- Energy from Waste Facilities which have an annual capacity of over 50 Megawatts
- Waste Water Treatment Plants which are expected to have a capacity exceeding a population equivalent of 500,000
- Facilities to transfer or store waste water facilities if the capacity for storage of waste water exceeds 350,000 cubic metres
- Hazardous Waste Facilities, including extensions or alterations to existing facilities, where the main purpose is expected to be the final disposal or recovery of hazardous waste, and the capacity is:
  - (a) in the case of the disposal of hazardous waste by landfill or in a deep storage facility, more than 100,000 tonnes per year;
  - (b) in any other case, more than 30,000 tonnes per year<sup>50</sup>

The NPF will include two sets of NPSs that may have relevance to waste policies in the Minerals and Waste Joint Plan: the NPSs on Hazardous waste and the NPSs on waste water. The waste water NPS was published in March 2012 and the Hazardous Waste NPS was published in July 2013. A set of NPSs addressing energy issues, which also may be of relevance have also been produced by the Department for Energy and Climate Change (DECC). This set of NPSs were formally designated on the 19<sup>th</sup> July 2011<sup>51</sup>.

### 2.2.8 Sustainable Development Strategy

The UK Government's current Sustainable Development Strategy, "*Mainstreaming Sustainable Development*" was published in 2011 and builds upon the 2005 document "*Securing the Future: Delivering UK Sustainable Development Strategy*". Mainstreaming Sustainable Development sets out the vision of the Coalition Government for sustainable development and what this means in practice.

The document states that the Coalition Government is committed to sustainable development, which means making the necessary decisions now to realise our vision of stimulating economic growth and tackling the deficit, maximising wellbeing and protecting our environment, without negatively impacting on the ability of future generations to do the same. The document also sets out key areas where the Government will take action:

- Sustainable development in government
- Green economy
- Action to tackle climate change
- Protecting and enhancing the natural environment
- Fairness and improving wellbeing
- National and international sustainable development
- Building a Big Society
- Business planning
- Operations and procurement commitments
- Transparency and public accountability<sup>52</sup>

<sup>50</sup> Planning Act 2008

<sup>51</sup> DECC, <http://www.decc.gov.uk>, July 2011

<sup>52</sup> Defra, Mainstreaming Sustainable Development, February 2011

In May 2013 'Government Progress Mainstreaming Sustainable Development' was published by Defra. The Report found that over the past two years much progress has been made to deliver on the Government's vision for sustainable development. Structures are in place to ensure sustainable development is being considered across policy, estates and operations and [Government] Departments are driving forward sustainability in policy, operations and procurement.<sup>53</sup>

### 2.3 Regional Waste Policy

With effect from 22<sup>nd</sup> February 2013 the Government formally revoked the Regional Strategy for the Yorkshire and Humber Region (RSS), with the exception of Green Belt policies relevant to York. From the 22<sup>nd</sup> February 2013 development plans across the former government office region, with the exception of York, will comprise the relevant local plan, and where they exist, neighbourhood plans. In York, the development plan will continue to include the Regional Strategy's Green Belt policies.

Although the policies in the RSS have been revoked, with the exception of Green Belt policies relevant to York, evidence used in support of the waste policies may remain relevant. The RSS was published in 2008 and was based on evidence preceding that date. The evidence used to prepare it is now some years old and has largely been superseded by more recent information.

### 2.4 Local Policy

For the purposes of this document, local policy covers all waste related policy, both direct and indirect, prepared by North Yorkshire County Council or organisations which operate at a level below the Yorkshire and Humber regional level but above the district/borough level.

#### 2.4.1 Waste Local Plan Saved Policies

The current North Yorkshire Waste Local Plan (NYWLP) was adopted in 2006 and was originally due to expire on the 17<sup>th</sup> May 2009. However, the Secretary of State has issued a direction allowing a large number of the policies to be 'saved' until the policies being developed in the Minerals and Waste Joint Plan supersede them. The 'saved' policies continue to form part of the statutory 'development plan' and provide an important part of the current local policy framework for development control decisions for waste facilities. A list of the NYWLP 'saved' policies is in Appendix 1 of this document.

#### 2.4.2 Municipal Waste Management Strategy

North Yorkshire County Council is a member of the York and North Yorkshire Waste Partnership (YNYWP), which was formed in 1998. This organisation (which comprises NYCC together with City of York Council and the seven District/Borough Councils in North Yorkshire), produces the Municipal Waste Management Strategy (MWMS) for the North Yorkshire sub-region. The most recent strategy to be adopted, '*Lets Talk Less Rubbish*' (June 2006) sets out how municipal waste in York and North Yorkshire will be dealt with up until 2026.

A key role of the MWMS is to set out the partnership's targets for waste minimisation and diversion of municipal waste from landfill as a waste management authority. The

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<sup>53</sup> Defra, Government Progress Mainstreaming Sustainable Development, May 2013

Minerals and Waste Joint Plan sets land use related policies for all waste streams arising and managed in the North Yorkshire Plan area and forms part of the statutory development plan for the determination of planning applications.

The Vision of the MWMS is to work with the community and stakeholders of York and North Yorkshire to meet their waste needs and deliver a high quality, sustainable, customer-focussed and cost effective waste management service<sup>54</sup>.

The MWMS has identified the following strategic objectives:

- *To reduce the amount of waste produced in York and North Yorkshire to make us one of the best performing areas in the country by 2013*
- *To promote the value of waste as a natural and viable resource, by:*
  - *Re-using, recycling and composting the maximum practicable amount of household waste*
  - *Maximising opportunities for re-use of unwanted items and waste by working closely with community and other groups*
  - *Maximising the recovery of materials and/or energy from waste that is not re-used, recycled or composted so as to further reduce the amount of waste sent to landfill<sup>55</sup>*

With regard to recycling and composting the MWMS aims to achieve the following targets as a minimum:

- Recycle or compost 45% of household waste by 2013
- Recycle or compost 50% of household waste by 2020

In addition to the targets above the MWMS has also set itself a target to, as a minimum:

- Divert 75% of municipal waste from landfill by 2013

#### 2.4.3 North Yorkshire Community Plan

The 'North Yorkshire Community Plan 2014-17' sets out three key priorities for how to help make North Yorkshire a better place in which to live, work and visit.

- Facilitate the development of key housing and employment sites across North Yorkshire by delivering necessary infrastructure investments through partnership
- Supporting and enabling North Yorkshire communities to have greater capacity to shape and deliver the services they need and to enhance their resilience in a changing world
- Reduce health inequalities across North Yorkshire<sup>56</sup>

Each of these priorities contains specific actions to be taken over the next three years. The plan also contains a brief action plan identifying which groups of partners will take the lead in making sure each of these objectives. Local Government North Yorkshire and York and the Chief Executives Group for North Yorkshire and York, will work to achieve the aims of the Community Plan through the use of action plans developed alongside the District and Borough Council's in North Yorkshire.

<sup>54</sup> York and North Yorkshire Waste Partnership, Lets Talk Less Rubbish - A Municipal Waste Management Strategy 2006 – 2026, June 2006

<sup>55</sup> *Ibid*

<sup>56</sup> Local Government North Yorkshire and York Chief Executives Group North Yorkshire and York, North Yorkshire Community Plan, 2014



The plan was formerly known as the Sustainable Community Strategy for North Yorkshire; originally launched in 2008 as a ten-year vision for the North Yorkshire Strategic Partnership (NYSP). It has been re-named following a public consultation during 2011 to refresh the strategy and ensure that it continues to focus on the most critical priorities for the next three years.

The Minerals and Waste Joint Plan, despite its relatively narrow focus, can attempt to contribute to the delivery of these actions. These will be discussed further at appropriate points in the strategy development where this potential occurs.

#### 2.4.4 Local Enterprise Partnerships

One of the key alterations by the former Coalition Government, with specific reference to economic growth, was the creation of Local Enterprise Partnerships (LEPs). These non-statutory bodies set the economic priorities of their local area. LEPs have been designed locally to meet local needs, but they share the common goal of tackling local barriers in order to grow the local economy. They are the focus for Government's local growth drive and as part of their role they can provide a strategic local vision<sup>57</sup>.

There are three LEPs covering different parts of the Plan area:

- York, North Yorkshire and East Riding LEP – covers all of the Plan area
- Leeds City Region LEP – covers the southern parts of Craven and Harrogate districts, Selby district and City of York;
- Humber LEP – Scarborough Borough Council works in partnership with the Humber LEP.

The York, North Yorkshire and East Riding Local Enterprise Partnership was recognised by the Government on the 10th February 2011. Below are the six priorities identified in the LEP's Strategic Economic Plan (March 2014):

- Profitable and ambitious small and micro businesses;
- A global leader in food manufacturing, agri-tech and biorenewables;
- Inspired people;
- Successful and distinctive places; and
- A well-connected economy.<sup>58</sup>

The relationship with neighbouring LEPs, such as the Tees Valley LEP, will also be relevant for areas of North Yorkshire which are in close proximity to the boundaries of the Plan area.

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<sup>57</sup> DCLG, Supporting Local Growth, December 2011

<sup>58</sup> York, North Yorkshire and East Riding Enterprise Partnership, Strategic Economic Plan, March 2014

### 3. Waste Management

This section of the Evidence Base considers available information on amounts of waste and current management methods in North Yorkshire.

#### 3.1 The Current Picture

Research undertaken by Urban Vision and 4Resources has provided estimates of the amount and type of waste arising within the North Yorkshire Sub-region and its constituent Waste Planning Authorities. The table below shows waste arisings in the North Yorkshire Plan area, City of York and North York Moors National Park for Local Authority Collected Waste (LACW) and Hazardous waste in 2013 and Commercial and Industrial (C&I) waste, Construction, Demolition and Excavation (CD&E) waste, and Agricultural waste in 2011.

	LACW <sup>^</sup>	C&I <sup>*</sup>	CD&E <sup>β</sup>	Hazardous <sup>^</sup>	Agricultural
North Yorkshire	330,346	582,643	627,590 <sup>a</sup>	23,479	2,347,889
City of York	92,134	168,083	141,174	6,036	168,403
North York Moors NP	11,325	6,915	-	-	1,135,923

Table 1 – North Yorkshire, City of York and North York Moors National Park Waste arisings in tonnes, 2011 and 2013<sup>59</sup>

<sup>^</sup>LACW and Hazardous waste data relates to the calendar year 2013

<sup>\*</sup>C&I waste extrapolations for 2011 are estimates based upon the North West Regional Survey (2009), excludes Power & Utilities Waste which is deposited at restricted user sites

<sup>β</sup> CD&E waste refers to deposits, as arisings data is not currently available

<sup>a</sup> North Yorkshire CD&E waste deposits includes North York Moors and Yorkshire Dales National Park data

The table above sets out the waste arisings within the North Yorkshire Plan area by waste stream. Agricultural waste, which is estimated based upon number of farm dwellings within the respective areas, is by far the biggest contributor of waste arisings. However, the vast majority of this is managed on the farm site where it arises through exempt management practices, with only a small element, approximately 32,000 tonnes, requiring off site management.

In addition to the 2011 waste arisings data for the North Yorkshire plan area, updated waste arisings for the Joint Plan area as a whole is provided in the 2015 Addendum to the research undertaken by Urban Vision and 4Resources. This information is provided in the table below and shows waste arisings in the Joint Plan area for Local Authority Collected Waste (LACW), Construction, Demolition and Excavation (CD&E) waste and Hazardous waste in 2013 and Commercial and Industrial (C&I) waste and Agricultural waste in 2015.

<sup>59</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (2013) and Addendum Report (May 2015)

	LACW <sup>^</sup>	C&I <sup>*</sup>	CD&E <sup>β</sup>	Hazardous <sup>^</sup>	Agricultural
Joint Plan area	415,214	758,000	384,664	29,515	4,581,443

Table 2: Joint Plan area Waste Arisings in tonnes, 2013 – 2015<sup>60</sup>

<sup>^</sup>LACW and Hazardous waste data relates to the calendar year 2013. LACW does not include local authority trade waste or hazardous waste and therefore does not sum from the local authority specific data above.

<sup>\*</sup>C&I waste extrapolations for 2015 are estimates based upon the North West Regional Survey (2009), excludes Power & Utilities Waste which is deposited at restricted user sites

<sup>β</sup>CD&E waste arisings is a minimum estimate calculated by deducting estimated hazardous CD&E waste and transfer CD&E waste from the CD&E waste arisings total

The estimates provided for C&I waste arisings in 2011 and 2015 are based upon extrapolations from the North West Regional C&I Survey (2009), as explained in the table above. The research suggests that the main waste producing sectors are food & drink and the commercial sectors. An estimate of CD&E waste arisings within North Yorkshire (including North York Moors and Yorkshire Dales National Parks) has been produced based upon deposits at sites identified in the Environment Agency's Waste Interrogator. The research also shows that over 59% of Construction & Demolition waste is recycled or treated and that excavation waste (soils and naturally occurring waste) is mainly deposited at inert landfill and non-hazardous landfill to assist in restoration.<sup>61</sup>

LACW arisings are based upon information provided directly by the Waste Management Authorities. Arisings of Hazardous waste within the North Yorkshire Plan area are relatively small and information is provided by the Environment Agency's Hazardous Waste Interrogator.

The Environment Agency produces annual datasets of the amount and type of waste deposited within Waste Planning Authority areas, and the methods by which this waste was managed. The table below provides a brief overview of the total amount of waste managed by various methods in North Yorkshire.

	Landfill	Treatment	Recycling	On/In Land	Use of Waste	Total	Transfer
North Yorkshire	1,643,332	269,382	87,755	53,481	-	<b>2,053,950</b>	428,985
City of York	293,686	66,831	89,648	-	-	<b>450,165</b>	95,245
Yorkshire & Humber	4,934,205	4,764,089	2,648,510	573,129	366,689	<b>13,286,622</b>	4,837,638
England	41,067,916	41,261,526	21,605,226	13,709,013	3,019,782	<b>120,663,463</b>	42,246,955

Table 3 – Total waste in tonnes received by waste facilities within North Yorkshire, 2013<sup>62</sup>

Please note the term 'On/In Land', refers to three types of more specific waste management methods; Deep Injection; Lagoon, and; Land Recovery whereas the term 'Use of Waste' refers to three types of more specific waste management methods: Construction, Reclamation and Timber Manufacturing

<sup>60</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>61</sup> *Ibid*

<sup>62</sup> Environment Agency, 2013 Waste Interrogator, 2014

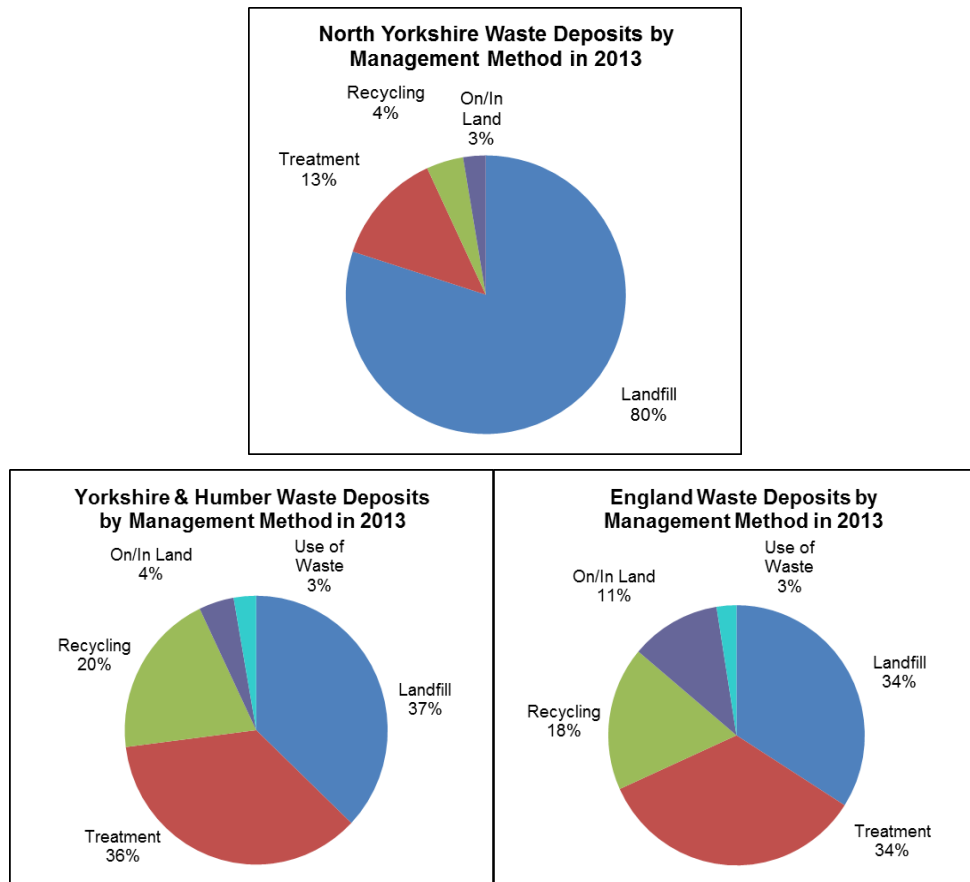


Figure 4 - Total waste deposited by waste management method at a national, regional and county level in 2013<sup>63</sup>

The table and figure above provide a summary of the waste management methods for all waste at a national, regional and county level in 2013. The table above demonstrates that 2 million tonnes of waste was managed by permitted waste facilities within North Yorkshire. An additional 428,985 tonnes of waste passed through waste transfer stations within North Yorkshire, which may or may not be ultimately treated, disposed or recycled within the Plan area.

The data used has been sourced from the Environment Agency's Waste Interrogator and therefore only applies to waste facilities which are required to hold an Environmental Permit. Not all waste facilities are required to hold Environmental Permits due to exemptions and thresholds set out in the Environmental Permitting Regulations. The data will therefore represent an underestimate of the total amount of waste managed. The data shows that, with regard to waste management at a regional and national level, the proportions managed by the various methods are very similar. However, this position is not continued at a County level, where a much greater proportion of landfill takes place.

Please note that the data above categorises Material Recycling Facilities (MRF) under Recycling, whereas the Environment Agency categorises this facility type under Treatment. For the purposes of this document the Council has taken the view that MRFs should be included under 'Recycling' because of the similar nature of the processes that take place at these types of site. The result of this is that the waste data presented in this document may not be directly comparable with that presented

<sup>63</sup> Environment Agency, 2013 Waste Interrogator, 2014

by the Environment Agency. In North Yorkshire, MRFs received 42,959 tonnes of waste in 2013.

It should also be noted that Transfer waste, which refers to waste which passes through waste transfer stations, is not included in the total waste for the national, regional and county figures. The reason for this is to reduce 'double counting' which occurs when waste is handled by more than one facility and is counted twice towards the waste total. Taking waste that has passed through waste transfer stations out of the waste total reduces the likelihood of double counting. However, despite this, it should be noted that waste transfer stations, including for recycling, provide an important element in the waste management infrastructure of North Yorkshire and elsewhere and requirements for waste transfer will need to be considered in the Minerals and Waste Joint Plan.

The high rate of Landfill in North Yorkshire, demonstrated by the figure above, is attributable in part to the high amount of waste (primarily from Power Stations), that is deposited at Restricted User Landfills<sup>64</sup> which in 2013 was 998,623 tonnes, accounting for approximately 49% of all waste deposited in North Yorkshire. This compares to Restricted User Landfill deposits accounting for 8% of waste deposits in Yorkshire & Humber (1.1 mt) and 2% in England (2.3 mt). The term Restricted User sites, is a reference to waste management sites, primarily landfills, which are privately owned, not open to the general market and are commonly used by one significant producer of waste e.g. Eggborough Power Station utilising Gale Common Ash Disposal Site. These types of site account for a large proportion of waste landfilled in North Yorkshire.

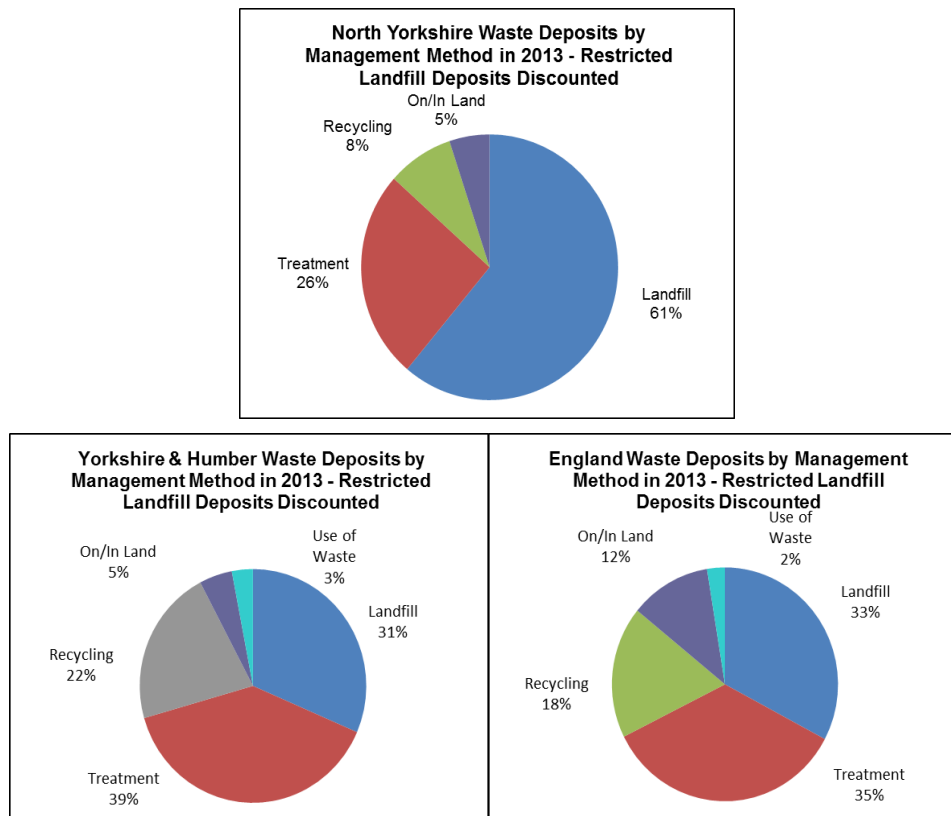


Figure 5 - Total waste deposited by waste management method at a national, regional and County level in 2013 – Restricted User Landfill Deposits Discounted<sup>65</sup>

<sup>64</sup> Restricted User Landfills are defined as landfills not available to the general market which tend to be utilised by single users, such as Power Station Ash Disposal sites

<sup>65</sup> Environment Agency, 2013 Waste Interrogator, 2014

The figure above shows waste deposits by management method at a national, regional and county level in 2013 when Restricted User Landfill deposits have been discounted from the figures. This has a significant impact upon North Yorkshire's figures, reducing landfill deposits from 80% to 61% of total deposits, because of the high levels of waste disposed of at restricted user landfill sites in the County, as explained above. The figure above increases the percentage of total waste dealt with by Recycling and Treatment waste management methods from 4% and 13% to 8% and 26% respectively.

The table below provides more information on landfill deposits within North Yorkshire in 2013. The Environment Agency, within its data, divides waste types into three broad headings; Inert/Construction and Demolition (Inert/C&D); Household, Industrial & Commercial (H/I&C), and; Hazardous.

Site type	Waste type	Inputs (tonnes)
Non-hazardous Landfill	Inert/C&D	99,637
	H/I&C	103,739
	Hazardous	0
<b>Non-hazardous Total</b>		<b>203,376</b>
Inert Landfill only	Inert/C&D	441,333
	H/I&C	0
	Hazardous	13,112
<b>Inert only Total</b>		<b>441,333</b>
Restricted-user Landfill	Inert/C&D	0
	H/I&C	998,624
	Hazardous	0
<b>Restricted-user Total</b>		<b>998,624</b>
<b>Landfill Total</b>		<b>1,643,333</b>

Table 4 - Landfill deposits by site and waste type for North Yorkshire in 2013, also includes the National Parks<sup>66</sup>

The table above is sourced from the Environment Agency's Waste Data Interrogator (2013) and provides the amount of waste sent to different types of landfill in North Yorkshire in 2013, totalling over 1.6 million tonnes of waste. As can be seen the large majority, just under 1 million tonnes of waste, was sent to restricted user landfill sites which are associated mainly with power station ash disposal and minerals working.

Due to the banning of the co-disposal of waste in landfill in July 2004, landfill disposal has been reclassified into categories used under the Pollution Prevention and Control (PPC) permitting of landfills. In addition to this, hazardous landfills have only been able to accept wastes classified as hazardous under the Hazardous Waste Directive.

The table below shows the amount of waste that is managed by treatment facilities within North Yorkshire and the type of waste that is managed by these facilities.

<sup>66</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

Site type	Waste type	Inputs (tonnes)
Physical Treatment	Inert/C&D	64,414
	H/I&C	25,190
	Hazardous	2,170
<b>Physical Total</b>		<b>91,774</b>
Physical-Chemical Treatment	Inert/C&D	0
	H/I&C	5,337
	Hazardous	0
<b>Physical-Chemical Total</b>		<b>5,337</b>
Composting	Inert/C&D	935
	H/I&C	63,184
	Hazardous	0
<b>Composting Total</b>		<b>64,119</b>
Biological Treatment	Inert/C&D	0
	H/I&C	4,168
	Hazardous	0
<b>Biological Total</b>		<b>4,168</b>
WEEE Treatment Facility	Inert/C&D	0
	H/I&C	3,663
	Hazardous	2,240
<b>WEEE Treatment Total</b>		<b>5,903</b>
Non-Hazardous Waste Transfer/Treatment	Inert/C&D	33,813
	H/I&C	44,940
	Hazardous	506
<b>Non-Hazardous Treatment/Transfer Total</b>		<b>79,258</b>
Hazardous Waste Transfer/Treatment	Inert/C&D	2,497
	H/I&C	0
	Hazardous	0
<b>Hazardous Treatment/Transfer Total</b>		<b>2,497</b>
Inert Waste Transfer/Treatment	Inert/C&D	16,327
	H/I&C	0
	Hazardous	0
<b>Inert Waste Transfer/Treatment</b>		<b>16,327</b>
<b>Treatment Total</b>		<b>269,383</b>

Table 5 – Waste managed by treatment facilities in North Yorkshire, 2013<sup>67</sup>

Note: For the purposes of this analysis HWRCs are included in the waste transfer table below

The table above demonstrates the range of types of treatment facilities categorised by the Environment Agency and types of waste managed by these facilities. A selection of the types of waste management method listed in the 'Treatment' category above are explained below;

- **Physical Treatment:** this method often involves the separation of a waste stream, perhaps following a prior treatment stage, or as a precursor to some subsequent processing. The separation of the waste is primarily based upon

<sup>67</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

its physical properties such as particle size or relative density. This could include manual separation, size reduction and sieving/screening.

- **Physical/Chemical Treatment:** processes in this method are a hybrid, in so far as the process relies on the use of both physical and chemical properties for the process to operate successfully. It could include processes such as solvent extraction, pertraction and desorption
- **Composting:** a process in which solid and semi solid biodegradable waste is subject to biological decomposition, primarily used to treat vegetative and green waste,
- **Biological Treatment:** biological processes have several special features and requirements. The basic principle, common to all, is that natural, microorganism based activity breaks down certain compounds either through metabolism or co-metabolism. This method includes both aerobic and anaerobic processes.
- **Chemical Treatment:** a process where the waste is subjected to a chemical reaction, involving the addition of other chemicals as reagents, so that beneficial chemical transformations take place. This could include processes such as oxidation, neutralisation and dechlorination<sup>68</sup>

The data shows that 'Physical Treatment' facilities are the largest subsector of 'treatment' waste facilities, which processed over 91,000 tonnes of waste in 2013.

The table below shows the amount of waste, passing through sites permitted by the Environment Agency, which is recycled in North Yorkshire.

Site type	Waste type	Inputs (tonnes)
Material Recycling	Inert/C&D	29,128
	H/I&C	13,831
	Hazardous	0
<b>Material Recycling Total</b>		<b>42,959</b>
Metal Recycling	Inert/C&D	7,744
	H/I&C	18,985
	Hazardous	3,013
<b>Metal Recycling Total</b>		<b>29,742</b>
Car Breaker	Inert/C&D	2,506
	H/I&C	10,721
	Hazardous	1,681
<b>Car Breaker Total</b>		<b>14,908</b>
Vehicle Depollution Facility	Inert/C&D	0
	H/I&C	3
	Hazardous	142
<b>Vehicle Depollution Total</b>		<b>145</b>
<b>Recycling Total</b>		<b>87,755</b>

Table 6 – Waste managed by recycling facilities in North Yorkshire, 2013<sup>69</sup>

The table above shows that material recycling facilities, in terms of weight, deal with the majority of waste that is managed at recycling facilities in North Yorkshire. It is important to note that a large percentage of Inert Construction and Demolition waste

<sup>68</sup> Basel Convention, Technical Guidelines on Hazardous Wastes: Physico-Chemical and Biological Treatment, September 1999

<sup>69</sup> Environment Agency, 2013 Waste Data Interrogator, 2014



is recycled at sites, including quarry sites, which do not report figures back to the Environment Agency and as such are not included in the table above.

The Environment Agency's Waste Data Interrogator classifies Household Waste Recycling Centres under the 'Transfer' classification as opposed to the 'Recycling' classification and this has been reflected in the evidence base paper.

The table below shows the amount of waste, passing through sites permitted by the Environment Agency, which is managed by transfer stations in North Yorkshire.

Transfer Facility Type	Waste Type	Tonnes Received
Non-hazardous	Inert/C&D	59,457
	H/I&C	228,454
	Hazardous	34
<b>Non-hazardous Total</b>		<b>287,945</b>
Hazardous	Inert/C&D	20,471
	H/I&C	38,661
	Hazardous	5,329
<b>Hazardous Total</b>		<b>64,460</b>
Inert	Inert/C&D	10,989
	H/I&C	-
	Hazardous	-
<b>Inert Total</b>		<b>10,989</b>
HWRC	Inert/C&D	12,235
	H/I&C	51,383
	Hazardous	1,974
<b>HWRC Total</b>		<b>65,591</b>
<b>Transfer Total</b>		<b>428,985</b>

Table 7 – Waste which has passed through Waste Transfer Stations within North Yorkshire, 2013<sup>70</sup>

The table shows that just over two thirds of all waste passing through transfer stations pass through non-hazardous transfer facility types.

### 3.2 Projected Future Arisings

Please note that, with the exception of Municipal Waste, all figures provided below in respect of forecasted growth of waste arisings are provided by sources outside of the Council, for example through the evidence base that contributed to the former Yorkshire and Humber Plan (RSS) (2008). It should be noted that the Yorkshire and Humber Plan was revoked on 22<sup>nd</sup> February 2013 with the exception of Green Belt policies relevant to York. As a result further work has also been commissioned by waste planning authorities in the North Yorkshire Sub-region to establish likely future arisings, for waste streams other than Municipal Waste, to help with preparation of the Minerals and Waste Joint Plan which will cover the period up to 2030. The outcome of this work is reported elsewhere in this Paper where relevant. For municipal waste, up to date projections are available based on work undertaken by the York and North Yorkshire Waste Partnership, although earlier figures contained in the Yorkshire and Humber Plan are also provided below for comparison purposes.

<sup>70</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

The Yorkshire and Humber Plan provided regional waste forecasts for municipal waste and commercial and industrial waste up to 2021. These forecasts included specific North Yorkshire forecasts, albeit including the National Parks, and are based upon work undertaken by the consultancy Enviros, published in 2007, *Government Office Yorkshire & Humber Waste Arisings Forecasting*. These forecasts are as follows;

#### *Municipal Solid Waste*

	2010		2015		2021	
<b>Total Tonnes to be managed</b>	<b>395,000</b>		<b>416,000</b>		<b>443,000</b>	
		% Target		% Target		% Target
Maximum Landfill Capacity required	186,000	47%	137,000	33%	111,000	25%
Minimum Treatment Capacity required	209,000	53%	279,000	67%	333,000	75%
Minimum Tonnage to be Recycled	158,000	40%	187,000	45%	222,000	55%

Table 8 – Municipal Solid Waste projections and potential management methods for North Yorkshire, 2010 - 2021<sup>71</sup>

Subsequent to the waste projections for MSW in North Yorkshire included in the former Yorkshire and Humber Plan, more up-to-date LACW projections have been produced by the York and North Yorkshire Waste Partnership to inform implementation of the Municipal Waste Management Strategy. These are set out in the table below.

Year	Local Authority Collected Waste Projections for North Yorkshire	Year	Local Authority Collected Waste Projections for North Yorkshire
2016/17	339,748	2031/32	375,369
2017/18	341,838	2032/33	377,761
2018/19	343,864	2033/34	380,156
2019/20	345,980	2034/35	382,550
2020/21	348,076	2035/36	384,944
2021/22	351,431	2036/37	387,337
2022/23	353,824	2037/38	389,731
2023/24	356,217	2038/39	392,124
2024/25	358,612	2039/40	394,517
2025/26	361,007	2040/41	396,912
2026/27	363,399	2041/42	399,305
2027/28	365,793	2042/43	401,699
2028/29	368,186	2043/44	404,093
2029/30	370,580	2044/45	406,485
2030/31	372,975		

Table 9 – Local Authority Collected Waste Projections for North Yorkshire, 2016/17 – 2044/45<sup>72</sup>

<sup>71</sup> Government Office Yorkshire & Humber, Yorkshire and Humber Plan – RSS to 2021, May 2008

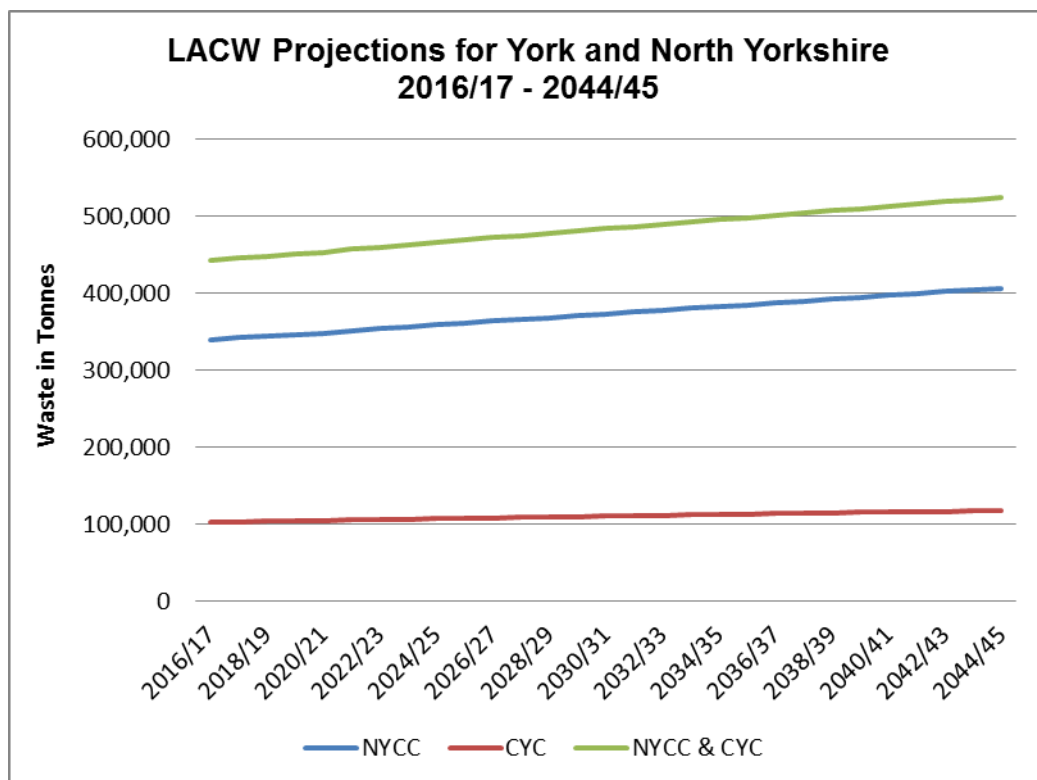


Figure 6 – Local Authority Collected Waste Projections for North Yorkshire, City of York and the combined Partnership area, 2016/17 – 2044/45<sup>73</sup>

These projections are sourced from the York and North Yorkshire Waste Partnership.

*Commercial and Industrial Waste (excluding Restricted User Landfills)*

	2010		2015		2021	
<b>Total Tonnes to be managed</b>	<b>688,000</b>		<b>706,000</b>		<b>730,000</b>	
		% Target		% Target		% Target
Landfill Capacity required	227,000	33%	233,000	33%	241,000	33%
Treatment Capacity required	461,000	67%	473,000	67%	489,000	67%

Table 10 – Commercial and Industrial Waste projections (excluding restricted user) and potential management methods for North Yorkshire, 2010 - 2021<sup>74</sup>

The tables above provide waste projections for municipal solid waste (MSW) and commercial and industrial (C&I) waste in North Yorkshire for 2011/12 – 2039/40 and 2010 – 2021 respectively. They also provide an indication of predicted capacity required for a range of main waste management methods, specifically landfill, treatment and recycling, based upon nationally derived targets.

<sup>72</sup> York and North Yorkshire Waste Partnership

<sup>73</sup> *Ibid*

<sup>74</sup> Government Office Yorkshire & Humber, Yorkshire and Humber Plan – RSS to 2021, May 2008

The tables sourced from the former Yorkshire and Humber Plan show both MSW and C&I waste streams increasing up to 2021, maximum landfill capacity required reducing from 186,000 tonnes per year (tpa) to 111,000 tpa between 2010 – 2021 for MSW and increasing from 227,000 tpa to 241,000 between 2010 – 2021 for C&I waste. The need for Treatment and Recycling capacity is also predicted to increase for both waste streams. It should again be noted that the data on which the Yorkshire and Humber Plan was based is now relatively old and the Plan itself has been revoked.

The more recent LACW projections produced by the York and North Yorkshire Waste Partnership also show waste increasing, but at a slower rate than that predicted by the Yorkshire and Humber Plan. From 2016/17 to 2044/45 LACW is predicted to increase by approximately 67,000 tonnes from 340,000 tpa to 406,000 tpa.

The waste projections produced for the Yorkshire and Humber Plan and set out in Tables 8 and 10 above were based on data provided by the Environment Agency and Defra from surveys or recorded figures. For commercial and industrial waste, projections for growth used historical data and the impact of employment and industrial growth rates. National Waste Strategy 2007 targets and other information were used as a source for information on the required capacity for various forms of waste disposal. The figures above were not intended to be a detailed forecast but to provide a suitable benchmark for the preparation of Local Development Documents<sup>75</sup>. As noted, the figures included in the former RSS are becoming increasingly out of date and do not go beyond 2021, whereas the Minerals and Waste Local will cover the period to 2030.

### 3.3 Waste Management Capacity

The table below shows the total potential waste management capacity added over recent years to North Yorkshire's waste management infrastructure as a result of the granting of new planning permissions.

	2009/10	2010/11	2011/12	2012/13	2013/14
<b>Total Additional Waste Management Capacity for which new permissions granted</b>	171,500 m <sup>3</sup> and 464,050 tpa	167,000 tpa	68,000 tpa	479,500 tpa	127,000 tpa

Table 11 – Additional waste management capacity provided by new developments, 2009/10 – 2013/14<sup>76</sup>

The addition of cubic metres (m<sup>3</sup>) represents the additional landfill void space added to North Yorkshire's waste management capacity, whereas tonnes per annum (tpa) figures represent all other forms of additional waste management capacity. In total 127,000 tpa of additional waste management capacity was permitted during 2013/14.

<sup>75</sup> *Ibid*

<sup>76</sup> NYCC, Planning Records, 2014

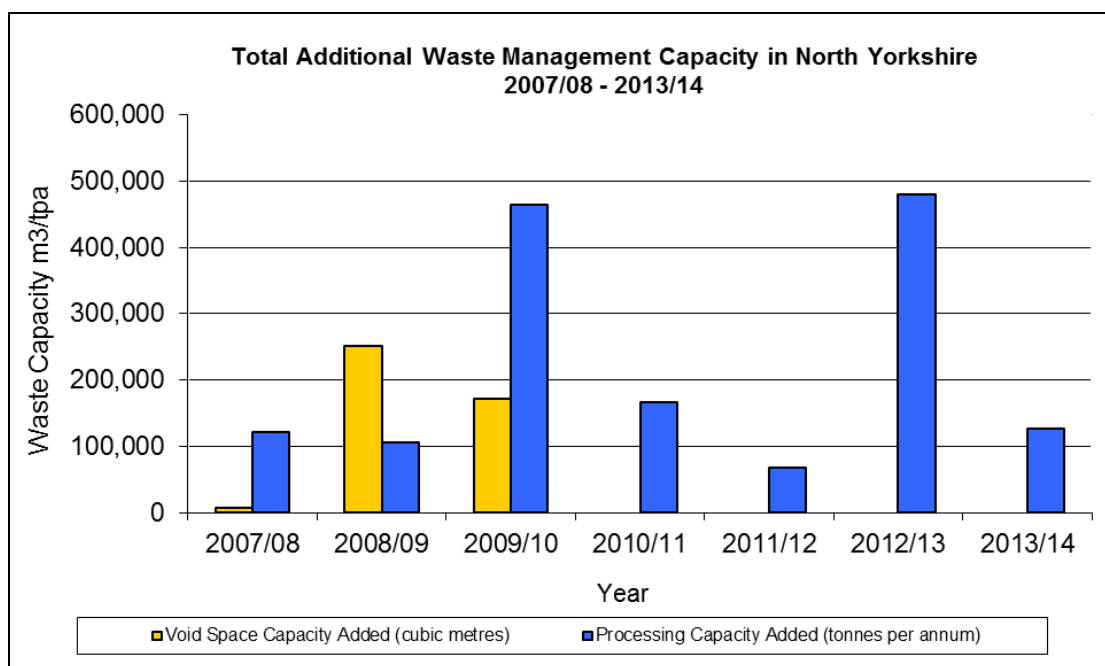


Figure 7 – Total additional waste management capacity added in North Yorkshire Plan area categorised into void space (landfill) and processing, 2007/08 – 2013/14

On 14<sup>th</sup> February 2013 the County Council granted planning permission for the Allerton Waste Recovery Park (AWRP). The 2012/13 data above demonstrates the additional 320,000 tpa of waste management capacity added to the Plan area.

The table below provides information on total landfill capacity permitted by the Environment Agency within the North Yorkshire Plan area in 2012.

Site type	Landfill capacity (m <sup>3</sup> )	Approximate Capacity in Tonnes
Inert Landfill	2,441,000 m <sup>3</sup>	2,441,000
Non-Inert Landfill	5,504,000 m <sup>3</sup>	6,605,000
<b>Sub-total</b>	<b>7,945,000 m<sup>3</sup></b>	<b>9,046,000</b>
Restricted User Landfill	18,889,000 m <sup>3</sup>	18,889,000
<b>Total</b>	<b>26,835,000 m<sup>3</sup></b>	<b>27,935,000</b>

Table 12 – Landfill Capacity in North Yorkshire Plan area, 2012<sup>77</sup>

In accordance with Environment Agency guidance, waste density figures used are 1.2 tonne per cubic metre for non-hazardous waste (which has been applied to non-inert landfill) and 1 tonne per cubic metre for inert waste<sup>78</sup>.

The table above includes three categories of landfill site type: Inert landfill only allows materials which are regarded to be innocuous, undamaging, non-toxic and not detrimental to health or the environment<sup>79</sup>; Non-Inert Landfill accept materials which fall outside of inert waste but are not categorised as hazardous e.g. biodegradable waste, including non-hazardous landfill sites, non-hazardous landfill sites with a

<sup>77</sup> Environment Agency, 2011 and NYCC Planning Records, 2012

<sup>78</sup> Environment Agency, [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk), Explanation of Waste Data 2009, 2011

<sup>79</sup> Defra, Waste Strategy for England, 2007

Stable Non-Reactive Hazardous Waste Cell (SNHRW) and merchant hazardous landfill sites; Restricted User Landfill which have been explained above, include non-hazardous and hazardous restricted landfill sites. The table above summarises data published by the Environment Agency indicating that in 2012, 26.8 million m<sup>3</sup> of landfill capacity was available in the North Yorkshire Plan area. The figure includes a large proportion of capacity at Restricted User Sites, which is industrial and relates mainly to power station ash disposal and minerals working.

In the Yorkshire & Humber Plan (2008) capacity shortfalls for MSW and C&I waste were calculated for the North Yorkshire sub-region (North Yorkshire, City of York and the National Parks). The findings of this, which are based upon data collected in 2004/05, are shown below. However, although evidence utilised by the Yorkshire & Humber Plan continues to be relevant, all the policies, with the exception of Green Belt policies relevant to York, were revoked on 22<sup>nd</sup> February 2013;

### *Capacity*

Urban Vision and 4Resources have undertaken research which includes assessing capacity of waste management facilities within the North Yorkshire Plan area. The table below provides the estimated 2015 capacity of waste management facilities which were included in the findings of the 'Waste Arisings and Capacity Requirements Addendum Report' (May 2015).

Waste Management Method	May 2015 Estimated Capacity (tonnes per annum)
Landfill	693,000
Anaerobic Digestion	197,000
Composting	112,000
Household Waste Recycling Centres	93,000
Incineration with Energy Recovery	675,000
Recycling (CD&E)	223,000
Recycling	721,000
Transfer	718,000
Treatment	115,000

Table 13 – May 2015 Estimated Waste Management Capacity in the North Yorkshire Plan area<sup>80</sup> Please note that this data includes facilities with planning permission but not yet operational. The data does not include restricted user landfill sites or Barnsdale Bar Landfill and Long Lane Landfill which at the time of producing the data were not operational but did have theoretical capacity.

The table above provides estimated waste management capacity data based upon information provided through planning permissions and Environment Agency waste management permits. The table shows that in 2015 transfer and recycling facilities constituted the greatest provision of waste management capacity within the North Yorkshire Plan area.

<sup>80</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

*Projected Capacity*

The table below summarises the projected 2030 capacity of waste management facilities within the North Yorkshire Plan area based upon current planning permission and Environment Agency licence capacity data and end dates. This data has been compiled in research undertaken by Urban Vision and 4Resources.

Waste Management Stream	2030 Projected Capacity (tonnes per annum)
Local Authority Collected Waste (LACW)	100,000
Commercial and Industrial (C&I) waste	542,000
Construction, Demolition and Excavation (CD&E) waste	203,000
LACW and C&I	1,011,000
C&I and CD&E	938,000
LACW and C&I and CD&E	259,000

Table 14 – 2030 Projected Waste Management Capacity in North Yorkshire Sub-region<sup>81</sup>  
Please note that this data does not include restricted user landfill sites or Barnsdale Bar Landfill and Long Lane Landfill facilities which, at the time of producing the data, were assumed to be inactive over the plan period.

The table above provides waste management capacity projections based upon waste streams or combinations thereof, due to the fact that facilities often accept more than one type of waste management stream.

<sup>81</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

## 4. North Yorkshire's Waste Streams

There are a wide variety of waste types ("streams") within the North Yorkshire Plan area. These principally include;

- Local Authority Collected waste
- Commercial and industrial waste
- Construction, demolition and excavation waste
- Hazardous waste
- Agricultural waste
- Low level (non-nuclear) radioactive waste
- Waste Water

An important element of waste planning is consideration of the range of types of waste. This variation in the types of waste can have implications for the method by which it is collected, the potential it has for reuse and recycling and the methods by which it can be managed. Therefore, it is usual practice to consider each of these waste streams separately and that is the focus of this section of the evidence base document.

Waste, in general terms, can be identified in two ways; by its source, such as household waste or by its physical properties, such as waste water and hazardous waste, which may be produced by a wide range of sectors.

However, three waste streams are regarded as the main components of controlled waste and together accounted for 65% of total English waste arisings in 2007<sup>82</sup>; Local Authority Collected Waste (also referred to as Municipal Waste); Commercial and Industrial Waste, and; Construction, Demolition & Excavation Waste.

The Environment Agency provide data on waste deposits within the country based upon returns that they receive from waste operators who require an environmental permit. The most recent results from these returns, given for 2013, at a county level are provided below with figures for City of York, Yorkshire and Humber Region and England for comparison purposes.

	Household, Industrial & Commercial	Inert / Construction & Demolition	Hazardous*	Unknown
North Yorkshire	1,629,609	905,226	6,339*	10,749
City of York	392,935	145,120	5,738*	1,618
Yorkshire & Humber	10,628,889	6,957,072	522,502*	15,799
England	86,664,776	71,000,802	4,059,282*	1,185,560

Table 15 – Total waste received by waste facilities across three waste streams at a national, regional, City of York and county level in 2013<sup>83</sup>

\*Note: the Hazardous Waste figures are sourced from the Environment Agency's 2013 'Hazardous Waste Interrogator' and is believed to be a more accurate representation of

<sup>82</sup> Defra, Waste Strategy for England, 2007

<sup>83</sup> Environment Agency, 2013 Waste Interrogator, 2014



hazardous waste deposits in North Yorkshire<sup>84</sup> than those sourced from the Environment Agency's 2013 'Waste Interrogator'. The amount of waste defined as 'Unknown' has been determined by subtracting the amount of deposited hazardous waste defined in the '2013 Hazardous Waste Interrogator' from the amount of deposited hazardous waste defined in the '2013 Waste Interrogator'

Please note that the methodology by which data is returned to the Environment Agency classifies waste into three broad categories: Household, Industrial & Commercial; Inert / Construction & Demolition, and; Hazardous waste. These categories combine together some of the principal waste streams noted above (e.g. municipal together with commercial & Industrial waste) and this represents a constraint on the level of analysis that can be applied. For the purposes of this evidence base paper a fourth category has been created, 'Unknown', so as to take account for differences between the Environment Agency's Waste Interrogators (further explanation is provided in the note to the table above).

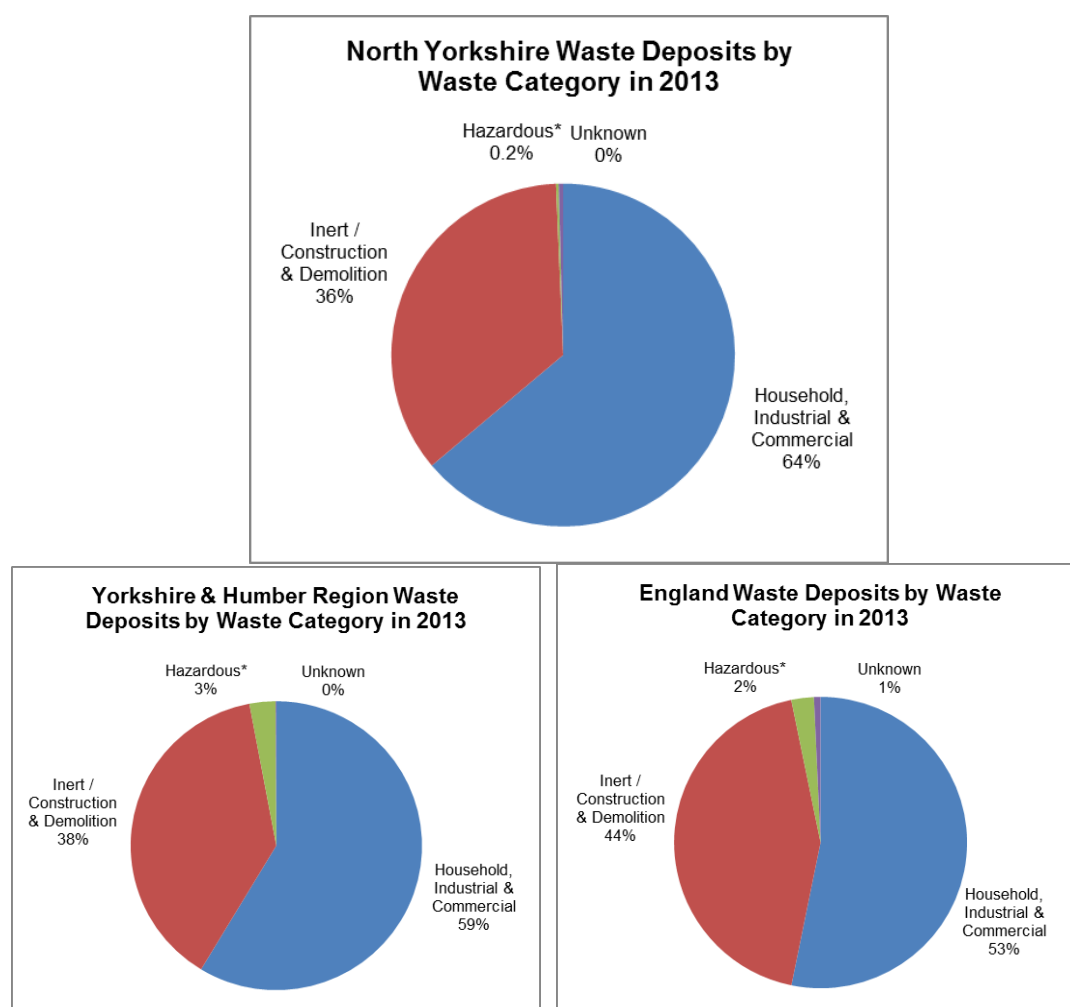


Figure 8 - Total waste deposits by waste stream category at a national, regional and county level in 2013<sup>85</sup>

The table and figure above provide a summary of waste deposits at a national, regional and county level in 2013. This data demonstrates that North Yorkshire deposits a greater percentage of Household, Industrial & Commercial waste than at both the regional and national level. The data also shows that, proportionally, North

<sup>84</sup> Meeting with the Environment Agency, 2011

<sup>85</sup> Environment Agency, 2013 Waste Interrogator and 2013 Hazardous Waste Interrogator, 2014

Yorkshire deposits a smaller percentage of Hazardous waste when compared to both the regional and national levels. The data used has been sourced from the Environmental Agency's Waste Interrogator and Hazardous Waste Interrogator and therefore only applies to waste facilities which are required to hold an Environmental Permit.

Information for Local Authority Collected Waste, Commercial and Industrial Waste, and Construction, Demolition & Excavation Waste is considered in more detail below, followed by information all other remaining waste streams that potentially arise or are managed within the North Yorkshire Plan area.

## **4.1 Local Authority Collected Waste**

### **4.1.1 Introduction and Background**

Local Authority Collected Waste (LACW) has been defined by the Department for Food and Rural Affairs (Defra) to include all waste collected by the local authority, including household waste, business waste which is similar in nature and composition and non-municipal fractions such as construction and demolition waste<sup>86</sup>.

LACW is collected by local authorities and in the case of North Yorkshire this is the 7 District/Borough Councils. LACW can be collected through regular waste collection, through the provision of bottle, paper and can banks, and Household Waste Recycling Centres (HWRCs). LACW also includes other elements such as litter and street sweepings, bulky household wastes and flytipped materials.

Whilst authorities are under a statutory duty to collect household waste, they are only obliged to collect (or make arrangements for the collection of) commercial waste from the private sector on request,<sup>87</sup> this obligation is discretionary in the case of industrial waste.

### **4.1.2 Local and National Policy**

#### ***National Policy***

There are a range of national policies specifically relevant to Local Authority Collected Waste. However, one of the key influences on national policy includes the EU Landfill Directive (99/31/EC), which sets mandatory targets for the reduction of Biodegradable Municipal Waste (BMW) sent to landfill. The UK national targets to reduce the amount of BMW sent to landfill (based upon that produced in 1995) are:

- by 2010 reduce to 75%
- by 2013 reduce to 50%
- by 2020 reduce to 35%

The actual amount of waste that these targets equate to (at a national level) are shown in the table below;

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<sup>86</sup> Defra, [www.gov.uk/local-authority-collected-waste-definition-of-terms](http://www.gov.uk/local-authority-collected-waste-definition-of-terms) (23 Sept 2011)

<sup>87</sup> Defra, Waste Management Plan for England, December 2013

Landfill Diversion Targets ('000 tonnes)			
	2010	2013	2020
England	21,773	14,515	10,161
Scotland	2,697	1,798	1,258
Wales	1,378	919	643
Northern Ireland	919	612	429
UK	26,766	17,844	12,491

Table 16 - Landfill Diversion Targets for Biodegradable Municipal Waste<sup>88</sup>

Note: The figures in this table do not reflect any revised interpretation of the definition of municipal waste resulting from the 2011 Waste Regulations

In June 2011 it was announced that the UK had met the 2010 target for the diversion of BMW from landfill and that the 2013 target was on target to be met. Taking into account expected progress in infrastructure delivery, the Waste Management Plan for England (2013) states that there is an estimated likelihood of over 90% that the EU landfill diversion targets will be achieved for England by 2020.<sup>89</sup>

The 2008 Waste Directive<sup>90</sup> has set a number of targets relevant to management of municipal waste in member states, including;

- Recycle 50% of household waste by 2020
- Set up 'separate collections of waste for at least paper, metal, plastic and glass by 2015 where technically, environmentally and economically practicable, for both household and business waste
- Apply the Waste Hierarchy concept as a 'priority order' throughout waste management legislation and policy

No additional measures are proposed by Government to meet the household waste recycling target of 50% by 2020 because Defra have indicated that they consider England is currently on target achieve this target.

The Landfill Allowance Trading Scheme (LATS) discussed earlier has also been important at a local level with regard to limiting the amount of biodegradable municipal waste allowed to go to landfill. Although the LATS system ended in 2013, diversion of waste from landfill remains a very important objective, with a tax on landfill remaining a key national policy driver.

In May 2015 Government removed a number of centrally imposed household waste recycling targets to allow councils to act on their own local priorities, whilst also improving recycling rates.<sup>91</sup>

With regard to the separate collection of waste by local authorities the Waste Management Plan for England (Dec 2013) provides relevant guidance: 'Almost all local authorities collect garden waste separately and about 50% collect food waste either on its own or with garden waste, providing quality feedstocks for anaerobic digestion and composting. The Government has identified anaerobic digestion as the best technology currently available for treating food waste and has incentivised AD through renewable energy subsidies'.<sup>92</sup>

<sup>88</sup> Defra, [www.defra.gov.uk](http://www.defra.gov.uk), 2011

<sup>89</sup> Defra, Waste Management Plan for England, December 2013

<sup>90</sup> Council of the European Union, Council Directive on Waste and repealing certain Directives, November 2008

<sup>91</sup> Defra, Waste and Recycling Policy Paper, May 2015

<sup>92</sup> Defra, Waste Management Plan for England, December 2013

## Local Policy

The provisions relating to preparation of joint municipal waste management strategies set out in section 32 of the Waste and Emissions Trading (WET) Act currently require authorities in two-tier areas, subject to specific exemptions, to:

- Have in place a joint strategy for their municipal waste<sup>93</sup>;
- Review and keep any strategy up to date; and
- Send a statement of the joint strategy to the Secretary of State and the Environment Agency<sup>94</sup>

For the purposes of North Yorkshire, the York and North Yorkshire Waste Partnership (YNYWP), which was formed in 1998, has produced a joint Municipal Waste Management Strategy (MWMS) for the Plan area and beyond. The Partnership includes NYCC, City of York Council and the 7 North Yorkshire Districts/Borough Councils. It should be noted that the MWMS covers the whole of the North Yorkshire Sub-region.

In 2006 YNYWP published a MWMS 2006 – 2026, which provided a strategic vision for managing municipal wastes, and improving the recovery of those wastes as resources. The MWMS provides details of a number of objectives and targets, including;

- To reduce the amount of waste produced in York and North Yorkshire so as to make us one of the best performing areas in the country by 2013
- Contain average household waste arisings so that residents of the Partnership area generate less per head than the average for Shire counties and be amongst the lowest 25% of these by 2013
- Continue to 'involve community and other groups in maximising opportunities for re-use'<sup>95</sup>.

With regard to recycling and composting the MWMS aims to achieve the following targets as a minimum:

- Recycle or compost 45% of household waste by 2013
- Recycle or compost 50% of household waste by 2020

In addition to the targets above, the MWMS has also set a target to, as a minimum:

- Divert 75% of municipal waste from landfill by 2013

The Council's current Waste Local Plan (2006) contains a number of Saved Policies relevant to the management of Municipal waste in the North Yorkshire Plan area. This includes Policy 5/4 – Household Recycling – Bring System which states that *proposals for major retail and community developments will be required to provide facilities for the public to recycle waste within the related car parking area*. It also includes Policy 5/5 – Household Waste and Recycling Centres which states *proposals for new HWRC at two locations, one in Boroughbridge and one in Harrogate will be permitted. Proposals at other locations will be supported if there will not be an unacceptable impact on the environment or local amenity*.

<sup>93</sup> Note: The Government has indicated that it will consult local authorities on options for the future of Municipal Waste Management Strategies, including the possible removal of the statutory duty

<sup>94</sup> Waste and Emissions Trading Act 2003

<sup>95</sup> York and North Yorkshire Waste Partnership, Lets Talk Less Rubbish - A Municipal Waste Management Strategy 2006 – 2026, June 2006

## 4.1.3 Waste Arisings

The table below shows the household waste dealt with in North Yorkshire for the financial years 2009/10 – 2014/15.

Household Waste dealt with in North Yorkshire 2009/10 2014/15						
Description	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Total amount of household waste (tonnes)	306,687	305,778	301,267	298,470	303,436	300,704
Growth in total household waste	-1.6%	-0.3%	-1.5%	-0.9%	+1.7%	-0.9%
Household Waste Recycled	23.5%	24.1%	23.7%	24%	24.5%	24.8%
Household Waste Composted	20.5%	20.8%	22.2%	21.4%	22.1%	20.7%
Household Waste Re-used	0.2%	0.2%	0.3%	0.3%	0.4%	0.7%
Household Waste Recycled, Composted and Re-used	44.3%	45.1%	46.2%	45.7%	46.9%	46.2%
Recovery of Heat & Power	0.03%	0.03%	0.03%	0.00%	4.97%	1.39%
Household Waste to Landfill	58.3%	56.7%	54.1%	54.6%	48.5%	52.5%

Table 17 - Waste Management Method of Household Waste arising in North Yorkshire 2009/10 – 2014/15<sup>96</sup>

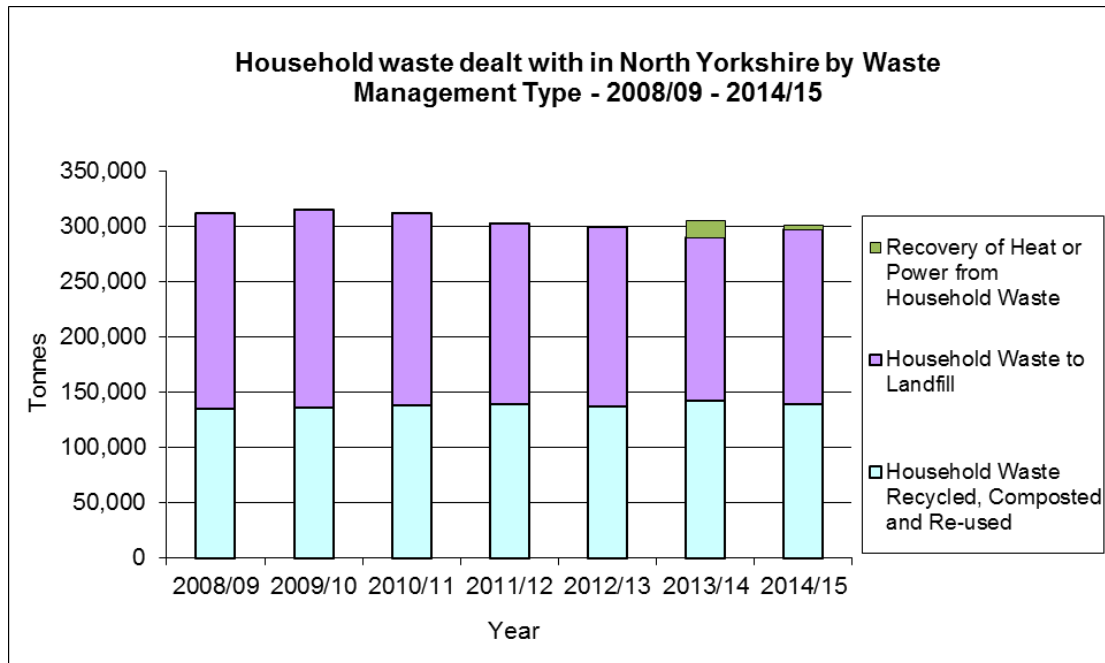


Figure 9 – Household waste dealt with in North Yorkshire by waste management type, 2008/09 – 2014/15<sup>97</sup>.

<sup>96</sup> NYCC Waste Management sourced from Waste Data Flow, July 2015

<sup>97</sup> NYCC Waste Management sourced from Waste Data Flow, July 2015

Household waste has been falling in England since 2007/8, on average by just over 2% per year with this decline continuing in 2012/13 to 22.6 million tonnes. In 2012/13, 43.2% of the waste generated was recycled, re-used or composted, an increase from 41.5% in 2010/11<sup>98</sup>.

The table and figure below presents the total **Local Authority Collected Waste** arisings in North Yorkshire over the last seven financial years and the methods by which it is managed.

Year	Amount of Local Authority Collected Waste Arisings (tonnes)			
	Landfill	Incineration with EfW	Recycled / composted	Total waste arisings
2008/09	216,462	97	146,150	362,709
2009/10	205,337	90	146,689	352,116
2010/11	200,689	93	142,573	343,354
2011/12	192,222	101	143,200	335,522
2012/13	188,201	0	141,533	329,734
2013/14	167,889	14,969	152,744	335,602
2014/15	174,271	4,185	147,848	326,304

Table 18 - Amount of LACW arising, and managed by management type in North Yorkshire, 2008/09 – 2014/15<sup>99</sup>

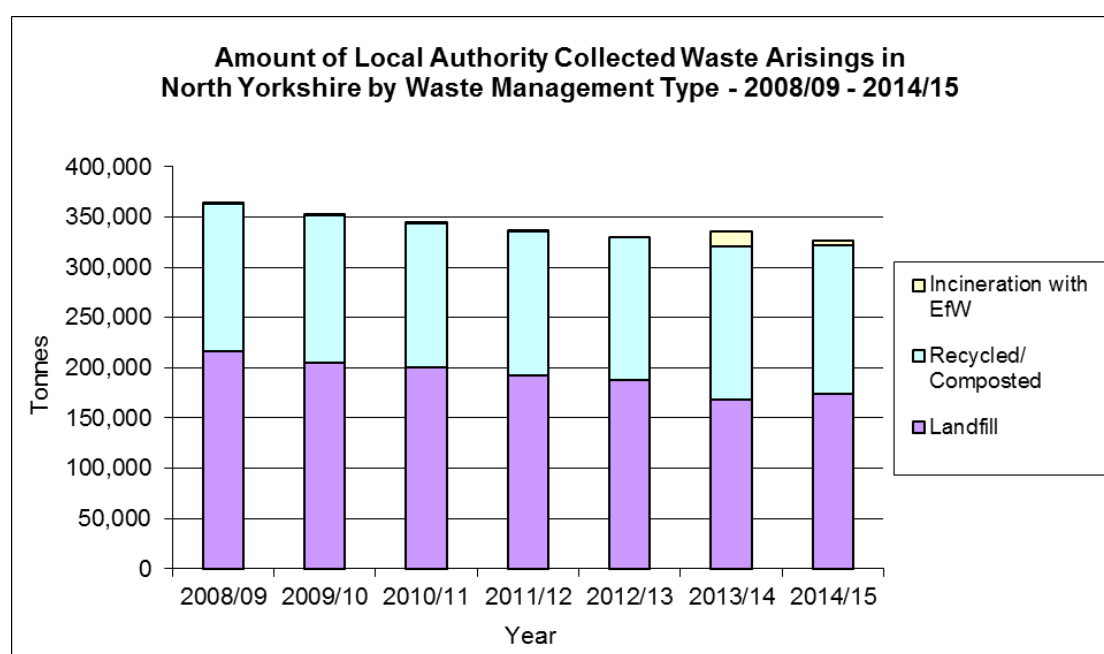


Figure 10 – Local Authority Collected Waste arisings in North Yorkshire by waste management type, 2008/09 – 2014/15<sup>100</sup>.

<sup>98</sup> Defra, Waste Management Plan for England, December 2013

<sup>99</sup> NYCC Waste Management Data sourced from Waste Data Flow, July 2015

<sup>100</sup> *Ibid*

#### 4.1.4 Future Trends

The figure below provides Local Authority Collected Waste projections for North Yorkshire, City of York and the combined Partnership area between the period 2016/17 – 2044/45 and is a repeat of the figure utilised in section 3.2 earlier in the document. These projections are sourced from the York and North Yorkshire Waste Partnership, and for the combined Partnership area predict an increase of approximately 82,000 tonnes from 442,297 tpa in 2016/17 to 524,165 tpa in 2044/45. Over the period to 2030/31 (i.e. the end date for the Minerals and Waste Joint Plan) the projected increase is about 41,000 tonnes.

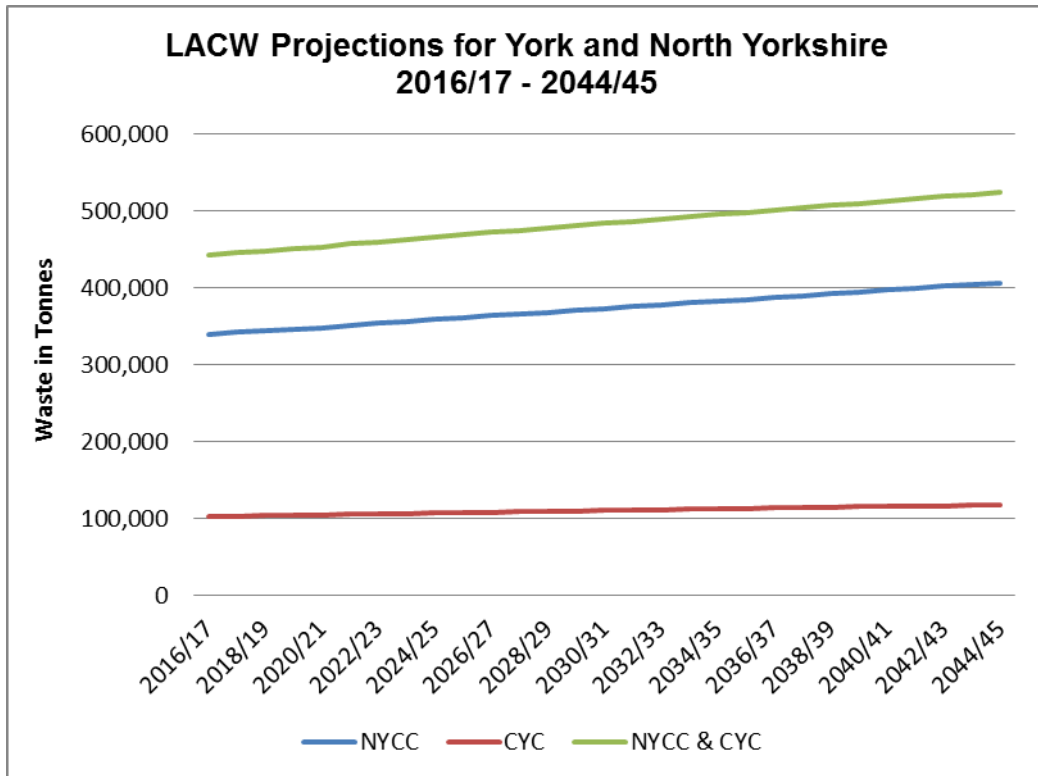


Figure 11 – Local Authority Collected Waste Projections for North Yorkshire, City of York and combined Partnership area, 2016/17 – 2044/45<sup>101</sup>

The table below provides projected Local Authority Collected Waste for North Yorkshire between 2016/17 and 2044/45.

Year	Local Authority Collected Waste Projections for North Yorkshire	Year	Local Authority Collected Waste Projections for North Yorkshire
2016/17	339,748	2031/32	375,369
2017/18	341,838	2032/33	377,761
2018/19	343,864	2033/34	380,156
2019/20	345,980	2034/35	382,550
2020/21	348,076	2035/36	384,944
2021/22	351,431	2036/37	387,337
2022/23	353,824	2037/38	389,731

<sup>101</sup> York and North Yorkshire Waste Partnership

2023/24	356,217		2038/39	392,124
2024/25	358,612		2039/40	394,517
2025/26	361,007		2040/41	396,912
2026/27	363,399		2041/42	399,305
2027/28	365,793		2042/43	401,699
2028/29	368,186		2043/44	404,093
2029/30	370,580		2044/45	406,485
2030/31	372,975			

Table 19 – Local Authority Collected Waste Projections for North Yorkshire, 2016/17 – 2044/45<sup>102</sup>

The table below provides projected Local Authority Collected Waste for the North Yorkshire and City of York combined Partnership area between 2016/17 and 2044/45.

Year	Local Authority Collected Waste Projections for North Yorkshire and City of York	Year	Local Authority Collected Waste Projections for North Yorkshire and City of York
2016/17	442,297	2031/32	486,348
2017/18	444,973	2032/33	489,275
2018/19	447,582	2033/34	492,202
2019/20	450,277	2034/35	495,124
2020/21	452,949	2035/36	498,043
2021/22	456,876	2036/37	500,958
2022/23	459,838	2037/38	503,871
2023/24	462,796	2038/39	506,779
2024/25	465,752	2039/40	509,684
2025/26	468,706	2040/41	512,588
2026/27	471,653	2041/42	515,486
2027/28	474,599	2042/43	518,383
2028/29	477,540	2043/44	521,277
2029/30	480,480	2044/45	524,165
2030/31	483,416		

Table 20 – Local Authority Collected Waste Projections for the combined Partnership area of North Yorkshire and City of York, 2016/17 – 2044/45<sup>103</sup>

#### 4.1.5 Capacity Requirements

The research undertaken by Urban Vision and 4Resources projects waste arisings within the North Yorkshire Sub-region up to 2030 based upon a number of scenarios and growth assumptions, and compares these against existing waste management capacity in order to identify any potential capacity gap.

For the early part of the Joint Plan period continued reliance on landfill for LACW would be required, pending development of the AWRP facility. If AWRP were not

<sup>102</sup> York and North Yorkshire Waste Partnership

<sup>103</sup> *Ibid*



commissioned reliance on landfill may need to continue and a capacity gap for anaerobic digestion and other recovery processes of LACW would exist.

However, as AWRP is currently being developed and expected to be operational in 2017, no specific capacity gap in LACW management facilities would exist for the Plan period, on the assumption that exports of recyclate continue as is currently the case<sup>104</sup> although the Waste Management Authorities in the area have indicated that some additional facilities, such as transfer facilities, may be needed in order to provide an adequate overall geographical network of capacity.

## 4.2 Commercial and industrial waste

### 4.2.1 Introduction and Background

Commercial waste is classified as waste arising from the commercial sector including wholesalers, catering establishments, shops and offices (in both the public and private sectors). Industrial waste is waste arising from the industrial sector including factories and industrial plants<sup>105</sup>. The producers of Commercial and Industrial (C&I) waste arisings can be separated into industrial and commercial subsectors.

Commercial and Industrial (C&I) waste includes a wider range of characteristics than is found in municipal waste due to the range of sectors, identified below, that contribute towards it.

Commercial Waste Producers	Industrial Waste Producers
<ul style="list-style-type: none"> <li>• Retail &amp; Wholesale</li> <li>• Public Sector</li> <li>• Other Services</li> </ul>	<ul style="list-style-type: none"> <li>• Food, Drink &amp; Tobacco</li> <li>• Chemical/Non-Metallic Minerals</li> <li>• Power &amp; Utilities</li> <li>• Metal Manufacturing</li> <li>• Machinery &amp; Equipment</li> <li>• Textiles/Wood/Paper/Publishing</li> </ul>

Table 21 – C&I waste producer subsectors split into Commercial and Industrial components<sup>106</sup>

The producers of C&I waste are defined in the Standard Industrial Classifications;

Sector	Description
Food, Drink & Tobacco	Food, drink and tobacco manufacturers
Textiles/Wood/Paper/Publishing	Includes manufactures of textiles, wearing apparel, luggage, handbags and footwear, wood and wood products, pulp, paper and paper products, publishing and printing
Power & Utilities	Production of gas, electricity, oil and water
Chemical/Non-Metallic Minerals	Manufacture of chemicals and chemical products,

<sup>104</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013)

<sup>105</sup> Defra, Waste Strategy for England, 2007

<sup>106</sup> ADAS, Study into Commercial and Industrial Waste Arisings, April 2009

	cleaning products, manmade fibres, rubber and plastic products and non-metallic mineral products
Metal Manufacturing	Manufacture of basic metals and fabricated metal products
Machinery & Equipment	Manufacturing of machinery and equipment, of computers, electrical and communication equipment, including medical and optical instruments. Also manufacturers of motor vehicles and of furniture and other manufacturing
Retail & Wholesale	Retail and wholesale including motor vehicles and fuel
Public Sector	Includes public administration, social work and education
Other Services	Includes hotels, catering, transport, storage, communications, travel agents, finance, estate agents, IT related activities and other business

Table 22 – Standard Industrial Classification of C&I waste producer subsectors<sup>107</sup>

The C&I waste producer subsectors explained above enable a more in depth study of this component of waste within the Plan area. However, currently there is only limited data on C&I waste at the sub-regional level, such as North Yorkshire. Therefore, regional level data is utilised where possible and assumptions are made on how this reflects on the North Yorkshire Plan area.

C&I waste is collected and managed privately unless a waste collection authority, i.e. a Local/Unitary Authority, is requested to collect the waste specifically by the producer of the waste; this obligation is discretionary in the case of industrial waste. A charge for this service is made. As earlier noted, with the reinterpretation of the definition of municipal waste more waste from sources other than households, such as commercial sources, will fall within the definition of Local Authority Collected Waste. This is likely to have implications for the overall volume of waste categorised as LACW.

#### 4.2.2 Local and National Policy

##### **National Policy**

The 2011 Review of Waste Policy in England, states that Commercial and Industrial waste, along with LACW, should be given particular regard when considering the need for waste management. This signifies the importance placed upon the management of this waste stream within national policy<sup>108</sup>.

The 2008 Waste Directive<sup>109</sup> has set a target for ‘business waste’ treatment in member states, including;

<sup>107</sup> *Ibid*

<sup>108</sup> Defra, Government Review of Waste Policy in England, June 2011

<sup>109</sup> Council of the European Union, Council Directive on Waste and repealing certain Directives, November 2008

- Set up 'separate collections of waste for at least paper, metal, plastic and glass by 2015 where technically, environmentally and economically practicable, for both household and business waste

The Waste (England and Wales) Regulations 2011 place a requirement on local authorities and private waste companies that collect waste from commercial and industrial premises to offer 'separate collections' (which can be co-mingled collections) of paper, metal, plastic and glass by 1<sup>st</sup> January 2015. It has been proposed that the terms on which the collection would be offered and its pricing would be left for commercial decision<sup>110</sup>.

This has led to policies such as the Courtauld Commitment, which aims to reduce the amount of packaging on retail goods, and the Food Industry Sustainability Strategy, which targets the reduction of waste in the food manufacturing industry.

In the 2013 Waste Management Plan for England it states that 'in 2009, 47.9 million tonnes of waste were generated by businesses. The industrial sector accounted for 24.1 mt and the commercial sector 23.8 mt. The 2009 survey showed that there had been a decline in waste arisings in both the commercial (21%) and industrial sectors (36%) since a similar survey in 2002/3. It is estimated that 52% of commercial and industrial waste was recycled or re-used in 2009 and 24% was sent to landfill'<sup>111</sup>.

The 2011 Review of Waste Policy in England, published in June 2011, places a high importance upon improving the management of waste from the C&I sector. It states *'the focus to date in England has been on improving recycling services to householders. As well as focussing more on waste prevention, we also need to have a similar focus on recycling services to businesses. We are taking steps to improve the waste and recycling services that business, particularly SMEs, can expect from either their local authority or a private waste management company. Further improvements in the management of business waste will be a critical part of the move towards a zero waste economy'*<sup>112</sup>. Specific issues which the Review highlights include;

- A lack of facilities for businesses to take their waste and recycling (as opposed to having it collected from their premises);
- A lack of recycling services in some areas and in relation to some materials (particularly food waste);
- High cost of service to the business user and lack of convenience;
- A lack of awareness amongst SMEs of their legal obligations;
- A lack of awareness amongst SMEs of services available in their area.

In response to these issues the Review puts forward a Business Waste and Recycling Collection Commitment which will set out the principles of how Local Authorities can help local businesses meet their waste management responsibilities and recycle more<sup>113</sup>.

With regard to energy recovery, the Review suggests that there are significant opportunities for growth in this waste management method for C&I waste, for example residual mixed 'household like' commercial waste and individual waste streams where recycling is not currently viable such as treated wood. It also notes

<sup>110</sup> HM Government, The Waste (England and Wales) Regulations 2011, March 2011

<sup>111</sup> Defra, Waste Management Plan for England, December 2013

<sup>112</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>113</sup> *Ibid*

that there is the potential for businesses to use their residual waste to power and/or heat their premises, using one of a wide range of technologies<sup>114</sup>.

### **Local Policy**

The Council's current Waste Local Plan (2006) contains a number of Saved Policies relevant to the management of Commercial and Industrial waste in the North Yorkshire Plan area. This includes Policy 5/3 – Recycling, Sorting and Transfer of Industrial, Commercial and Household Waste, which states *proposals for the above facilities will be permitted provided that:- the proposed site is suitably located; the operations are carried out in suitable buildings; it does not prejudice the restoration of a quarry or landfill site; the local highway network is satisfactory; and the proposal will not have an unacceptable impact on local amenity or the environment.*

#### 4.2.3 Waste Arisings

The research undertaken by Urban Vision and 4Resources has produced an estimate of C&I waste arisings within the North Yorkshire Sub-region based upon data extrapolated from the North West Region Survey (2009), the results of which are shown below;

	Commercial & Industrial Waste
North Yorkshire Sub-region	758,000
North Yorkshire	588,000
City of York	170,000

Table 23 – North Yorkshire Sub-region 2015 C&I Waste Arisings (Tonnes) extrapolated from North West Region C&I Survey (2009). Excludes Power & Utilities Waste<sup>115</sup>

The 'North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)' suggests that by utilising the 2009 Extrapolated North West C&I survey as the source of C&I waste arisings, and excluding power and utilities waste, a total of 758,000 tonnes of C&I arisings is projected for the North Yorkshire Sub-region.

Utilising the Environment Agency's Waste Interrogator it is also possible to generate an estimate the amount of C&I waste arising in North Yorkshire by virtue of taking the Household waste arisings, based on County Council data, away from the combined Household, Commercial & Industrial deposits data. The results of these calculations are shown in the table below.

<sup>114</sup> *Ibid*

<sup>115</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

North Yorkshire	2009	2010	2011	2012	2013
Total C&I Waste	1,233,478	1,006,143	1,165,669	1,594,034	1,326,173
C&I Waste minus Power Station waste	312,244	293,567	304,217	289,339	327,550

Table 24 – North Yorkshire Commercial and Industrial Waste estimates for 2008 - 2013<sup>116</sup> (Tonnes)

The table above also takes into account the amount of C&I waste arisings in North Yorkshire once Power Station waste has been taken away from the total. Power Station waste, which commonly takes the form of Furnace Bottom Ash (FBA) and Pulverised Fuel Ash (PFA), accounts for a disproportionately large percentage of C&I waste in North Yorkshire when compared to regional and national arisings. This is due to the relatively large scale of existing power generation capacity in the County (Drax and Eggborough Power Stations).

The above calculations are estimates and based upon data which in itself has limitations. In particular, it is important to note that the table directly above is a combination of two data sources; the Environment Agency, which provides waste deposits within the County, and the Council's own waste management data, which provides waste arisings within the County. The data is considered to represent a relatively accurate minimum C&I figure because the combined Household, Industrial and Commercial data only includes licensed facilities which report the waste they have accepted. However the use of deposits data for C&I waste means that it is not possible to use the figures presented as a direct proxy for actual arisings of C&I waste.

In 2009, 47.9 million tonnes of waste were generated by businesses in England. The industrial sector accounted for 24.1mt and the commercial sector 23.8mt. Estimates show that 52% of C&I waste was recycled or re-used and 24 per cent was sent to landfill<sup>117</sup>. In 2009, 6.9 million tonnes of Commercial and Industrial waste was generated in the Yorkshire & Humber region, of which industrial waste accounted for 4.9mt and commercial waste just under 2mt. A survey shows that 48% of this waste was recycled or re-used whilst 29% was disposed of at landfill<sup>118</sup>.

	2002/03	2009	2020 Forecast
Yorkshire & Humber	11,136,000	6,944,600	9,585,518
England	67,907,000	47,928,000	42,590,718*

Table 25 – Regional and National Commercial and Industrial Waste Arising Estimates<sup>119</sup>  
\*Not including North West or East of England Regions

The table above shows a percentage change in the estimated C&I waste arisings in the Yorkshire and Humber Region of -37.6% between 2002/03 and 2009. A figure has also been produced, based upon the 2006/07 North West C&I Survey, which

<sup>116</sup> Environment Agency, 2008, 2009 and 2010 Waste Interrogator, 2012, and, NYCC, Waste Management, 2011

<sup>117</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>118</sup> Defra, Survey of Commercial and Industrial Waste Arisings for 2009 (2010 (revised 2011))

<sup>119</sup> Defra, Survey of Commercial and Industrial Waste Arisings for 2009 (2010 (revised 2011)) and ADAS, Study into Commercial and Industrial Waste Arisings, April 2009

forecasts the C&I waste arisings for the Yorkshire and Humber region for 2020, this predicts an increase on the 2009 figure of 38%<sup>120</sup>.

The accuracy of these figures is uncertain and should be treated with a degree of caution. This is due to the lack of very robust waste arisings for C&I waste, on a national and local scale.

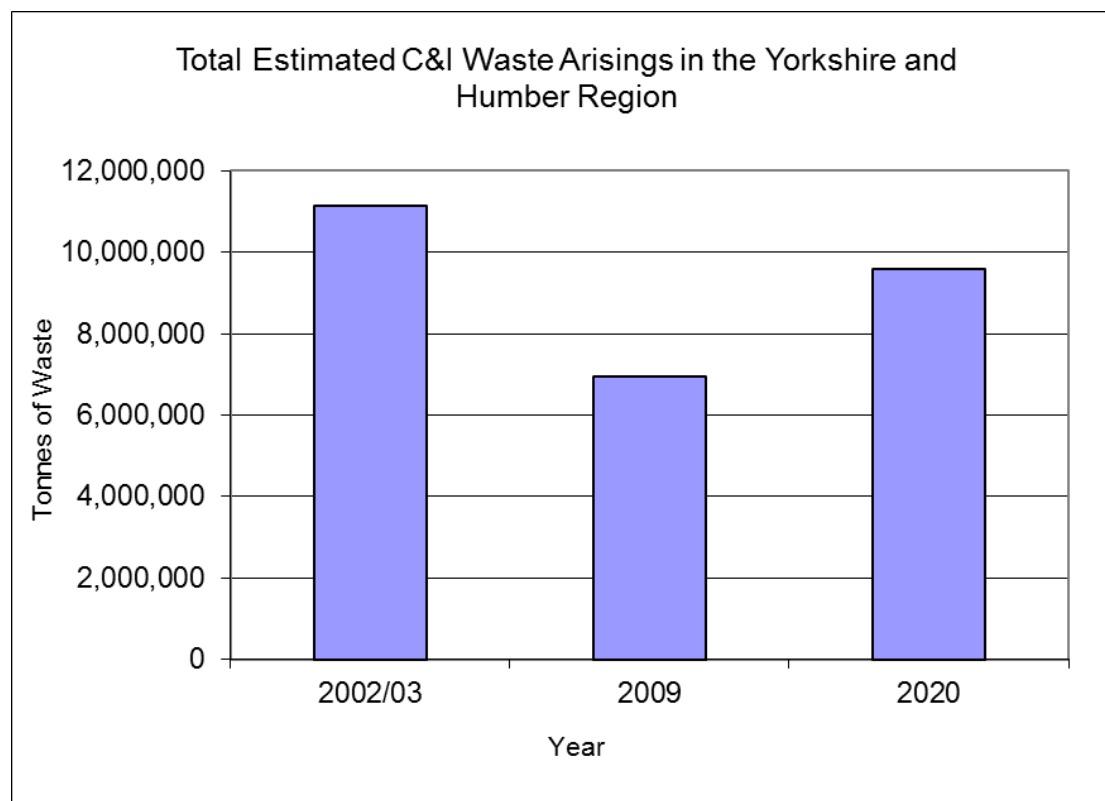


Figure 12 - Total estimated C&I Waste arisings in the Yorkshire & Humber, 2002/03, 2009 and 2020<sup>121</sup>

\*Please note that the 2020 figure is an estimated prediction based upon the 2006/07 North West C&I Survey

Industrial Waste Subsectors	2009	2020
Food, Drink & Tobacco	690,401	736,865
Chemical/Non-Metallic Minerals	570,573	791,840
Power & Utilities	2,063,504	2,913,556
Metal Manufacturing	772,256	1,282,117
Machinery & Equipment	267,866	226,255
Textiles/Wood/Paper/Publishing	582,888	332,902
<b>Total</b>	<b>4,947,488</b>	<b>6,283,535</b>
Commercial Waste Subsectors	2009	2020
Retail & Wholesale	814,231	1,248,182

<sup>120</sup> ADAS, Study into Commercial and Industrial Waste Arisings, April 2009

<sup>121</sup> Defra, Survey of Commercial and Industrial Waste Arisings for 2009 (2010 (revised 2011)) and ADAS, Study into Commercial and Industrial Waste Arisings, April 2009

Public Sector	387,550	483,864
Other Services	794,574	1,563,159
<b>Total</b>	<b>1,996,355</b>	<b>3,295,205</b>

Table 26 – Estimated waste arisings in tonnes of C&I waste subsectors in the Yorkshire and Humber Region, 2006/07 and 2020<sup>122</sup>

Based upon the distinctions and data provided in the table above it is possible to look in further detail at where different sectors specifically within the C&I waste grouping currently stand and how they may change in the future.

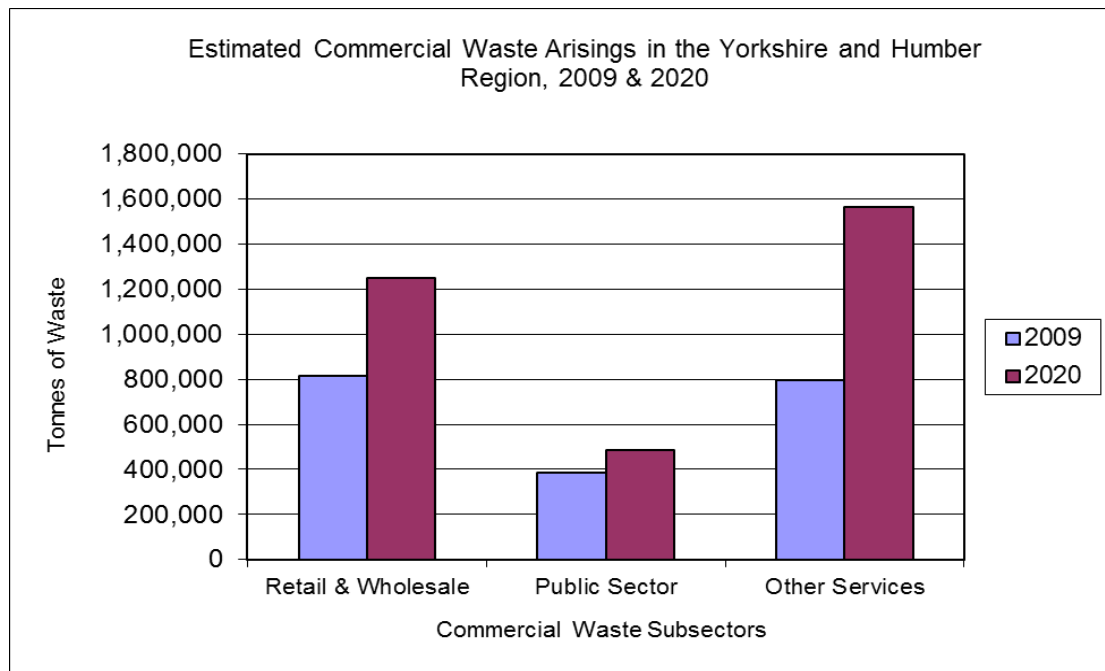


Figure 13 – Estimated and projected Commercial subsector waste arisings for the Yorkshire and Humber Region, 2009 and 2020<sup>123</sup>

<sup>122</sup> *Ibid*

<sup>123</sup> *Ibid*

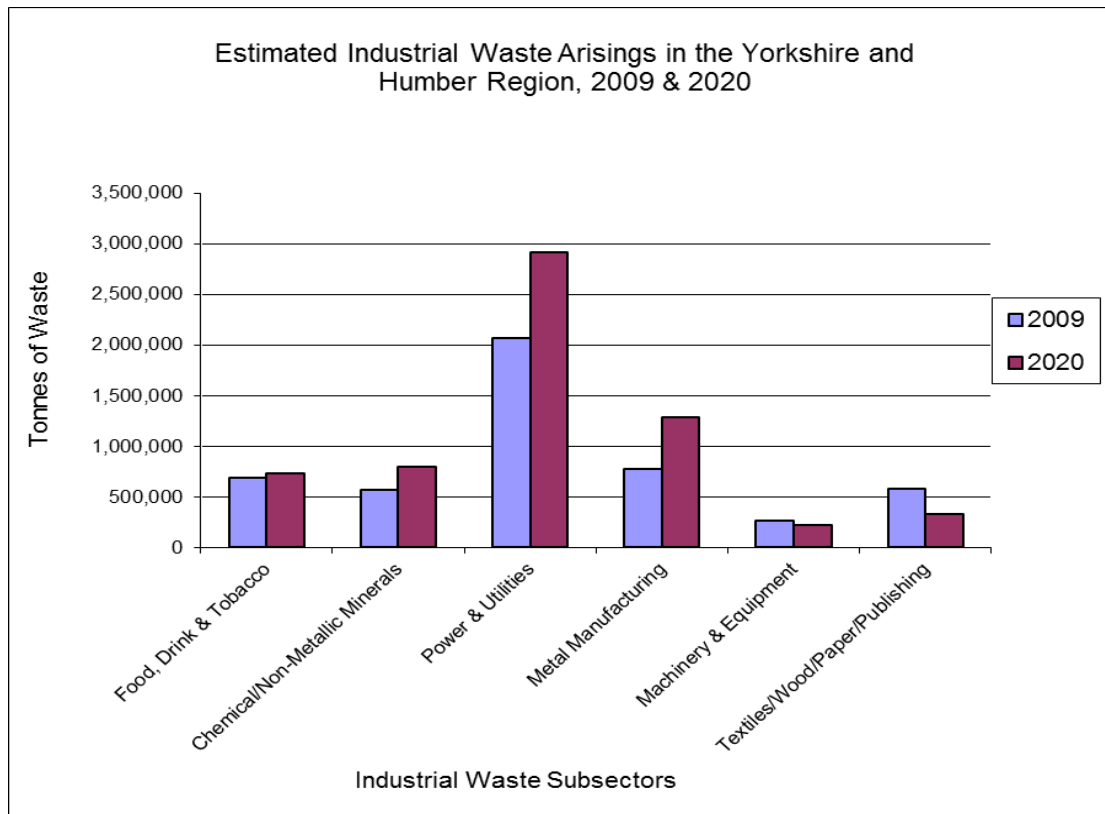


Figure 14 – Estimated and projected Industrial subsector waste arisings for the Yorkshire and Humber Region, 2009 and 2020<sup>124</sup>

As can be seen from the two figures above all the commercial and industrial sub-sectors, except Machinery & Equipment and Textiles/Wood/Paper/Publishing, show predicted increase in arisings between 2009 and 2020. Including Power & Utilities, the industrial sector shows a predicted increase in waste arisings from 2009 to 2020 of 1,336,047 tonnes. The commercial sector sees a predicted increase in waste arisings across all sub-sectors, equating to a total commercial waste increase between 2009 and 2020 of 1,298,850 tonnes. The predicted waste arisings across all commercial and industrial sub-sectors results in an overall estimated increase of C&I waste between 2009 and 2020 of 2,640,918 tonnes.

In 2005 a Study into C&I Waste in the Yorkshire and Humber Region was commissioned by the Yorkshire and Humber Regional Assembly and the Environment Agency. This report made a number of findings;

- A large quantity of hazardous material was finding its way into the general waste stream of the Region, 33,353 tonnes in total
- Over 517,000 tonnes of recyclable paper and cardboard was estimated to have been disposed of in the general waste stream, which would ultimately be sent to landfill
- Both within the Region and the County of North Yorkshire the C&I subsector which includes Utilities, construction, retail, hospitality, education, transport and offices sent the most waste to landfill
- By focussing on materials such as card, metals, compostable waste and plastics there is the potential to achieve a much higher C&I recycling rate within the Region<sup>125</sup>.

<sup>124</sup> *Ibid*

<sup>125</sup> Save Waste and Prosper Ltd, Commercial and Industrial Waste in the Yorkshire and Humber Region, April 2005



It is important to note that this report and the data included within it is approximately 10 years old, which significantly reduces the weight attached to its findings. However, as it looks specifically at C&I waste arisings within the Yorkshire and Humber Region it is useful contextual evidence.

As the majority of C&I waste is collected and treated/disposed of privately and due to the fact that there is currently limited data on C&I waste arisings at a sub-regional level, it is relatively difficult to define how this waste stream is managed in the North Yorkshire Plan area. However, the figures below provide a summary of available information on the waste management methods for C&I waste (in addition to household waste) deposited in North Yorkshire.

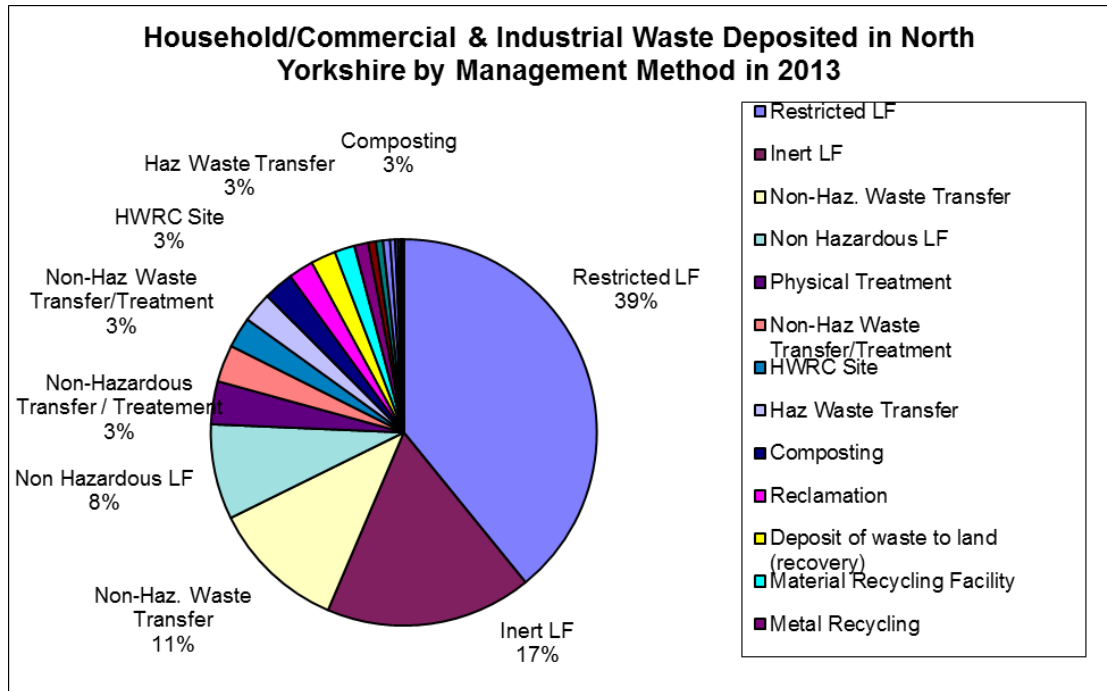


Figure 15 – Household, C&I waste deposits in North Yorkshire by management method in 2013<sup>126</sup>

<sup>126</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

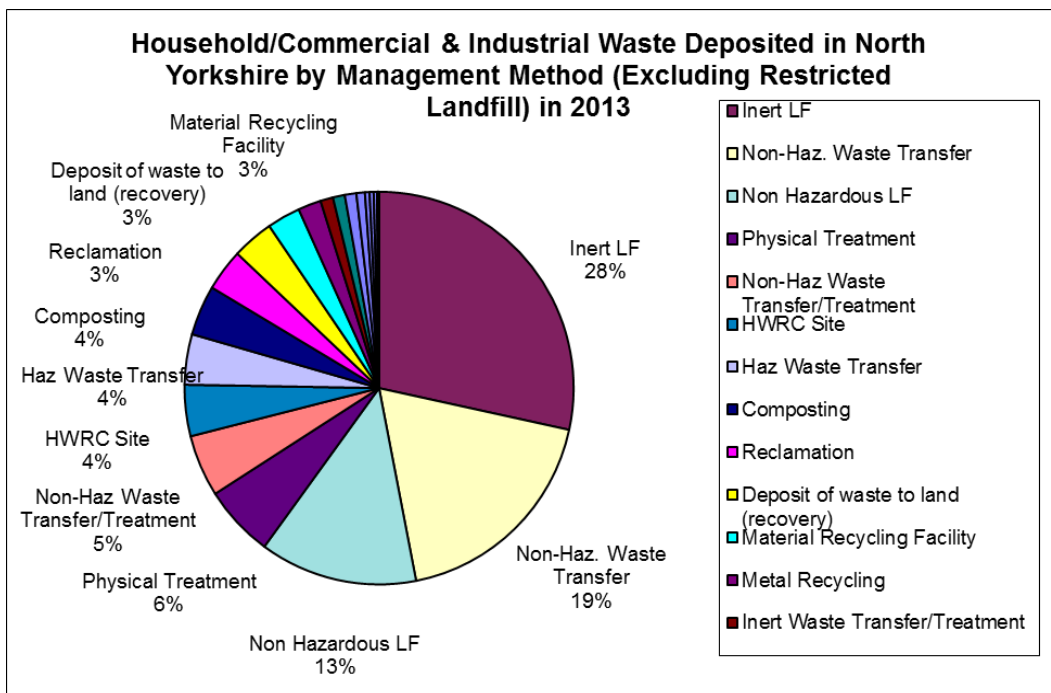


Figure 16 – Household, C&I waste deposits in North Yorkshire by management method (excluding waste deposited at Restricted User Landfill sites (primarily Power station waste)) in 2013<sup>127</sup>

For the following figure waste deposited at Restricted User Landfill sites (Power station waste) and waste passing through Transfer Stations has been excluded. The intention of these omissions is to produce a figure which best represents the waste management methods which deal with a wide range of waste producers and to reduce the potential for double accounting, which transfer stations can produce.

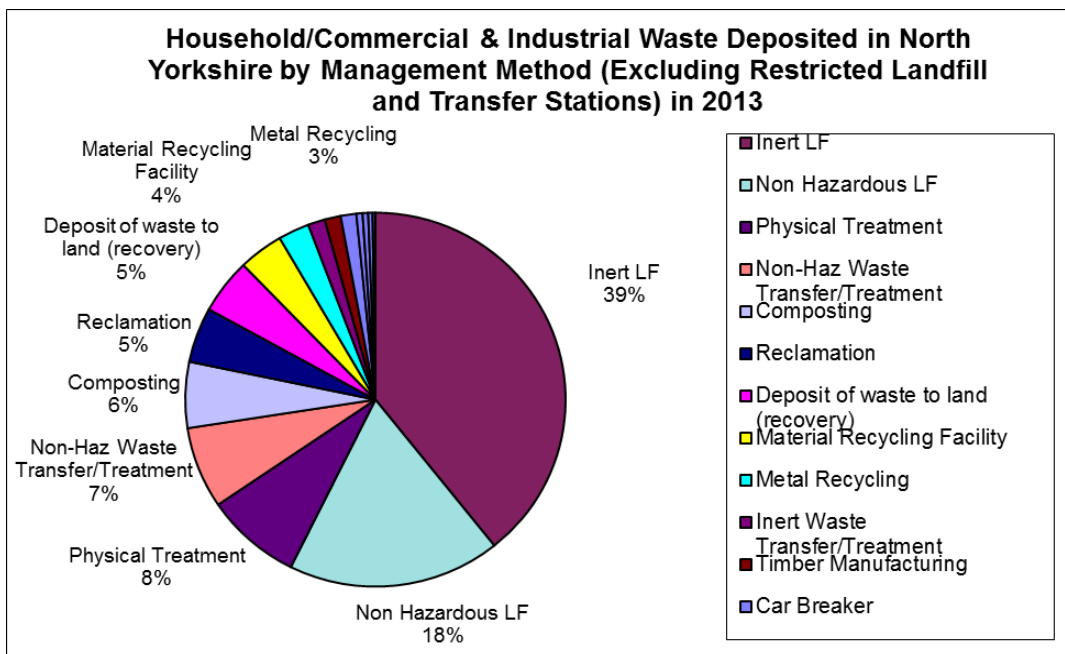


Figure 17 – Household, C&I waste deposits in North Yorkshire by management method (excluding waste deposited at Restricted User Landfill sites (Power station waste) and waste passing through Transfer Stations), in 2013<sup>128</sup>

<sup>127</sup> Ibid

<sup>128</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

The figures above suggest that landfill is significantly the largest category of management method (excluding transfer) of C&I waste deposited in North Yorkshire with other treatment methods such as HWRC, transfer/treatment, physical treatment, metal recycling and composting constituting the majority of the remaining waste management methods. It is important to note that these figures include household waste and therefore include the relatively high levels of recycling and composting rates within this waste stream.

On a national scale, the 2010 Defra survey of Commercial and Industrial Waste Arisings revealed an overall recycling rate (including re-use and composting) of 52%, up from 42% in 2002/03, whilst only 2% was incinerated with energy recovery<sup>129</sup>.

#### 4.2.4 Capacity Requirements

The Urban Vision and 4Resources research undertaken on behalf of the North Yorkshire Sub-region projects C&I arisings up to 2030 based upon a number of scenarios and growth assumptions, and compares these against existing waste management facilities in order to calculate a potential capacity gap.

The research suggests that under the majority of scenarios there is a recycling capacity gap at the beginning of the plan period until AWRP becomes operational, expected to be in 2017. A small capacity gap for recycling of C&I waste at the end of plan period is projected only under one scenario which calculates high waste growth and high recycling rates. There is a capacity gap for the recovery of energy from suitable C&I waste under a number of the scenarios tested, but only until AWRP becomes operational. A capacity gap for landfill of C&I waste is only projected under the baseline scenario where no increase in recycling or recovery is assumed. In addition to this, the research identifies a small potential capacity gap for the landfilling of hazardous C&I waste, although the amount would not justify specific provision in the Plan area<sup>130</sup>.

### 4.3 Construction, demolition and excavation waste

#### 4.3.1 Introduction and Background

Construction, demolition and excavation (CD&E) waste is defined as waste arising from site construction or refurbishment, demolition or excavation. The CD&E sector generates more waste in England than any other sector, generating 77.4 mt of waste in 2010, down from 81.4 mt in 2008.<sup>131</sup>

Specific types of waste which commonly fall under the CD&E definition include;

- Plasterboard
- Bricks
- Soils
- Minerals materials
- Glass
- Various metals
- Tiles

<sup>129</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>130</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013)

<sup>131</sup> Defra, Waste Management Plan for England, December 2013

In 2008, approximately 85% of CD&E waste arising in England was either recovered or beneficially re-used without further processing.<sup>132</sup>

#### 4.3.2 Local and National Policy

##### **National Policy**

The 2008 Waste Directive<sup>133</sup> has set a specific target for construction and demolition waste;

- Recover 70% of construction and demolition waste by 2020

The Government has stated that England and the UK are exceeding the 70% target for recovery of construction and demolition waste, with an estimated recovery rate of 93%.<sup>134</sup>

In 2008 the '*Strategy for Sustainable Construction*' (2008) was published by Central Government and sets out policies for CD&E waste in England. This included a target of reducing CD&E waste sent to landfill by 50% by 2012 compared to 2008 levels<sup>135</sup>. The 2011 Review of Waste Policy in England states that current data suggests this target will be met<sup>136</sup>.

The 2008 Strategy also goes on to state that the 2012 target, agreed by the Strategic Forum for Construction, does not include aggregates used for backfilling quarries, site restoration or legitimately spread on exempt sites. It also notes that, for limited types of CD&E waste, landfill is likely to remain the least environmentally damaging option but indicates that further work on, for example, life cycle assessments, increased capacity and alternative disposal options, will allow industry to assess how it could go beyond 2012 and end the disposal of CD&E waste to landfill in the longer-term<sup>137</sup>.

The carbon benefit of recycling CD&E waste is dependent upon the relative fuel/energy demand for transport and processing of recycled versus virgin materials. For example, recycling of non-ferrous metals offers a large carbon benefit, due to the high embodied energy of these materials. By comparison, recovered soils and mineral materials (e.g. recycled aggregates) have a low embodied energy and high volume, and therefore should be used locally in order to retain a carbon benefit. Net carbon benefits are also likely to result from the recovery of higher value inert materials such as brick and concrete, and their use in higher value applications<sup>138</sup>.

This demonstrates that in attempting to reduce the carbon footprint of waste by recycling CD&E waste, as well as other wastes, it is important to consider the amount of carbon generated by transporting waste when compared to the amount generated whilst creating new like-for-like materials.

The 2013 Waste Management Plan for England provides guidance for the landfilling of inert waste, stating 'Inert waste can and should be recovered or recycled whenever possible. However, the disposal of inert waste in or on land i.e. landfill,

<sup>132</sup> WRAP, Construction, demolition and excavation waste arisings, use and disposal for England 2008 (April 2010)

<sup>133</sup> Council of the European Union, Council Directive on Waste and repealing certain Directives, November 2008

<sup>134</sup> Defra, Waste Management Plan for England, December 2013

<sup>135</sup> HM Government, Strategy for Sustainable Construction, June 2008

<sup>136</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>137</sup> HM Government, Strategy for Sustainable Construction, June 2008

<sup>138</sup> *Ibid*

remains a valid way of restoring quarries and worn out mineral workings where this is a planning requirement<sup>139</sup>.

The 2011 Review of Waste Policy in England states that there will be a greater focus on waste reduction at the earlier, design stages of construction projects as this is where the largest environmental and financial savings can be made. This will be part of a wider, on-going programme of work with the industry including support for the Sustainable Construction Task Group Action Plan. The Review goes on to state that the Government will seek to expand capacity to treat C&I and CD&E waste through improved information on waste supply and composition and developing further the supply chains for recyclates and solid recovered fuel<sup>140</sup>.

### **Local Policy**

The existing Waste Local Plan (2006) contains a number of Saved Policies relevant to the management of CD&E waste in the North Yorkshire Plan area. This includes Policy 5/7 – Facilities for the Recycling of Construction and Demolition Wastes, which states *proposals for the above facilities will be permitted provided that:- the proposed site is suitably located; it does not prejudice the restoration of a quarry or landfill site; the local highway network is satisfactory; and the proposal will not have an unacceptable impact on local amenity or the environment.* This also includes Policy 5/8 – Temporary Recycling Facilities for Recycling of Construction and Demolition Wastes, which states *proposals for the above facilities will be permitted provided that:- the facilities are removed on completion of the project; the local highway network is satisfactory; and the proposal will not have an unacceptable impact on local amenity or the environment.*

#### 4.3.3 Waste Arisings

The research undertaken by Urban Vision and 4Resources has produced estimates of 2013 CD&E waste arisings within the North Yorkshire Sub-region, the results of which are shown below;

Waste Stream	Tonnes
Construction & Demolition Waste	101,000
Excavation Waste	291,600
Total CD&E	392,600
Total CD&E (Excluding Hazardous Waste)	384,664

Table 27 - CD&E 2013 Waste Arisings in the North Yorkshire Sub-region<sup>141</sup>. Excludes CD&E waste deposited at 'registered exemption' sites

The table above sets out that the total 2013 CD&E waste arisings within the Sub-region was in the order of **384,664 tonnes**. However, the Report states that given the uncertainty about fate of material passing through transfer stations and the lack of information about exempt sites which includes utilising waste for reclamation purposes, the estimates should be regarded as a minimum estimate of the quantity of

<sup>139</sup> Defra, Waste Management Plan for England, December 2013

<sup>140</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>141</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

local arisings. The majority of this is excavation waste, accounting for approximately 74%, with Construction & Demolition waste accounting for the remainder. There is likely to be an uneven geographical distribution of CD&E arisings across the Sub-region with most arisings concentrated in urban areas.

On a national scale the construction industry in England uses around 400 million tonnes of materials every year, the highest tonnage of solid material resources in any sector.

	2005	2008	% Change
'Hard inert' CD&E Waste generating recycled aggregate	42.1	43.5	+ 3%
Inert CD&E Waste recovered as recycled soils	4.4	9.2	+ 111%
Mainly Excavation Waste spread on exempt sites	15.4	11	- 29%
Mainly inert CD&E Waste used for landfill engineering	9.6	10.6	- 47%
Mainly inert CD&E Waste used to restore quarries	10.2		
Mainly inert CD&E Waste deposited at landfills	7.9	8.9	+ 13%
Sub-total - Inert CD&E Waste	89.6	83.2	- 7%
Non-inert CD&E Waste	20.0*	3.7	- 81%
Total CD&E Waste	109.6	86.9	- 21%

Table 28 - Estimated Arisings of CD&E Waste in England, 2005 and 2008 (Million Tonnes)<sup>142</sup>  
\*Approx.<sup>143</sup>

In 2005 around 90 million tonnes (mt) of CD&E inert waste was produced in England and estimates suggested at least a further 20 mt of non-inert and mixed CD&E waste was also produced<sup>144</sup>. However, by 2008 this appears to have fallen to approximately 83 mt and 3.7 mt respectively. This suggests that in 2005 a total of 110 mt of CD&E waste was produced in England, falling to approximately 87 mt by 2008.

Arisings of inert CD&E waste fell by 7% over the 3-year period, and the tonnage of inert CD&E waste sent to landfill fell by 30%. Non-inert CD&E waste fell by approximately 81%, however it is important to note that considerable care must be exercised when interpreting estimates for non-inert CD&E waste, because a high proportion is handled more than once by licensed waste facilities and double counting may occur. It is highly likely that the total level of arisings rose in 2006 and 2007 before falling in 2008 as a result of recession, with the final year-on-year fall being appreciably steeper than the fall since 2005.<sup>145</sup>

<sup>142</sup> WRAP, Construction, demolition and excavation waste arisings, use and disposal for England 2008 (April 2010)

<sup>143</sup> HM Government, Strategy for Sustainable Construction, June 2008

<sup>144</sup> *Ibid*

<sup>145</sup> WRAP, Construction, demolition and excavation waste arisings, use and disposal for England 2008 (April 2010)

	Total estimated CD&E Waste Arisings in 2005
North Yorkshire	2,702,882
Yorkshire & Humber	10,496,900
England	88,630,000

Table 29 – Total estimated CD&E waste at a national, regional and county level (includes City of York) in 2005<sup>146</sup>

The table above provides an estimated total for CD&E waste arisings in North Yorkshire (including the City of York) in 2005. This provides a useful estimate of CD&E waste arisings at a level as close to the Plan area as is available. However, please note that the confidence level of this figure is not high. It should be noted that the figure in the table above for North Yorkshire is much higher than that given in Table 15 as the former estimate is likely to include a large volume of arisings reused at the location where it arises or managed at facilities exempt from permitting.

The Environment Agency provides an estimate of 811,870 tonnes for ‘construction and demolition waste’ deposited at permitted waste management facilities in North Yorkshire in 2013<sup>147</sup>. This figure does not include excavation waste and is significantly lower than previous estimates but does provide a useful contemporary minimum figure for an element of CD&E waste deposits within North Yorkshire.

There is generally a lack of up-to-date comprehensive data with regard to CD&E waste arising and deposited within the Plan area. However, it is apparent, as shown by the table above, that North Yorkshire does generate a significant volume of CD&E waste.

#### 4.3.4 Future Trends in Arisings

Table 28 above shows the change in arisings of CD&E waste between 2005 and 2008, however, the downturn in construction activity which started in mid-2008 as a result of the impending recession led to a fall in the production of waste specifically for this waste stream<sup>148</sup>.

The impact of reduced activity in the construction sector on future trends in waste arisings over the long term (15 years) and how this will consequently impact the Plan area’s capacity to deal with this waste is currently unclear. However, it is reasonable to assume that growth in CD&E waste arisings will coincide with the return of economic growth.

#### 4.3.5 Capacity Requirements

The Urban Vision and 4Resources research projects CD&E arisings up to 2030 based upon a number of scenarios and growth assumptions, and compares these against existing waste management facilities in order to calculate a potential capacity gap. This has resulted in the identification of a predicted significant shortfall in capacity for facilities to recycle CD&E waste, primarily the construction and

<sup>146</sup> CLG, Report by Capita Symonds, Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005: Construction, Demolition and Excavation Waste, February 2007

<sup>147</sup> Environment Agency, 2013 Waste Data Interrogator, 2014 (EWC Category 17: Construction and Demolition Waste when Hazardous Waste is removed due to the fact that this has been re-classified as unknown for the purposes of this document)

<sup>148</sup> WRAP, Construction, demolition and excavation waste arisings, use and disposal for England 2008 (April 2010)

demolition element, throughout the majority of the plan period. In addition to this, a potentially significant capacity gap has been identified for landfill of CD&E waste, particularly over the latter part of the Plan period.<sup>149</sup>

With regard to the current management of 'construction and demolition waste' in 2013 over 520,000 tonnes was sent to landfill in the Joint Plan area, around 64% of total 'construction and demolition waste' deposits, and over 135,000 tonnes was managed at treatment facilities<sup>150</sup>.

#### 4.3.6 Mining and Quarrying Waste

Mining and quarrying waste, also referred to as waste from the extractive industries, is very similar in nature and the methods by which it is treated to CD&E waste. Mining and quarrying waste accounted for a significant proportion (30%) of UK waste produced in 2004 (approximately 82 mt). However, the majority of this does not enter the waste management system due to it being utilised on the site of its production for quarry restoration purposes.

Mining and quarrying waste is defined by virtue of EU Directive 2006/21/EC on the management of waste from the extractive industries (the Mining Waste Directive). The Directive does not provide a definitive definition but does define minerals as a naturally occurring deposit in the earth's crust of an organic or inorganic substance, such as energy fuels, metal ores, industrial minerals, construction minerals and indicates that waste produced via extracting and processing minerals would be classed as mining and quarry waste.

The vast majority of mining and quarry waste is non-hazardous, inert, and managed by the operator at the place of production. Extractive material not utilised may be:

- returned to the extraction void as an essential part of the restoration of the site to subsequent beneficial uses;
- Utilised as a 'filling' material in the construction of roads etc.
- if essentially dry, placed in temporary, or landscaped permanent, tips; or
- if wet, and essentially in the form of a slurry, emplaced behind dams in 'tailings lagoons'<sup>151</sup>

'Minerals Waste' Deposited in North Yorkshire	Tonnage
Mining and Quarry Waste <sup>^</sup>	1,033,372*
Combustion Waste (Power Stations)	1,012,640
Soils	731,017
Asbestos Waste	231

Table 30 – 'Minerals Waste', as defined in the Substance Orientation Classification utilised in the Environment Agency Waste Interrogator 2013 (excluding construction and demolition wastes), deposited at waste management facilities in North Yorkshire, 2013<sup>152</sup>. This table combines data sourced from the Environment Agency and NYCC data. <sup>^</sup>Mining and Quarry Waste has been calculated by combining 'Waste from Waste Treatment', 'Waste of Naturally Occurring Minerals' and 'Various Mineral Wastes'. \*Please note that this figure includes 1,010,000 tonnes of minerals waste produced by Kellingley Colliery in 2010 and deposited at Womersley Quarry, which is not included in Environment Agency Waste Interrogator Data

<sup>149</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>150</sup> Environment Agency Waste Data Interrogator 2013 – EWC category 17: Construction and Demolition Waste

<sup>151</sup> Defra, Waste Strategy for England, 2007

<sup>152</sup> Environment Agency, 2013 Waste Data Interrogator, 2014



The table above provides an approximate figure for the Mining and Quarry Waste deposited at waste management facilities in North Yorkshire in 2013. It is currently understood that a large proportion of mining and quarry waste arising in North Yorkshire is disposed of at the site where it is produced. An exception to this is Kellingley Colliery, where spoil is transported by road to a disposal site at the nearby disused Womersley Quarry in Selby. This constitutes a very large majority of mining and quarrying waste deposited in North Yorkshire.

#### 4.4 Hazardous waste

##### 4.4.1 Introduction and Background

Hazardous waste is defined by Defra as waste that may cause particular harm to human health or the environment<sup>153</sup>. The European Commission defines hazardous waste within the European Waste List (Commission Decision 2000/532/EC)<sup>154</sup>, a selection of which is shown below;

<ul style="list-style-type: none"> <li>• Any waste containing a dangerous substance</li> <li>• Agrochemical wastes</li> <li>• Non-halogenated organic wood preservatives</li> <li>• Organochlorinated / Organometallic / Inorganic wood preservatives</li> <li>• Waste from finishing containing organic solvents</li> <li>• Oil spills</li> <li>• Acid tars</li> <li>• Spent filter clays</li> <li>• Sludges containing mercury</li> <li>• Wastes from oil regeneration</li> <li>• Waste acidic / alkaline solutions</li> <li>• Salts and solutions containing cyanides</li> <li>• Waste containing arsenic, mercury and other heavy metals</li> <li>• Waste containing asbestos from electrolysis</li> <li>• Inorganic pesticides, biocides and wood preserving agents</li> <li>• Waste from asbestos processing</li> <li>• Wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals</li> <li>• Wastes from the MFSU of plastics, synthetic rubber and man-made fibres, organic dyes and pigments, organic pesticides, pharmaceuticals, fats, grease, soaps, detergents disinfectants and cosmetics, fine chemicals and removal of paint and varnish</li> <li>• Waste ink containing halogenated and</li> </ul>	<ul style="list-style-type: none"> <li>• Liquid wastes and sludges from metal treatment and coating of metals</li> <li>• Sludges and solids from tempering processes</li> <li>• Wastes from shaping (including forging, welding, pressing, drawing, turning, cutting and filing)</li> <li>• Wastes from water and steam degreasing processes</li> <li>• Waste hydraulic oils and brake fluids, engine, gear and lubricating oils</li> <li>• Waste insulating and heat transmission oils and other liquids</li> <li>• Bilge oils</li> <li>• Oil / water separator contents</li> <li>• Wastes from metal degreasing and machinery maintenance, textile cleaning and degreasing of natural products, the electronic industry, coolants, foam/aerosol propellants, solvent and coolant recovery (still bottoms)</li> <li>• Transformers and capacitors containing PCBs or PCTs</li> <li>• Discarded equipment containing or contaminated by PCBs or PCTs/chlorofluorocarbons/free asbestos</li> <li>• Waste explosives</li> <li>• Lead/Ni-Cd/Mercury-containing batteries</li> <li>• Waste from marine transport tank cleaning, containing chemicals/oils</li> <li>• Waste from railway and road transport tank cleaning, containing chemicals/oils</li> <li>• Waste from storage tank cleaning, containing chemicals/oils</li> </ul>
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<sup>153</sup> Defra, A Strategy for Hazardous Waste Management in England, March 2010

<sup>154</sup> Council of the European Union, Committee decision establishing a list of wastes and a list of hazardous wastes, 3 May 2000

<ul style="list-style-type: none"> <li>• non-halogenated solvents</li> <li>• Waste organic solvents used for cleaning</li> <li>• Wastes from MFSU of adhesives and sealants</li> <li>• Wastes from the photographic industry</li> <li>• Oil fly ash</li> <li>• Sulphuric acid</li> <li>• Solvents</li> <li>• Acids</li> <li>• Pesticides</li> <li>• Alkalines</li> <li>• Fluorescent tubes and other mercury-containing waste</li> </ul>	<ul style="list-style-type: none"> <li>• Spent catalysts</li> <li>• Dredging spoil containing dangerous substances</li> <li>• Insulation materials containing asbestos</li> <li>• Mixed construction and demolition waste or separated fractions containing dangerous substances</li> <li>• Wastes from specific physico/chemical treatments of industrial waste,</li> <li>• Fly ash and other flue gas treatment waste</li> <li>• Grease and oil mixture from oil/waste water separation</li> <li>• Saturated or spent ion exchange resins</li> <li>• Photochemicals</li> </ul>
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Table 31 – Selection of Hazardous Waste types defined in the European Waste List

The list is subject to periodic review by the European Commission and thus may see additions or deletions at certain review points in the future. Everyday items such as computer monitors, TVs, refrigeration equipment and some batteries may be hazardous waste as well as more obvious materials such as asbestos and oil. Hazardous waste therefore comes from a wide range of sources, including households, businesses of all types, and public services, such as the health service, schools and universities<sup>155</sup>.

On 6<sup>th</sup> June 2013 the National Policy Statement on Hazardous Waste was laid before parliament (under section 9(5) of the Planning Act 2008). This document will assist the Major Infrastructure Planning Unit (MIPU) within the Planning Inspectorate when considering applications for facilities that provide for the recovery or disposal of hazardous waste in England, who will advise the relevant Minister. As a result of the Localism and Decentralisation Act 2011, Waste Planning Authorities will only deal with planning applications for new hazardous waste facilities whose main purpose is the final recovery or disposal of hazardous waste, with a throughput of less than 30,000 tonnes per annum. In the case of hazardous waste landfills and deep storage facilities, the WPA will only deal with applications with a capacity less than 100,000 tonnes per annum. For alterations to existing plants and facilities, the relevant thresholds are an increase in capacity of 30,000 tonnes per annum or 100,000 tonnes for landfill. All applications in excess of these figures will be handled by the MIPU.

#### 4.4.2 Local and National Policy

##### **National Policy**

The Government's policies with regard to the management of hazardous waste are set out in 'A Strategy for Hazardous Waste Management in England' published in 2010. This document states that, in order to help secure environmentally sound management of hazardous waste, it is expected that associated hazardous waste management practices and new infrastructure will meet existing regulatory requirements, including those of the 2008 revised Waste Framework Directive, the Integrated Pollution Prevention and Control Directive (2008/1/EC), and the 1999 Landfill Directive<sup>156</sup>.

<sup>155</sup> Defra, A Strategy for Hazardous Waste Management in England, March 2010

<sup>156</sup> Defra, A Strategy for Hazardous Waste Management in England, March 2010

This policy document issued by Defra goes on to provide a clear signal for waste producers, waste holders and waste managers to adopt the revised waste hierarchy to encourage options that deliver the best overall environmental outcome for their waste and to secure protection of the environment and human health. The Strategy envisages that, in line with the Government's wider policies on resource efficiency, the opportunity will be taken to encourage the recycling of material or recovery of energy from hazardous waste, thus further reducing reliance on landfill and helping reduce carbon dioxide emissions from the manufacture of new products and the use of fossil fuels. The government therefore considers that improved hazardous waste management has a part to play in a low carbon economy<sup>157</sup>.

The Hazardous Waste Strategy also sets out six principles for the Environmentally Sound Management of Hazardous Waste. Each principle is based on a legal requirement stemming from European Directives, or a combination of these;

1. **The Waste Hierarchy** – Hazardous waste should be managed by waste producers and waste managers in accordance with the EU waste hierarchy. In applying the hierarchy, hazardous waste producers and waste managers shall opt for hazardous waste management that takes into account the resource value of hazardous wastes, and the need for health and safety to be maintained and delivers the best overall environmental outcome. This may require specific hazardous waste streams departing from the hierarchy where this is justified by life-cycle thinking on the overall impacts of the generation and management of such waste.
2. **Infrastructure Provision** – The planning system is pivotal to the adequate and timely provision of facilities for hazardous waste recovery and disposal close to where that waste arises. Responsible regional authorities and waste planning authorities are expected to plan for the volume of hazardous waste arisings in their area. Any recovery of Hazardous Waste must be in plant which meets EU requirements – that means environmentally sound management and in practice a plant that applies best available techniques.
3. **Reduce Reliance on Landfill** – Reduction in reliance on landfill for hazardous waste, which should only be used where, overall, there is no better recovery or disposal option. Disposal to landfill represents a lost opportunity for the recovery of materials or energy and can lead to longer term contamination of air, land and water.
4. **No Mixing or Dilution** – Waste producers and waste managers should not mix different categories of hazardous waste, or mix hazardous waste with other waste, substances or materials, unless under the terms of an environmental permit. They shall not treat hazardous waste by the dilution of hazardous substances and, must keep organic hazardous waste fractions separate from other streams to assist with their subsequent management.
5. **Treatment of Hazardous Organic Wastes** – Hazardous organic wastes that cannot be reused, recycled or recovered shall be subject to destruction using best available techniques, with energy recovery (including thermal treatment) for all appropriate treatments. No hazardous organic waste shall be landfilled unless the requirements of the Landfill Directive are met. Thermal treatment in this context is not meant to refer exclusively to high temperature incineration, but includes other alternative thermal treatments, including pyrolysis, gasification or vitrification. Other techniques could include biological treatment.

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<sup>157</sup> Ibid

6. **End Reliance on the Use of Landfill Directive Waste Acceptance Criteria Derogations** – *The practice of relying on higher waste acceptance criteria to enable hazardous waste to continue to be landfilled must end. Continued use of the derogations is a disincentive to alternative treatment and encourages the landfilling of hazardous waste. It is not envisaged that the current use of three times WAC derogations will stop immediately, but instead will be a phased process to coincide with the development of alternative treatment. The Environment Agency will phase out the WAC derogations by using the permitting process<sup>158</sup>.*

These principles are used by the Environment Agency to guide their approach on the permitting and enforcement of hazardous waste treatment facilities, and the application of other hazardous waste controls<sup>159</sup>. It follows that where relevant these principles should also inform the Minerals and Waste Joint Plan and the creation of development management policies with regard to waste management applications.

The Hazardous Waste Strategy also identifies that the following generic categories of nationally significant infrastructure projects are likely to be needed:

- Waste electrical and electronic equipment plants
- Oil regeneration plant
- Treatment plant for air pollution control residues
- Facilities to treat oily wastes and oily sludges
- Bioremediation / soil washing to treat contaminated soil diverted from landfill
- Ship recycling facilities
- Hazardous waste landfill<sup>160</sup>

As stated above, on 6<sup>th</sup> June 2013 the National Policy Statement (NPS) on Hazardous Waste was laid before parliament In July 2011. Whilst the statement is aimed at providing advice on large scale facilities to be dealt with by MIPU, it may also be a material consideration for proposals dealt with by the Waste Planning Authority. *The main objectives of Government policy on hazardous waste are:*

- (a) To protect human health and the environment** – *stringent legislative controls are in place to control the management of waste with hazardous properties;*
- (b) Implementation of the waste hierarchy** – *to produce less hazardous waste, using it as a resource where possible and only disposing of it as a last resort;*
- (c) Self-sufficiency and proximity** – *to ensure that sufficient disposal facilities are provided in the country as a whole to match expected arisings of all hazardous wastes, except those produced in very small quantities, and to enable hazardous waste to be disposed of in one of the nearest appropriate installations;*
- (d) Climate change** – *to minimise greenhouse gas emissions and maximise opportunities for climate change adaptation and resilience.*

*Government aims to meet these objectives by encouraging the development of a robust infrastructure network to manage hazardous waste<sup>161</sup>.*

With regard to the arisings of hazardous waste the NPS finds that ‘Despite measures to prevent and minimise hazardous waste and the economic downturn, arisings have not declined particularly significantly with around 3.3m tonnes of hazardous waste

<sup>158</sup> Defra, A Strategy for Hazardous Waste Management in England, March 2010

<sup>159</sup> *Ibid*

<sup>160</sup> *Ibid*

<sup>161</sup> Defra, National Policy Statement for Hazardous Waste, June 2013

being consigned in England in 2010. **Arisings are expected to increase as the economy improves.** The continuing consumer demand for new goods and services means that waste will continue to arise. There are still products for which there remains no alternative but to use a hazardous component and services such as transport services that are likely to produce hazardous waste such as oil for the foreseeable future. Future increases are expected due to increasing use of producer responsibility schemes, changes to the list of hazardous properties in the revised Waste Framework Directive and forthcoming changes to the European Waste List<sup>162</sup>.

In respect of the management of hazardous waste at a national level 'there has been ... decreases in the amounts of hazardous waste sent for recycling and reuse since 2006. This is partly due to a lack of available facilities for treatment and because landfilling certain hazardous wastes such as contaminated soil is often seen as the only option by some hazardous waste producers. There has been some increase in amounts sent to recovery in recent years, but more needs to be done to reverse this negative trend and new facilities are needed to allow more waste to be recycled and reused. Furthermore, amounts of hazardous waste sent to landfill can still show considerable variations from year to year as they are heavily dependent on the volume of contaminated soil produced during major construction projects. The management of at least some of this soil could be moved up the waste hierarchy and new facilities are needed to allow this<sup>163</sup>.'

The Waste Management Plan for England (Dec 2013) reiterates guidance in the 2010 Hazardous Waste Strategy stating that the 'aim is to continue to encourage policies which lead to reductions in hazardous waste arisings, and the wider application of the waste hierarchy to the management of hazardous waste'<sup>164</sup>.

The relatively small volume of hazardous waste arising in North Yorkshire, and the specialist facilities required to treat this, may mean that self-sufficiency is not a realistic option. This would result in the likelihood that an element hazardous waste arising in North Yorkshire will be exported and managed at facilities outside the County.

### **Local Policy**

The Waste Local Plan contains a number of Saved Policies relevant to the management of Hazardous waste in the North Yorkshire Plan area. This includes Policy 7/1 – Incineration, Treatment and Transfer of Special or Clinical Waste, which states *proposals for the incineration, treatment or transfer of special or clinical waste will be permitted provided: the proposed site is suitably located; the proposed methods are appropriate to the nature and hazards of the waste(s) concerned; the local highway network is satisfactory; and the proposal will not have an unacceptable impact on local amenity or the environment.*

#### 4.4.3 Waste Arisings

In 2013, 3.6 million tonnes of hazardous waste arose in England and approximately 23,479 tonnes of this was produced within North Yorkshire<sup>165</sup>. The total hazardous waste arisings in North Yorkshire equates to approximately 5.2% of the 2013 Yorkshire and Humber regional total of 455,579 tonnes.

<sup>162</sup> *Ibid*

<sup>163</sup> *Ibid*

<sup>164</sup> Defra, Waste Management Plan for England, December 2013

<sup>165</sup> Environment Agency, 2013 Hazardous Waste Interrogator, 2014

	2008	2009	2010	2011	2012	2013
<b>North Yorkshire</b>	<b>32,878</b>	<b>27,313</b>	<b>23,943</b>	<b>20,748</b>	<b>22,635</b>	<b>23,479</b>
Yorkshire and Humber Region	457,934	387,485	435,239	460,333	509,092	455,579
England	6,252,024	4,112,776	3,356,077	3,901,593	3,985,724	3,663,988
UK	6,651,520	4,437,212	3,747,464	4,348,382	4,413,604	4,045,709

Table 32 – Hazardous Waste Arisings in Tonnes, 2008 – 2013<sup>166</sup>

The table above shows that the amount of hazardous waste *arising* within the County has fallen from 2008 to 2011, with a slight rise in 2012 and 2013. However, the overall trend is reducing amounts of hazardous waste, with an approximate 29% reduction between 2008 and 2013. This is in line with the UK trend which shows a reduction in hazardous waste arisings of 39% between 2008 and 2013.

	2008	2009	2010	2011	2012	2013
<b>North Yorkshire</b>	<b>15,863</b>	<b>11,658</b>	<b>7,540</b>	<b>3,890</b>	<b>4,928</b>	<b>6,338</b>
Yorkshire and Humber Region	427,578	348,339	371,442	420,569	472,831	522,501
England	6,345,633	4,180,313	3,450,260	4,037,737	4,099,616	4,064,375
UK	6,651,520	4,437,212	3,769,033	4,362,290	4,428,081	4,064,375

Table 33 – Hazardous Waste Deposits in Tonnes, 2008 - 2013<sup>167</sup>

The table above details the hazardous waste *deposited* within North Yorkshire and shows a fall between 2008 and 2011, with a rise in 2012 and 2013. However, the trend from 2008-2013 is a reduction in deposits of approximately 60%, which is double the rate at which hazardous waste *arisings* are falling within North Yorkshire. When compared to waste arisings the data shows that North Yorkshire is a net exporter of hazardous waste, with the majority transported to facilities within Waste Planning Authorities in relative close proximity to the County such as Stockton-on-Tees, Wakefield and Kirklees.

<sup>166</sup> Environment Agency, 2013, 2012, 2011, 2010, 2009, 2008, Hazardous Waste Interrogator, 2014

<sup>167</sup> *Ibid*

Waste Planning Authority	Tonnes Deposited	Percentage of total North Yorkshire Hazardous Waste Arisings
Stockton-on-Tees	2,667	11.4%
Wakefield	2,138	9.1 %
Kirklees	2,063	8.8 %
<b>North Yorkshire</b>	<b>1,893</b>	<b>8.1 %</b>
Leeds	1,742	7.4 %
Redcar and Cleveland	1,291	5.5 %
Derbyshire	1,131	4.8%
York, City of	1,021	4.4 %
Hartlepool	992	4.2 %
North East Lincolnshire	856	3.6 %

Table 34 - Top ten WPA destinations of Hazardous Waste Arising in North Yorkshire, 2013<sup>168</sup>

The table above shows that hazardous waste arising in North Yorkshire is transported to a range of destinations and only a relatively small proportion is actually managed within the County. This is likely to reflect the relatively specialised nature of hazardous waste management facilities.

Waste Planning Authority	Tonnes Deposited	Percentage of total Hazardous Waste deposited within North Yorkshire
<b>North Yorkshire</b>	<b>1,893</b>	<b>29.9 %</b>
Leeds	391	6.2 %
Wakefield	383	6.0 %
North Lincolnshire	346	5.5 %
Bradford	243	3.8 %
East Riding of Yorkshire	234	3.7%
Sunderland	173	2.7 %
County Durham	146	2.3 %
Kent	131	2.1 %
Kirklees	118	1.9 %

Table 35 - Top ten WPAs who deposit Hazardous Waste in North Yorkshire, 2013<sup>169</sup>

The table shows that hazardous waste is imported into North Yorkshire from a range of other WPAs. However, the WPAs of Leeds, Wakefield and North Lincolnshire currently export the highest amount of hazardous waste to North Yorkshire.

The tables above demonstrate that, based upon the Environment Agency's data for 2013, North Yorkshire;

- Deposits approximately 8%, 1,893 tonnes, of the hazardous waste it produces within its own WPA boundary
- Exports approximately 93%, 21,586 tonnes, of the hazardous waste it produces to other WPAs
- Imports approximately 4,445 tonnes of hazardous waste from other WPAs

<sup>168</sup> Environment Agency, 2013 Hazardous Waste Interrogator, 2014

<sup>169</sup> *Ibid*

Please note that the figures above for North Yorkshire include the North York Moors and Yorkshire Dales National Parks. Hazardous waste data is not available at the North Yorkshire Plan area level. In addition to this, the waste data held by the Environment Agency is not fully accurate and can be subject to limitations, such as double-counting, whereby waste transported to a number of facilities could be recorded more than once, consequently skewing the results.

In 2013, approximately 6,338 tonnes of hazardous waste (including waste imported from outside North Yorkshire) was deposited at waste management facilities within North Yorkshire. A number of hazardous waste transfer stations are located within the North Yorkshire Plan area which, when combined, handled approximately 3,938 tonnes of hazardous waste in 2013<sup>170</sup>. These sites act as points at which waste is stored prior to being transported to their point of treatment or disposal.

The figures below provide a summary of the method by which waste arisings and deposits within North Yorkshire are managed.

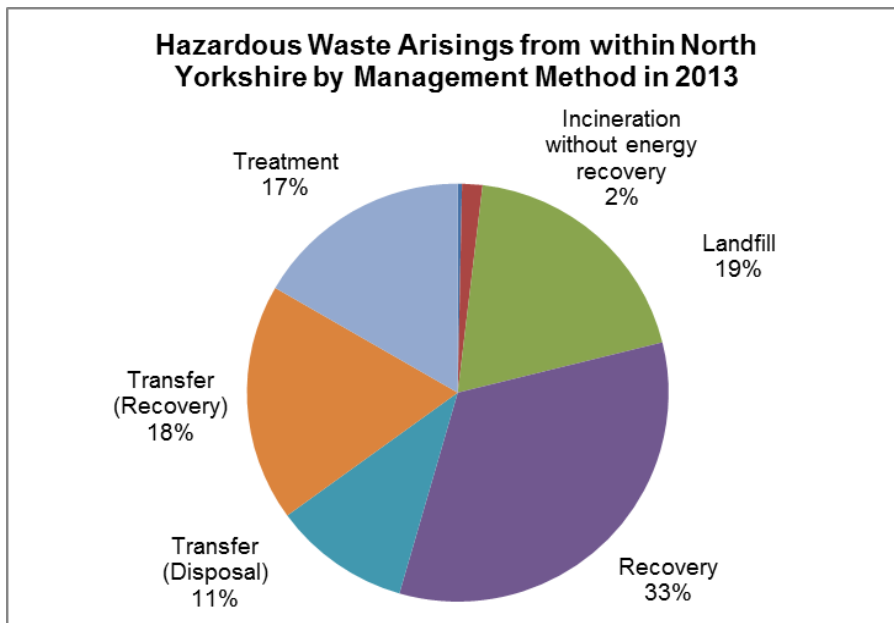


Figure 18 – Hazardous Waste Arisings from within North Yorkshire by management method in 2013<sup>171</sup> (includes Yorkshire Dales and North York Moors national parks)

The figure above suggests that a third of hazardous waste arising within North Yorkshire is managed at recovery facilities and approximately a fifth is managed at landfill sites.

<sup>170</sup> *Ibid*

<sup>171</sup> *Ibid*



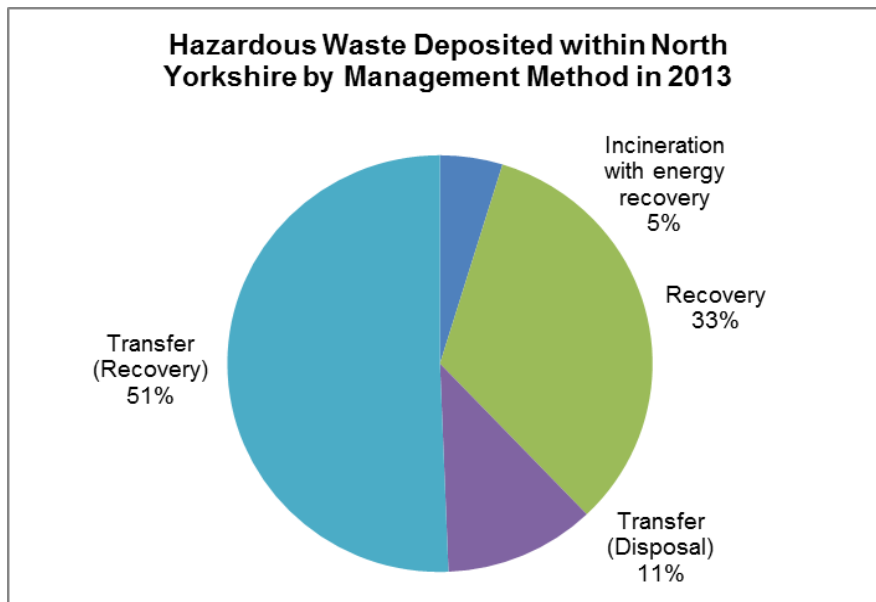


Figure 19 – Hazardous Waste Deposits within North Yorkshire by management method in 2013<sup>172</sup> (includes Yorkshire Dales and North York Moors national parks)

The figure above demonstrates that of the hazardous waste deposited within North Yorkshire the majority is managed at Transfer facilities.

#### 4.4.4 Future Trends

It is expected that the development of Allerton Waste Recovery Park would result in an increase in hazardous waste arisings within the Plan area as a result of the production of Air Pollution Control residues. For the first year of operation, which is currently expected to be 2017, it is understood that approximately 14,578 tpa of such residues would be produced. It is proposed by the developer that this waste will be transported and deposited at a waste management facility in Leeds City Council Authority area.

#### 4.4.5 Capacity Requirements

The research undertaken by Urban Vision and 4Resources considers the capacity requirements for future management of hazardous waste as a subset of other waste streams<sup>173</sup>.

#### 4.4.6 Incinerator Bottom Ash

Since 2012 several Energy from Waste applications have come forward within North Yorkshire. Two are incinerator based and one is advanced thermal treatment (ATT). Both processes produce waste as a by-product which needs to be dealt with. One waste is Incinerator Bottom Ash (IBA) which is non-hazardous, and the other is Air Pollution Control residue (APC)/Flue Gas Treatment Residue which is classified as hazardous and so needs to be dealt with separately to IBA.

<sup>172</sup> Environment Agency, 2013 Hazardous Waste Interrogator, 2014

<sup>173</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

### **National Policy**

Defra have produced a series of Waste Management Technology Briefs to accompany the 2013 Energy from Waste Guide, including 'Incineration of Municipal Solid Waste 2013' and 'Advanced Thermal Treatment of Municipal Solid Waste 2013' which provide background information on each process. Below is a brief description of each process to identify the differences and the types of by-products produced which will need to be dealt with as part of the Local Plan.

For incineration a sufficient quantity of oxygen is required to fully oxidise the fuel (waste). The waste is converted into carbon dioxide and water. Any non-combustible materials remain as solid or are converted to ash and known as Incinerator Bottom Ash (IBA). Flue gases are also produced and must be cleaned up before final release. The clean up of the flue gases will produce solid residues comprising fly-ash, lime/bicarbonate and carbon, these are generally combined and referred to as Air Pollution Control residues (APC) or Flue Gas Treatment residues and are classified as hazardous waste.

Advanced Thermal Treatment comprises two main technologies; pyrolysis and gasification.

Pyrolysis is the thermal degradation of a substance in the absence of oxygen. It requires an external heat source to maintain the temperature required. Raw municipal waste is usually not suitable, typically it would require some mechanical preparation and separation of glass, metals and inert materials prior to processing the remaining waste. The process tends to prefer consistent feedstocks. The products produced are a solid residue and synthesis gas (syngas). The solid residue or char is a combination of non-combustible materials and carbon. The syngas is a mixture of gases of which a proportion can be condensed to produce oils, waxes and tars. The condensable fraction can be collected by cooling the syngas potentially for use as liquid fuel.

Gasification can be considered a process between pyrolysis and combustion as it involves the partial oxidation of a substance. This means that oxygen is added but the amounts are not enough to allow the fuel/waste to be completely oxidised and full combustion to occur. The process is largely exothermic but some heat may be required to initialise and sustain the gasification process. As for pyrolysis raw municipal waste is usually not appropriate for gasification and some separation of the glass, metals and inert materials would be required prior to processing the remaining waste. The main products are syngas and a solid residue of non-combustible materials which forms an ash.

The table below summarises the key outputs from incineration processes.

Outputs	State	Quantity by Weight of Original Weight	Comment
Incinerator Bottom Ash (IBA)	Solid residue	20-30%	Potential use as aggregate replacement or non-biodegradable, non-hazardous waste for disposal.
Metals (ferrous and non-ferrous)	Requires separation from MSW or IBA	2-5%	Sold for re-smelting.
APC residues (including fly ash, reagents and waste water)	Solid residue / liquid	2-6%	Hazardous waste for disposal.
Emissions to atmosphere	Gaseous	Represents ~70%–75%	Cleaned combustion products

Table 36 – Key outputs from incineration processes<sup>174</sup>

The table below summarises the key outputs from ATT processes.

Outputs	State	Potential Markets
Slag (gasification)	Solid, fused	Aggregate.
Ash (gasification)	Un-fused residue	Aggregate replacement, metals can be separated.
Flue Gas Treatment Residue	Solid, powder/sludge. Invariably a hazardous waste; some potential for neutralising waste acids.	Specialist Disposal or treatment potential use in Chemical treatment works (e.g. neutralising acid waste).
Syngas	Gaseous	Heat or power generation/fuel/some chemical application.
Condensate	Liquid	Liquid Fuel/chemical application, although variable composition. Care needs to be taken with the chemical composition of this and the hazards associated with it.
Char (pyrolysis)	Solid	Hazardous waste, but could be used as coal replacement in certain combustion applications or as a gasifier feedstock.
Materials Recycling	Solid (glass, metals etc.)	Secondary raw materials.

Table 37 – Key outputs from ATT processes<sup>175</sup>

<sup>174</sup> Defra, Incineration of Municipal Solid Waste, 2013

<sup>175</sup> Defra, Advanced Thermal Treatment of Municipal Solid Waste, 2013

Both incineration and ATT produce by products which will need to be dealt with, including ash/slag which is non-hazardous and can be used as a secondary aggregate after treatment. Both also have Flue Gas Treatment residue or Air Pollution Control residues which are classed as hazardous and so need different handling.

The Environment Agency has produced a set of standard rules under 'The Environmental Permitting (England and Wales) Regulations 2010'. One set of these rules deals with the 'Treatment of Incinerator Bottom Ash (IBA)<sup>176</sup>'. The document states that the purpose of the treatment of IBA and slag is to improve the ash quality in order to generate a material that has the potential for recovery, such as use as secondary aggregate material in road construction, and mechanically separate and collect ferrous and non-ferrous metal fractions for future recycling.

### ***Capacity within the Plan area***

#### *Allerton Waste Recovery Park*

Allerton Waste Recovery Park includes an energy from waste plant which will be an incinerator. Planning permission has been granted and the facility is under construction with commissioning expected in 2017. The incinerator will have capacity to deal with 320,000 tonnes per annum, but it is expected that it will typically treat 305,000 tonnes per annum of waste, principally municipal solid waste.

By-products which will be produced include IBA and Air Pollution Control (APC) residue. It is expected that 50,000 tonnes per annum of IBA will be produced. The planning consent permits the construction of an onsite IBA processing facility which will have the capacity for 50,000 tonnes per annum. It is expected that approximately 38,000 tonnes per annum will be recycled to produce secondary aggregate which can be used in construction.

The developer estimates that approximately 13,000 tonnes per annum IBA residue and 15,000 tonnes per annum APC residue would be generated.

The APC is a hazardous waste and is proposed to be transported off site in sealed tankers to a hazardous landfill site which is currently likely to be Knostrop in Leeds, but the developer has indicated that the situation will be reviewed before the development moves into the operational phase.

It is expected that the IBA residue which cannot be recycled will be disposed of at the adjacent non-hazardous landfill (Allerton Park) or another suitably licenced landfill, but this will also be reviewed before the development moves into the operational phase.

#### *Southmoor Energy Centre*

The development is to include an Energy from Waste facility which will treat the waste by combustion, i.e. incineration. The feedstock is expected to be commercial and industrial waste but it will be able to deal with municipal solid waste as well. The site will have capacity to manage 280,000 tonnes per annum of waste.

By-products will include flue gases, which will be converted into APCs, and IBA. The IBA will have ferrous metals removed and then will be held in a bunker until it can be

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<sup>176</sup> Environment Agency, Standard Rules SR2012 No13, Treatment of Incinerator Bottom Ash

transported off site to an off-site treatment centre where it will be processed for use as a secondary aggregate. There is no indication of where this processing is likely to take place as it will be a commercial decision for the Operator to determine.

The flue gases will be treated in the flue and the solid Flue Gas Treatment reagents will be removed from the flue gas stream along with any floating ash from the combustion process. The filtered solids are recycled back into the reaction duct for further combustion. Eventually the reagents will become exhausted and will be removed as Air Pollution Control residues (APC), which will be transported to an as yet unidentified hazardous landfill site.

It has been confirmed that 64,000 tonnes per annum of IBA and 8,500 tonnes per annum of APCs are expected to be produced.

#### *Former ARBRE Power Station*

The proposal is to convert the ARBRE Power Station at Eggborough to an Advance Thermal Treatment facility using gasification to burn the waste.

The proposal states that there will be 200,000 tonnes per annum inputs into the site, but of this 100,000 tonnes per annum will be recycle material such as glass, plastic and inert waste which will be filtered out and transported to another site. The remaining waste will be shredded into a form which can be used as fuel in the gasification system. The site will be able to deal with C&I waste as well as MSW.

The application form states that it is expected that 10 tonnes per day of IBA and fuel ash will be generated, to be used as a resource if possible, and if not disposed of at landfill. The intended management route for all of the IBA and fuel ash is for it to be transported off site to be used in the manufacture of concrete blocks. If the site was operational 7 days a week for 52 weeks a year then this would total 3,650 tonnes of IBA and fuel ash.

The flue gases will be cleansed in the chimney and be controlled by the contents of an Environmental Permit.

## **4.5 Agricultural waste**

### **4.5.1 Introduction and Background**

The legal definition of agricultural waste is 'waste from premises used for agriculture'<sup>177</sup>. The Agriculture Act 1947 defines agriculture as including horticulture, fruit growing, seed growing, dairy farming and livestock breeding and keeping, the use of land as grazing land, meadow land, osier land, market gardens and nursery grounds, and the use of land for woodlands where that use is ancillary to the farming of land for other agricultural purposes.

However, with specific regard to agricultural waste, where items which may be regarded as waste in other circumstances are commonly re-used, such as used tyres, the definition of waste becomes rather less clear. Waste is any substance or object which the holder discards or intends or is required to discard. From a legal perspective it may not be possible to say whether any particular substance, in any particular circumstance is discarded as waste. It will, however, often be clear that a substance is waste. For example, pesticide containers, silage wrap, batteries and oil

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<sup>177</sup> Agriculture Act 1947

which are discarded after use. This is in contrast to manure and slurry which are not classified as waste when used as a fertiliser<sup>178</sup>.

Before the introduction of the 2006 Agricultural Waste Regulations, research referred to by Defra indicates that the majority of agricultural waste was disposed of on-farm by open burning, by burial or by disposal in farm dumps. With the introduction of the said regulations Agricultural waste producers now have 5 options;

1. Store waste on site for up to 12 months pending recovery or disposal
2. Transport waste for recovery or disposal at an appropriately licensed site
3. Transfer the waste for recovery or disposal at an appropriately licensed site
4. Register a licence exemption with the Environment Agency to recover or dispose of the waste on-farm; or
5. Apply to the Environment Agency for a waste management licence or a landfill permit to recover or dispose of the waste on-farm<sup>179</sup>.

#### 4.5.2 Local and National Policy

##### **National Policy**

As detailed above the Government has brought into force regulations which bring agricultural waste under the same system of legal controls that applies to waste from all other sectors of industry. This has primarily been undertaken to ensure national policy is in line with rulings of the European Union.

The Government has also put in place a statutory producer responsibility scheme for non-packaging farm plastics, which places obligations on producers to increase collection and recycling of waste farm plastics<sup>180</sup>.

In providing guidance on identifying suitable sites for waste management facilities in Local Plans, the National Planning Policy for Waste (Oct 2014) states that waste planning authorities should, among others 'give priority to the re-use of previously-developed land, sites identified for employment uses and redundant agricultural and forestry buildings and their curtilages'<sup>181</sup>. The use of redundant agricultural and forestry buildings would have specific relevance when the proposal is linked to the management of agricultural waste. The 2011 Review of Waste Policy in England promotes waste controls in the agricultural sector through the Whole Farm Approach as a good regulatory practice that has made it easier for businesses to comply with legislation. The Government intends to continue to develop this approach and in doing so, states that the recommendations of the Farming Regulation Task Force will be taken into consideration<sup>182</sup>.

##### **Local Policy**

The Waste Local Plan contains a number of Saved Policies relevant to the management of Agricultural waste in the North Yorkshire Plan area. This includes Policy 5/9 – Green Waste Composting, which states *proposals for the above will be permitted provided that: the proposed site is suitably located; it is in scale and keeping with the local landscape; it does not prejudice the restoration of a landfill site*

<sup>178</sup> The Waste Management (England and Wales) Regulations 2006, "The Agricultural Waste Regulations", Frequently Asked Questions and Answers, May 2007

<sup>179</sup> *Ibid*

<sup>180</sup> Defra, Waste Strategy for England, 2007

<sup>181</sup> DCLG, National Planning Policy for Waste, Oct 2014

<sup>182</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

*or quarry; the local highway network is satisfactory; and the proposal will not have an unacceptable impact on local amenity or the environment.*

#### 4.5.3 Waste Arisings

Information on agricultural waste arisings is very limited but due to the large number of agricultural waste exemption licences issued in North Yorkshire, it would be reasonable to assume that the majority of this waste stream is dealt with on the site at which it is produced, as defined above.

Local Authority	Number of Agricultural Waste Exemption Licenses
Selby District Council	336
Ryedale District Council	757
Hambleton District Council	970
Craven District Council	471
Scarborough Borough Council	337
Harrogate Borough Council	780
Richmondshire District Council	481
<b>North Yorkshire</b>	<b>4,132*</b>

Table 38 – Number of Agricultural Waste Exemption Licenses by Local Authority, 2013<sup>183</sup>

\*Please note this figure includes the North York Moors and Yorkshire Dales National Parks, and a site may hold more than one agricultural waste exemption License

As Environment Agency Agricultural Waste Exemption Licensing Regulations currently stand, there is no requirement to give the weight of waste arisings managed at exempt sites. It is therefore particularly difficult to gauge an accurate figure for agricultural waste arisings in the Plan area. However, it is known that on a national scale agricultural waste accounted for less than 1% of all waste arisings<sup>184</sup>.

The research undertaken by Urban Vision and 4Resources has estimated the number of farm holdings within the North Yorkshire Plan area as approximately 3,458<sup>185</sup>. This relatively high number reflects the predominantly rural nature of North Yorkshire and the importance of the agricultural sector as a key component of the economy. From this it is reasonable to assume that the proportion of agricultural waste relative to total waste arisings may be higher for North Yorkshire than the national figure but no specific data is available to verify this assumption.

#### 4.5.4 Capacity Requirements

The Urban Vision and 4Resources research has estimated that around 4.58 million tonnes of agricultural waste is generated in the North Yorkshire Sub-region every year although the vast majority of this is organic by-products most of which will be disposed of at the farm.

The remaining amount, thought to be around 32,000 tonnes, will require off farm site management which will need to be factored into consideration of provision of waste management facilities. It is likely that over the Plan period this waste will be diverted

<sup>183</sup> Environment Agency, Agricultural Waste Exemptions Register, 2013

<sup>184</sup> Defra, Waste Strategy for England, 2007

<sup>185</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013)

from landfill to recycling, fulfilling the aspirations of waste management moving up the waste hierarchy. However, provision for specialised waste, including animal by-products incineration and hazardous landfill, will need to be maintained.<sup>186</sup>

## 4.6 Low level (non-nuclear) radioactive waste

### 4.6.1 Introduction and Background

Within the UK, Low Level (non-nuclear) Radioactive (LLR) Waste is defined as having a radioactive content not exceeding four gigabecquerels per tonne (GBq/te) of alpha or 12 GBq/te of beta/gamma activity<sup>187</sup>.

A sub-category of LLR waste, Very Low Level Radioactive (VLLR) waste, is defined as:

- **In the case of low volumes** radioactive waste which can be safely disposed of to an **unspecified** destination with other waste each 0.1m<sup>3</sup> of waste containing less than 400 kilobecquerels (kBq) of total activity or single items containing less than 40 kBq of total activity.
- **Or in the case of bulk disposals** radioactive waste with maximum concentrations of four megabecquerels per tonne (MBq/te) of total activity which can be disposed to **specified** landfill sites. For waste containing hydrogen-3 (tritium), the concentration limit for tritium is 40MBq/te.

The principal difference between the two definitions of VLLR waste is the need for controls on the total volumes in the high volume category being deposited at any one particular landfill site<sup>188</sup>.

Radioactive waste policy in the UK is framed within the context of international guidelines and regulations. In particular, as a Member State of the EU, UK activities involving radioactive substances are governed by legislation set down under the Euratom Treaty, and radioactive waste policy and legislation are separate from those for other sorts of waste<sup>189</sup>.

LLR waste can sometimes be disposed of safely to conventional landfills or incinerators. Much of the LLR waste suitable for disposal to these kinds of facility is generated by conventional (that is, non-nuclear) industries, a major producer being the healthcare sector<sup>190</sup>. Other producers of LLR waste are likely to include organisations such as pharmaceutical companies, research and educational establishments and oil and gas industries which are located throughout the UK<sup>191</sup>.

Industries which produce LLR waste have been mainly dependent on landfill and incinerator facilities, usually provided by commercial operators, for disposal of their LLR waste. The Government has indicated that it wishes to see the maintenance of the required disposal routes for these kinds of wastes that minimise the effect on the environment, including the need for long distance transport<sup>192</sup>.

<sup>186</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013)

<sup>187</sup> Defra, Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom, March 2007

<sup>188</sup> *Ibid*

<sup>189</sup> Defra, Waste Strategy for England, 2007

<sup>190</sup> *Ibid*

<sup>191</sup> Defra, Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom, March 2007

<sup>192</sup> *Ibid*



#### 4.6.2 Local and National Policy

##### **National Policy**

The Government policy in respect of LLR waste is set out in the document '*Policy for the Long Term Management of Solid Low Level Radioactive Waste in the UK*' published in 2007. National policy recognises that there is a large range of LLR waste types, and levels of associated radioactivity, and does not aim to be prescriptive in its approach. It acknowledges that each LLR waste management need will have its own approach, and the development of solutions on a case-by-case basis is a matter for waste managers with the objective of achieving safe, environmentally-acceptable and cost-effective management solutions that appropriately reflect the nature of the waste concerned<sup>193</sup>.

Regulation of the management of non-nuclear industry LLR waste is the responsibility of a number of agencies, which regulate both accumulation and disposal of waste for the sites concerned. As a component of this system of regulation, plans for the management of radioactive waste must be developed by waste managers. The preparation of LLR waste management plans for non-nuclear industry sites should be proportionate to the scale of their waste production and holdings, as agreed with the regulator<sup>194</sup>.

Defra's policy is that, through LLR Waste Management Plans, provision should be made to manage waste in accordance with the waste management hierarchy principles set out in UK waste strategy documents. For LLR waste this means:

- Not creating waste where practicable (avoidance);
- Reducing waste arisings to the minimum through the appropriate design and operation of processes and equipment and making effective use of techniques such as waste characterisation, sorting and segregation, volume reduction;
- Otherwise minimising quantities of LLR waste requiring disposal through decay storage, re-use and/or recycling, and incineration;
- Disposal (which may include incineration)<sup>195</sup>

The Strategy also advises that the use of centralised facilities may be the appropriate point of disposal for LLR waste. However, depending on the intrinsic hazard, other solutions are possible, employing the proximity principle as a point of reference. It also indicates that, although the desire to avoid excessive transportation of materials is an important consideration, it must be balanced with all the other relevant factors on a case by case basis<sup>196</sup>.

In March 2012 the Government published '*Strategy for the Management of Solid Low Level Radioactive Waste from the Non-Nuclear Industry in the United Kingdom*' which specifically states that waste planning authorities should take account of non-nuclear industry radioactive waste disposal requirements, both in their role as consultees to the environmental regulators, and when they prepare and review local waste plans. In addition waste planning authorities should also be aware of the current disposal needs and waste management practices of non-nuclear industries that operate within their areas of responsibility as they prepare their

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<sup>193</sup> *Ibid*

<sup>194</sup> *Ibid*

<sup>195</sup> *Ibid*

<sup>196</sup> *Ibid*

plans<sup>197</sup>. This document constitutes the key national strategy for LLR waste in North Yorkshire as all LLR waste arising in the Plan area arises from non-nuclear industry sources.

The Strategy identifies the role of planning authorities in the management of LLR waste, which includes;

- Ensure that sufficient waste management facilities are in place for all relevant waste streams, including LLR waste
- However, [WPAs] do not need to designate a certain proportion of landfill capacity specifically for LLR waste, due to the very low quantities
- Provide a framework in which communities take more responsibility for their own waste
- Push the management of waste up the hierarchy
- Ensure waste is handled safely
- Ensure communities which benefit from the uses of radioactive materials take a share in the responsibility for managing radioactive waste (whilst recognising the every local authority cannot be self-sufficient in waste management)
- If necessary and feasible work with other WPAs to share facilities which manage LLR waste
- However, LLR waste sent to waste disposal facilities should normally be disposed of at one of the nearest appropriate installations<sup>198</sup>

National Planning Practice Guidance, in relation to the identification of suitable sites and areas for waste management, provides guidance on LLRW: 'Significant flows of some industrial wastes, and particularly hazardous industrial wastes and low level radioactive wastes, may arise at clearly defined locations, and have specific treatment and disposal needs. In considering the broad locations for the pattern of waste management facilities care should be taken, particularly for the smaller scale waste streams, to avoid limiting market flexibility.'<sup>199</sup>

### **Local Policy**

The current Waste Local Plan (2006) contains a number of Saved Policies relevant to the management of LLR waste in the North Yorkshire Plan area. This includes Policy 7/1 – Incineration, Treatment and Transfer of Special or Clinical Waste (see section 4.4.2 for a description of this policy).

#### **4.6.3 Waste Arisings**

The Environment Agency confirmed in 2011 that the most recent records suggest that the production of LLR waste in North Yorkshire is below the reporting threshold – which is measured in terms of radioactivity. Volumes of waste are not requested from producers of LLR waste, however an estimate has been made that the annual arising of LLR waste in the North Yorkshire Plan area is likely not to exceed 50m<sup>3</sup>.<sup>200</sup>

Most (98%) of LLR waste in the UK arises from operation of nuclear power stations, nuclear fuel reprocessing facilities and also from the decommissioning and clean-up of nuclear sites. The remaining 2% is produced by non-nuclear industry users of

<sup>197</sup> DECC, Strategy for the Management of Solid Low Level Radioactive Waste from the Non-Nuclear Industry in the United Kingdom, March 2012

<sup>198</sup> *Ibid*

<sup>199</sup> DCLG, National Planning Practice Guidance, Accessed 1<sup>st</sup> June 2015 (Para 37)

<sup>200</sup> Environment Agency, Email communication, 15<sup>th</sup> April 2011

radioactivity<sup>201</sup>. As no nuclear sites are located in the North Yorkshire Plan area, these non-nuclear industries are the sole producers of LLR waste that the Joint Plan will need to plan for. Therefore, when compared to the total LLR waste produced in the UK, the amount produced in North Yorkshire is very small.

Furthermore, it is highly unlikely that a nuclear facility would be located in North Yorkshire in the next 20 years, which means it is highly unlikely that LLR waste will increase significantly above current levels.

Research has estimated that total UK arisings from the non-nuclear industry are very unlikely to exceed 100,000 m<sup>3</sup> per year. In comparison, total waste arisings in England are around 272 million tonnes. Non-nuclear LLR waste arisings are therefore very unlikely to exceed 0.1% by volume of conventional waste arisings from the whole of the UK.<sup>202</sup>

However, the document notes that participation in the LLR waste survey was less than anticipated and therefore the quantification of waste arisings from the non-nuclear industry across the whole of the UK remains very uncertain and is to be treated with caution<sup>203</sup>.

The quantities of waste arising from the non-nuclear sector suggested by the 2012 Strategy stated above are not consistent with previous estimates. For example, the sample from the survey suggested nearly 100,000 m<sup>3</sup> per year of LLR Waste, whereas the previous estimate was for less than 6,000 m<sup>3</sup> per year for the whole of the UK. This wide discrepancy may be partly due to survey responses being heavily influenced by data from Scottish organisations which make up nearly 90% of the total VLLR waste volume. However, it should be pointed out that previous estimates of UK arisings from the non-nuclear sector have also been based on very limited data, and in one study based on only one part of the UK, and therefore any extrapolation to a UK-wide position needs to be treated with caution<sup>204</sup>.

### ***Naturally Occurring Radioactive Material***

There is also potential for generation of Naturally Occurring Radioactive Material (NORM) if exploration, appraisal or development of shale gas takes place in the Plan area. Flowback fluids from hydraulic fracturing and other activities associated with onshore gas development can constitute a significant source of NORM, depending on the local geology. There may be potential for flowback water to be dealt with via onsite treatment of the water prior to reuse for further hydraulic fracturing or prior to reinjection. Separated solids are likely to require offsite disposal at a suitably licensed facility. A planning application for appraisal of unconventional gas resources in the Vale of Pickering, submitted in 2015, indicates that there are a number of potentially disposal sites for such materials in the Yorkshire and Humber area.

#### 4.6.4 Future Trends in Capacity

The very small volumes of solid LLR waste produced by the non-nuclear industry are largely insufficient to drive the provision of specific management and disposal

<sup>201</sup> Defra, Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom, March 2007

<sup>202</sup> DECC, Strategy for the Management of Solid Low Level Radioactive Waste from the Non-Nuclear Industry in the United Kingdom, March 2012

<sup>203</sup> *Ibid*

<sup>204</sup> *Ibid*

facilities via the market. Due to the very small quantities produced, LLR waste has mostly been managed via facilities that are used for other, non-radioactive, wastes; predominantly, incineration and landfill. However, despite the low risks associated with non-nuclear industry waste disposals, the fact that the wastes are defined as radioactive can give rise to significant public concern which can be a deterrent for waste facility operators to provide a disposal service<sup>205</sup>.

It is anticipated that national LLR waste arisings will reduce to about a half of the volume and a quarter of the mass of estimates for 2007, which equates to approximately 50,000 m<sup>3</sup>,<sup>206</sup>. No timescale is given for when this reduction is likely to occur and the information itself is to be treated with caution due the limited range of the survey. However, the information can provide a useful steer for expected future LLR waste arisings in North Yorkshire.

In summary the Strategy states that waste planning authorities are unlikely to need to make any special provisions to cope with an increase in volumes of radioactive waste<sup>207</sup>.

#### 4.6.5 Capacity Requirements

As part of the Waste Arisings and Capacity Requirements project carried out by Urban Vision and 4Resources a survey was undertaken of all potential large producers of LLR waste within the North Yorkshire Sub-region, including the healthcare sector, pharmaceutical companies and research and educational establishments. From the respondents to the survey it was identified that the levels of LLR waste produced within the Sub-region is minimal and of those who responded all arisings were currently managed at a single incineration facility based within the Leeds City Council area.<sup>208</sup>

This research also found that arisings of LLR waste are not expected to change significantly over the plan period and the current pattern of management, which is export out of the Plan area, is expected to continue as at present<sup>209</sup>.

### 4.7 Waste Water Treatment

#### 4.7.1 Introduction and Background

The EU Urban Waste Water Treatment Directive (91/271/EEC) differentiates the definition of waste water dependent upon its origin from a residential or industrial source;

- **Domestic waste water** means waste water from residential settlements and services which originates predominantly from the human metabolism and from household activities
- **Industrial waste water** means any waste water which is discharged from premises used for carrying on any trade or industry, other than domestic waste water and run-off rain water<sup>210</sup>

<sup>205</sup> *Ibid*

<sup>206</sup> *Ibid*

<sup>207</sup> DECC, Strategy for the Management of Solid Low Level Radioactive Waste from the Non-Nuclear Industry in the United Kingdom, March 2012

<sup>208</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Interim Report (Oct 2013)

<sup>209</sup> *Ibid*

<sup>210</sup> Council of the European Union, EU Directive 91/271/EEC - Concerning urban waste water treatment, 21 May 1991

With regard to the treatment of waste water there are three components through which it is managed. Firstly, the collecting system, or sewerage system, which is a system of conduits which collects and conducts urban waste water to treatment facilities. Secondly, waste water may be directed to a primary treatment facility which treats waste water by a physical and/or chemical process. Thirdly, waste water may move to a secondary treatment facility which treats waste water by a process generally involving biological treatment with a secondary settlement<sup>211</sup>.

Every day in England and Wales the public sewerage system collects approximately 10 billion litres of waste water from households and industry. To enable the collection of this sewage and surface water there are over 324,000 km of public sewers and rising mains, 15,000 combined sewer overflows, 17,000 major pumping stations and 37,000 surface water outfalls.<sup>212</sup>

Within the UK, private water companies manage the infrastructure of water provision and the sewerage of used water. Within North Yorkshire this is primarily undertaken by Yorkshire Water (referred to as the Statutory Undertaker), however United Utilities and Northumbria Water also operate in small sections of the Plan area to the north west and north respectively. With regard to the control of waste water infrastructure, the majority of developments (including maintaining the current waste water infrastructure) do not require planning permission as they are exempt under Permitted Development Rights. However, there are exceptions to this, including;

- The erection of new facilities not on operational land
- Sewerage Treatment Facilities
- Waste Water Treatment Works (WWTW)
- Pumping Stations
- Surface control kiosks (facilities which support the waste water sewerage system)

Waste Water is produced by all sectors of the community, be it households, industry or commercial sectors. The organisations with the responsibility to manage this waste stream do so through a range of waste water infrastructure at a range of scales.

#### 4.7.2 Local and National Policy

##### **National Policy**

Waste water treatment in the UK is governed by the 1994 Urban Waste Water Treatment Regulations. These regulations provide guidance in relation to the collection, treatment and discharge of urban waste water, and the treatment and discharge of waste water from certain industrial sectors.

The EU Water Framework Directive (2000/60/EC) also provides a steer for national policy in relation to waste water and this has led to a large degree of progress in water protection in the UK including the development of new infrastructure. This Directive will continue to be relevant in the future ensuring all groundwater supplies are at safe levels and free from pollution.

<sup>211</sup> Council of the European Union, EU Directive 91/271/EEC - Concerning urban waste water treatment, 21 May 1991

<sup>212</sup> Defra, National Policy Statement for Waste Water, March 2012

In March 2012 the Government published the National Policy Statement for Waste Water, which sets out Government policy for the provision of major waste water infrastructure, which for the purposes of this document includes;

- Construction of waste water treatment plants which are expected to have a capacity exceeding a population equivalent of 500,000 when constructed; or
- Alterations to waste water treatment plants where the effect of the alteration is expected to be to increase by more than a population equivalent of 500,000 the capacity of the plant<sup>213</sup>

The NPS for Waste Water sets out the Government's key policy objectives for the management of waste water:

- Seek waste water infrastructure that allows us to live within environmental limits and that helps ensure a strong, healthy and just society, having regard to environmental, social and economic considerations;
- Continue to meet our obligations under the Urban Waste Water Treatment Directive by providing suitable collection and treatment systems to limit pollution of the environment;
- Improve water quality in the natural environment and meet our obligations under related European Directives
- Reduce water consumption by households and industry
- Reduce demand for waste water infrastructure capacity
- Help deliver the UK's obligation to reduce greenhouse gas emissions by 80% by 2050 and ensure that climate change adaptation is adequately included in waste water infrastructure planning
- Apply the waste hierarchy in terms of seeking to first reduce waste water production, to seek opportunities to re-use and recycle resources and to recover energy and raw materials where possible<sup>214</sup>

### **Local Policy**

The existing Waste Local Plan (2006) contains a number of Saved Policies relevant to the management of Waste Water in the North Yorkshire Plan area. This includes Policy 7/2 – Waste Water Treatment Works, which states *proposals for treatment of waste water and sewage sludge will be permitted provided that: the proposal is required to improve the treatment of sewage sludge and waste water or discharge standards; the proposal is required to provide increased capacity; the local highway network is satisfactory; and the proposal will not have an unacceptable adverse impact on local amenity or the environment.*

#### 4.7.3 Waste Arisings

Historic information collected during the preparation of the North Yorkshire Waste Local Plan, dating from 1997/1998, indicate that in total the amount of sludge disposed of in North Yorkshire was 5,749 tonnes of dry solids, the majority of which was disposed of to land, although this data is now very old.

Data supplied by Yorkshire Water suggests that in 2011 there were approximately 256 Waste Water Treatment Works (WWTW) within the Plan area serving approximately 474,597 people<sup>215</sup>.

<sup>213</sup> Defra, National Policy Statement for Waste Water, March 2012

<sup>214</sup> *Ibid*

<sup>215</sup> Yorkshire Water, Correspondence by Email, 17<sup>th</sup> June 2011

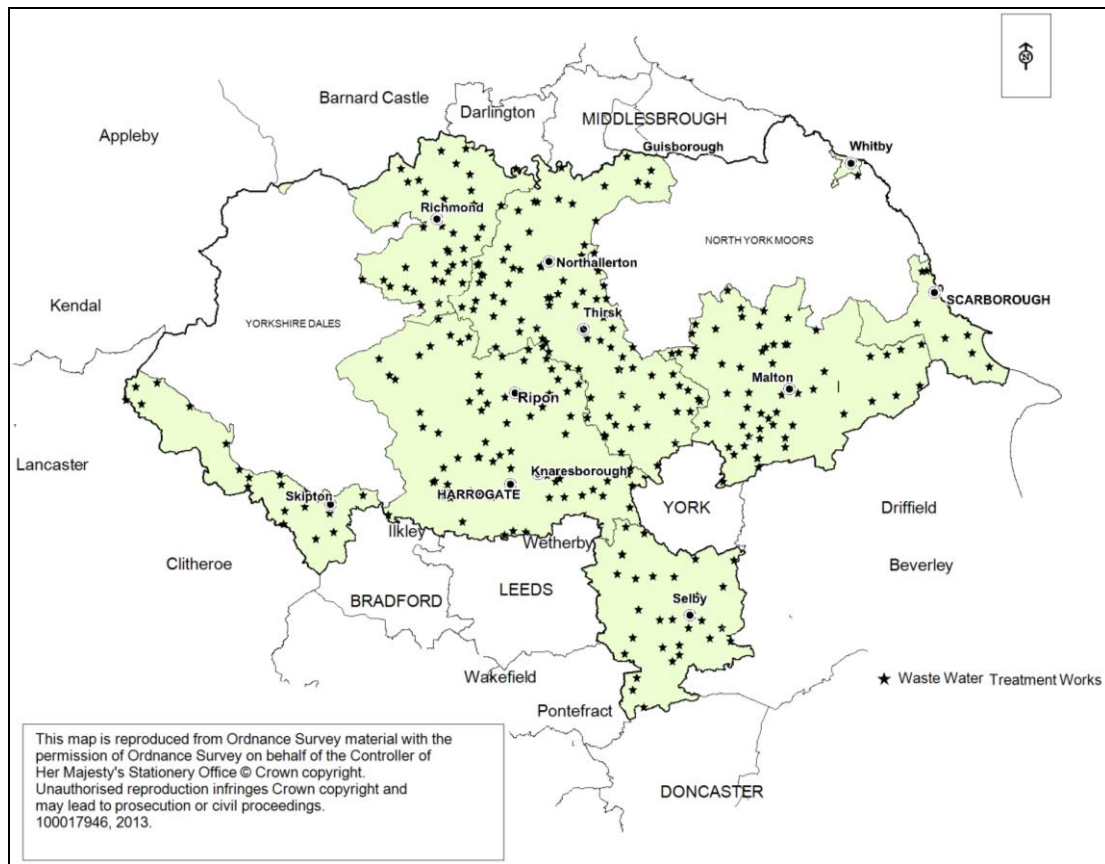


Figure 20 - Location of Waste Water Treatment Facilities within North Yorkshire Plan area, 2011<sup>216</sup>

The figure above shows the location of existing Waste Water Treatment Facilities within the North Yorkshire Plan area as of June 2011.

#### 4.7.4 Future Trends in Capacity

In order for the Minerals and Waste Joint Plan to make provision for waste water infrastructure it is important that there is a reasonable level of information with regards to the likely future level of demand.

The projection for future waste water treatment capacity is largely based on two factors. Firstly, quality drivers, such as the Water Framework Directive may introduce requirements to meet stricter standards on the effluence discharging to a watercourse that water companies, such as Yorkshire Water, need to meet. This may require investment in new infrastructure. Secondly, growth from new development, primarily related to new housing but also certain manufacturing activity (e.g. food production units) can have a significant impact. If there is growth allocated and/or committed the relevant water company is obliged to increase the capacity at the respective WWTW.<sup>217</sup>

Projections provided by Yorkshire Water suggest that the population of the Plan area to be served by WWTW maintained by Yorkshire Water in 2025 will be 540,621 people. This is an increase of 66,024 from the 2010 figure, representing an increase in capacity of almost 14%<sup>218</sup>. Yorkshire Water indicate that they expect the majority of

<sup>216</sup> Yorkshire Water, Correspondence by Email, 28<sup>th</sup> June 2011

<sup>217</sup> Yorkshire Water, Correspondence by Email, 17<sup>th</sup> June 2011

<sup>218</sup> *Ibid*

this increase in capacity will be accommodated at existing sites but if new development is deemed necessary planning permission will be required.

#### 4.7.5 Capacity Requirements

The research undertaken by Urban Vision and 4Resources has found that the Water Companies cannot indicate at this stage what future capacity requirements are likely to be with regard to waste water, especially not for the period up to 2030. However, at present the Water Companies do not anticipate the requirement to build new WWTWs in the Plan area but would almost certainly be undertaking works at various existing WWTWs over the Plan period.<sup>219</sup>

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<sup>219</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013)



## 5. Waste Management Facilities

There are a wide variety of potential waste management facility types and methods, a summary of which are listed below;

<ul style="list-style-type: none"> <li>• Household Waste Recycling Centre</li> <li>• Waste Transfer Station</li> <li>• Waste Separation and Recycling Facilities</li> <li>• Landfill</li> <li>• Anaerobic Digestion</li> <li>• Composting</li> </ul>	<ul style="list-style-type: none"> <li>• In Vessel Composting</li> <li>• Incineration with Energy Recovery</li> <li>• Pyrolysis</li> <li>• Gasification</li> <li>• Mechanical Biological Treatment</li> <li>• Aggregates Recycling Plant</li> <li>• Resource Recovery Parks</li> </ul>
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Table 39 – A selection of waste management methods

As of May 2015 there were approximately 134 waste management sites within the North Yorkshire Plan area licensed by the Environment Agency and holding planning permission. At a number of sites multiple waste management methods are taking place. Taking this into account approximately 168 waste management methods are being undertaken<sup>220</sup>. In addition to these, there are a large number of Environment Agency issued waste exemptions licenses held within North Yorkshire<sup>221</sup>. It is important not to consider waste management facilities in isolation but rather as elements in a wider network of waste management infrastructure, as the indicative waste management flow chart below demonstrates.

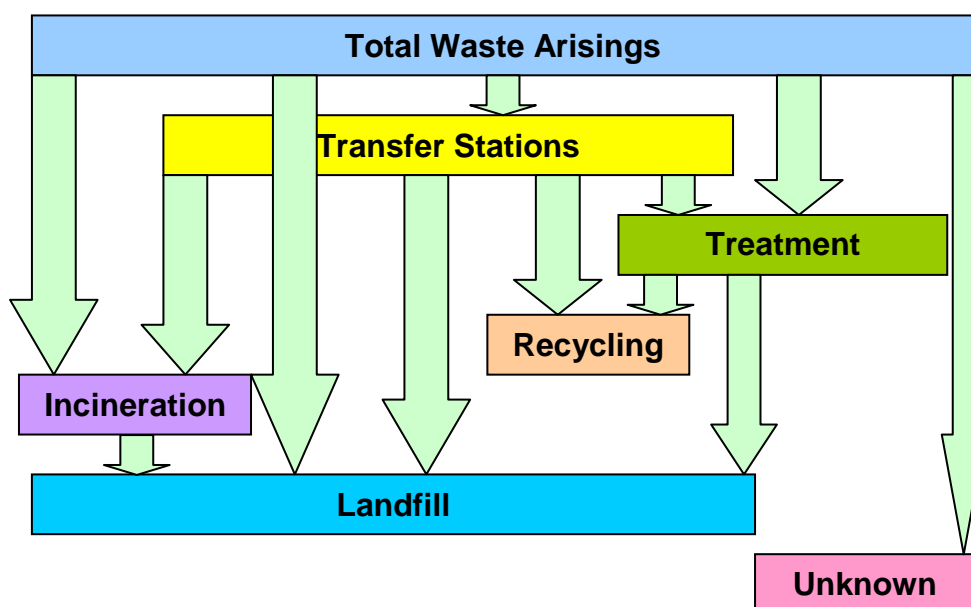


Figure 21 – Waste Management Flow Chart<sup>222</sup>

The figure above is a hypothetical visual demonstration of the movement of waste through the waste infrastructure of a WPA. The box at the top of the flow chart

<sup>220</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>221</sup> Environment Agency, Waste Exemption Register, 2015. Note: A site may hold more than one waste exemption license and/or a waste management licence if a number of waste management methods are being undertaken

<sup>222</sup> Environment Agency, Waste Data Modelling Project: Yorkshire and Humber, September 2010

represents the total waste arisings of a Plan area and every box underneath that represents a generic waste management method. The arrows represent the movement of waste between different facility types. As may be seen, certain types of waste can travel through various waste management methods before it reaches its final stage, be it treatment, recycling, recovery (incineration) or disposal (landfill). This can particularly be the case with mixed waste streams which may hold a wide variety of waste types which can be subject to a range of waste management methods. The varying stages of waste management make it difficult for accurate waste arisings figures to be produced because double counting can occur where waste travels through more than one stage. In addition, the flow chart is a simplification of the many stages of waste management infrastructure that different types of waste can pass through. Please note that there is also a box labelled 'unknown'. This refers to waste that is not recorded through any waste management method due to it passing through waste management facilities which are not required to have an Environmental Permit.

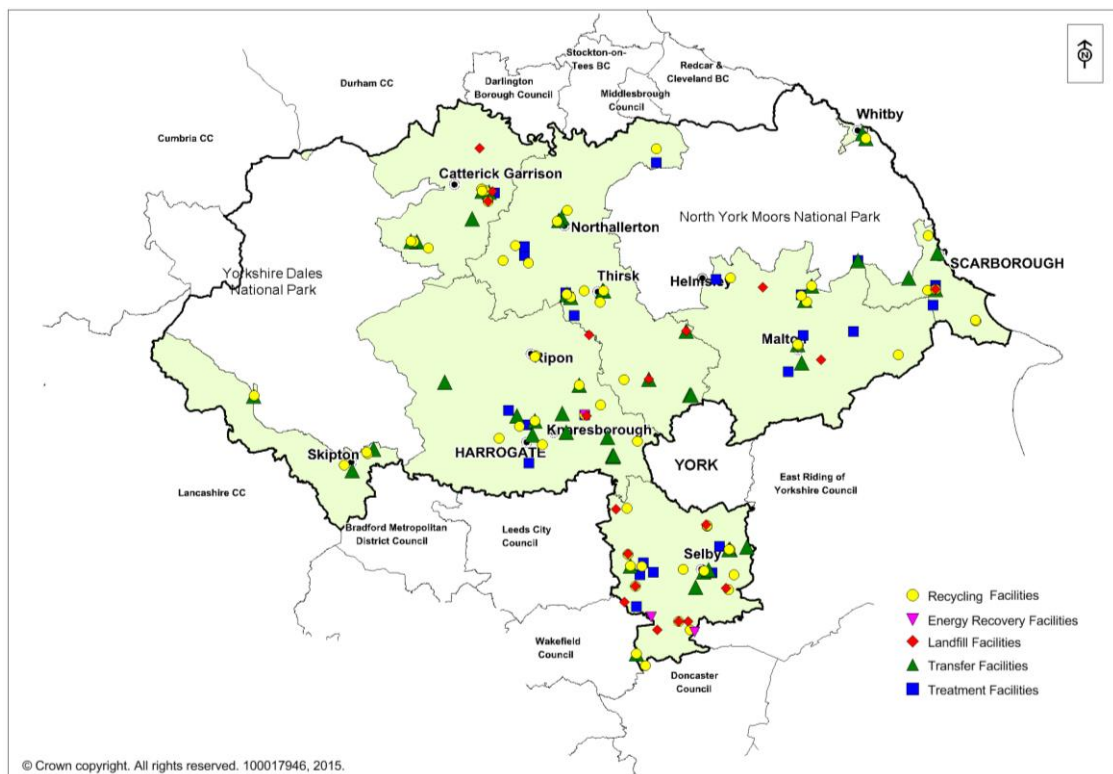


Figure 22 – Location of permitted Waste Management Facilities (Management Methods) within the North Yorkshire Plan area, 2015<sup>223</sup> (NB owing to the scale of the map there may be overlapping of facilities and therefore not all may be visible).

The figure above shows the location of Waste Management Facilities within the North Yorkshire Plan area as identified by the Urban Vision and 4Resources Waste Arisings and Capacity Requirements research. Exempt facilities are not shown.

The sections below provide a summary description of the waste management methods/facility types listed above and the location of known facilities within the North Yorkshire Plan area, with the exception of facilities which have an Environment Agency issued waste exemptions license.

<sup>223</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

## 5.1 Household Waste Recycling Centre

These facilities are an important point of contact between members of the public and the waste management infrastructure of an area. Household Waste Recycling Centres (HWRCs) are located around the Plan area and provide a facility where members of the public can deposit waste which they cannot dispose of through their local bin collection service. These sites are also referred to as Civic Amenity sites.

There are 20 HWRCs within the Plan area, and one mobile HWRC which visits two locations within the Plan area throughout the year.

HWRCs	
<ul style="list-style-type: none"> <li>• Catterick Bridge</li> <li>• Leyburn</li> <li>• Leeming Bar</li> <li>• Stokesley</li> <li>• Whitby</li> <li>• Burniston</li> <li>• Seamer Carr</li> <li>• Malton &amp; Norton</li> <li>• Thornton-le-dale</li> <li>• Northallerton</li> </ul>	<ul style="list-style-type: none"> <li>• Wombledon</li> <li>• Sowerby</li> <li>• Skipton</li> <li>• Ripon</li> <li>• Settle</li> <li>• Tadcaster</li> <li>• Selby</li> <li>• Tholthorpe</li> <li>• West Harrogate</li> <li>• Harrogate</li> </ul>
Mobile HWRCs	
<ul style="list-style-type: none"> <li>• Pateley Bridge</li> </ul>	<ul style="list-style-type: none"> <li>• Boroughbridge</li> </ul>

Table 40 – Fixed and Mobile HWRCs in the North Yorkshire Plan area

Due to recent financial constraints placed upon Local Authorities, HWRCs within North Yorkshire are closed on Wednesdays, in addition to the Christmas and New Year closures, and residents will be charged for the disposal of hardcore, rubble and plasterboard.

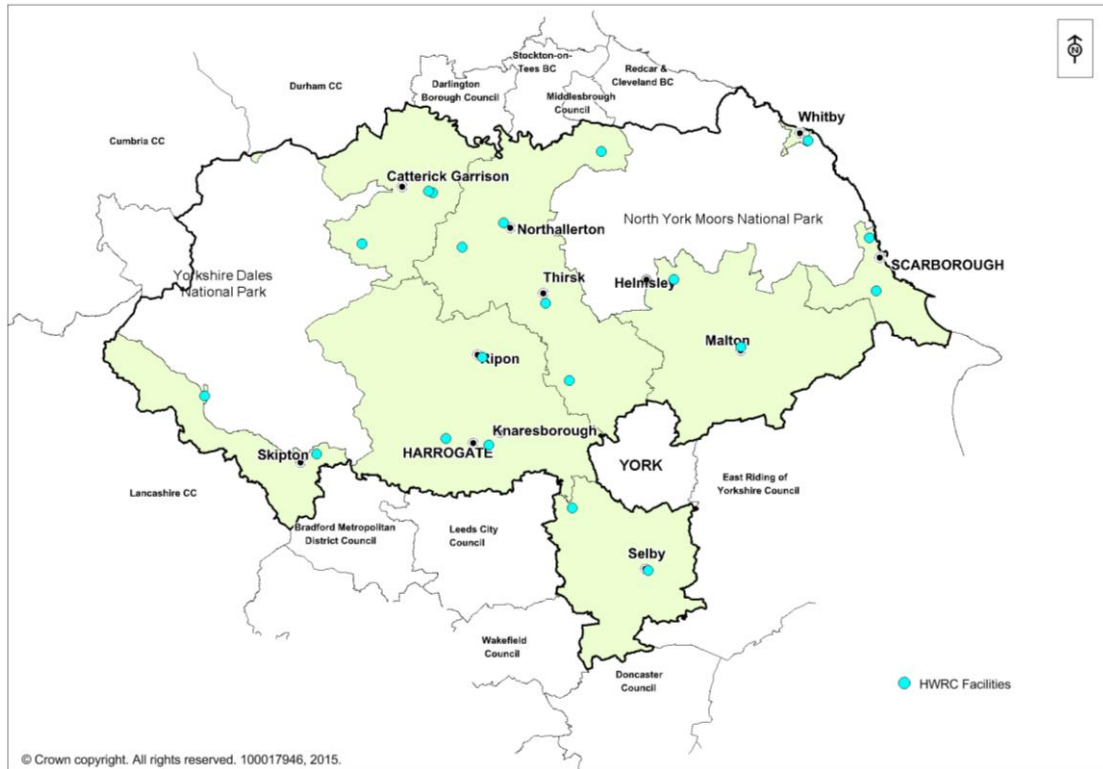


Figure 23 - Location of HWRCs within North Yorkshire Plan area, 2015<sup>224</sup>

As the Plan above shows, HWRCs are located relatively widely across the Plan area to help ensure convenient access by members of the public. In its capacity as Waste Disposal Authority for municipal waste the Council adopted, in 2005, policies relating to the provision of HWRCs. These state that:

- HWRCs will be located on the basis that a minimum of 95% of the public live within 20 minutes drive time of a facility, and
- HWRCs will be located on the basis that no single facility serves a population greater than 69,000 people

In 2012/13, 67% of all waste taken to the HWRCs was recycled, composted or re-used<sup>225</sup>. This demonstrates that HWRCs are very important in increasing recycling rates within North Yorkshire and moving the management of LACW up the waste hierarchy. This is also the case for recycling 'bring' sites, which includes services such as textile and paper banks, open to the general public but which are not generally subject of control by the Waste Planning Authority.

In March 2014 NYCC Waste Disposal Authority was granted planning permission for a new HWRC site for the Catterick area on the Gatherley Road Industrial Estate at Brompton on Swale, as a replacement for the existing site at Catterick Bridge. The new facility provides additional capacity and will accept a wider range of wastes and recyclables, to help improve recycling and composting rates.

<sup>224</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>225</sup> YNYWP, Waste Management Data, 2014

District/Borough Council	Number of Recycling Bring Sites	2011 Population
Craven District Council	67	55,500
Hambleton District Council	131	89,900
Harrogate Borough Council	108*	158,200
Richmondshire District Council	23*	53,900
Ryedale District Council	17	52,200
Scarborough Borough Council	120*	108,200
Selby District Council	32	84,700
North Yorkshire	499	602,700

Table 41 – The number of Recycling Bring Sites within North Yorkshire, 2015<sup>226</sup> and population estimates in 2013<sup>227</sup>. \*2013 Data

The table above demonstrates that there are a large number of recycling 'bring' sites located throughout North Yorkshire.

The Waste Local Plan contains a number of Saved Policies relevant to waste management methods, such as HWRCs, in the North Yorkshire Plan area. This includes Policy 5/4 – Household Recycling – Bring System and Policy 5/5 – Household Waste and Recycling Centres (see section 4.1.2 for description of these policies).

## 5.2 Waste Transfer Station

Waste Transfer Stations are a point in the waste recycling/disposal chain where waste is delivered, separated, sorted, bundled and then moved on to another location for further processing. These are important components of the waste treatment infrastructure in North Yorkshire and it is important that these facilities have good access to transport networks to ensure they operate efficiently.

There are approximately 49 Waste Transfer Stations within the North Yorkshire Plan area licensed by the Environment Agency and holding planning permission which are understood to be operating, or are due to begin operation<sup>228</sup>. Waste Transfer facilities managed approximately 0.42 million tonnes of waste in 2013<sup>229</sup>.

The types of waste accepted at waste transfer stations can vary dependent upon the interests of the operators and the conditions placed upon it by the planning permission. However, generally speaking, waste transfer stations can accept most wastes across the waste stream spectrum.

As defined by the Environment Agency there are various denominations within the generic term "Waste Transfer Station" including;

- Hazardous Waste Transfer Stations
- Non-hazardous Waste Transfer Stations
- Clinical Waste Transfer Station
- Inert Waste Transfer Station
- HWRC Waste Transfer Station

<sup>226</sup> District/Borough Council's of North Yorkshire, 2015

<sup>227</sup> Office for National Statistics, 2013 Mid-year Population estimates

<sup>228</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>229</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

Transfer facilities also play an important role in the recycling network within the Plan area, with a number of waste management sites housing both transfer and recycling facilities.

The Government has attempted to simplify the regulatory system of waste management by making it more proportionate and risk based through reforming the controls on handling, transfer and transport of waste<sup>230</sup>. This demonstrates that the importance of transferring waste, and the facilities at which these processes are carried out, is recognised at a national level.

The research undertaken by Urban Vision and 4Resources has identified that there is no specific capacity gap for transfer facilities, however; for Local Authority Collected Waste, North Yorkshire County Council and City of York Council Waste Disposal Authorities have stated that additional transfer station capacity will be required in order to provide an adequate overall geographical network of transfer facilities.<sup>231</sup>

The Waste Local Plan (2006) contains a number of Saved Policies relevant to waste management methods, such as Waste Transfer Stations, in the North Yorkshire Plan area. This includes Policy 5/3 – Recycling, Sorting and Transfer of Industrial, Commercial and Household Waste and Policy 7/1 – Incineration, Treatment and Transfer of Special or Clinical Waste (see sections 4.2.2 and 4.4.2 for a description of these policies).

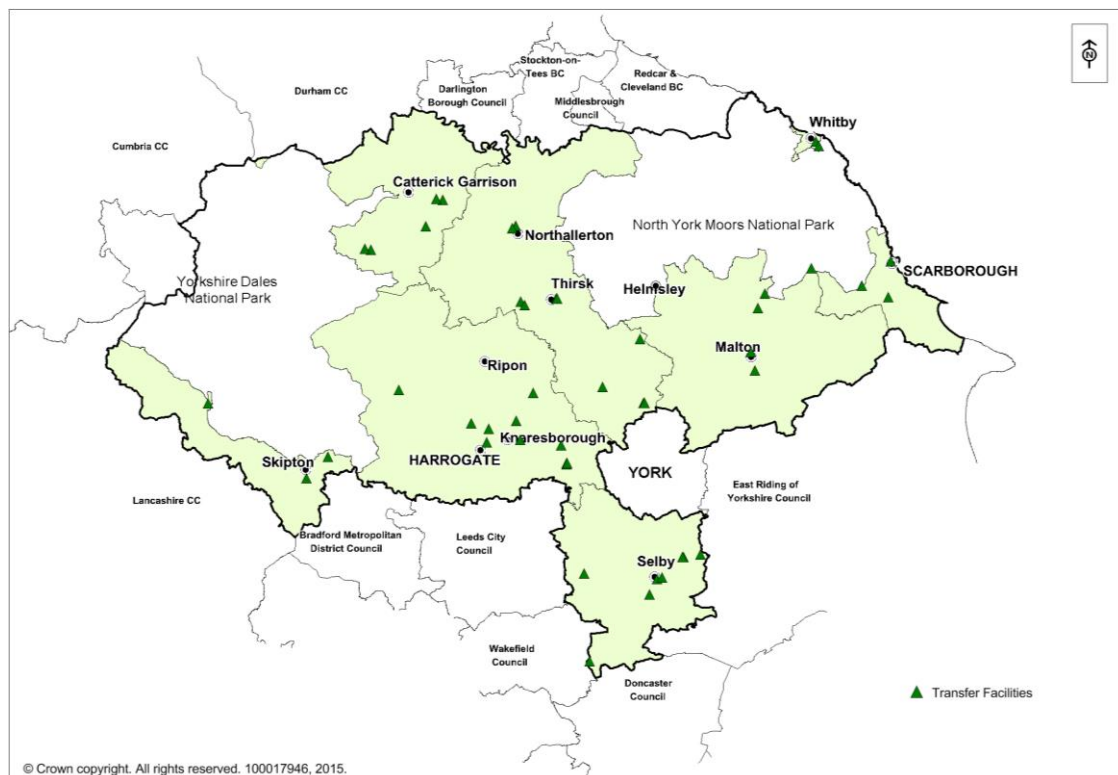


Figure 24 - Location of Waste Transfer Stations within North Yorkshire Plan area, 2015<sup>232</sup>

<sup>230</sup> Defra, Waste Strategy for England, 2007

<sup>231</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013)

<sup>232</sup> *Ibid*

The figure above shows the location of Waste Transfer Stations within the North Yorkshire Plan area as identified by the Urban Vision and 4Resources Waste Arisings and Capacity Requirements research.

### 5.3 Waste Separation and Recycling Facilities

Waste separation and recycling facilities are often a combination of waste transfer facility, where waste is organised similar to the process stated above, and a facility which actively alters the composition of waste, generating an end product which can be utilised. Waste recycling facilities are also very similar to Materials Recovery Facilities (MRF).

The recycling of waste is an important element of the waste hierarchy and in diverting waste from landfill. A wide range of products have the potential to be recycled, these include;

<ul style="list-style-type: none"> <li>• Cardboard</li> <li>• Card</li> <li>• Various types of metals</li> <li>• Glass</li> <li>• Plastics</li> <li>• Textiles</li> <li>• Batteries</li> </ul>	<ul style="list-style-type: none"> <li>• Waste Electronics including mobile phones, televisions etc.</li> <li>• White Goods including freezers, dishwashers etc.</li> <li>• Bicycles</li> <li>• Furniture</li> <li>• and many more...</li> </ul>
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Table 42 – Common materials capable of recycling<sup>233</sup>

Recycling facilities may specialise in recycling particular types of waste. These specialisms commonly reflect the range of potentially recyclable products within a geographic area. Within North Yorkshire, the seven District/Borough Councils also have different capabilities with regard to the home collection of waste, whereas a wider range of products can be recycled at HWRCs. Both of these methods of collection involve transfer of waste to separate specialised recycling facilities.

In the UK waste recycling facilities and MRFs reprocess millions of tonnes of waste material every year. For example:

- All of the newsprint manufactured in the UK is made from 100% recycled paper;
- All of the organic (garden and kitchen) waste collected by Local Authorities is recycled in the UK, usually quite close to where it is collected; and
- Over 80% of the glass collected for recycling is used in the UK, the majority of it to make new glass bottles and jars<sup>234</sup>.

However, a large percentage of recyclable waste collected in the UK is also transported outside of the UK for processing. Research undertaken by Defra indicates a balance of about 47% domestic reprocessing and 53% export<sup>235</sup>. The principle of managing waste close to where it is produced is well established as a desirable objective and therefore it is important to ensure an appropriate level of local provision.

<sup>233</sup> WRAP, [www.recyclenow.com](http://www.recyclenow.com), 2013

<sup>234</sup> *Ibid*

<sup>235</sup> *Ibid*

In 2008, the amount of household waste recycled in the UK reached 8.7 million tonnes which saved the equivalent in CO2 emissions of nearly a million return flights from Sydney to London. That is because virgin materials that would otherwise be used in production are conserved and the waste recycled is not being sent to landfill. In 1997 only 7% of England's household waste was recycled.

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Total amount of Household Waste	306,687	305,778	301,267	298,470	303,436	300,704
Household Waste: Recycled	23.5%	24.1%	23.7%	24%	24.5%	24.8%

Table 43 – Household Waste in North Yorkshire Recycled, 2009/10 – 2014/15<sup>236</sup>.

The table above demonstrates that, with regard to household waste in North Yorkshire, the proportion of household waste recycled has remained relatively static over the past six years, whilst the total household waste arisings have decreased by approximately 6,000 tonnes.

With regard to recycling targets for municipal waste, the York and North Yorkshire Waste Partnership (YNYWP) has set a target to recycle or compost 50% of household waste produced within the two local authority areas by 2020<sup>237</sup>. The combined household waste recycling, composting and re-use rate was 47% in 2012/13 for the YNYWP area.

The research undertaken by Urban Vision and 4Resources has identified a recycling capacity gap for;

- Local Authority Collected Waste; under the majority of scenarios there is a recycling capacity gap at the beginning of the plan period until the expected opening of AWRP in 2017. A small capacity gap for recycling of LACW and C&I waste at the end of plan period is projected only under one scenario which calculates high waste growth and high recycling rates.
- Commercial & Industrial Waste: see LACW comment above.
- Construction, Demolition & Excavation Waste; a significant shortfall in capacity for facilities to recycle CD&E waste has been identified, primarily the construction and demolition element, throughout the majority of the Plan period.
- Agricultural Waste; a small recycling capacity gap of agricultural waste has been identified over the Plan period. However, due the minimal capacity required to meet this, for the purposes of the research the recycling capacity has been combined with the required C&I recycling capacity.<sup>238</sup>

The existing Waste Local Plan (2006) contains a number of Saved Policies relevant to waste management methods, such as Waste Separation and Recycling Facilities, in the North Yorkshire Plan area. This includes Policy 5/6 – Scrapyards and Metal Recycling Facilities, which states *proposals for the above facilities will only be permitted provided:- the proposed site is suitably located; the site is adequately*

<sup>236</sup> NYCC Waste Management Data, 2015

<sup>237</sup> York and North Yorkshire Waste Partnership, Lets Talk Less Rubbish - A Municipal Waste Management Strategy 2006 – 2026, June 2006

<sup>238</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013) and Addendum Report (May 2015)



*screened; the local highway network is satisfactory; and the proposal will not have an unacceptable impact on local amenity or the environment.*

There are approximately 38 Recycling Facilities within the North Yorkshire Plan area (excluding HWRCs and aggregate and C&D recycling facilities) licensed by the Environment Agency and holding planning permission<sup>239</sup>. Recycling facilities in North Yorkshire managed approximately 87,000 tonnes of waste in 2013<sup>240</sup>.

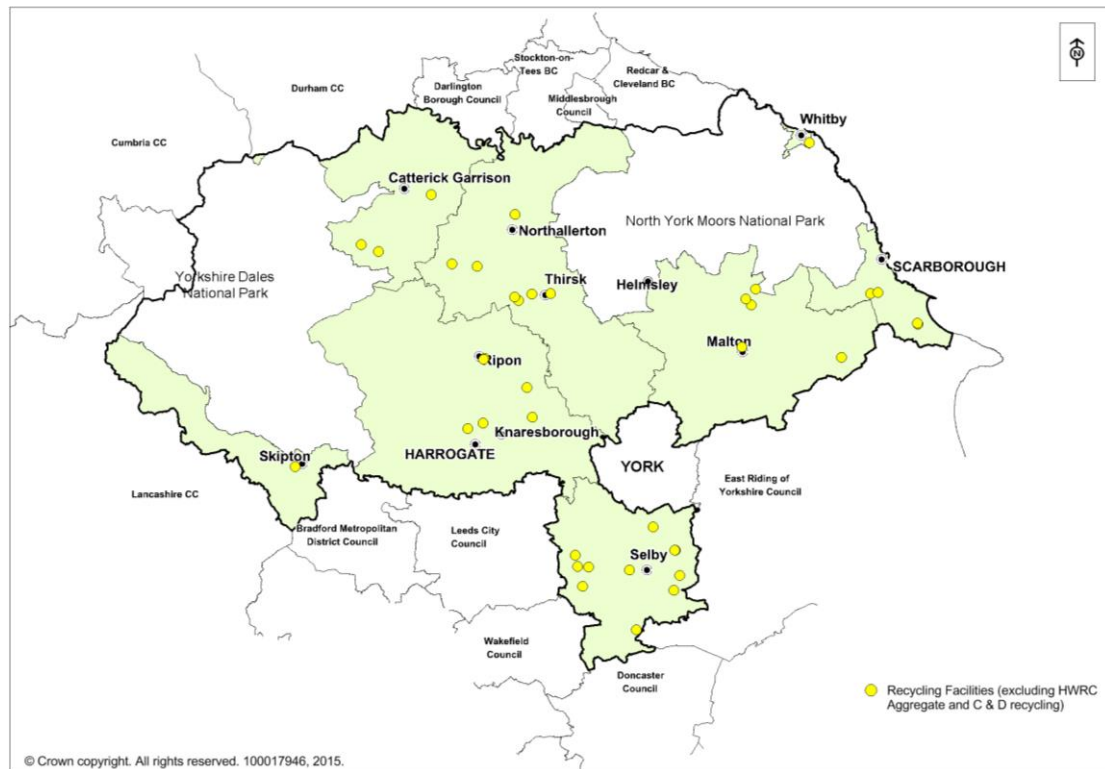


Figure 25 - Location of Recycling Facilities (excluding HWRCs and aggregate and C&D recycling facilities) within North Yorkshire Plan area, 2015<sup>241</sup>

The figure above shows the location of recycling facilities (excluding HWRCs and aggregate and C&D recycling facilities) within the North Yorkshire Plan area as identified by the Urban Vision and 4Resources Waste Arisings and Capacity Requirements research.

As noted in the Waste Transfer section, transfer facilities play an important role in the recycling network within the Plan area, with a number of waste management sites housing both transfer and recycling facilities.

### ***Aggregates Recycling Plant***

Aggregate is any hard, granular, construction material, derived from primary or secondary sources. It can be re-used or recycled and thus cease to be waste<sup>242</sup>.

<sup>239</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (2015)

<sup>240</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

<sup>241</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (2015)

<sup>242</sup> CLG, Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005 – Construction, Demolition and Excavation Waste, 2007

Aggregates recycling plants may be located within the site of, or in close proximity to, existing quarries. However, they may also be located in areas where other similar activities are taking place, such as industrial estates, as well as occurring as temporary activity at construction and demolition sites.

There are approximately 10 main Aggregate and C&D Recycling Facilities within the North Yorkshire Plan area licensed by the Environment Agency and holding planning permission<sup>243</sup>.

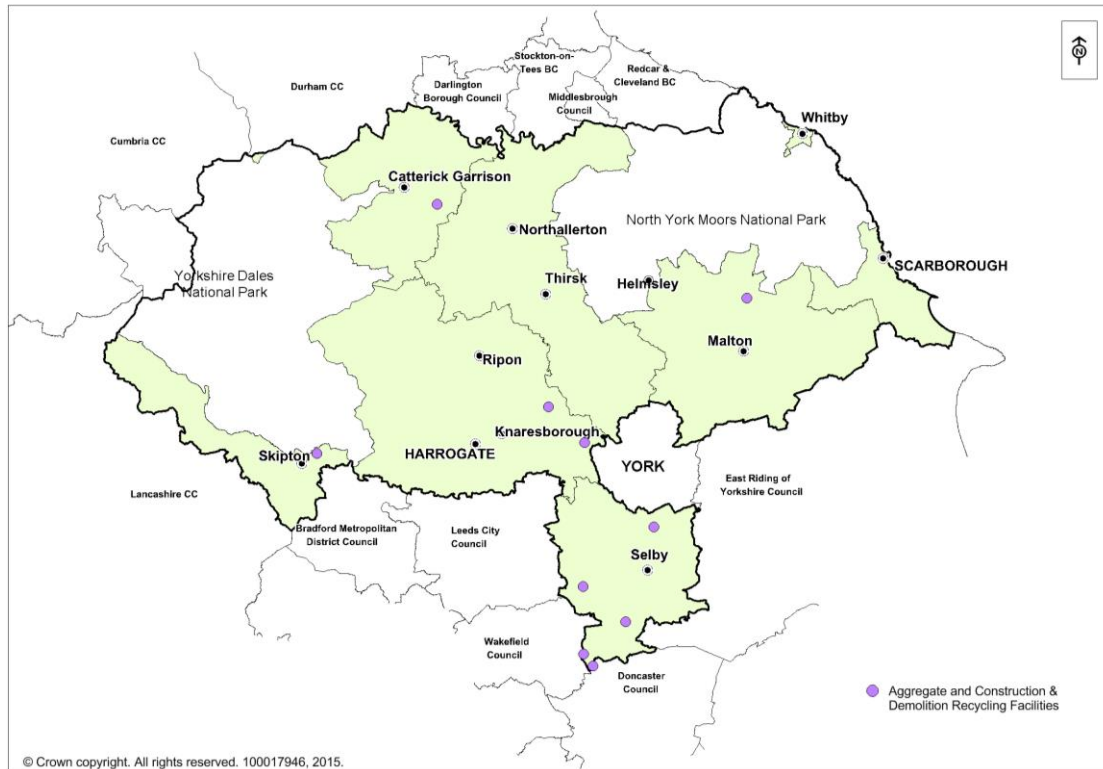


Figure 26 - Location of Aggregate and C&D Recycling Facilities within North Yorkshire Plan area, 2015<sup>244</sup>

The existing Waste Local Plan (2006) contains a number of Saved Policies relevant to waste management methods, such as Aggregates Recycling Plants, in the North Yorkshire Plan area. This includes Policy 5/7 – Facilities for the Recycling of Construction and Demolition Wastes and Policy 5/8 – Temporary Recycling Facilities for Recycling of Construction and Demolition Wastes (see section 4.3.2 for a description of these policies).

#### 5.4 Anaerobic Digestion

Anaerobic Digestion (AD) is defined as the conversion of biodegradable material into methane (CH<sub>4</sub>) and carbon dioxide (together known as biogas), and water, through microbial fermentation in the absence of oxygen. Biogas can be burned for heat and/or electricity production<sup>245</sup>. AD falls under the wider waste treatment category of Advanced Biological Treatment.

<sup>243</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>244</sup> *Ibid*

<sup>245</sup> Defra, Advanced Biological Treatment of Municipal Solid Waste, February 2013

Biodegradable wastes including food wastes, garden wastes and cardboards can be used to feed anaerobic digesters. In addition to biogas, the non-digested sludge residue (anaerobic digestate) can be used as an agricultural fertiliser. Using anaerobic digestate in this way diverts it away from landfill.

However, anaerobic digestates can be produced to different qualities. Some could retain their waste characteristics and would need to be regulated under the European Waste Framework Directive, and some could be of high quality and no longer waste. To help reduce these uncertainties the Environment Agency have developed quality protocols for both materials<sup>246</sup>.

The 2013 Waste Management Plan for England *'supports anaerobic digestion because of its value in dealing with organic waste and avoiding, by more efficient capture and treatment, the greenhouse gas emissions associated with its disposal to landfill. Anaerobic Digestion also recovers energy and produces valuable bio-fertilisers. The Government is committed to increasing the energy from waste produced through Anaerobic Digestion'*<sup>247</sup>.

These commitments are also stated in the 2011 Review of Waste Policy in England where it states that AD can play an important role as a means of dealing with food waste and avoiding, by more efficient capture and treatment, the greenhouse gas emissions that are associated with its disposal to landfill. The Review goes on to state that the evidence base shows that of the main options for the treatment of food waste, AD offers the greatest environmental benefit, followed by composting and then incineration with energy recovery<sup>248</sup>.

The Department for Energy and Climate Change has provided grant funding for AD and is considering options for possible future bioenergy/energy from waste demonstration programmes based on technology needs assessments. There were around 145 MWe of installed capacity in the UK in 2011. The potential growth over the coming 10 – 20 years is difficult to quantify but given the current low level of deployment and the quantities of feedstock likely to be available, the Government considers that the industry has the capacity to grow<sup>249</sup>.

An Anaerobic Digestion Strategy and Action Plan (2011) have also been published by Government and this details certain issues and actions which need to be addressed if a sustainable AD industry is to emerge:

- Feedstock security
- Use of digestate as a valuable resource
- Biogas use
- Access to finance to build plants and certainty around the financial incentives that are in place to encourage renewable energy generation<sup>250</sup>

There are approximately 4 main Anaerobic Digestion Facilities within the North Yorkshire Plan area licensed by the Environment Agency and holding planning permission<sup>251</sup>. Planning permission has been granted recently for a further significant AD facility at the former North Selby Mine site, on the York/North Yorkshire boundary.

<sup>246</sup> Environment Agency, [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk), 2011

<sup>247</sup> Defra, Waste Management Plan for England, December 2013

<sup>248</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>249</sup> *Ibid*

<sup>250</sup> Defra & DECC, Anaerobic Digestion Strategy and Action Plan, June 2011

<sup>251</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

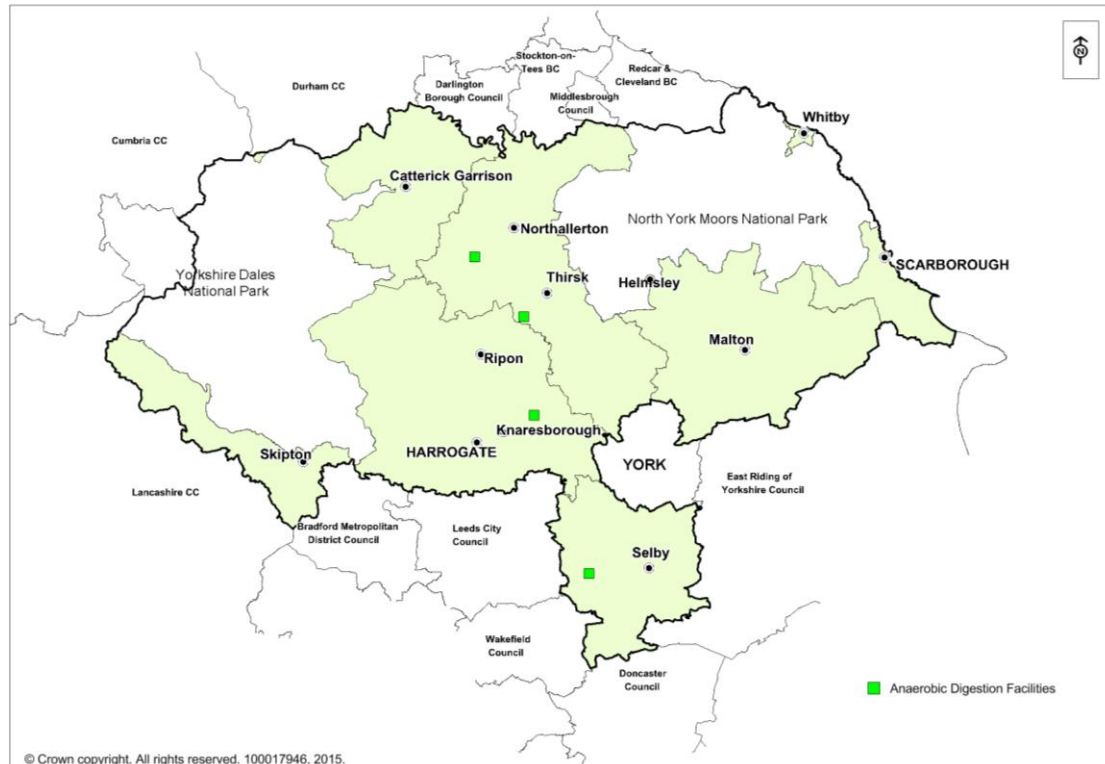


Figure 27 - Location of Anaerobic Digestion Facilities within the North Yorkshire Plan area, 2015<sup>252</sup>

The research undertaken by Urban Vision and 4Resources has identified that treatment facility (including anaerobic digestion) provision within the Joint Plan area is currently in surplus and remains adequate under all growth forecasts and scenarios modelled until the end of the Plan period.<sup>253</sup>

## 5.5 Composting

Compost is defined as a mixture of various (waste) ingredients for fertilising or enriching land<sup>254</sup> and the process of composting is the natural decomposition of certain biodegradable materials when collected in a specific area. With regard to composting of waste on a large scale, this is commonly undertaken in 'windrows' which are long heaped rows of compostable material left open to the natural elements.

Composting has a key role to play in diverting waste away from landfill and pushing the management of biodegradable waste up the waste hierarchy. Composting is being pursued as a national policy through two routes;

- Home Composting Schemes
- Commercial Composting on a larger scale

With regard to the types of waste accepted at composting sites, this is restricted firstly to biodegradable waste. However, as certain biodegradable wastes are subject to further controls, this restricts composting activities to certain types of waste within

<sup>252</sup> *Ibid*

<sup>253</sup> *Ibid*

<sup>254</sup> Oxford University Press, Oxford English Dictionary, 2010

this category. Input materials must not be mixed, combined or contaminated with other potentially polluting wastes, products or materials including invasive species<sup>255</sup>. The waste types listed below may be used in order to produce source segregated compost (within these types of wastes there are further restrictions);

<ul style="list-style-type: none"> <li>• Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing</li> <li>• Wastes from the preparation and processing of meat, fish and other foods of animal origin</li> <li>• Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing, conserve production, yeast and yeast extract production</li> </ul>	<ul style="list-style-type: none"> <li>• Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard</li> <li>• Organic Wastes matter from natural products from the textile industry</li> <li>• Soil, stones and dredging spoil</li> <li>• Various biodegradable waste from the municipal waste stream</li> <li>• Garden and park wastes<sup>256</sup></li> </ul>
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Table 44 - Waste types capable of producing source segregated compost

Compost must also be destined for appropriate use within one or more of the following market sectors for it to meet certain quality protocols:

- Land restoration and soft landscape operations;
- Horticulture (this includes domestic use); or
- Agriculture and soil-grown horticulture<sup>257</sup>

The quality of the resulting compost and its potential end-use is restricted by the types of waste that are utilised to create it. Compost that has been produced from source segregated waste is currently allowed to be applied to agricultural land. However, Compost-like Output (CLO), sometimes referred to as 'stabilised biowaste', has further restrictions because it is regarded to be not as high a quality as compost as can be derived from source segregated waste, due to it containing a higher level of contaminants<sup>258</sup>.

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Total amount of Household Waste	306,687	305,778	301,267	298,470	303,436	300,704
Household Waste Composted	20.5%	20.8%	22.2%	21.4%	22.1%	20.7%

Table 45 – Composting of household waste in North Yorkshire, 2009/10 – 2014/15<sup>259</sup>.

The table above demonstrates a small increase in the rate of composting of household waste collected within North Yorkshire. Over the last six years, from 2009/10 – 2014/15, the amount of household waste composted remained relatively static, whilst the total arisings of household waste reduced by approximately 6,000 tonnes.

<sup>255</sup> Environment Agency, Compost Quality Protocol, July 2010

<sup>256</sup> Environment Agency, Compost Quality Protocol, July 2010

<sup>257</sup> *Ibid*

<sup>258</sup> Defra, Advanced Biological Treatment of Municipal Solid Waste, February 2013

<sup>259</sup> NYCC Waste Management Data, 2015

With regard to targets for municipal waste, the York and North Yorkshire Waste Partnership has set a number of targets for composting and recycling municipal waste;

- Recycle or compost 50% of household waste by 2020<sup>260</sup>

The research undertaken by Urban Vision and 4Resources has identified that aerobic composting provision within the Joint Plan area is currently in surplus and remains adequate under all growth forecasts and scenarios modelled until the end of the Plan period.<sup>261</sup>

The existing Waste Local Plan (2006) contains a number of Saved Policies relevant to waste management methods such as Composting in the North Yorkshire Plan area. This includes Policy 5/9 – Green Waste Composting (see section 4.5.2 for a description of this policy).

There are approximately 11 main Composting Facilities within the North Yorkshire Plan area licensed by the Environment Agency and holding planning permission<sup>262</sup>.

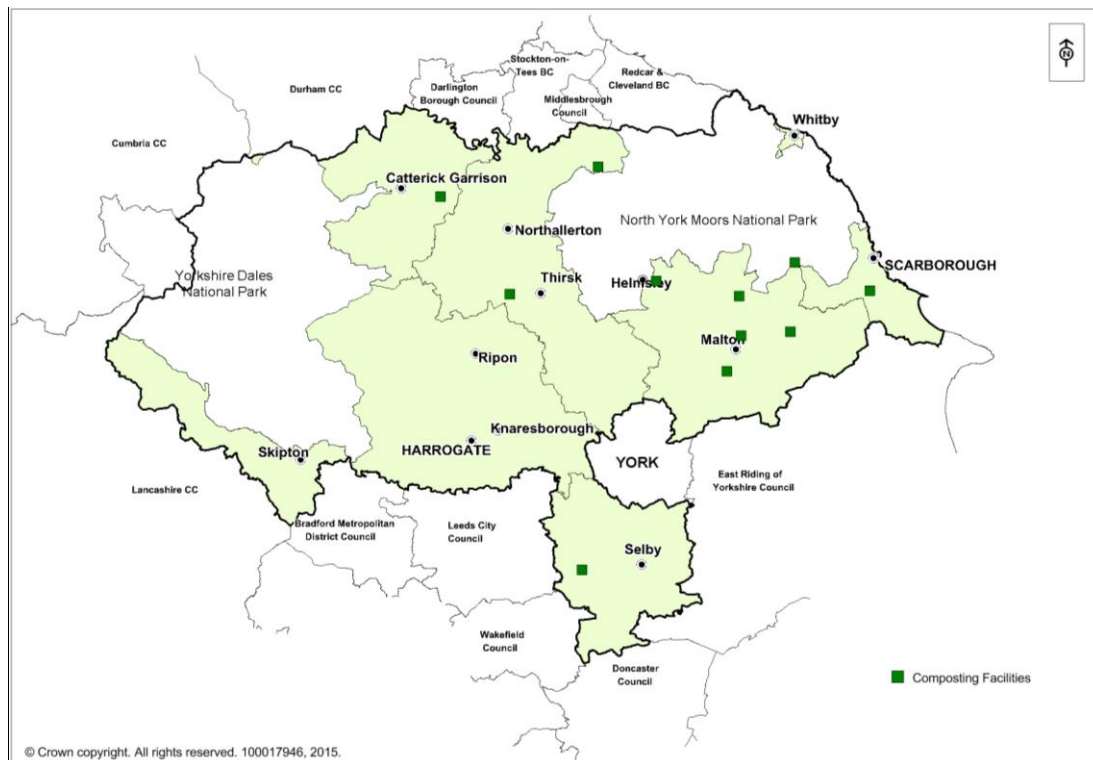


Figure 28 - Location of Composting Facilities within North Yorkshire Plan area, 2015<sup>263</sup>

The figure above shows the location of composting facilities within the North Yorkshire Plan area as identified by the Urban Vision and 4Resources Waste Arisings and Capacity Requirements research.

<sup>260</sup> York and North Yorkshire Waste Partnership, Lets Talk Less Rubbish - A Municipal Waste Management Strategy 2006 – 2026, June 2006

<sup>261</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013)

<sup>262</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>263</sup> *Ibid*

## 5.6 In Vessel Composting

This facility type follows a similar process to that above. However, as the name suggests, this method requires the control of both temperature and water content in enclosed conditions, with an aim of increasing the rate at which the waste materials are broken down.

There is currently limited information about this waste management process, at both a national and local level, as it is a relatively new technology which is still being developed.

## 5.7 Mechanical Biological Treatment

Mechanical Biological Treatment (MBT) is a generic term for the integration of several processes commonly found in other waste management technologies and deals primarily with processing residual waste by both mechanical and biological treatment methods. The processes may include a combination of the following;

- *Waste Preparation* – Residual waste requires preparation before biological treatment or sorting of materials. Initial waste preparation may take the form of simple removal of bulky wastes, which could cause problems with processing equipment downstream. Further mechanical waste preparation techniques may be used which aim to prepare the materials for subsequent separation stages.
- *Waste Separation* – Sorting the waste allows an MBT process to separate different materials which are suitable for different end uses. A variety of different techniques can be employed, and most MBT facilities use a series of several different techniques in combination to achieve specific end use requirements for different materials. Separation technologies exploit varying properties of the different materials in the waste such as their size, shape, density, weight, magnetism, and electrical conductivity.
- *Materials Recycling* - Recyclables derived from the various MBT processes are typically of a lower quality than those derived from separate collection systems and therefore have a lower potential for high value markets. The types of materials recovered from MBT processes almost always include metals and for many systems this is the only recyclate extracted. However these facilities can help enhance overall recycling levels.
- *Biological Treatment* – a range of biological processes may be used such as: Aerobic Bio-drying; Aerobic In-vessel composting, or Anaerobic digestion. Each approach has its own particular application<sup>264</sup>

Mechanical Biological Treatment has the potential to treat a very wide range of waste streams due to the variety of treatment processes available. A selection of the typical aims of MBT plants include the:

- Pre-treatment of waste going to landfill;
- Diversion of MSW going to landfill through the mechanical sorting into materials for recycling and/or energy recovery
- Diversion of biodegradable MSW going to landfill by:
  - Reducing the dry mass of BMW prior to landfill;
  - Reducing the biodegradability of BMW prior to landfill;
- Stabilisation of waste into a compost-like output for use on land;

<sup>264</sup> Defra, Mechanical Biological Treatment of Municipal Solid Waste, February 2013

- Conversion of waste into a combustible biogas for energy recovery; and/or
- Drying materials to produce a high calorific organic rich fraction<sup>265</sup>

MBT was identified under the Defra Waste Implementation Programme as a technology that may have an increasing role in diverting MSW from landfill as part of an integrated waste strategy, having the potential to recover materials & energy and reduce the quantity of MSW requiring final disposal to landfill. MBT has also been identified as a key waste management method for energy recovery from waste through the use of secondary recovered fuel (an output from mechanical and biological treatment processes)<sup>266</sup>.

There are approximately 13 Treatment Facilities within the North Yorkshire Plan area (excluding Composting and AD Facilities) licensed by the Environment Agency and holding planning permission<sup>267</sup>. Treatment facilities in North Yorkshire managed approximately 269,000 tonnes of waste in 2013<sup>268</sup>.

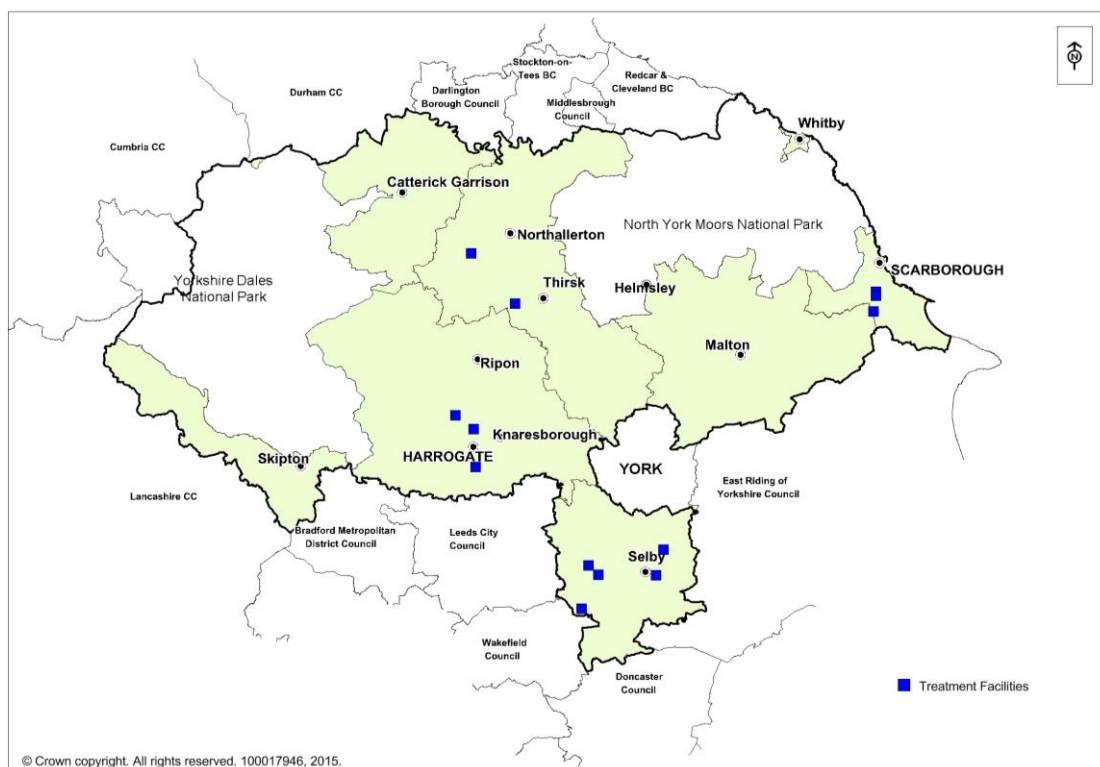


Figure 29 - Location of Waste Treatment facilities (excluding Composting and AD Facilities) within North Yorkshire Plan area, 2015<sup>269</sup>

The figure above shows the location of treatment facilities (excluding composting and AD facilities) within the North Yorkshire Plan area as identified by the Urban Vision and 4Resources Waste Arisings and Capacity Requirements research.

The research undertaken by Urban Vision and 4Resources has identified that treatment facility provision within the Joint Plan area is currently in surplus and

<sup>265</sup> *Ibid*

<sup>266</sup> Defra, Waste Strategy for England, 2007

<sup>267</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>268</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

<sup>269</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)



remains adequate under all growth forecasts and scenarios modelled until the end of the Plan period.<sup>270</sup>

## 5.8 Thermal Treatment

### *Energy-from-Waste*

'Energy-from-waste' derived from thermal (heat) treatment offers a method for the management of residual waste. The waste hierarchy positions energy recovery from waste as a preferred option to landfill. However, it recognises that prior to energy recovery waste reduction, re-use, recycling and composting are preferred, where appropriate. European experience illustrates that recovery of energy from residual waste (including by incineration) can be compatible with high recycling rates<sup>271</sup>.

Energy may be produced from waste by a variety of processes. The production of energy-from-waste through incineration involves the combustion of waste, resulting in the production of carbon dioxide, water and heat. The standard approach for the recovery of energy from the incineration of waste is to utilise the combustion heat through a boiler to generate steam which can be used to generate power via a steam turbine, although increasingly there is interest in direct use of the heat as well as the generation of power.<sup>272</sup>

Waste managed at an energy-from-waste facility will typically go through a pre-treatment (or 'intermediate') process where some items that can be recycled are removed, and/or where the remaining material is prepared for use in energy recovery by being converted into refuse derived fuel or solid recovered fuel. Pre-treatment processes include:

- Materials Recovery (often at a Materials Recovery Facility)
- Mechanical Biological Treatment (MBT) which can include an AD energy conversion process
- Mechanical Heat Treatment (MHT) including autoclaving<sup>273</sup>

An incineration plant is defined as any stationary or mobile technical unit and equipment dedicated to the thermal treatment of waste with or without recovery of the combustion heat generated. A number of related operations/equipment around an incineration plant, which may be included as part of proposals for a waste incinerator, may potentially include;

- Incineration lines,
- Waste reception,
- On site pre-treatment facilities,
- Waste-fuel and air-supply systems,
- Boiler,
- Facilities for the treatment of exhaust gases,
- On-site facilities for treatment or storage of residues and waste water,
- Stack,
- Devices and systems for controlling incineration operations, recording and monitoring incineration conditions<sup>274</sup>

<sup>270</sup> *Ibid*

<sup>271</sup> Defra, Incineration of Municipal Solid Waste, February 2013

<sup>272</sup> *Ibid*

<sup>273</sup> Defra, Energy from Waste – A guide to the debate, February 2013

<sup>274</sup> Defra, Environmental Permitting Guidance - The Directive on the Incineration of Waste, October 2009

The primary motive of incineration and other thermal treatments, which are discussed below, is to produce energy from residual waste. The energy generation option selected for any facility will depend on the potential for end users to utilise the power and/or heat available. The energy produced by such facilities can be utilised in the following ways:

- **Generation of Power (electricity)** - In most instances power can be easily distributed and sold via the national grid and this is the most common form of energy recovery
- **Generation of Heat** - For heat, the consumer needs to be local to the facility producing the heat and a dedicated distribution system (network) is required
- **Generation of Heat and Power** (this is referred to as Combined Heat and Power (CHP)) - CHP increases the overall energy efficiency for a facility compared to generating power only<sup>275</sup>

Incinerators and other thermal treatment facilities may process a combination of both LACW and other wastes such as commercial and industrial waste. Good practice suggests incinerators should only process residual waste i.e. the waste remaining after separation of the recyclables and treatment of organic/biodegradable waste.

In the UK, all waste incineration facilities must comply with the Waste Incineration Directive (2000/76/EC) (WID), which was translated in the UK through The Waste Incineration (England and Wales) Regulations 2002 (subsequently updated in 2009). This Directive sets stringent emissions controls for any thermal processes regulated in the EU. The objectives of the Directive are to minimise the impact from emissions to air, soil, surface and ground water on the environment and human health resulting from the incineration waste. The enforcement of the WID is through the Pollution Prevention and Control regime, which provides the mechanism by which all major industrial processes are permitted and regulated, with respect to their environmental performance<sup>276</sup>.

The 2013 Waste Management Plan for England confirms that ‘the Government supports efficient energy recovery from residual waste – of materials which cannot be reused or recycled - to deliver environmental benefits, reduce carbon impact and provide economic opportunities, [stating that the] aim is to get the most energy out of waste, not to get the most waste into energy recovery’<sup>277</sup>.

The 2011 Review of Waste Policy in England states that support for energy from waste facilities will be given where appropriate, for waste which cannot be recycled, re-used or composted<sup>278</sup>.

This direction was reiterated in the document ‘Energy from Waste – A guide to the debate’ published by Defra in February 2013 where it states that ‘there is an opportunity to retrieve more value from the waste we currently send to landfill by diverting it into energy recovery and by employing more efficient technologies to maximise the energy we get out of it.

However, it goes on to state that ‘the amount of waste available for energy recovery will not necessarily follow the same trends as the waste being produced, as it is expected the proportion being reused and recycled will increase. While there will be

<sup>275</sup> Defra, Incineration of Municipal Solid Waste, February 2013

<sup>276</sup> Defra, Environmental Permitting Guidance - The Directive on the Incineration of Waste, October 2009

<sup>277</sup> Defra, Waste Management Plan for England, December 2013

<sup>278</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

opportunities to divert residual waste that may be destined for landfill into energy recovery, the amount that is available, and its renewable content, will depend on a number of factors, including;

- waste management policy at a local and national level
- the composition of residual waste
- the infrastructure available to treat and process waste
- infrastructure efficiency
- the cost of treating waste in different options
- markets for recyclates and cost of energy<sup>279</sup>

The research undertaken by Urban Vision and 4Resources has identified a gap in capacity for recovery of energy from waste:

- Local Authority Collected Waste; There is a capacity gap for the recovery of energy from suitable LACW and C&I waste under a number of the scenarios tested, but only until AWRP becomes operational, which is expected in 2017.
- Commercial & Industrial Waste; see LACW comment above.

There are 3 Thermal Energy-from-Waste Treatment Facilities within the North Yorkshire Plan area licensed by the Environment Agency and holding planning permission<sup>280</sup>. The EfW facility at Allerton Waste Recovery Park is currently under construction, whilst the EfW facilities at Southmoor and Pollington (the latter is for waste wood/biomass) have planning permission but are not yet under construction. The EfW facility at Pollington is located at a site which straddles the border with East Riding of Yorkshire Council.

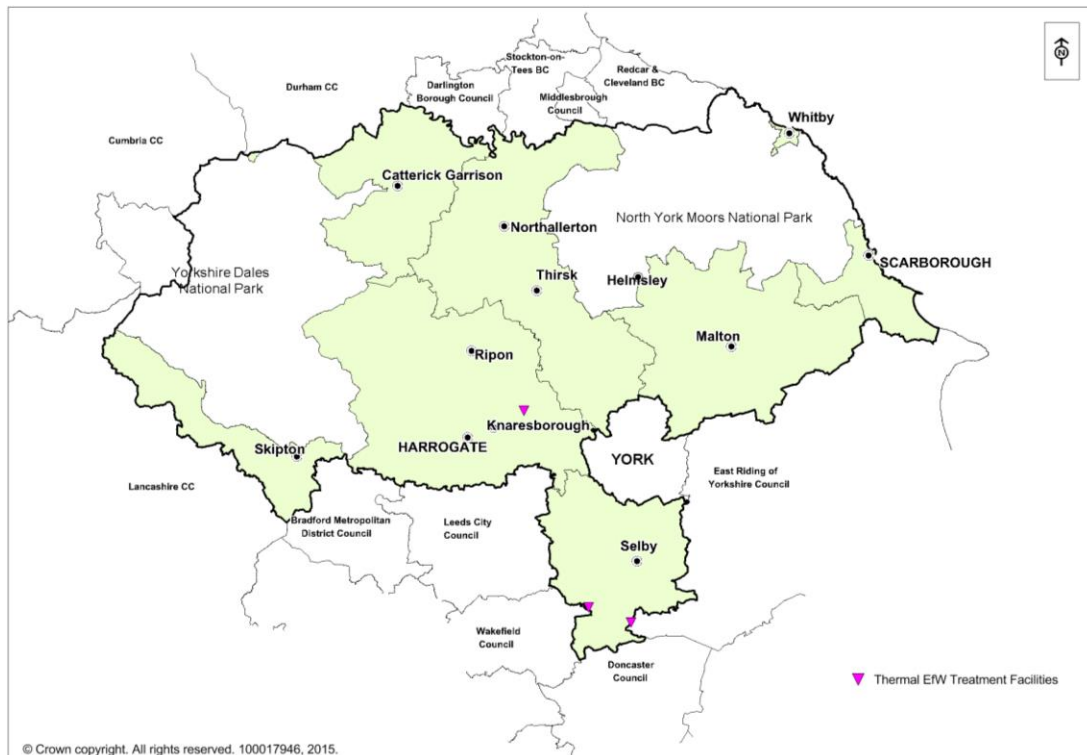


Figure 30 - Location of Thermal Energy from Waste Treatment facilities within North Yorkshire Plan area, 2015<sup>281</sup>

<sup>279</sup> Defra, Energy from Waste – A guide to the debate, February 2013

<sup>280</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>281</sup> *Ibid*

The figure above shows the location of thermal energy from waste treatment facilities within the North Yorkshire Plan area as identified by the Urban Vision and 4Resources Waste Arisings and Capacity Requirements research.

The existing Waste Local Plan (2006) contains a number of Saved Policies relevant to waste management methods, such as Incineration, in the North Yorkshire Plan area. This includes Policy 5/10 – Incineration of Waste, which states *proposals for the incineration of household, commercial and non-hazardous industrial waste will be permitted only after opportunities for recycling and composting have been explored and provided the following criteria are met: the proposed site is suitably located; the local highway network is satisfactory; and the proposal will not have an unacceptable impact on local amenity or the environment*, as well as Policy 7/1 – Incineration, Treatment and Transfer of Special or Clinical Waste (see section 4.4.2 for a description of this policy).

### **Advanced Thermal Treatment**

Advanced Thermal Treatments (ATT) are systems which incorporate emerging technologies which use heat to decompose waste in limited oxygen prior to energy extraction<sup>282</sup>. ATTs, such as pyrolysis and gasification, thermally treat waste to generate secondary products (gas, liquid and/or solid) from which energy can be generated<sup>283</sup>.

In contrast to combustion, pyrolysis is the thermal degradation of a waste substance in the absence of oxygen. This process requires an external heat source to maintain the pyrolysis process. The useful product from pyrolysing materials is syngas, which is a mixture of combustible gases and condensable oils, waxes and tars which can be used as fuels<sup>284</sup>.

Gasification involves the partial oxidation of a waste substance to such an extent as the material degrades but not a sufficient amount to allow full combustion to occur. The main product from this process is syngas, the use of which is described above<sup>285</sup>.

The actual design and configuration of ATT facilities may differ considerably between technology providers. However, an ATT plant will typically consist of the following key elements:

- Waste reception, handling and pre-treatment;
- Thermal treatment reactor;
- Gas and residue treatment plant (optional);
- Energy recovery plant (optional); and
- Emissions clean-up<sup>286</sup>

ATT processes are focused on treating the biodegradable materials present in waste (e.g. paper, card, putrescible waste, green waste, wood), as well as plastics. Therefore, it is common to remove non-combustible materials and recyclables, (typically metals and glass) prior to the primary treatment stage. In addition, depending on the technology employed, the feed material might require processing to remove excess moisture and shredding to reduce the size.

<sup>282</sup> Defra, Energy from Waste – A guide to the debate, February 2013

<sup>283</sup> Defra, Incineration of Municipal Solid Waste, February 2013

<sup>284</sup> *Ibid*

<sup>285</sup> *Ibid*

<sup>286</sup> Defra, Advanced Thermal Treatment of Municipal Solid Waste, February 2013

There are a variety of differences promoted to differentiate ATT from traditional Incineration technologies. One distinction is that smaller scale facilities are being marketed for treatment of waste with ATT processes as opposed to typical incineration facilities. Differences in scale can influence the potential to find local markets for both heat and electricity produced. Whilst incineration plants are typically centralised operations, the modular design of ATT operations allow flexible capacity and operational patterns<sup>287</sup>.

Whilst there are a number of examples of ATT processes that are established and viable for various waste streams such as biomass, industrial wastes and tyres, there are a lesser number of proven facilities which treat municipal wastes and the development of ATT is in its relative infancy in the UK, whereas large scale plants have been built and are in operation in Europe, North America and Japan<sup>288</sup>.

As with incineration, all ATT facilities treating waste must comply with the Waste Incineration Directive (2000), which has been transposed into the Waste Incineration (England and Wales) Regulations.

There is one Advanced Thermal Treatment Facility within the North Yorkshire Plan area licensed by the Environment Agency and holding planning permission. Permission was granted in 2015 for a further facility, at the former Arbre Power Station site near Eggborough, but development has not yet commenced.

## 5.9 Landfill

The primary method of waste management within the North Yorkshire Plan area continues to be landfill. This process is defined as the disposal of refuse by burying it under layers of earth<sup>289</sup> and this is commonly undertaken in disused quarries where the mineral resources have been exhausted.

There are currently 19 landfill sites within the North Yorkshire Plan area that are licensed by the Environment Agency and hold planning permission as of May 2015<sup>290</sup>. However, it is understood that a number of these landfill sites are in the process of closing.

Landfill as a form of waste disposal has historically been, and continues to be, the predominant waste management method within the North Yorkshire Plan area and the UK as a whole. However, in line with the waste hierarchy, current national policy is focussed towards changing this position.

The 2013 Waste Management Plan for England, states that landfill should usually be the last resort for waste, particularly biodegradable waste. However, it does accept that there are some wastes for which landfill remains the best, or least worst, option; such materials are likely to include:

- some hazardous wastes – such as asbestos;
- certain process residues, such as pre-treated industrial wastes from which no further resources can be recovered; and

<sup>287</sup> *Ibid*

<sup>288</sup> *Ibid*

<sup>289</sup> Oxford University Press, Oxford English Dictionary, 2010

<sup>290</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

- waste for which the alternatives to landfill are not justified on cost or environmental and resource efficiency grounds.<sup>291</sup>

The 2011 Review of Waste Policy in England continues the policy of diverting waste away from landfill. In addition to this it also encourages the targeting of waste streams with high carbon impacts, both in terms of embedded carbon (food, metals, plastics, textiles) and direct emissions from landfill (food, paper and card, textiles, wood)<sup>292</sup>.

Landfills are categorised into three broad types based upon the streams of waste that they accept;

- Hazardous
- Non-hazardous
- Inert

There a number of restrictions placed upon wastes that can be landfilled before they are treated and these restrictions are increasing as more stringent environmental policies are passed down from the national and European levels. However, a wide array of wastes can still currently be landfilled without prior treatment and, in addition to the relatively large number of mineral extraction sites in the Plan area, which are a source of void space, this is in a part an explanation why landfills have accounted for a large proportion of the total waste management provision within the North Yorkshire Plan area.

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Total amount of Household Waste	306,687	305,778	301,267	298,470	303,436	300,704
Household Waste sent to Landfill	58.3%	56.7%	54.1%	54.6%	48.5%	52.5%

Table 46 – Household Waste collected in North Yorkshire sent to Landfill, 2009/10 – 2014/15<sup>293</sup>.

The table above demonstrates the declining proportion of household waste being sent to landfill in North Yorkshire from 2009/10 – 2014/15. This would suggest that the current and continued national and local policy of diverting waste away from landfill is having a positive effect. Over the last six years, from 2009/10 – 2014/15, the amount of household waste landfilled decreased by over 19,000 tonnes, an approximate 11% decrease on the 2009/10 amount landfilled.

It is also important to note that landfill sites are a finite resource, having lifespans limited by capacity. This is in contrast to other waste treatment facilities which have an annual throughput and which can manage waste on an ongoing basis.

The research undertaken by Urban Vision and 4Resources has identified a landfill capacity gap for;

- Local Authority Collected Waste; There is a small capacity gap for hazardous LACW waste landfill throughout the plan period under all scenarios, but the

<sup>291</sup> Defra, Waste Management Plan for England, December 2013

<sup>292</sup> Defra, Government Review of Waste Policy in England 2011, June 2011

<sup>293</sup> NYCC Waste Management Data, 2015

amount projected does not justify a new landfill site in itself. Hazardous waste has been incorporated in LACW and C&I waste

- Commercial & Industrial Waste; see LACW comment above. A capacity gap for landfill of C&I waste is only projected under the baseline scenario where no increase in recycling or recovery is assumed.
- Construction, Demolition & Excavation Waste; from 2021 onwards there is a significant landfill capacity gap for this waste stream up to the end of the Plan period. The hazardous CD&E waste landfill capacity gap is small in comparison but runs throughout the Plan period.
- Low-Level (Non-Nuclear) Radioactive Waste; landfill capacity outside of the Joint Plan area for LLRW is uncertain post-2015 suggesting the need for medium term review of these provisions.<sup>294</sup>

The existing Waste Local Plan (2006) contains a number of Saved Policies relevant to landfill in the North Yorkshire Plan area. This includes Policy 6/1 – Landfill Proposals, which states *proposals for additional landfill capacity will be permitted provided that:- it can be demonstrated that there is an over-riding need for the development and there are no available alternative methods for treating the waste; or it is required for the restoration of a former mineral void which cannot be satisfactorily reclaimed in any other way; and where appropriate provision is made for the selective recycling of waste; the local highway network is satisfactory; and the proposal will not have an unacceptable impact on local amenity or the environment.*

Policy 6/4 – Leachate and Landfill Gas Management is also a relevant policy which states *proposals for the landfilling of waste will be required, where appropriate to demonstrate that adequate measures can be made for treatment of leachate and landfill gas that will not have an unacceptable impact on the environment or local amenity. Where practical, landfill gas should be recovered for use as an energy source.*

Policy 7/3 – Reworking of Deposited Waste is also relevant, which states *proposals for the above will be permitted only where: the proposals represent the Best Practicable Environmental Option; and re-working would achieve material planning benefits that would outweigh any environmental or other planning harm which might result.*

There are 19 Landfill Facilities within the North Yorkshire Plan area licensed by the Environment Agency and holding planning permission<sup>295</sup>. Landfill facilities in North Yorkshire managed approximately 1.6 million tonnes of waste in 2013<sup>296</sup>.

<sup>294</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Final Report (Oct 2013) and Addendum Report (May 2015)

<sup>295</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)

<sup>296</sup> Environment Agency, 2013 Waste Data Interrogator, 2014

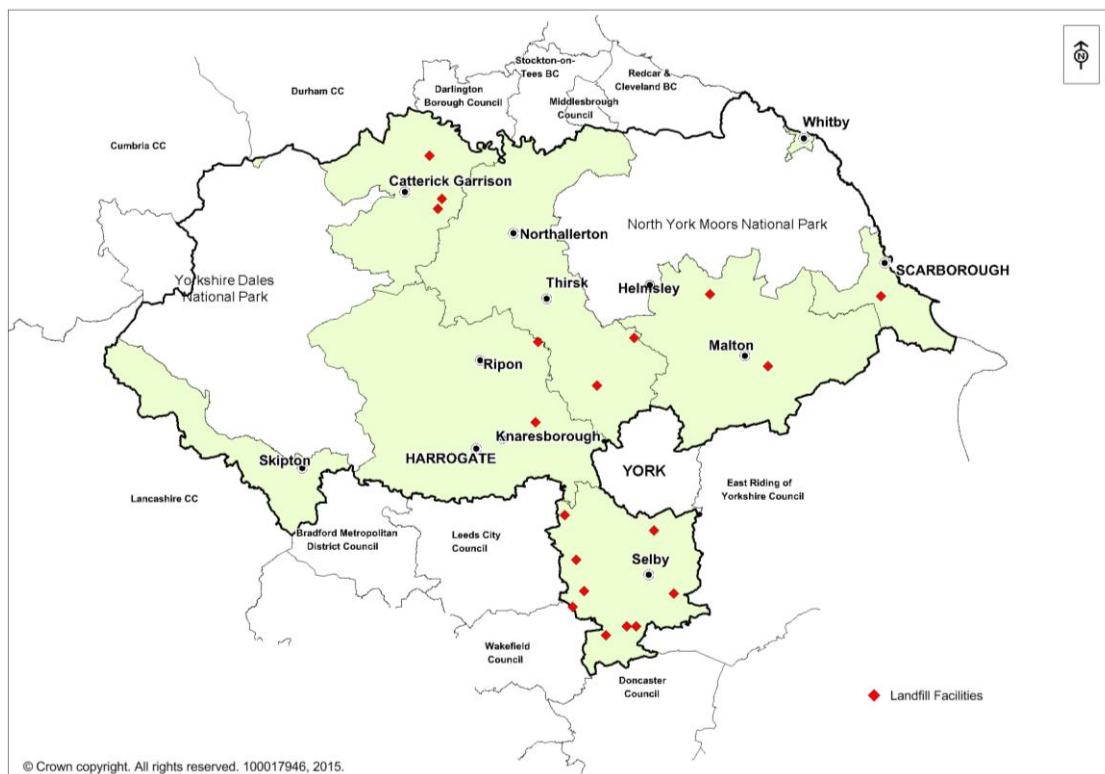


Figure 31 - Location of landfill sites within North Yorkshire Plan area, 2015<sup>297</sup>

The figure above shows the location of landfill sites within the North Yorkshire Plan as identified by the Urban Vision and 4Resources Waste Arisings and Capacity Requirements research.

<sup>297</sup> Urban Vision and 4Resources, North Yorkshire Sub-region: Waste Arisings and Capacity Requirements Addendum Report (May 2015)



## 6. District/Borough Plans

There are 7 District/Borough Councils within the County of North Yorkshire, these are;

- **Craven** District Council
- **Hambleton** District Council
- **Harrogate** Borough Council
- **Richmondshire** District Council
- **Ryedale** District Council
- **Scarborough** Borough Council
- **Selby** District Council

As a two-tier authority area the County Council and the District/Borough Councils have different responsibilities with regard to the preparation of local planning policy. County Council's, such as North Yorkshire, have responsibilities specific to minerals and waste planning which requires the production of a Minerals and Waste Joint Plan. The District/Borough Councils, such as those above, have responsibilities for the majority of development apart from minerals and waste developments and the County Council's own development, such as schools, libraries, and highways.

Local Authorities, however, may include policies within their adopted Local Plans which relate to and may have an impact upon waste issues. For instance Hambleton's Core Strategy (April 2007) includes the following Strategic Objective;

***To reduce the adverse impact of society on the environment, and respond to the implications of climate change; This will involve efforts to reduce waste, encourage recycling, reduce pollution and energy consumption, promote the use of renewable energy and the conservation of water supplies and respond to increased risks of flooding<sup>298</sup>***

In addition to this, Policy CP18 of the Core Strategy, under the heading 'Prudent use of Natural Resources', makes specific reference to waste;

***Development and service provision must seek to ensure that impact on natural resources is minimised and the potential use of renewable resources maximised. Proposals must take all potential opportunities to:***

- i. minimise energy demand, improve energy efficiency and promote renewable energy technologies;*
- ii. maximise the re-use and recycling of waste materials and minimise the environmental consequences of waste production<sup>299</sup>.*

Harrogate Borough Council also has an adopted Core Strategy (February 2009), under the 'Environment' heading, this document holds as a Strategic Objective;

***To provide enhanced care for the environment, with particular emphasis on the reduction of waste and CO2 emissions, climate change and renewable energy<sup>300</sup>.***

<sup>298</sup> Hambleton District Council, Local Development Framework Core Strategy, April 2007

<sup>299</sup> *Ibid*

<sup>300</sup> Harrogate Borough Council, Local Development Framework Core Strategy, February 2009

Selby District Council adopted their Core Strategy on 22<sup>nd</sup> October 2013. Policy CP13 'Improving Resource Efficiency' of the Core Strategy makes reference to the use of waste as a renewable energy source;

*In order to promote increased resource efficiency unless a particular scheme would be demonstrably unviable or not feasible; the Council will require:*

*b) Strategic Development Sites identified in the Core Strategy and key sites identified in future Local Plan documents to derive the majority of their total energy needs from renewable, low carbon or decentralised energy sources. Developers to investigate particular opportunities to take advantage of any or a combination of the following for example:*

- i) Local biomass technologies,*
- ii) Energy from waste (in accordance with the County Waste Policies),*
- iii) Combined Heat and Power schemes, and*
- iv) Community Heating Projects<sup>301</sup>*

The Core Strategy also identifies waste management as an issue that needs to be addressed.

*The Council is also committed to waste management and prioritises waste reduction above all other methods of management, and in order to achieve this will continue to support North Yorkshire County Council in implementing the priorities of its strategy (Municipal Waste Management Strategy for York and North Yorkshire 'Let's Talk Less Rubbish') for sustainable waste management through the York and North Yorkshire Waste Partnership. Waste reduction is a key step towards maintaining, protecting and improving quality of life, for example, the re-use of secondary aggregates such as ash, which may contribute to the production of building materials from a sustainable source.<sup>302</sup>*

The Ryedale District Council Local Plan Strategy, which sets out how much new housing, employment and retail development should go where up to 2027, was adopted in September 2013. Policy SP16 'Design' states;

*The design of new development will also be expected to:*

- Proposals for major development will be expected to include a statement identifying the waste implications of the development and measures taken to minimise and manage waste generated.<sup>303</sup>*

Policy SP17 'Managing Air Quality, land and Water Resources' also includes reference to waste management, where it states;

*Water Resources will be managed by:*

- Protecting surface and groundwater from potentially polluting development and activity. Sources of groundwater protection within and adjacent to the District will be protected using the Source Protection Zones (SPZs) identified by the Environment Agency. Within SPZ1 the following types of development will not be permitted unless adequate safeguards against possible contamination can be agreed:*
  - Septic tanks, waste water treatment works.....*
  - Activities which involve the disposal of liquid waste to land<sup>304</sup>*
  - .....*

<sup>301</sup> Selby District Council, Selby District Core Strategy, October 2013

<sup>302</sup> *Ibid*

<sup>303</sup> Ryedale District Council, Ryedale Local Plan Strategy, September 2013

<sup>304</sup> *Ibid*

Richmondshire District Council, outside of the Yorkshire Dales National Park, adopted their Local Plan 2012–2028 Core Strategy on 9<sup>th</sup> December 2014. The Adopted Plan states;

*Minerals and waste planning issues, including the location, safeguarding and extraction of minerals, are dealt with through North Yorkshire County Council's Minerals and Waste Local Plans.*<sup>305</sup>

It is important to acknowledge the significance of minerals and waste related policies at the Local Authority level and, where possible, build links with these in the Minerals and Waste Joint Plan.

This is also the case in relation to local level policies which could potentially have an indirect impact upon waste management facilities, such as the allocation of land which may be suitable for small scale waste management or the preferred spatial distribution of development and how this may impact on future waste arisings and the need for waste management capacity in specific areas.

Craven District Council and Scarborough Borough Council are currently in the process of updating their Local Plans, which were both adopted in 1999.

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<sup>305</sup> Richmondshire District Council, Richmondshire Local Plan 2012-2028 (Dec 2014)

## 7. Adjoining Authorities

In total, 14 minerals and waste planning authorities directly adjoin the North Yorkshire Plan area;

<b>City of York</b> Council	<b>Yorkshire Dales</b> National Park
<b>Leeds</b> City Council	<b>North York Moors</b> National Park
<b>Bradford</b> Metropolitan District Council	<b>Middlesbrough</b> Council
<b>East Riding of Yorkshire</b> County Council	<b>Redcar &amp; Cleveland</b> Borough Council
<b>Doncaster</b> Metropolitan Borough Council	<b>Lancashire</b> County Council
<b>Wakefield</b> Council	<b>Durham</b> County Council
<b>Darlington</b> Borough Council	<b>Stockton-On-Tees</b> Borough Council

Table 46 – Minerals and waste planning authorities adjoining the North Yorkshire Plan area

All the above planning authorities have a responsibility to produce minerals and waste planning policies which will form part of the ‘development plan’. Those which are unitary authorities, together with lower tier district/borough authorities, also need to produce policies for non-minerals and waste related issues, such as housing and commercial developments, which may nevertheless have implications for waste planning.

It is important that relevant strategies and policies of adjacent authorities are taken into consideration when developing policies for the Plan area. The National Planning Policy Framework provides guidance on this issue: ‘Public bodies have a duty to cooperate on planning issues that cross administrative boundaries, particularly those which relate to the strategic priorities set out in paragraph 156 [of the NPPF]. The Government expects joint working on areas of common interest to be diligently undertaken for the mutual benefit of neighbouring authorities.’<sup>306</sup>

As the position in terms of policy production is continually evolving, the relevant Council websites provide the most up-to-date picture at the time of production of their documents. City of York Council, Bradford Metropolitan District Council, East Riding of Yorkshire Council, Yorkshire Dales National Park and Durham County Council are currently in the process of updating Local Plans which are now relatively dated. The position of those authorities that have recently adopted waste policies within a development plan is summarised below.

### Leeds City Council

Leeds City Council adopted their Natural Resources and Waste DPD on the 16th January 2013 and this now constitutes part of the Development Plan for the area.

<sup>306</sup> DCLG, National Planning Policy Framework, March 2012 (Para 178)

With regard to the cross boundary movement of waste it is acknowledged within the DPD that *'the Leeds waste market operates closely with North Yorkshire'*<sup>307</sup>. In particular the DPD identifies a number of waste facilities within North Yorkshire that manage waste arising within the Leeds City Council authority area, namely *'Great Heck Biomass and Wood Fuel Processing Plant, The Maltings Composting Site at South Milford and Selby Energy Park (Biomass and Anaerobic Digestion).'*<sup>308</sup>

The DPD also acknowledges that *'Leeds is a net importer of liquid hazardous waste and also has an end of life vehicles processor, which imports vehicles from all over the north of England. Both Peckfield and Skelton Grange Landfill sites accept waste from both North and West Yorkshire.'*<sup>309</sup>

However, *'Policy Waste 1: Self-sufficiency for future waste management in Leeds'* plans to manage Leeds City Councils fair share of waste without relying on exporting waste to other areas.

### Wakefield Council

Wakefield Council adopted its Core Strategy and Development Policies DPD on 15 April 2009. This was then followed on 9 December 2009 with the adoption of a Waste DPD.

With regard to cross boundary issues the Waste DPD states that *Wakefield deals with a significant amount of waste that is being brought into the district. Inevitably, there is also a proportion of waste generated in Wakefield that is exported, in particular commercial and industrial waste. Strategic sites that are located in other districts, but near our boundary, could provide additional flexibility should they be available to take a proportion of Wakefield's waste. Reverse movements of wastes into Wakefield also need to be considered but neighbouring authorities are all seeking to be as self-sufficient as possible'*<sup>310</sup>.

### Lancashire County Council

Lancashire County Council adopted their Minerals and Waste Core Strategy in February 2009 which replaced the Lancashire Minerals and Waste Local Plan.

The document states that Lancashire is a *significant net importer of waste going to landfill, and also an exporter of waste being put through other treatment processes. The cross boundary movements are expected to continue in certain cases due to proximity, transport network, the need for specialised treatment, economies of scale and locational constraints'*<sup>311</sup>.

### Tees Valley

The Joint Tees Valley Minerals and Waste Core Strategy Development Plan Document (DPD), which was adopted on the 15<sup>th</sup> September 2011, has been prepared to cover the five Tees Valley Local Authorities of Darlington, Hartlepool, Middlesbrough, Redcar & Cleveland and Stockton-on-Tees, four of which adjoin the North Yorkshire Plan area.

<sup>307</sup> Leeds City Council, Natural Resources and Waste DPD, January 2013

<sup>308</sup> *Ibid*

<sup>309</sup> *Ibid*

<sup>310</sup> Wakefield Council, Waste DPD, March 2009

<sup>311</sup> Lancashire County Council, Minerals and Waste Core Strategy, February 2009

The DPD contains the long-term spatial vision and strategic policies needed to achieve the key objectives for minerals and waste developments in the Tees Valley. The Minerals and Waste Policies and Sites DPD, which was also adopted, identifies specific sites for future minerals and waste development, setting out a limited range of policies which will be used to assess minerals and waste planning applications<sup>312</sup>.

The Tees Valley document states that *'Companies which manage the municipal solid, commercial and industrial, construction and demolition and hazardous waste streams also import waste from outside the Tees Valley to be dealt with at their sites. The amount of waste imported varies over time, but has been a source of economic success for these companies and it is anticipated that an element of importation will continue over the plan period'*<sup>313</sup>.

### North York Moors National Park

The North York Moors Park adopted its Core Strategy and Development Policies document on 13<sup>th</sup> November 2008. This document supersedes all the policies contained in the former North York Moors Local Plan (2003).

The Core Strategy and Development Policies document is the key part of the new North York Moors Local Development Framework and sets out a spatial vision for the future of the National Park. Its Core Policies set a strategic framework for the scale and location of all types of new development and more detailed Development Policies against which individual proposals including waste and mineral proposals will be assessed.

Core Policy F (Sustainable Waste Management) of the document states *'The development of small scale waste facilities will be facilitated where this will: Contribute towards meeting the targets of the waste management authorities in respect of increasing reuse, recycling, composting and energy recovery from waste; Manage waste predominantly generated from communities within the National Park; Enable waste to be managed as close to its source as possible'*<sup>314</sup>.

The document goes on to state *'The majority of waste generated within the Park is disposed of in landfill sites outside the Park boundary....In light of the waste management strategies covering the Park, the low levels of waste generated within the area and the high level of protection afforded to the Park's special qualities, it is appropriate that any waste management facilities are of a scale appropriate to the Park, relating only to accommodating waste from the immediate area. Larger scale commercial facilities can cause harm to the environment of the Park due to the size or nature of the operations being undertaken and will only be permitted where the scale of the operation is compatible with its location in the Park. Landfill is not considered appropriate within the Park'*<sup>315</sup>.

### Doncaster Metropolitan Borough Council

Doncaster MBC (which borders the Plan area to the south) has prepared a Joint Waste Plan with Barnsley and Rotherham councils. This document was adopted in March 2012 and now constitutes part of the Development Plan for the council areas.

<sup>312</sup> Tees Valley, Joint Minerals and Waste DPD, September 2011

<sup>313</sup> *Ibid*

<sup>314</sup> North York Moors National Park Authority, Core Strategy and Development Policies, November 2008

<sup>315</sup> *Ibid*

The Joint Waste Plan acknowledges that *‘A proportion of [Doncaster, Barnsley and Rotherham] waste (e.g. hazardous waste and some municipal, commercial and industrial waste) is exported to treatment and disposal facilities outside the plan area. Some waste is also imported from neighbouring authorities (e.g. Sheffield and Wakefield) into our landfill sites. However, cross boundary movements are likely to decrease over the course of the plan period so long as neighbouring authorities are successful in their intentions to manage their waste within their own boundaries.’*<sup>316</sup>

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<sup>316</sup> Doncaster, Barnsley and Rotherham Councils, Joint Waste Plan, March 2012

**Appendix 1: North Yorkshire Waste Local Plan Saved Policies**

Below is a schedule of 'Saved Policies', as of May 2009, from the North Yorkshire Waste Local (2006).

Policy	Saved	Not Saved
<b>Chapter 4 – Protecting the Environment</b>		
4/1 – Waste Management Proposals	√	
4/2 – Waste Hierarchy		√
4/3 – Landscape Protection	√	
4/4 – Areas of Outstanding Natural Beauty		√
4/5 – Heritage Coasts	√	
4/6 – Green Belts		√
4/7 – Protection of Agricultural Land	√	
4/8 – International Sites		√
4/9 – National Sites	√	
4/10 – Locally Important Sites	√	
4/11 – European Protected Species		√
4/12 – Water Protection		√
4/13 – Flood Risk		√
4/14 – Historic Environment	√	
4/15 – Archaeological Evaluation	√	
4/16 – Archaeological Sites	√	
4/17 – Transport		√
4/18 – Traffic Impact	√	
4/19 – Quality of Life	√	
4/20 – Open space, Recreation and Public Rights of Way	√	
4/21 – Progressive Restoration	√	



4/22 – Site Restoration	√	
4/23 – Aftercare	√	
<b>Chapter 5 – Reduction, Re-Use, Recovery</b>		
5/1 – Waste Minimisation	√	
5/2 – Waste Recovery	√	
5/3 – Recycling, Sorting and Transfer of Industrial, Commercial and Household Waste	√	
5/4 – Household Recycling – Bring System	√	
5/5 – Household Waste and Recycling Centres	√	
5/6 – Scrapyards and Metal Recycling Facilities	√	
5/7 – Facilities for the Recycling of Construction and Demolition Wastes	√	
5/8 – Temporary Recycling Facilities for Recycling of Construction and Demolition Wastes	√	
5/9 – Green Waste Composting	√	
5/10 – Incineration of Waste	√	
<b>Chapter 6 – Waste Disposal</b>		
6/1 – Landfill Proposals	√	
6/2 – Land Improvement Schemes	√	
6/3 – Disposal of Waste by Landrising		√
6/4 – Leachate and Landfill Gas Management	√	
<b>Chapter 7 – Other Issues</b>		
7/1 – Incineration, Treatment and Transfer of Special or Clinical Waste	√	
7/2 – Waste Water Treatment Works	√	
7/3 – Reworking of Deposited Waste	√	