

**YORKSHIRE DALES**  
National Park Authority



# Local Aggregate Assessment for the North Yorkshire Sub-region

January 2013



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North Yorkshire County Council  
City of York Council  
Yorkshire Dales National Park Authority  
North York Moors National Park Authority

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# Summary

1. This first Local Aggregates Assessment (LAA) for the North Yorkshire sub-region has been produced jointly by North Yorkshire County Council, City of York Council and the Yorkshire Dales and North York Moors National Park Authorities in response to new requirements introduced in the National Planning Policy Framework in March 2012.
2. The sub-region is an important supplier of aggregates minerals such as sand and gravel and crushed rock, as well as alternative sources of secondary and recycled aggregate. This LAA:
  - Summarises available information on the supply of aggregate within, and movements of aggregates into and out of, the sub-region;
  - Identifies a basis for establishing future requirements for aggregates from the region over the period to 2030;
  - Summarises key issues which may impact on the supply of aggregates and identifies the extent to which it is likely that future supply requirements can be met;
  - Identifies a range of factors which may need to be considered in the preparation of minerals plans, addressed through co-ordination with other planning authorities, or may require on-going review.

## **Key conclusions from this first LAA are:**

Currently all aggregates produced in the sub-region are from the North Yorkshire County Council and Yorkshire Dales National Park areas, with no production from the City of York and North York Moors National Park areas

Aggregates supplied from the sub-region are of significance at a regional level and beyond

Although there has been a decline in production over the past few years, in response to economic conditions, the strategic significance of aggregate supply from the sub-region is likely to remain high and may increase

The sub-region has high overall reserves of crushed rock but reserves of sand and gravel are more limited and there is likely to be a need to identify further resources suitable for working

Identification of potential future requirements for aggregate based on historic sales over the past 10 years would be appropriate as a starting point for local minerals plans outside the National Park areas

There is potential for shortfall in supply of sand and gravel and Magnesian Limestone in the mid term in the absence of release of further reserves

Unless new permissions are granted, and if recent levels of sales are maintained, there is potential for reserves of high PSV aggregate to be significantly reduced in the mid term

There is no expectation of a substantial near term shift in the overall balance of supply from the main sources of aggregate produced in the sub-region (ie crushed rock, land won sand

and gravel and secondary and recycled aggregate) although a number of factors, discussed further in Part C of the LAA, have been identified which could impact on this in the mid to long term

A range of factors including matters relating to resource distribution and the presence of substantial areas of National Park and other important designations are likely to place increasing constraints on the supply of aggregates in the longer term

A number of significant cross-boundary movements of aggregate to/from other areas have been identified which should be considered further through preparation of local minerals plans

A number of matters relating to aggregate supply and demand have been identified which should be kept under review through future updates to this LAA

# Part A – Introduction and Context

## Overview

3. This is the first Local Aggregates Assessment (LAA) to be prepared for the North Yorkshire sub-region (NY sub-region). The North Yorkshire sub-region comprises the Mineral Planning Authorities of North Yorkshire County Council (NYCC), City of York Council (CYC), Yorkshire Dales National Park Authority (YDNPA) and North York Moors National Park Authority (NYMNP) combined (See Map A). The main purpose of the LAA is to set out information on the current supply of aggregate minerals (including primary land won aggregates, marine aggregates and secondary and recycled aggregate materials) within the sub-region and to inform understanding of the options that may be available for the future supply of aggregate. It is therefore expected that the LAA will help contribute to the evidence base for the development of strategic policies for aggregates, to be incorporated in minerals plans, although the LAA itself does not contain any such policies. In this respect no account has therefore been taken of the wide range of environmental or other constraints which may have a bearing upon the amount and distribution of future supply (with the exception of the acknowledgement of the Government's policy approach for aggregates provision in National Parks). The ability and suitability of North Yorkshire in being able to meet the needs identified, bearing in mind the presence of environmental and other constraints, will be explored through the production of minerals plans and through liaising with other MPAs under the Duty to Cooperate.
4. This LAA is presented in three main sections. **Part A** summarises the national and local context leading to its preparation and provides an overview of aggregate resources in the sub-region. **Part B** presents monitoring information on matters such as sales, reserves and movement of aggregate minerals and minerals infrastructure (with additional information in Appendix 1). **Part C** deals with the assessment of future supply requirements for aggregates and contains conclusions and suggestions for further work.
5. A requirement for the production of LAAs was introduced in the National Planning Policy Framework (NPPF) published in March 2012. It states that Mineral Planning Authorities (MPAs) should plan for a steady and adequate supply of aggregates by "*Preparing an annual LAA, either individually or jointly by agreement with another or other mineral planning authorities, based on a rolling average of 10 years sales data and other relevant local information, and an assessment of all supply options (including marine dredged, secondary and recycled sources)*".
6. The NPPF further indicates that MPAs should make provision for the land-won and other elements of their LAAs in their minerals plans taking account of the advice of the Aggregates Working Parties (AWPs) and the National Coordinating Group as appropriate. More detailed guidance on the preparation of LAAs was published in Guidance on the Managed Aggregates Supply System (DCLG 2012). This confirms that the key role of LAAs is to:
  - Forecast demand for aggregates based on the average of 10-years sales data and other relevant local information
  - Analyse all aggregate supply options, as indicated by landbanks, mineral plan allocations and capacity data e.g. marine licences for marine aggregates extraction and the potential throughput from wharves. This analysis should be informed by planning information, the aggregate industry and other bodies such as Local Enterprise Partnerships
  - Assess the balance between demand and supply, and the economic and environmental opportunities and constraints that might influence the situation. It

should conclude if there is a shortage or surplus of supply and, if the former, how this is being addressed

7. At the time of preparation of this first LAA there is no active AWP in the Yorkshire and Humber region although discussion with minerals industry representatives on the preparation of the LAA is taking place.
8. Within the NY sub-region local mineral plans are at a range of stages of preparation. Discussions are currently taking place between NYCC, CYC and the NYMNPA on the potential to prepare a joint minerals and waste plan for the three authorities and it is expected, subject to the outcome of the discussions, that a project plan will be published early in 2013. It is intended that any joint plan would build on work already undertaken by NYCC over the past two years. Work has also commenced recently in the Yorkshire Dales National Park, with an issues consultation on a new local plan for the Park published in December 2012.
9. The decision to prepare a sub-regional LAA reflects the outcome of Regional level discussions between MPAs in the Yorkshire and Humber area in June and July 2012, at which there was broad agreement that a sub-regional approach, for each of the four Yorkshire and Humber sub-regions, was likely to be appropriate. This reflected a number of considerations including the fact that some data on aggregates is only available at a sub-regional level, that there are known interactions between some parts of the sub-region in terms of aggregates supply, and the existence of established working relationships which facilitate a combined approach on a sub-regional basis.
10. Whilst Government Guidance on LAAs, published in October 2012, suggests that joint LAAs may be prepared where joint planning is taking place, this is not directly consistent with the more flexible approach to joint preparation of LAAs contained in national policy in the NPPF (referred to above). In the NY sub-region justification for the preparation of an LAA on a joint basis lies in the limitations of availability of some data at MPA level, the known interactions in terms of aggregates production and consumption within the sub-region and the perceived benefits of closer cooperation on minerals planning within the sub-region.
11. A decision to proceed with a NY sub-region LAA was reached following discussions between NYCC, CYC, YDNPA and NYMNPA in August 2012. This LAA has been prepared by the four MPAs on a collaborative basis and in accordance with the Duty to Cooperate<sup>1</sup>.
12. It was also recognised that LAAs prepared within the Y&H region should reflect, as necessary, interactions in aggregates supply matters both between Y&H sub-regions and across the Regional boundary where necessary. Accordingly, this LAA takes account of available information on the movement of aggregate into and out of the sub-region and its constituent MPAs.
13. National planning policy in the NPPF requires LAAs to be prepared on an annual basis. It is therefore expected that the information in the LAA will be updated accordingly and therefore help contribute to the on-going monitoring of patterns and trends in aggregates supply relevant to the sub-region.

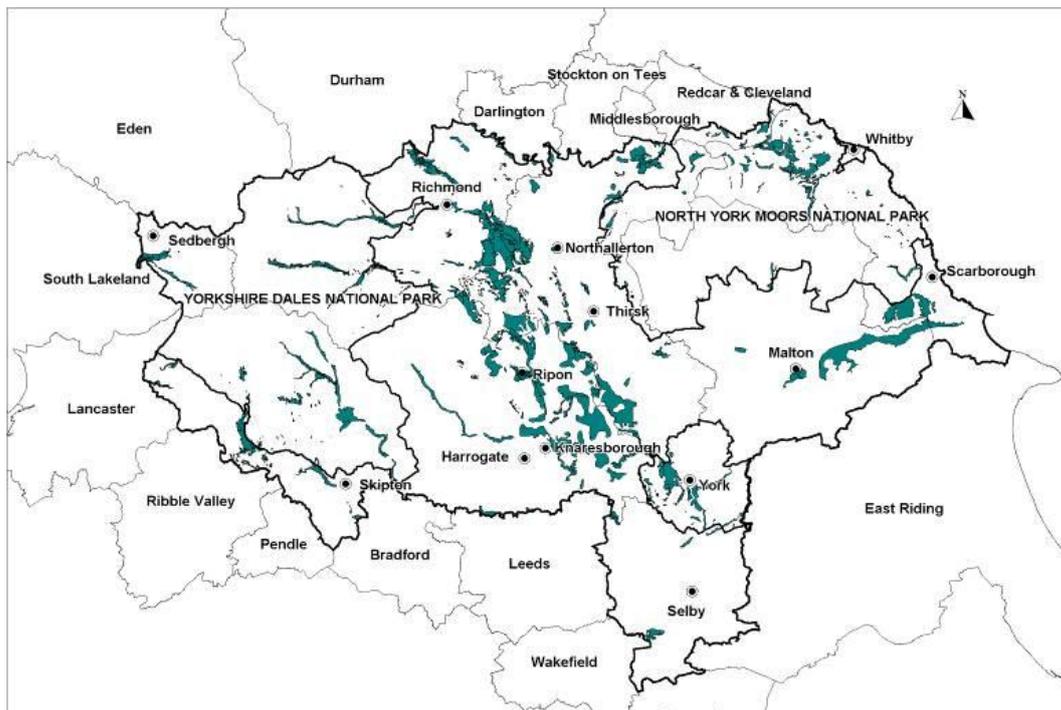
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<sup>1</sup> The Duty to Cooperate (introduced via the Localism Act 2011) means that planning authorities will be expected to address strategic issues in conjunction with other authorities who have to deal with the same issues.



15. A number of different rock types are worked in the sub-region, the location of the different rock types is shown on Map B above. The oldest of these are the Lower Palaeozoic siltstones and greywackes ('gritstones') which occur beneath Carboniferous age strata in Ribblesdale and Chapel-le-Dale in the Yorkshire Dales NP. These are quarried to produce high PSV aggregates for road surfacing. Carboniferous Limestone is worked to produce aggregates in Wharfedale and Ribblesdale in the Yorkshire Dales and Carboniferous Limestone of commercial significance also occurs in the western and northern parts of North Yorkshire County Council area, where they are currently worked in the Leyburn and Pateley Bridge areas and in the vicinity of Scotch Corner in the north of the County.
16. More recent deposits of significance for production of crushed rock are the Magnesian Limestones, of Permian age, which are distributed within a relatively narrow band running north-south through the central part of North Yorkshire, approximately along the line of the A1. These deposits lie only within the NYCC area. They are worked at a number of locations, particularly in Selby District in the southern part of the County, with more isolated workings to the west of the A1 in Harrogate Borough and Hambleton District.
17. Jurassic Limestone is also worked in the sub-region, on a relatively small scale, in the vicinity of Malton. Resources are located within Ryedale District in the eastern part of NYCC area and also within the North York Moors National Park, although it is no longer worked in the latter area. Chalk occurs extensively within the Eastern part of North Yorkshire and has been subject of small scale working until recently.

b. Sand and gravel

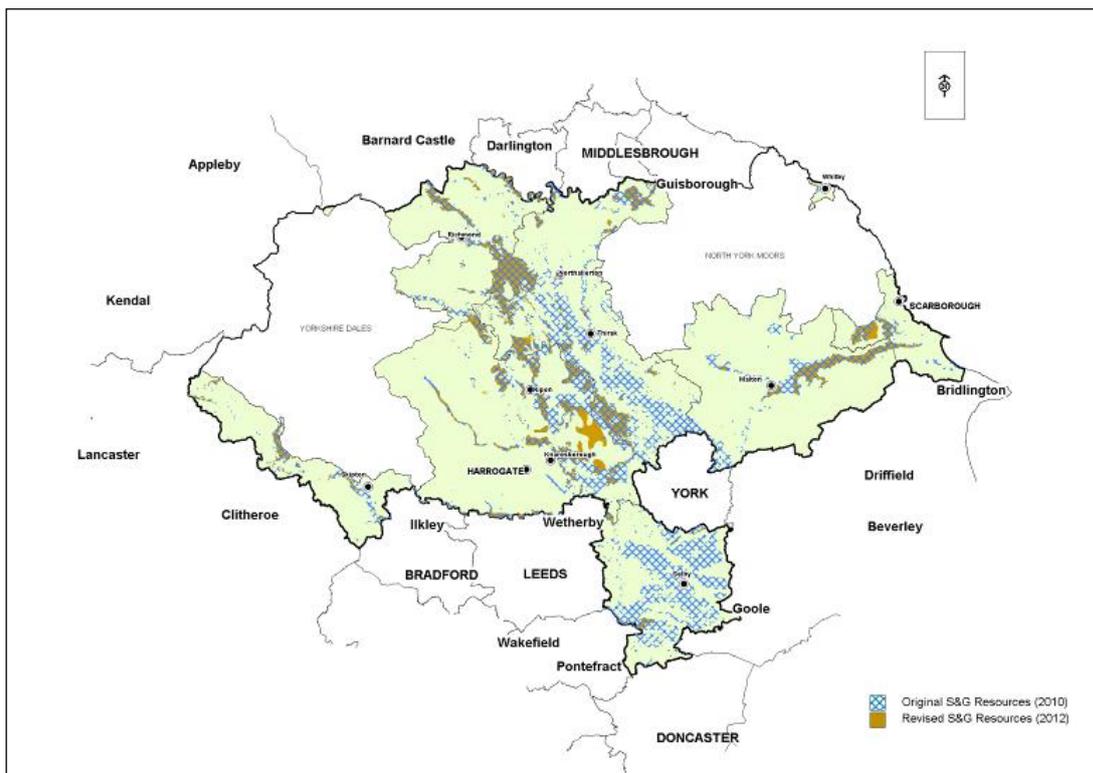


*Map C: Distribution of concreting sand and gravel resources*

18. Sand and gravel occurs widely in the lower lying parts of the sub-region, mainly within the NYCC area (see Map C). The principal deposits include glacial, glaciofluvial, blown sand and beach deposits and river terrace sand and gravel. River terrace and glaciofluvial deposits tend to form the most significant resources of commercial interest and are worked extensively in the central and northern parts of the NYCC area, particularly in the Swale

and Ure valleys but also in the Vale of Pickering to the east. Sand from much older geological deposits is also worked, on a relatively small scale, in Selby District.

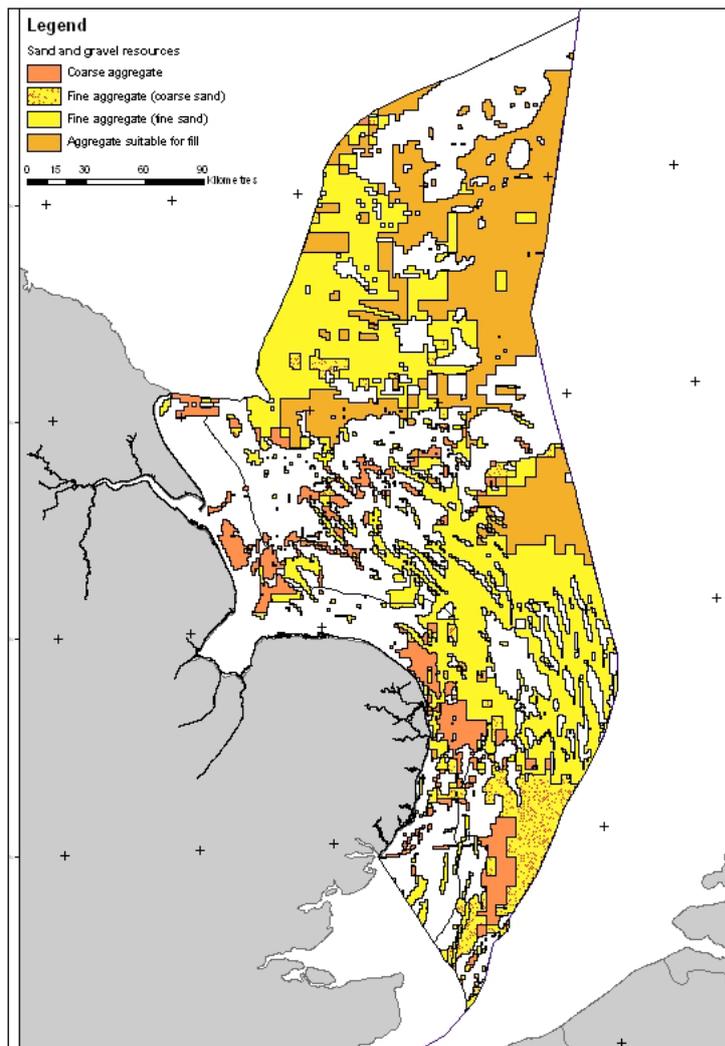
19. North Yorkshire County Council recently commissioned the British Geological Survey to reassess the extent of sand and gravel resources within North Yorkshire (excluding the City of York and National Park areas), taking into account the most up to date geological information and updated viability criteria (the full report can be viewed at <http://www.northyorks.gov.uk/index.aspx?articleid=20124>). The new information and criteria applied in the report have led to identification of a reduced geographical extent of resources of a quality suitable for concreting purposes compared with previous BGS resource mapping, although the overall volume of potentially viable resource is still very substantial if environmental and other planning considerations are excluded. Map D below shows the mapped extent of potential concreting sand and gravel resources in the NYCC area before and after the 2012 BGS reassessment.



Map D: Comparative distribution of viable sand and gravel resources in North Yorkshire County Council Plan area following reassessment in 2012<sup>2</sup>

20. Extensive resources of marine sand and gravel occur off the coast of the NY sub-region, (See Map E). These are currently exploited through commercial dredging activity. No landings take place directly within the sub-region although marine sand and gravel is landed in relatively close proximity to the Sub-region, in Hull and on the Tees. Potential resources of marine sand and gravel in the Humber dredging area are understood to be very extensive. The current extent of the Humber dredging area is shown on Map H on page 13.

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Map E: Marine sand and gravel resources in East Inshore and East Offshore areas.<sup>3</sup>

### c. Secondary and recycled aggregates

21. Sand and gravel and crushed rock comprise primary aggregate sources. However, other materials may be able to substitute for primary aggregates for some end uses and these may comprise either secondary aggregate<sup>4</sup> or recycled aggregate<sup>5</sup>. Within the NY sub-region secondary aggregates currently include two main potential sources; colliery spoil arising from deep mining of coal in Selby District (NYCC area) and combustion ash from power generation, also arising within Selby District. Recycled aggregate often arises on a more dispersed and intermittent basis, usually in association with particular construction projects and hence tends to be associated with more developed parts of the sub-region. Although specific data is not available, it is therefore considered likely that NYCC and CYC supply most of the recycled aggregate originating within the sub-region, although there are also a small number of facilities in the NYMNP area (see map J on page 15).

<sup>3</sup> BGS; The Mineral Resources of East Inshore and East Offshore Marine Plan Areas, Southern Northern Sea. 2011

<sup>4</sup> Secondary aggregates are derived from a range of materials which may be used as aggregate, including power station ash and colliery spoil.

<sup>5</sup> Recycled aggregates can be sourced from construction and demolition waste, highway maintenance waste and excavation and utility operations and which can then be reused as aggregate.

Principal uses of aggregate supplied from the sub-region

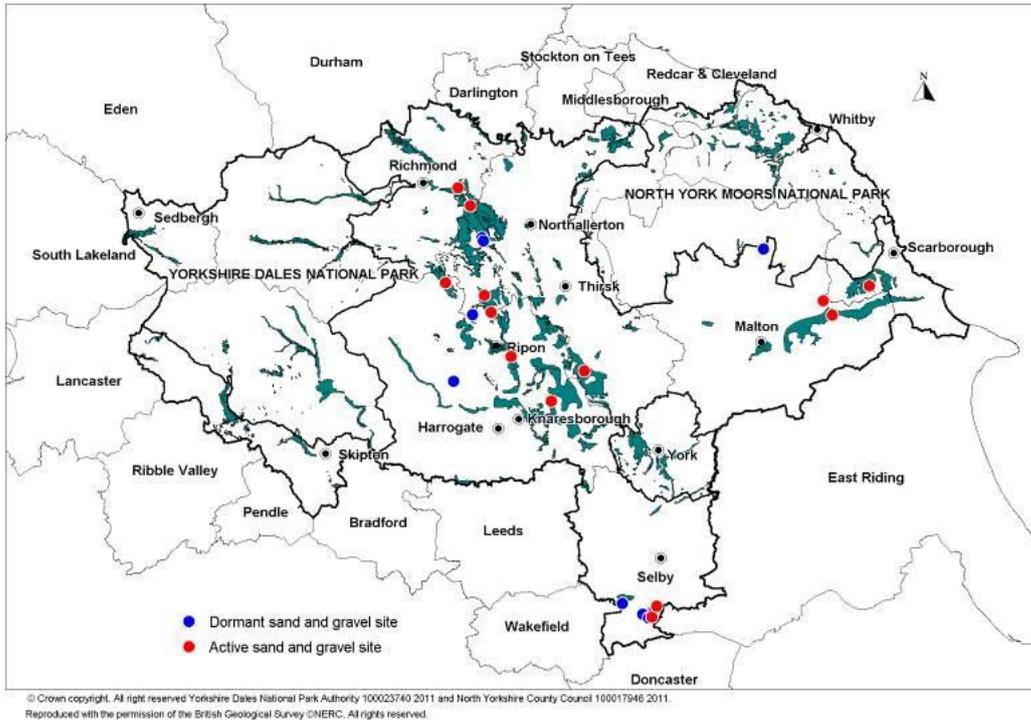
22. Aggregates worked in the sub-region serve a range of end uses and markets, generally dependant on the quality and properties of the material. In summary, the main end uses/markets for the main types of aggregate worked in the sub-region are as follows:

<b>Deposit</b>	<b>Principle uses/markets</b>	<b>Main Occurrences</b>
Glacial, Glacio-fluvial and river terrace sands and gravel	Concreting sand and gravel	Principally central and northern NYCC area, including valleys of the Rivers Swale and Ure and Vales of Mowbray and York, Derwent and Leven valleys, City of York
Blown sand and Permian sands	Mortar sand	Selby area and other isolated occurrences (NYCC area)
Marine sand and gravel	Concreting sand and gravel. Beach replenishment	Offshore (Humber dredging area)
Chalk (not currently being worked within the sub-region)	Generally lower grade uses such as constructional fill	Eastern NYCC area (Ryedale and Scarborough Districts)
Jurassic Limestone	Generally lower grade uses such as constructional fill. May in some instances be capable of use as concrete aggregate and other higher specification end uses	Eastern NYCC area (Ryedale District, North York Moors National Park)
Magnesian Limestone	Lower grade uses such as constructional fill. Higher quality Magnesian Limestone (principally the Upper Magnesian Limestone) can be used as concrete aggregate and uncoated roadstone	NYCC area only (narrow north-south outcrop passing through parts of Richmondshire, Harrogate and Selby Districts)
Carboniferous Limestone	Concreting aggregate and coated and uncoated roadstone	Yorkshire Dales National Park, relatively limited distribution in Northern and Western NYCC (principally within Richmondshire and Craven Districts, with isolated occurrence in Harrogate Borough)
Palaeozoic gritstone	High PSV aggregate for specialist surfacing requirements	Yorkshire Dales National Park (Western part)
Colliery spoil	Bulk and constructional fill and road construction. May be used as a partial replacement for higher grade aggregate in higher specification end uses	Active production at Kellingley colliery (Selby District of NYCC area). A major completed and landscaped spoil disposal mound is located at Sherburn-in-Elmet (Selby District)
Power station ash	Ash comprises two main types: Pulverised Fuel Ash (PFA) and Furnace Bottom Ash (FBA). PFA is typically used in lightweight block manufacture and as a partial replacement for higher grade aggregate in higher specification end uses.	Active production at Drax and Eggborough power stations in Selby District (NYCC area). Previously deposited ash occurs in ash disposal facilities at Drax and at Gale Common and Brotherton Ings, also in Selby District
Recycled aggregate	Generally lower grade uses such as constructional fill. May be used as a partial replacement for higher grade aggregate in higher specification end uses	Generally produced in association with construction and demolition activity. Distribution therefore variable and intermittent but generally within more developed parts of the sub-region

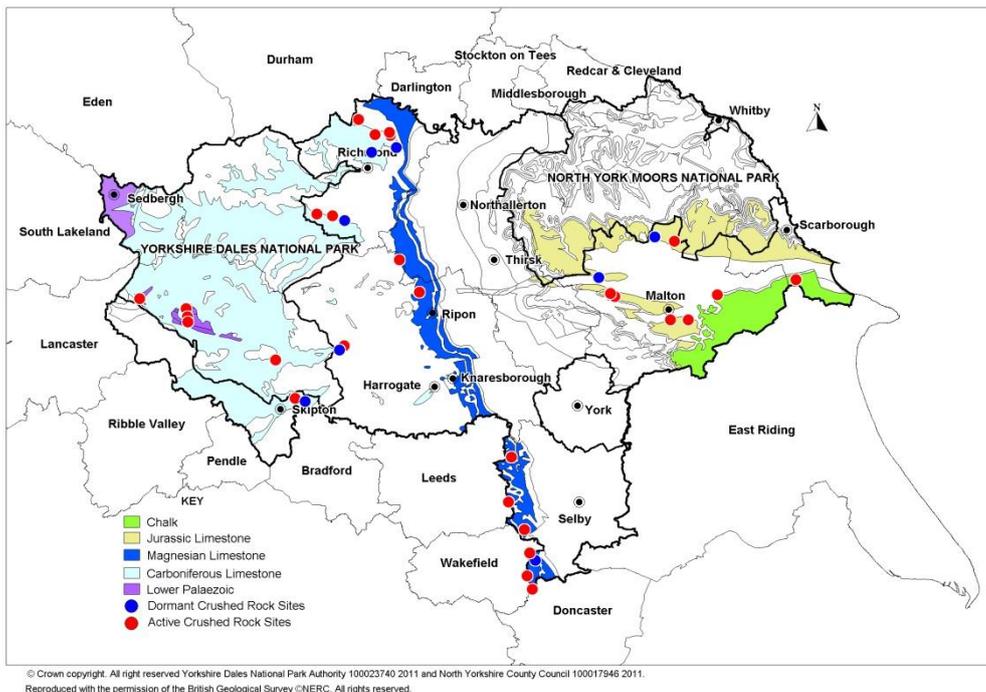
## Part B - Monitoring

### Existing minerals sites and infrastructure

23. The overall distribution of quarries and minerals supply infrastructure in the NY sub-region is shown on the following maps. More information on specific sites and facilities is set out in Appendix 1.

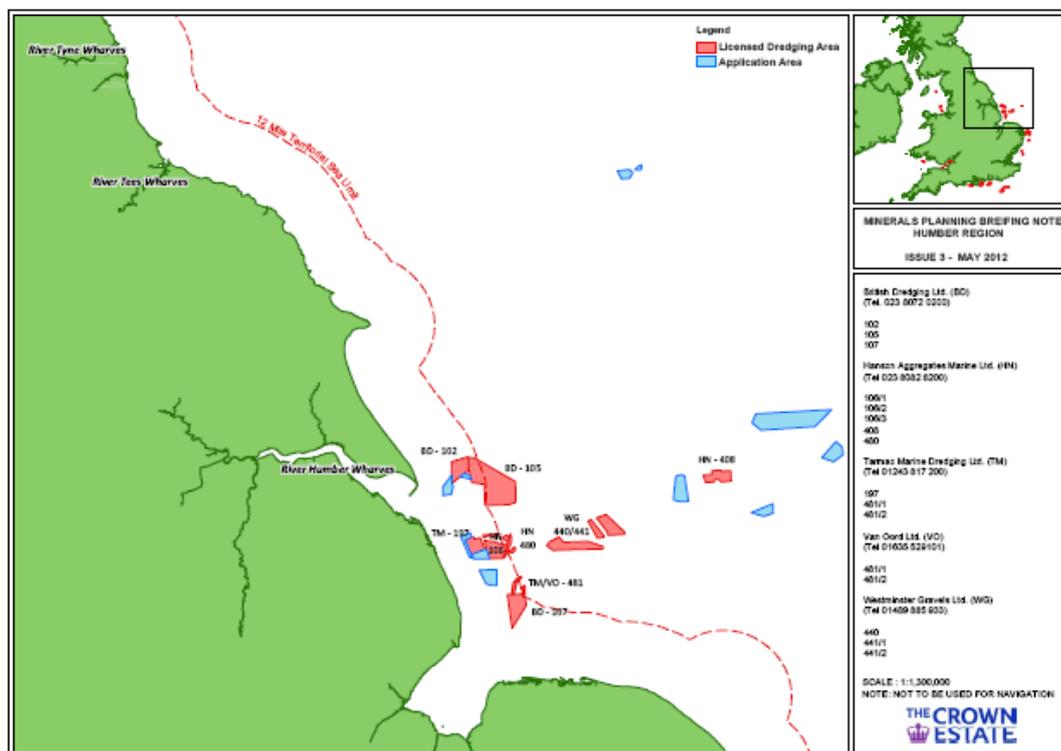


Map F: Active and dormant sand and gravel sites in the NY sub-region



Map G: Active and dormant crushed rock sites in the NY sub-region

24. Production of primary aggregate currently only takes place in two of the four MPAs in the sub-region, NYCC and YDNP. The majority of current aggregates quarries and infrastructure are located within the NYCC area, although there are also major and important quarries in the YDNP. Extraction of crushed rock has taken place in the NYMNP on a relatively small scale until 2007. There is no recent history of aggregate working within the CYC area.
25. Dormant primary aggregate sites are only present in the NYCC Plan area. There are some dormant sand and gravel sites (which are generally thought to contain material which is not of concreting quality) but the majority are crushed rock sites, mainly Carboniferous Limestone. Reserves in dormant sites do not count towards the landbank<sup>6</sup> until such time as updated working and reclamation schemes have been approved.
26. A number of licensed marine aggregate dredging areas are located in relatively close proximity to the coast of the NY sub-region and, as at May 2012, a number of applications for licenses were also under consideration (see Map H). The Crown Estate produces summary statistics each year on marine aggregate. This indicates that marine aggregate is landed in the Yorkshire and Humber landward region at Hull, and at wharves on the Tees and the Tyne in the North East region.

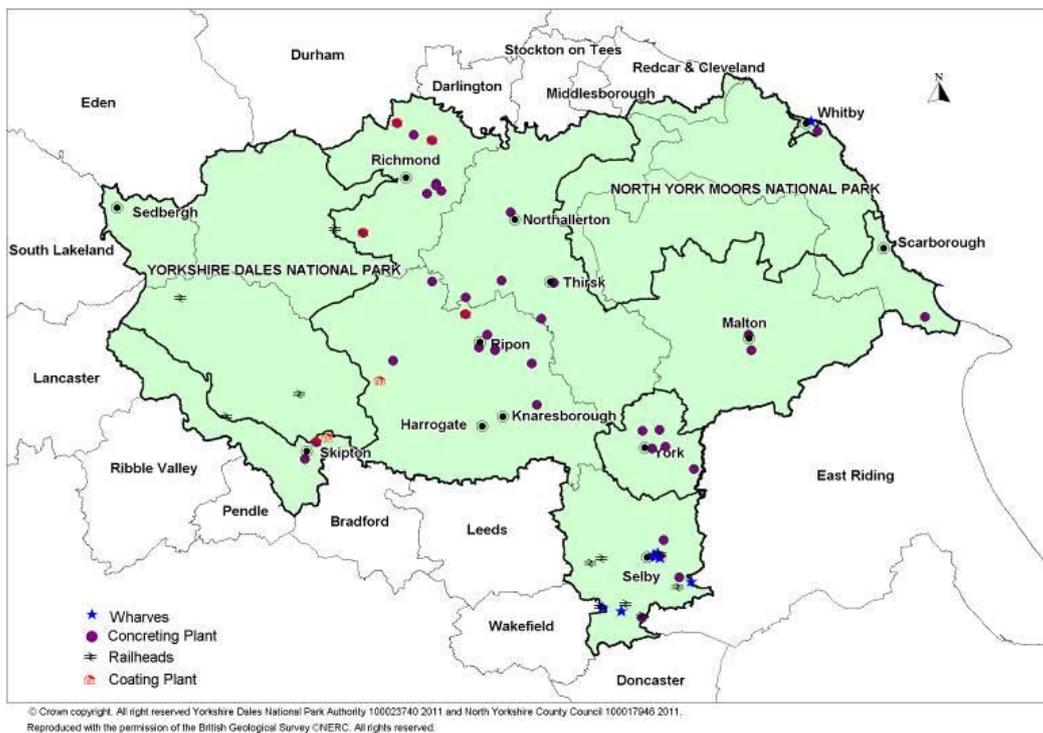


Map H: Licensed marine dredging areas and application areas in the Humber dredging region<sup>7</sup>

27. Supply of aggregate is supported by a range of associated infrastructure such as ready-mixed concrete and coating plants, shown on Map I below. The map also shows the locations of known infrastructure such as wharves and railheads, including known facilities not currently used for minerals transport.

<sup>6</sup> The landbank is the sum in tonnes of all permitted reserves for which valid planning permissions are extant. This includes current non-working sites but excludes dormant sites and “inactive sites” (set out under the Planning and Compensation Act 1991 and Environment Act 1995, for which a review is required before operations can commence or resume).

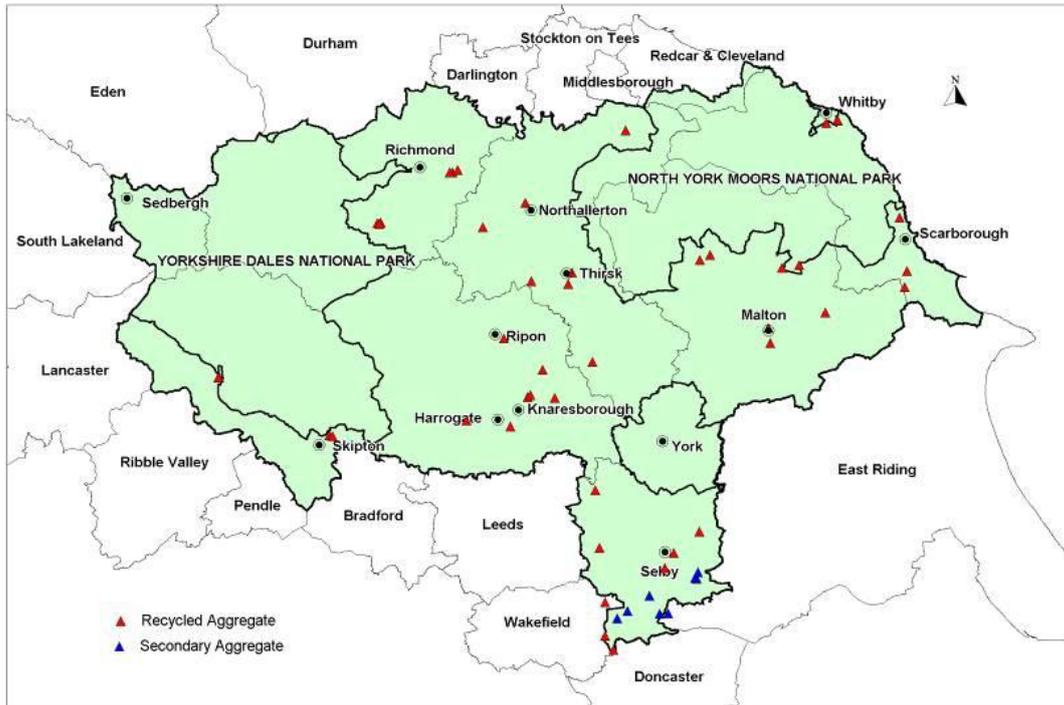
<sup>7</sup> Crown Estates Briefing Note: Issue 3 Marine Aggregates Opportunities, Region: Humber, May 2012



Map 1: Minerals supply and transport infrastructure

28. The majority of the concrete making, coated roadstone and block making facilities in the sub-region are located within the NYCC area. Some are present on operational extraction sites and others are standalone facilities located on industrial estates or where they are easily accessible.
29. There are several canal and river wharves present in the sub-region but, currently, none are being used to transport minerals, although the wharf at Drax power station has recently been used for transport of secondary aggregate. A list of wharves is provided in Appendix 1. Appendix 1 also includes a list of railheads and rail sidings which are present within the sub-region. Some are used for transporting non-aggregates minerals including coal such as at Kellingley Colliery and Eggborough and Drax power stations and potash at Boulby mine. The railhead at Drax was also used for the transport of secondary aggregate in 2012. Others are used to transport aggregate, including an export railhead at Swinden Quarry, in YDNP, and an import railhead at the Potter Group site in Selby. Some of the other rail heads and sidings have been used, or have the potential to be developed, for minerals transport as referred to in the table in Appendix 1.
30. Map J below shows the main known locations of secondary aggregate production and sites producing recycled aggregate. There are 3 sites in the sub-region which can supply secondary aggregate on a significant scale. Two of the sites are coal fired power stations at Eggborough and Drax, which produce Furnace Bottom Ash (FBA) and Pulverised Fuel Ash (PFA). The third site is a deep coal mine (Kellingley Colliery) which produces colliery spoil which can also be used as aggregate. Ash and colliery spoil not sold for use as secondary aggregate are disposed of at dedicated waste disposal sites at Barlow and Gale Common ash disposal facilities and, in the case of colliery spoil, at a disposal facility at Womersley, all of which are located in Selby District. Ash from Ferrybridge power station, in West Yorkshire, is also disposed of at the Gale Common facility. Ash has been recovered from both the Barlow and Gale Common sites for sale and therefore these facilities also represent potential sources of secondary aggregate.
31. Recycled aggregate tends to be sourced from construction, demolition and excavation waste. As shown on the map there are many waste sites which are known to deal with

Construction and Demolition waste (C&D waste). Recycling of such waste (and hence the production of recycled aggregate) is often dealt with at temporary sites and sites exempt from permitting by the Environment Agency and hence good quality data on locations of production and amounts produced is not available.



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Map J: Known secondary and recycled aggregate supply locations

## Aggregate sales and reserves

### a. Sales

32. As noted earlier in this LAA, a range of types of aggregate are supplied by the NY sub-region. Available information is summarised below. Unless otherwise stated, data is derived mainly from surveys carried out by the Yorkshire and Humber Regional Aggregates Working Party (YHRAWP) or directly by NYCC. Not all data on sales and consumption is available at MPA level, some is only available at sub-regional or North Yorkshire County Council level.

#### i) Primary land won aggregate

	Sand and Gravel (mt)				Crushed Rock (mt)				
	NYCC	YDNP	NYMNP	CYC	NYCC	YDNP (crushed rock total – limestone and high psv aggregate)	YDNP (high PSV aggregate only)	NYMNP	CYC
2002	2.5	0	0		4.1	4.0	1.0	0.3	0
2003	2.5	0	0		3.7	3.9	1.0	0.3	0
2004	2.8	0	0		4.2	3.8	0.9	0.2	0
2005	2.8	0	0		3.9	4.0	1.1	0.1	0
2006	2.7	0	0		3.8	3.8	1.0	0.1	0
2007	2.7	0	0		4.3	4.0	1.0	0.1	0
2008	2.3	0	0		3.8	3.8	1.0	0	0

	Sand and Gravel (mt)				Crushed Rock (mt)				
	NYCC	YDNP	NYMNP	CYC	NYCC	YDNP (crushed rock total – limestone and high psv aggregate)	YDNP (high PSV aggregate only)	NYMNP	CYC
2009	1.7	0	0		2.6	2.6	0.9	0	0
2010	1.6	0	0		2.9	2.6	0.8	0	0
2011	1.7	0	0		1.9	2.6	0.9	0	0
Average	2.3	0	0		3.5	3.5	1.0	0.1	0

Table 1: Historic sales of landwon aggregate by MPA and aggregate type 2002 - 2011

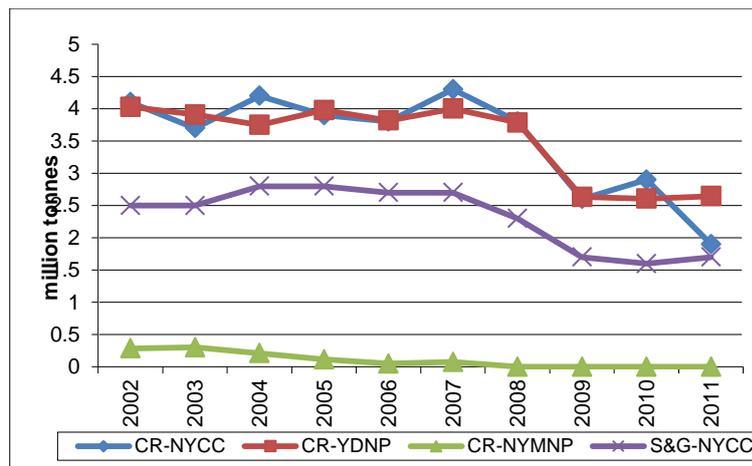


Figure 1: Sand and gravel and crushed rock sales in NY sub region, 2002 – 2011

33. For the purposes of reporting sand and gravel reserves and landbanks data (but not sales data) in previous YHRAWP surveys, concreting sand and gravel from the NYCC area has been subdivided into two main production areas (a northwards distribution area and a southwards distribution area) reflecting the fact that, typically, quarries in the northern part of the County (mainly in the valley of the River Swale in the Catterick/Scorton area) tend to supply most of their production northwards into the Tees Valley/Durham areas whereas sites elsewhere in North Yorkshire (principally the Ure Valley and the Vale of Pickering) supply most of their sales into the NY sub-region or to markets in West and South Yorkshire. A third sub-division, for building sand, has also been identified as this material tends to serve separate end uses. This approach to subdivision was incorporated into the North Yorkshire Minerals Local Plan 1997 for the purposes of maintaining future supply. Since 2009 the County Council has conducted its own industry surveys and published separate data on actual sales of sand and gravel for each subdivision. This data is shown in the following table.

	Sand and gravel Northwards distribution area (mt)	Sand and gravel Southwards distribution area (mt)	Building sand (mt)
2009	0.89	0.83	0.07
2010	0.67	0.88	0.09
2011	0.75	0.87	0.11
3yr average	0.77	0.86	0.09
3 yr average (as % of total)	45%	50%	5%

Table 2: Sales of landwon sand and gravel for NYCC split into distribution areas

Note- sales of sand and gravel was not split by distribution area in RAWP reports, therefore the information in this table is based on the NYCC survey data only available for the years 2009 to 2011.

34. The NYCC survey data collected from 2009 onwards can also provide sales of crushed rock broken down by crushed rock type. This is represented in the table below.

	Carboniferous limestone	Magnesian limestone	Jurassic limestone
2009	1.41	0.88	0.25
2010	1.48	1.12	0.31
2011	0.99	0.68	0.28
3yr average	1.29	0.89	0.28
3yr average (as % of total)	52%	36%	12%

Table 3: Crushed rock sales in NYCC area by rock type

35. Carboniferous limestone accounts for the majority of crushed rock sales in the NYCC area, followed by Magnesian limestone, with Jurassic limestone accounting for the lowest proportion of sales.

ii) Marine aggregate

36. Data on sales of marine aggregate into the NY sub-region are not available on a year by year basis, although some data on consumption of marine sand and gravel for the Yorkshire and Humber region has been published by the British Geological Survey and is shown below.

	Consumption of marine aggregate in Yorkshire and Humber (mt)
2002	0.277
2003	0.300
2004	0.277
2005	0.277
2006	0.322
2007	0.322
2008	0.322
2009	0.322
2010	0.234
2011	0.234

Table 4: Consumption of marine aggregate in Yorkshire and Humber between 2002 - 2011

37. The figures in the above table are recorded in the BGS Minerals Yearbooks which are published every year, although the original data is based on the consumption of aggregates survey, which is collated by region and is carried out once every four years, hence why the same figure appears for four consecutive years. In the 2003 report the figure appears to have been rounded up, hence the change in figure for this year.

38. Of the marine aggregate dredged for construction from the Humber dredging region in 2011, 65% was delivered to the continent, 24% was delivered to the Humber region (which includes landings in the Tyne, Tees and Humber estuaries) with the remainder being delivered to the Thames Estuary, East Coast and east English Channel. Of the marine aggregate landed in the Humber region approximately one third is landed at Hull. Sales/consumption into the Yorkshire and Humber region are detailed above. According to the Crown Estate,<sup>8</sup> over the past 10 years on average 76% of the permitted tonnage has been dredged from the Humber Region and at present there is an opportunity to dredge approximately 2.1mt more per annum.

<sup>8</sup> Crown Estates Briefing Note: Issue 3 Marine Aggregates Opportunities, Region: Humber, May 2012

39. Based on further information supplied from BGS (utilising the national collation of the 2009 aggregates monitoring survey), of the total marine sand and gravel consumed in the North Yorkshire sub region in 2009 between 50 and 60% (0.02-0.04mt) was supplied via South Tyneside MBC and the remaining 40 to 50% (0.016-0.02mt) was supplied via Stockton on Tees MBC. Therefore, in that year all the marine sand and gravel supplied into the North Yorks sub-region came from landings in the North East landward region.
40. The graph below illustrates the trend in landings of marine dredged sand and gravel between 2002 and 2011 in the North East Region and the Yorkshire and Humber Region. Data is provided for the NE region because this includes landings on Teesside and Tyneside, which were known to supply into the NY sub-region in 2009.

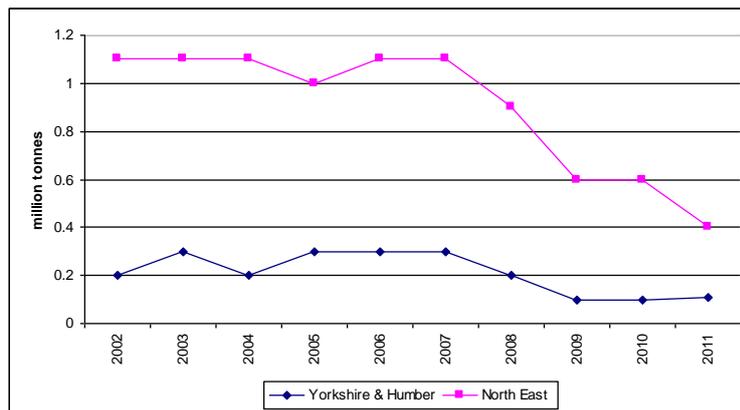


Figure 2: Marine dredged aggregates landing at Yorkshire and Humber and North East Ports<sup>9</sup>

41. There is substantially more landed in the North East Region than the Yorkshire and Humber Region. Landings in both Regions have reduced substantially since 2007 in line with the trend in sales of landwon aggregate.

iii) Secondary and recycled aggregate

42. NYCC is the only MPA in the NY sub-region which has significant sources of secondary aggregate. These are mainly in the form of ash from coal fired power stations at Drax and Eggborough and colliery spoil from Kellingley Colliery. Ash from a third power station, Ferrybridge, is generated just outside the Sub-region is also currently disposed of at a facility (Gale Common) inside the Sub-region. The graph below shows the trend in sales of ash and colliery spoil over the past 10 years.

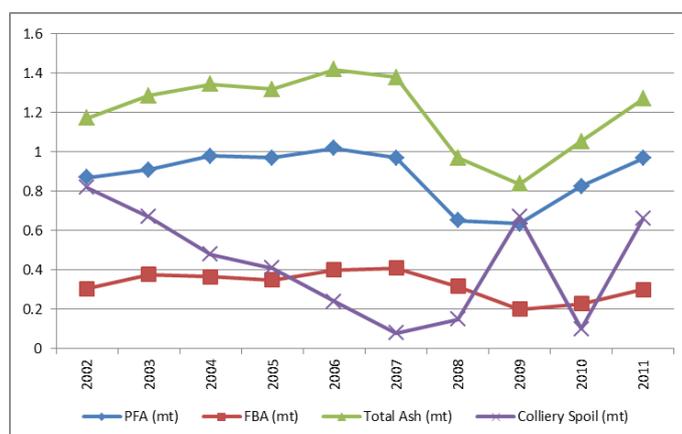


Figure 3: Sales of secondary aggregate in the North Yorkshire sub-region

<sup>9</sup> Yorkshire and Humber RAWP and North East RAWP 2001 to 2009 and Crown Estates Marine Aggregates, Summary of Statistics 2010 and 2011

## Discussion on aggregate sales

43. The above tables and graphs illustrate the position in relation to sales of sand and gravel, crushed rock, marine and secondary aggregate in the NY sub-region. The overall trend in sand and gravel sales had been relatively constant until 2007, since when there was a significant drop over the two years to 2009. Since then sales have remained broadly constant. Through the availability of more detailed NYCC survey data for the NYCC plan area, it has been possible to identify sand and gravel sales data separately for northwards and southwards distribution areas (concreting sand and gravel) and building sand, for the past 3 years. Production in the southern distribution area and for building sand has stayed relatively constant, but production in the northern distribution area has fluctuated more.
44. Another potential source of sand and gravel is from marine aggregate which is landed at the Humber Estuary and consumed in the Yorkshire and Humber Region. However, available data suggests that the relatively small amount of marine aggregate sold into the NY sub-region has been supplied from wharves or ports in the North East region. The total consumed in 2009 was between 0.036mt and 0.044mt. The overall amount of marine aggregate consumed in the Yorkshire and Humber Region prior to 2009 was around 0.3mt per annum, dropping to less than 0.25mt in 2010 and 2011.
45. The trend in crushed rock production levels has generally been very similar for both NYCC and the YDNP, with both showing a significant overall decline in production over the past 3 to 4 years, compared to previous relatively steady levels. Sales of high PSV stone from the YDNP have remained more stable over the past 10 years.
46. The main secondary aggregates available in the sub-region are ash, from Drax and Eggborough coal fired power stations, together with ash from Ferrybrige power station which is disposed of in North Yorkshire, and colliery spoil from Kellingley Colliery. The average amount of ash used for secondary aggregate over the past 10 years is 1.21mt, with 73% coming from PFA and 27% from FBA. The average amount of colliery spoil used as secondary aggregate over the past 10 years is 0.43mt. The ash and colliery spoil which does not get used as secondary aggregate is disposed of at dedicated waste sites.
47. The amount of secondary and recycled materials produced is dependent upon the primary process to which it relates, because the material is a by-product. Changes in the processes which lead to the production of material with potential for use as a secondary aggregate may also be significant, to the extent that they may impact on the properties and quality of secondary aggregate. Data shows that, in recent years, FBA is generally fully utilised whereas availability of PFA and colliery spoil exceeds utilisation. Sales of PFA increased slightly in 2010 and 2011 compared with other recent years. The proposed conversion to biomass fuel of a proportion of generation capacity at Drax and Eggborough power stations may impact on utilisation of the secondary aggregate and may start to impact on availability of material with potential for use as secondary aggregate over the next few years and beyond, although consultation on the draft LAA indicated mixed views from operators on the significance of this. Other constraints noted by operators during consultation were the designation of PFA by the Environment Agency as a waste requiring disposal at a licensed or exempt site and the need for it to be in accordance with a WRAP Quality Protocol to be considered a by-product. Sale of ash from the Gale Common ash disposal site in Selby District is currently subject of a 30kt per annum limit. The operator of one power station noted that it is constantly looking to increase the amount of secondary aggregate sold and for supply opportunities for 500kt of secondary aggregate that is currently under utilised.

	Total Arisings	Aggregate use	Other Use	Potentially available	Potentially available as % of total arisings
<b>PFA</b>	1.68	0.29	0.61	0.77	46
<b>FBA</b>	0.33	0.29	0	0.04	12
<b>Colliery Spoil</b>	1.97	0.41	0	1.56	79

Table 5: Useage of secondary minerals produced in Yorkshire and Humber in 2005 in million tonnes<sup>10</sup>

47. The table represents the whole of the Yorkshire and Humber region, not just the NY sub-region but the main sources of secondary minerals are within the sub-regional boundary.
48. Recycled aggregates can be sourced from construction, demolition and excavation waste (CDEW), highway maintenance waste and excavation and utility operations and which, usually after some reprocessing such as crushing and screening, can then be reused as aggregate. The most recent recorded figure for recycled CDEW is from 2005<sup>11</sup>, with a total for the North Yorkshire sub region of 2.7mt, of which 1.35mt was recycled by crushers and screens. A list of facilities is included in Appendix 1 and a map of facilities which deal with C&D waste is provided earlier in the LAA (map J), but the information on production of recycled aggregate from these sites is not available. It is known that the 22 Household Waste Recycling Centres in the Sub-Region produce around 20kt of recycled aggregate per year. Another potential source of recycled aggregate is mining and quarry waste, but 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, and so is not recorded. Several active quarries in North Yorkshire have recycling facilities on site. Anecdotal information from industry suggests that a large majority of material with potential for use as recycled aggregate is already so used.

#### Aggregate Sales from National Parks and AONBs

49. From 2004 until 2009 the YHRAWP published data on sales of aggregate from within National Parks and AONBs in the Region. Data is only published at a Regional level. It shows that over that period the contribution to total Regional sales of aggregate from sites in National Parks was around 25%, with a further 5% from sites in AONBs. Although the RAWP reports do not break down sales by aggregate type it is known that only crushed rock reserves occur within National Park and AONB areas in the sub-region and that, since 2007 when crushed rock production ceased in the NYMNPA area, only the Yorkshire Dales NP contributed to sales from within National Parks. Sales from within AONBs all occur within the NYCC area (Nidderdale and Howardian Hills AONBs). The proportion of supply from such sources remained relatively steady over that period, although the 2009 YHRAWP report notes a slight upward trend in sales from National Parks. The report also notes that, as quarries in these areas include some of the region's major production sites, with relatively high levels of sales and reserves, there is no indication of a significant decrease in the proportion of sales from within National Park and AONB designations in the short to medium term.

#### b. Reserves

50. A range of types of aggregate are permitted for working in the NY sub-region. Available data on reserves is summarised below.

<sup>10</sup> DCLG, Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005: Construction, Demolition and Excavation Waste

<sup>11</sup> Source: Table 7.2 in 'Survey of arisings and use of alternative to primary aggregates in England 2005 construction demolition and excavation wastes'

i) Primary landwon aggregate

	Sand and Gravel (mt)	Crushed Rock (mt)				
		Carboniferous Limestone	Magnesian Limestone	Jurassic Limestone	Chalk	High PSV
North Yorkshire County Council	16.24	79.70	7.85	10.15	Some available reserves but site closed by operator	
Yorkshire Dales National Park		94.74				9.75
North York Moors National Park						
City of York Council						
<b>Total</b>	<b>16.24</b>	<b>174.44</b>	<b>7.85</b>	<b>10.15</b>	<b>Some available reserves but site closed by operator</b>	<b>9.75</b>

Table 6: Reserves of primary landwon aggregate, by MPA and aggregate type at end of 2011

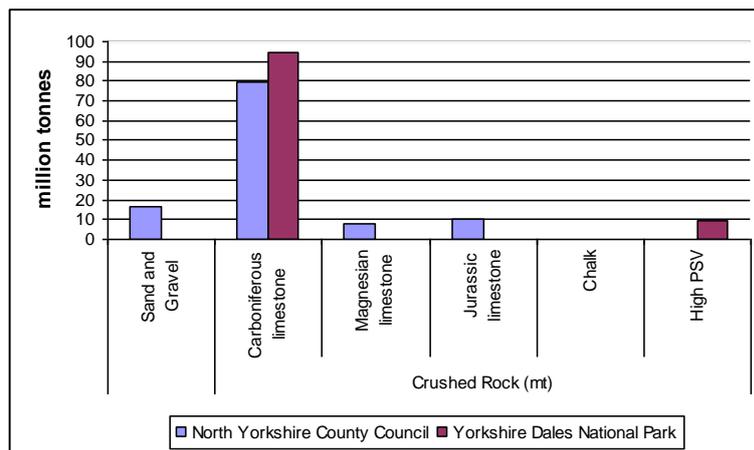


Figure 4: Reserves of primary landwon aggregate, by MPA and aggregate type at end of 2011.

51. The table and graph below illustrate the trend over time in reserves for sand and gravel and crushed rock in the NYCC area and the Yorkshire Dales National Park. Reserves of crushed rock in the North York Moors National Park were exhausted in 2007 and there are no reserves in the City of York area. It can be seen that reserves of sand and gravel are substantially lower than for crushed rock. The large majority of overall aggregate reserves comprise Carboniferous Limestone, and these are split between NYCC and the YDNP.

	NYCC sand and gravel reserves	NYCC crushed rock reserves	YDNP crushed rock reserves*
2002	31.28	110.51	143.12
2003	28.95	109.61	139.17
2004	28.04	105.35	137.28
2005	24.29	108.30	131.83
2006	22.85	105.20	128.00
2007	20.65	101.10	124.00
2008	20.02	100.50	120.20
2009	18.42	103.90	106.24
2010	17.98	101.00	103.63
2011	16.24	97.70	104.49

Table 7: Reserves of sand and gravel and crushed rock over time by MPA area.

\*the fall in reserves in the YDNP area between 2008 and 2009 results partially from reassessment of reserves by operators for the 2009 Annual Monitoring survey, whereas reserves for 2006, 2007 and 2008 were calculated by subtracting sales from reserves as calculated for the 2005 Annual Monitoring survey.

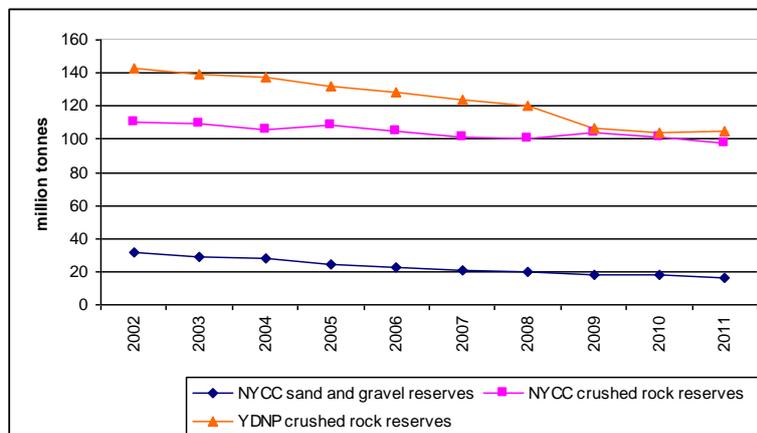


Figure 5: Reserves of sand and gravel and crushed rock over time by MPA area

52. As with sales, reserves of sand and gravel in NYCC can be presented separately by distribution area and for building sand as described in paragraph 33.

	Northwards distribution area (mt)	Southwards distribution area (mt)	Building sand (mt)	Total (mt)
2002	14.55	14.41	2.31	31.28
2003	13.87	12.87	2.20	28.95
2004	12.93	12.99	2.12	28.04
2005	11.51	10.68	2.10	24.29
2006	10.44	9.15	3.26	22.85
2007	9.75	7.75	3.15	20.65
2008	8.84	8.11	3.07	20.02
2009	9.20	7.50	1.69	18.42
2010	8.53	7.84	1.60	17.98
2011	7.78	6.97	1.49	16.24

Table 8: Reserves of sand and gravel over time for North Yorkshire County Council split by distribution areas.

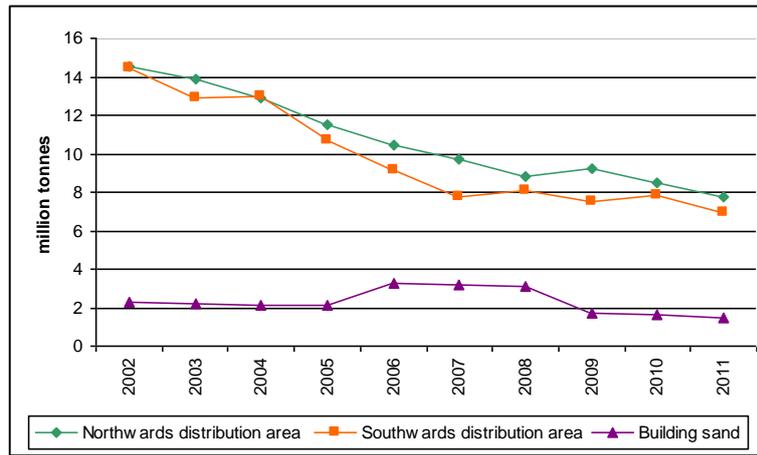


Figure 6: Reserves of landwon sand and gravel for North Yorkshire County Council over time split by distribution areas.

### Discussion on primary aggregate reserves

53. Within the sub-region sand and gravel reserves only exist within the NYCC area. Both NYCC and the YDNP have reserves of crushed rock. The largest overall reserve, over 170mt, is for Carboniferous Limestone which is present in both MPA areas. The YDNP also has a reserve of just under 10mt of high PSV stone. In addition to Carboniferous Limestone, NYCC also has much smaller reserves of Magnesian and Jurassic Limestone. The trend for all aggregate reserves has been for a gradual decline over time, although some years have seen a slight increase when new permissions have been granted.
54. As with sales, the sand and gravel reserve in NYCC is further broken down into a northern distribution area, southwards distribution area and building sand. The reserves in all categories have gradually declined over time, with the largest reserve tending to be in the northern distribution area and the smallest in building sand.
55. In accordance with Government advice on landbanks, only reserves for which valid planning permissions are extant are included within the reserve figures presented in the LAA. This includes reserves in sites which are currently not working but excludes dormant and inactive sites, (set out under the Planning and Compensation Act 1991 and Environment Act 1995 for which a review is required before operations can commence or resume).
56. The only MPA in the sub-region with such sites is NYCC. Reserves in dormant sites comprise a range of rock types including sand and gravel, Carboniferous Limestone, Magnesian Limestone and Jurassic Limestone but good data on potentially viable reserves is not available and the assistance of the industry in resolving this uncertainty will be required. However, it is likely that the majority of reserves in dormant sites comprise Carboniferous Limestone at sites in Richmondshire (Leyburn area) and Craven (Skipton area), with lesser amounts of Magnesian and Jurassic Limestone. Reserves of dormant sand and gravel are likely to be very limited and are not thought to be of concreting quality.
57. Substantial reserves of Carboniferous Limestone are thought to exist in dormant sites in the Leyburn area and working schemes are currently being brought forward by operators in this area to enable access to these.

	Sand and Gravel (mt)	Crushed Rock (mt)				
		Carboniferous limestone	Magnesian limestone	Jurassic limestone	Chalk	High PSV
North Yorkshire County Council	?	Estimated at in excess of 30mt	?	?	None	-
Yorkshire Dales National Park	-	None	-	-	-	None
North York Moors National Park	-	-	-	-	-	-
City of York Council	-	-	-	-	-	-
<b>Total</b>	?	Estimated at in excess of 30mt	?	?	None	None

Table 9: Estimated reserves in dormant and inactive sites by MPA and aggregate type

## ii) Marine aggregates

58. The Humber dredging region had estimated reserves of 15.7mt<sup>12</sup> of marine aggregate in 2008. Information published recently by the Crown Estate (May 2012) indicates that, in the Humber Region, 5.05 million tonnes per annum of marine aggregate is currently permitted for extraction and that, over the last ten years, on average, 76% of the permitted tonnage has been dredged. The information also notes that there is currently potential to supply up to 2.1 million tonnes of extra material per annum in the Region; that existing applications for dredging licences will deliver permits for a further 8.46mt per annum and that wharf infrastructure in the Region is well established and can cope with the tonnage currently delivered and any future tonnage uplift.<sup>13</sup> The graph below illustrates the difference between the tonnage permitted to be extracted and the actual tonnage extracted in recent years.

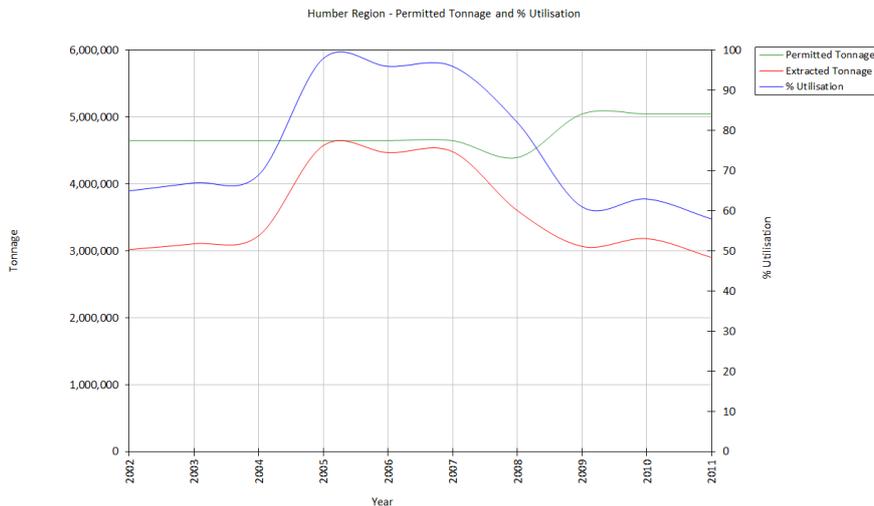


Figure 7: Marine aggregates permitted tonnage and % utilisation in the Humber Region<sup>14</sup>

<sup>12</sup> Crown Estates: Marine Aggregate Reserves 2008

<sup>13</sup> Crown Estates briefing note: Issue 3 Marine Aggregate Opportunities: Region, Humber May 2012

<sup>14</sup> Crown Estates Briefing note: Issue 3 Marine Aggregate Opportunities: Region, Humber May 2012

## Consumption within the sub-region and movements of aggregate within and across the sub-regional boundary

59. Data on consumption of aggregate within the North Yorkshire sub-region is available through the 4 yearly detailed annual monitoring surveys conducted by the RAWPs and collated by British Geological Survey on behalf of central Government. The most recent data is for 2009 and is presented below, with information for other Y&H sub-regions and for 2005 for comparison.
60. The data indicates that in 2009 a little over 3mt of primary aggregate, mainly crushed rock, was consumed in the sub-region. As shown in Table 1, total sales of primary aggregate extracted in the sub-region in 2009 were around 7mt, principally crushed rock, making the sub-region a substantial net exporter of aggregate. Sales of both sand and gravel and crushed rock exceeded consumption by at least 100%, with all sales of sand and gravel from the NYCC area and all sales of crushed rock from sites in either the NYCC area or YDNP. Total consumption of primary aggregate in the sub-region was greater in 2009 than in 2005. Whilst it is expected that demand would have been suppressed in 2009 relative to 2005, as a result of the economic downturn, major road building activity (A1(M) upgrade) was taking place in the NYCC area during 2009 and that may have helped support demand for crushed rock in particular. Total consumption of primary aggregates in other Yorkshire and Humber sub-regions was reduced in 2009 compared to 2005.

Consuming sub-region	Land won sand and gravel	Marine sand and gravel	Sand and gravel total	Crushed rock	Aggregates total (2009)	Aggregates total 2005 (for comparison)
<b>North Yorks</b>	<b>769kt</b>	<b>40kt</b>	<b>809kt</b>	<b>2,322kt</b>	<b>3,131kt</b>	<b>2,591kt</b>
West Yorks	810kt	-	810kt	2,332kt	3,142kt	3,488kt
South Yorks	719kt	-	719kt	2,110kt	2,829kt	3,226kt
Humber	594kt	194kt	788kt	789kt	1,577kt	2,540kt

Table 10: Consumption of primary aggregate in the Yorkshire and Humber Region 2009 and 2005

Source: Collation of the results of the 2009 and 2005 Aggregate Minerals Surveys

61. Exports take place from the sub-region to other sub-regions within Y&H, as well as to other Regions, making the area an important supplier of aggregate at a wide geographical scale. Although there is a substantial net balance of exports, aggregates are also imported into the sub-region. This is likely to be a result of market forces and commercial decisions, as well as the need to import any particular types of aggregate which cannot be supplied from within the sub-region as a result of geological or resource constraints. There is therefore a relatively complex overall picture of imports and exports and these are likely to change over time.
62. Published information does not include detailed data on imports at MPA or sub-regional level and it should be noted that information on movements is not comprehensive, mainly as a result of data collection methodologies, confidentiality restrictions and incomplete returns from industry. The most recent relatively comprehensive data is for 2009. Data is also provided for 2005 to help provide a comparison. Where possible, information has also been presented on the proportion of producer sales/recipient consumption that the export/import movement represents, to help provide an indication of relative significance.

Movement	2009			2005		
	Tonnage kt	% of producer sales	% of recipient consumption	Tonnage kt	% of producer sales	% of recipient consumption
Crushed rock from North Yorks sub-region to elsewhere in Yorkshire & Humber	2,009	39	38	4,549	58	47
Crushed rock from North Yorks sub-region to destinations outside Yorkshire & Humber	1,271	25	Unknown	1,812	23	Unknown
Crushed rock from North Yorks sub region to North West region	792*	15	15	1,224	16	13
Sand and gravel from North Yorks sub-region to destinations outside Yorkshire & Humber	609	37	Unknown	537	19	Unknown
Sand and Gravel from North Yorks sub-region to North East region	609*	37	31	537*	19	20
Sand and gravel from North Yorks sub-region to elsewhere in Yorkshire & Humber region	403	25	17	1,772	61	32
Crushed Rock from North Yorks sub-region to North East region	350*	7	10	457	6	8
Crushed Rock from North Yorks sub-region to East Midlands	14*	0.2	0.1	47*	0.5	0.4

Table 11: Known exports from NY sub-region by mineral type and destination, including information on the % share of producer sales and recipient consumption that the movement represents for 2009 and 2005.<sup>15</sup>

Movement	2009			2005		
	Tonnage kt	% of producer sales	% of recipient consumption	Tonnage kt	% of producer sales	% of recipient consumption
Crushed rock from Yorkshire Dales National Park to elsewhere in Yorkshire & Humber	1,295	49	17	1,888	47	20
Crushed rock from Yorkshire Dales National Park to destinations outside Yorkshire & Humber	947	36	Unknown	1,385	35	Unknown
Crushed rock from Yorkshire Dales National Park to North West region	792*	30	8	1,224*	31	10
Sand and gravel from North Yorkshire County Council to North East region	609*	37	31	537*	19	20
Crushed rock from North Yorkshire County Council to outside Yorkshire & Humber	324	13	Unknown	427	11	unknown

<sup>15</sup> Data based on AM2009 and the collation of the results of the 2009 and 2005 Aggregates Monitoring Surveys unless otherwise indicated by \*

\*Data from 2009 and 2005 RAWP reports

# NYCC mineral survey data

Movement	2009			2005		
	Tonnage kt	% of producer sales	% of recipient consumption	Tonnage kt	% of producer sales	% of recipient consumption
region						
Crushed rock from North Yorkshire County Council to North East region	323*	12	9	427*	11	12
Crushed rock from North Yorkshire County Council to West Yorkshire	250#	11	11	No data identified	No data identified	No data identified
Sand and gravel from North Yorkshire County Council to West Yorkshire	240#	14	30	No data identified	No data identified	No data identified
Crushed rock from North Yorkshire County Council to South Yorkshire	177#	8	8	No data identified	No data identified	No data identified
Sand and gravel from North Yorkshire County Council to South Yorkshire	107#	6	15	No data identified	No data identified	No data identified
Crushed Rock from Yorkshire Dales National Park to North East region	27	1	1	30	1	1
Crushed Rock from Yorkshire Dales National Park to East Midlands region	14	1	>1	47	1	1

Table 12: known exports by MPA by mineral type and destination, including information on the % share of producer sales and recipient consumption that the movement represents. For 2009, with comparator info for 2005 where available<sup>16</sup>

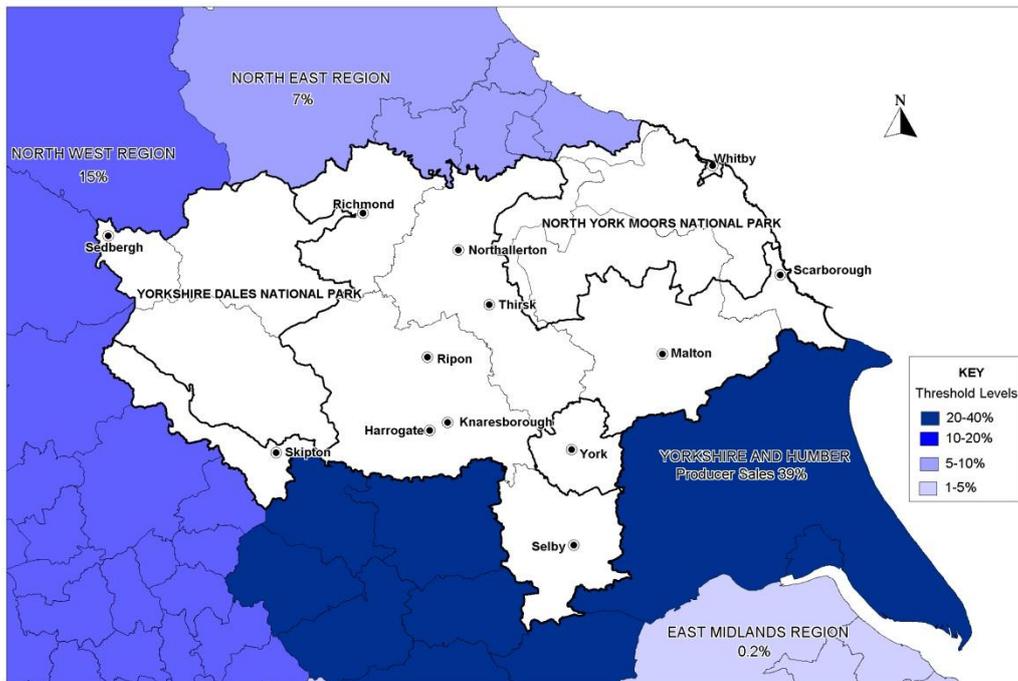
Data is not provided in relation to crushed rock provision from NYMNP on the basis that this ceased in 2007

63. In order to supplement the information on movements contained in the 4-yearly collations, direct contact has been made with BGS to request any available supplementary information to indicate the level of imports or consumption of aggregate at either MPA or sub-regional level. This information, together with a brief analysis of aggregates movements into or out of the sub-region is presented in Appendix 2. However, in summary the data appears to suggest that there are a relatively small number of particularly important inter-relationships in aggregates supply. These include a high volume of sales of crushed rock from the YDNP to other locations within Yorkshire and Humber and to the North West Region and a high volume of sales of crushed rock from NYCC to West and South Yorkshire and the North East region. Sales of sand and gravel to the North east region and to West and South Yorkshire also appear to be important<sup>17</sup>. Volumes of imports are generally much lower but important movements into the sub-region appear to include crushed rock from Cumbria and Derbyshire and, to a lesser extent, crushed rock from Durham and Wakefield. This information is presented in the maps below.

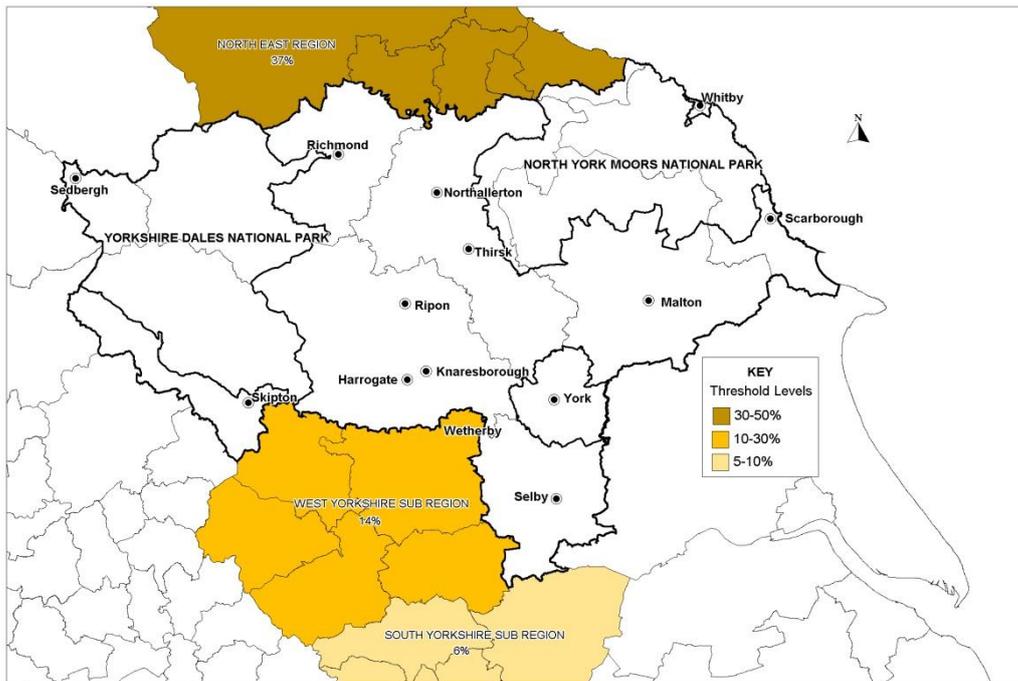
<sup>16</sup> Data based on AM2009 and the collation of the results of the 2009 and 2005 Aggregates Monitoring Surveys unless otherwise indicated by\* or #

\* Data from 2009 and 2005 RAWP reports

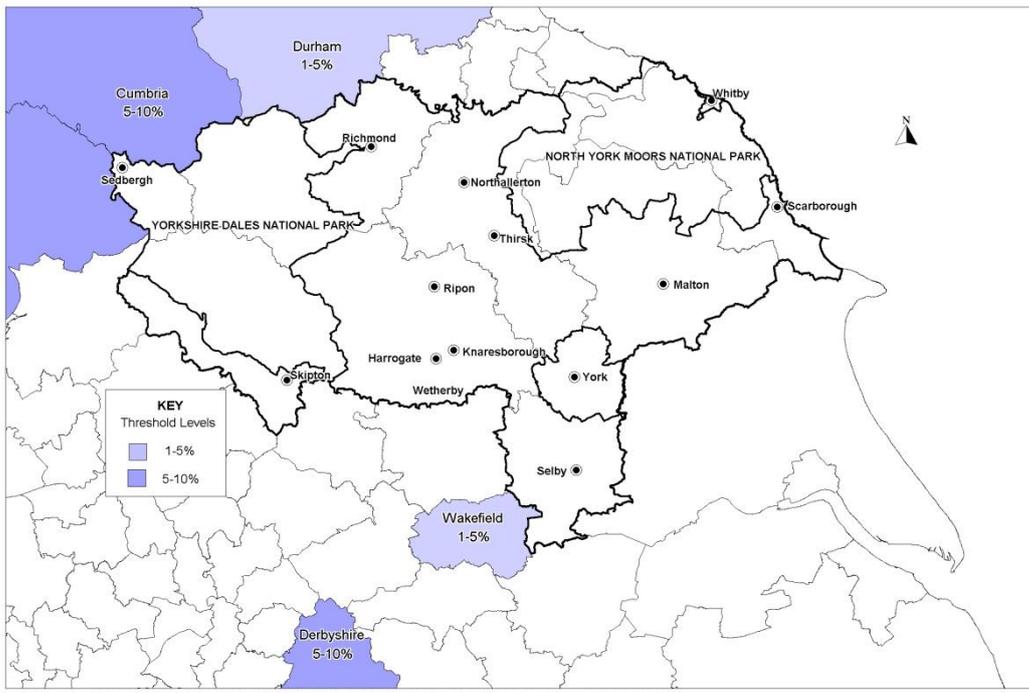
<sup>17</sup> Durham County Council, in response to consultation on a draft of this LAA indicate that, although actual data is not available, they consider that the majority of the flows of both sand and gravel and crushed rock from North Yorkshire to the NE Region will be to destinations in the Tees Valley. They consider that any future increased provision within the Tees Valley area could lead to a significant reduction in the scale of importation from North Yorkshire.



Map K: Exports of crushed rock from NY sub-region

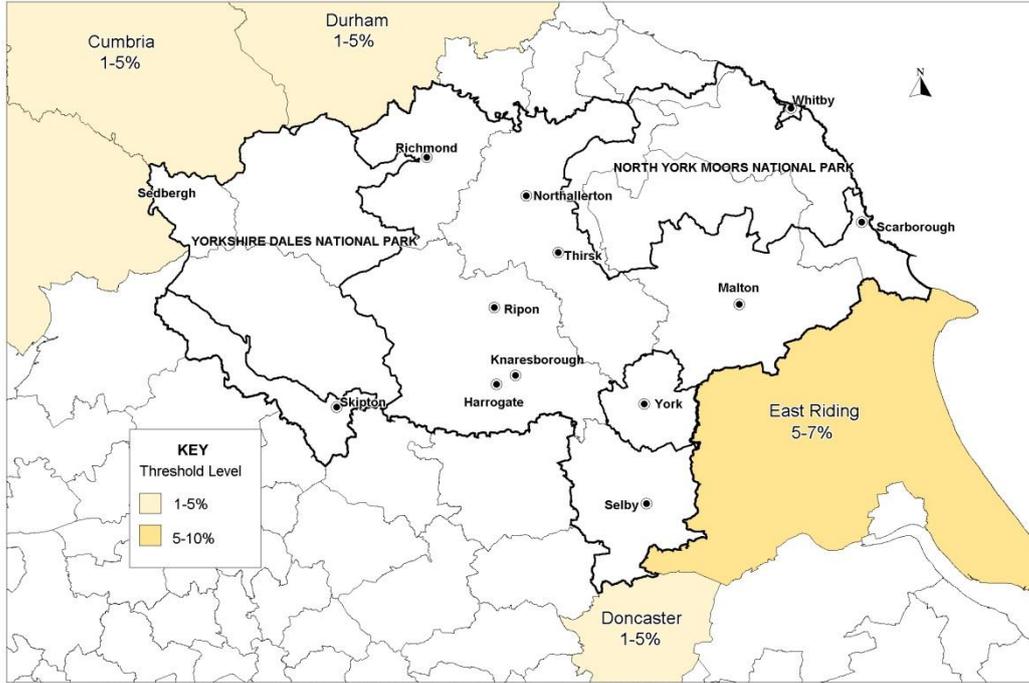


Map L: Exports of sand and gravel from NY sub-region



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Map M: Imports of crushed rock into the NY sub-region.



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Map N: Imports of sand and gravel into the NY sub-region.

**Aggregates landbanks in the North Yorkshire sub-region**

64. The following table shows landbank levels over the past 10 years for which data is available, utilising reserves data from Table 7. Landbank data for years up to and including 2008 are taken from YHRAWP reports and are based on the agreed sub-regional

apportionment in RSS<sup>18</sup>. For 2009, the data is taken from the RAWP AM2009 report, which calculated landbanks using average sales over the preceding 7 years. Since the NPPF was not published until 2012, landbanks for 2010 and 2011 are also shown based on 7 years average sales in accordance with advice from the YHRAWP at that time, with the landbank figure for 2011 based on 10 year average sales (derived from Table 1) shown in brackets for comparison. For 2012 and subsequent years the landbank will be calculated on the basis of average sales over the previous 10 years, in accordance with advice in the NPPF and Government Guidance on the Managed Aggregates Supply System (MASS). The different methodologies used for calculating the landbank should be borne in mind when considering the trend in landbank levels. Landbanks are not included for York and the NYMNP due to the fact that no reserves exist in these areas. The NPPF states that landbanks should be provided for as far as is practical from outside National Parks, and therefore future contributions from National Parks will need to be considered in the light of this as part of the plan preparation process.

	Sand and gravel		Crushed rock			
	NYCC		NYCC		YDNP	
	Reserves (mt)	Landbank (years)	Reserves (mt)	Landbank (years)	Reserves (mt)	Landbank (years)
2002	31.3	<b>14.7</b>	110.5	<b>12.3</b>	143.1	<b>34.7</b>
2003	29.0	<b>11.0</b>	109.6	<b>23.7</b>	139.2	<b>33.7</b>
2004	28.0	<b>10.7</b>	105.4	<b>22.7</b>	137.3	<b>33.3</b>
2005	24.3	<b>9.2</b>	108.3	<b>23.4</b>	131.8	<b>31.9</b>
2006	22.9	<b>8.7</b>	105.2	<b>22.7</b>	128.0	<b>31.0</b>
2007	20.7	<b>7.9</b>	101.1	<b>21.8</b>	124.0	<b>30.0</b>
2008	20.0	<b>7.6</b>	100.5	<b>21.7</b>	120.2	<b>29.1</b>
2009	18.4	<b>7.4</b>	103.9	<b>28.3</b>	106.2	<b>28.7</b>
2010	18.0	<b>7.5</b>	101.0	<b>28.1</b>	103.2	<b>30.0</b>
2011	16.2	<b>7.4 (7.0)*</b>	97.7	<b>29.6 (28.0)*</b>	104.5	<b>31.3 (29.6)*</b>

Table 13: Reserves and landbank by mineral type

\* See para 65 for explanation

The sand and gravel information for NYCC has been further broken down to provide landbank data by distribution areas.

	Northwards distribution area		Southwards distribution area (mt)		Building sand (mt)	
	Reserves (mt)	Landbank (years)	Reserves (mt)	Landbank (years)	Reserves (mt)	Landbank (years)
2002	14.6	<b>21.4</b>	14.4	<b>10.9</b>	2.3	<b>17.8</b>
2003	13.9	<b>20.4</b>	12.9	<b>9.8</b>	2.2	<b>16.9</b>
2004	12.9	<b>15.4</b>	13.0	<b>8.0</b>	2.1	<b>13.6</b>
2005	11.5	<b>13.7</b>	10.7	<b>6.6</b>	2.1	<b>13.1</b>
2006	10.4	<b>12.4</b>	9.1	<b>5.6</b>	3.3	<b>20.4</b>
2007	9.8	<b>11.6</b>	7.8	<b>4.8</b>	3.2	<b>19.7</b>
2008	8.8	<b>10.5</b>	8.1	<b>5</b>	3.1	<b>19.2</b>
2009	9.2	<b>10.1</b>	7.5	<b>5</b>	1.7	<b>19</b>
2010	8.5	<b>9.6</b>	7.8	<b>5.5</b>	1.6	<b>16</b>
2011	7.8	<b>7.9</b>	7.0	<b>6.3</b>	1.5	<b>12.4</b>

Table 14: Reserves and landbank by distribution area for sand and gravel

<sup>18</sup> The Government announced on 29 January 2013 that the Regional Strategy for Yorkshire and Humber (RSS) is to be revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which are to be retained.

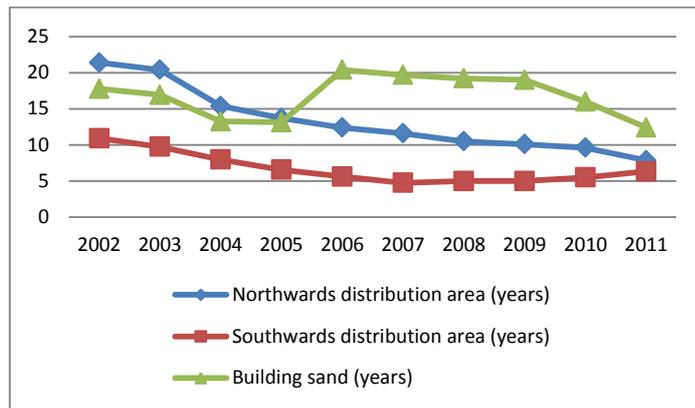


Figure 8: Landbanks by distribution area

65. The NPPF advises that a landbank of at least 7 years for sand and gravel should be maintained. The overall sand and gravel landbank in the NYCC area (and hence for the whole of the sub-region) has been declining gradually over the past 10 years and at the end of 2011 had reached a level of 7.4 years based on the 7 year average sales calculation (or 7.0 years based on 10 year average sales). The landbank for the northern distribution area has been above the 7 year recommended level for a least the past 10 years, gradually declining to its lowest level of 7.9 years in 2011. For the southern distribution area the landbank has been below 7 years since 2005. The building sand landbank has remained consistently above the 7 years level.
66. A number of planning applications for extensions to existing sand and gravel quarries are currently under consideration and it was resolved to grant permission on 30 October 2012 for an extension to Wykeham Quarry, containing 4.45mt of new reserves. The permission is subject to completion of a legal agreement and so does not count towards permitted reserves at the time of preparation of this LAA. The site falls within the southwards distribution landbank area and serves markets mainly in the Scarborough area.
67. Significant sand and gravel resources do not exist in the Yorkshire Dales or North York Moors National Parks and, in any event, national policy constraints would be likely to be a substantial obstacle to the development of any viable resources that could be identified. Minerals resource information suggests that sand and gravel resources are likely to exist within the CYC area although up to date information on their potential economic viability is not available. There has not been any apparent interest from the minerals industry in the development of resources within York.
68. Crushed rock is currently extracted in two MPA's in the sub-region, NYCC and YDNP. The minimum landbank recommended by the NPPF for crushed rock is 10 years. The landbank for crushed rock in NYCC is currently between 25 and 30 years.
69. As noted earlier, the NPPF states that landbanks for non-energy minerals should be provided for from outside National Parks as far as is practical. Substantial reserves and resources of crushed rock exist in the YDNP but the availability of new reserves is likely to be heavily influenced by the effect of national policy restrictions. Permitted reserves of crushed rock in the YDNP have declined by around 40mt over the past 10 years but are still large relative to sales. However, the extent to which reserves will be replenished (if at all) as current reserves are worked out is not yet known, although it is reasonable to assume that in the longer term reserves will continue to diminish.
70. Extraction of crushed rock ceased in 2007 in the NYMNP, upon closure of Spaunton Quarry. There are no remaining permitted reserves and it is considered unlikely that new reserves of crushed rock aggregate will become available in the NYMNP. Crushed rock resources do not occur within the City of York area.

# Part C - Assessment of future supply

## Aggregates supply requirements in the NY sub-region

### National and regional policy and guidance

71. Guidelines for aggregates supply in England have been published by central Government and over recent years have provided a basis for the identification of future requirements for aggregate minerals at the national and regional levels, as part of a managed system of aggregates supply. The most recent figures were published in the National and Regional Guidelines for Aggregate Supply in England 2005-2020, published in June 2009 and these Guidelines remain extant. The key Regional guideline figures are reproduced below. The table also shows figures from the previous (2003) Guidelines, which covered the period 2001-2016, for comparison purposes and as these figures provided the basis for the sub-regional apportionment contained in the RSS, which remains an extant part of the development plan at the time of preparation of this first LAA<sup>19</sup>.

Region	Land-won Provision				Assumptions					
	Land-won Sand & Gravel (mt)		Land-won Crushed Rock (mt)		Marine Sand & Gravel (mt)		Alternative Materials (mt)		Net Imports to England (mt)	
	2005-2020	2001-2016	2005-2020	2001-2016	2005-2020	2001-2016	2005-2020	2001-2016	2005-2020	2001-2016
<b>Yorkshire &amp; Humber</b>	<b>78</b>	73	<b>212</b>	220	<b>5</b>	3	<b>133</b>	128	<b>3</b>	0
England	<b>1028</b>	1068	<b>1492</b>	1618	<b>259</b>	230	<b>993</b>	919	<b>136</b>	169

Table 15: Comparison of National and Regional apportionment guidelines for England published in 2009 and 2003

72. At a national level the current guidelines recommend generally lower levels of provision of land-won aggregate than the previous 2003 figures. However, for Yorkshire and Humber, the current guideline figure for sand and gravel is slightly higher than in the 2003 guidelines, whereas the crushed rock figure is slightly lower. The published guideline figures for sand and gravel and crushed rock also include assumptions, set out in the Guidelines, about the amount of supply that will come from other sources such as marine dredged sand and gravel, alternatives to primary aggregates such as secondary and recycled materials, and imports from outside England. For Yorkshire and the Humber a substantial contribution from secondary and recycled aggregate is envisaged in the Guidelines, whereas the expected contribution from marine aggregates and imports from outside England is small.

73. New Government guidance on the Managed Aggregate Supply System (MASS), published in October 2012, indicates that the Government consider there is still a role for forecasts of aggregate provision in England and that it will continue to publish National and Sub-National Guidelines using an econometric model and continue to make assumptions on the likely contribution of demand for alternatives, imports and marine dredged sand and gravel. It states (at paragraph 15) that the Guidelines will have two key roles:

<sup>19</sup> The Government announced on 29 January 2013 that the Regional Strategy for Yorkshire and Humber (RSS) is to be revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which are to be retained.

a) they will seek to provide an indication of the total amount of aggregate provision that the Mineral Planning Authorities, collectively within each Aggregate Working Party, should aim to provide. There is no expectation that each Aggregate Working Party must meet the total set out in the Sub-National Guidelines especially if the environmental cost of meeting the guidelines is likely to be unacceptable. Nor is it expected or desirable that Mineral Planning Authorities will simply take the figure for each sub-national level and apportion it amongst constituent authorities. However, in those areas where apportionment of the land-won element has already taken place, those figures may be used as an indicator as to how much should be planned for. These Guidelines should therefore be seen as a means of providing an indicative amount that can be used as a cross-reference or another source of evidence when determining plans. This may mean that Mineral Planning Authorities may decide, collectively, to plan for more than set out in the Guidelines or, where based on robust evidence, plan for less. However, although these guidelines should be considered on this basis and not as a provider of rigid standards, they are nonetheless capable of being a material consideration when determining the soundness of minerals plans; and

b) they will provide individual Mineral Planning Authorities, where they are having difficulty in obtaining data, with some understanding or context of the overall demand and possible sources that might be available in their Aggregate Working Party area.

74. This Guidance reflects the policy approach in the NPPF, which states that MPAs should still take into account *published National and Sub National Guidelines on future provision which should be used as a guideline when planning for the future demand for and supply of aggregates*. The NPPF also indicates that Aggregate Working Parties will continue to play a role in providing advice on planning for the future supply of aggregate (and in the preparation of Local Aggregates Assessments such as this).

75. The 2009 Guidelines have not yet been subject to apportionment<sup>20</sup> in the Yorkshire and Humber area and it is not yet clear whether there will be any agreed regional apportionment in future. At the present time the only agreed apportionment is that contained in the Regional Spatial Strategy for Yorkshire and Humber. This utilised the previous 2003 Guidelines and followed an approach of allocating each sub-region a pro-rata amount proportionate to each sub-region's historic share of total regional production over the 5 year period 1997-2001. The 2003 Guidelines are now substantially out of date. In 2010 the YHRAWP advised that the apportionment contained in the RSS should no longer be used and it is therefore not considered to represent an appropriate basis for future planning. The RSS itself is proposed to be revoked and the current apportionment it contains is presented below for information only and as a comparison with actual sales over recent years (see Table 1)<sup>21</sup>.

Area	Land-won sand and gravel (mt)	Land-won crushed rock (mt)
North Yorkshire	42.1	140.8
- North Yorkshire CC	(42.1)	(74.0)
- Yorkshire Dales NP		(66.0)
- North York Moors NP		(0.8)
South Yorkshire	13.0	53.5
West Yorkshire	5.5	17.8

<sup>20</sup> Apportionment is a process whereby higher level guidelines for aggregates supply are broken down to a lower geographical level (such as sub-region or MPA level) on an agreed basis

<sup>21</sup>The Government announced on 29 January 2013 that the Regional Strategy for Yorkshire and Humber (RSS) is to be revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which are to be retained.

Area	Land-won sand and gravel (mt)	Land-won crushed rock (mt)
Humber	12.4	7.9
- East Riding	(8.3)	(5.3)
- North Lincolnshire	(4.1)	(2.6)
<b>TOTAL</b>	<b>73.0</b>	<b>220.0</b>

Table 16: Sub-regional apportionments for aggregates in the Yorkshire and Humber Region, 2001 to 2016 (mt) as incorporated into RSS 2008.

76. The YHRAWP advised in 2010 that, on an interim basis pending updated guidance, aggregates provision (and landbank calculation) in the Region should be assessed on the basis of historic sales averaged over the previous 7 year period, rather than using the agreed sub-regional apportionment contained in RSS<sup>22</sup>. This approach was reflected in YHRAWP published data on landbanks for the 2009 calendar year (published in 2010). The MASS guidance (October 2012) and the NPPF now advise that LAAs should include a forecast of demand for aggregates based on the average of 10 years sales data and other relevant local information.
77. With regard to calculation of landbanks, the new Guidance advises that these should be calculated using the expected provision (supply in response to demand) included in the local minerals plan, expressed on an annual basis. However, the Guidance also states that MPAs should seek to maintain a landbank of at least 7 years of land-won sand and gravel and 10 years of crushed rock, based on the past 10 years average sales.
78. Taking into account the 2012 MASS guidance referred to above, the approach in this LAA is therefore to use the 2009 Guidelines as an indicator against which any other sources of information about possible future requirements can be compared and in particular against which to compare an approach using an average of 10 years sales data. As there is not an up to date apportionment in the North Yorkshire Minerals Local Plan, this LAA also utilises historic sales data for the purposes of calculating landbanks.
79. It should be noted that, although the RSS and previous YHRAWP reports show a crushed rock apportionment for the Yorkshire Dales and North York Moors National Parks, current national planning policy for minerals states that when dealing with planning applications, MPAs should; *'As far as is practical, provide for the maintenance of landbanks of non-energy minerals from outside National Parks, the Broads, Areas of Outstanding Natural Beauty and World Heritage sites, Scheduled Monuments and Conservation Areas'* (NPPF) and that planning permission for major development in such areas should be refused except in exceptional circumstances. The existence of an apportionment for the National Parks in RSS should not therefore be taken as an indication that the National Parks could or should continue to maintain a 10 year landbank of crushed rock reserves.
80. In practice the Yorkshire Dales National Park has a substantial landbank of crushed rock and is expected to be able to continue maintaining supply over the period to 2030 and beyond. In the case of the NYMNP, whilst the apportionment in the RSS for the NYMNP was met prior to the closure of the quarries, there is currently no production of aggregate and any previous sales of crushed rock over the past 10 years were from sites which have now closed. The potential future role of both National Parks in terms of supply of aggregate will be a matter to be addressed in statutory land use plans for minerals.

<sup>22</sup> The Government announced on 29 January 2013 that the Regional Strategy for Yorkshire and Humber (RSS) is to be revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which are to be retained.

Comparison of actual sales with apportionment

81. In the following tables and graphs, which compare actual sales with the agreed sub-regional apportionment, information is only provided for the NYCC area, on the basis that the NPPF requires landbanks to be maintained outside National Parks as far as practical and this will have implications for apportionments which will be determined through the plan making process. The apportionment figures for 2002 and 2003 are based on the provision included in the North Yorkshire Minerals Local Plan 1997, which reflects the local apportionment of Regional Guidelines from 1994 as reported in the Yorkshire and Humber RAWP reports. The apportionment figures for the years 2004 to 2008 are based on the sub-regional apportionment of the 2003 National and Regional Aggregate Guidelines for 2003 – 2016 as contained in RSS<sup>23</sup>. For 2009 to 2011 the apportionment is based on average sales over the previous 7 year period in accordance with advice from the YHRAWP extant at the time. In 2012 the NPPF recommending using 10 years average sales as an initial basis for apportionment, and this will be used from 2012 onwards or until such time as an alternative local approach is agreed.

	Sand and gravel (mt)		Crushed rock (mt)	
	NYCC		NYCC	
	Sales	Agreed Apportionment	Sales	Agreed Apportionment
2002	2.5	2.13	4.1	9
2003	2.5	2.13	3.7	9
2004	2.8	2.63	4.2	4.63
2005	2.8	2.63	3.9	4.63
2006	2.7	2.63	3.8	4.63
2007	2.7	2.63	4.3	4.63
2008	2.3	2.63	3.8	4.63
2009	1.7	2.5*	2.6	3.67*
2010	1.6	2.4*	2.9	3.6*
2011	1.7	2.2*	1.9	3.3*
10 Year Average	2.3	-	3.5	-

Table 17: Sales relative to previous apportionment by mineral type  
\* based on 7 years average sales

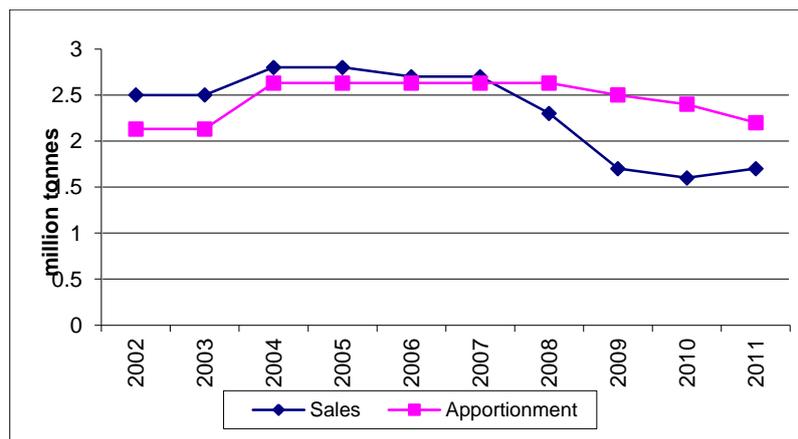


Figure 9: Trend in sales relative to apportionment for sand and gravel in the NYCC area

<sup>23</sup> The Government announced on 29 January 2013 that the Regional Strategy for Yorkshire and Humber (RSS) is to be revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which are to be retained.

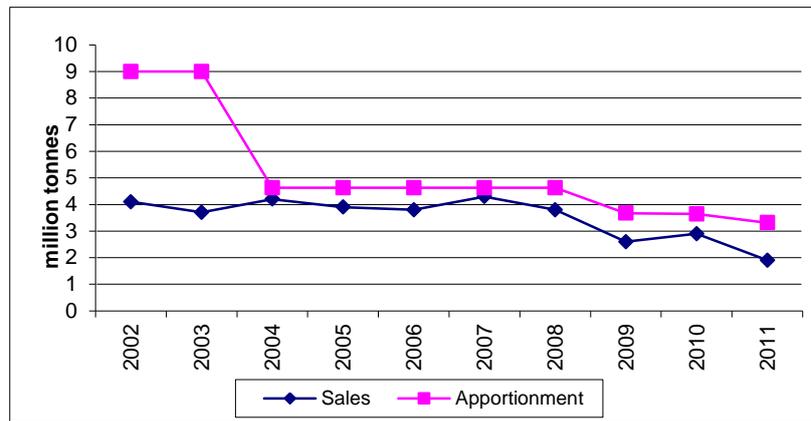


Figure 10: Trend in sales relative to apportionment for crushed rock in the NYCC area

82. The data shows that, until 2008, sales of sand and gravel broadly reflected the sub-regional apportionment of the 2003 Guidelines contained in RSS<sup>24</sup>. Since then, sales have been between 0.5mt and 0.8mt per annum below the apportioned figure. For crushed rock, sales from NYCC have (from 2004) been variable but consistently below the RSS apportionment until 2011, when a further significant reduction has occurred to a level of less than half of the RSS apportionment figure.

83. In order to provide a further indicative comparison between actual sales over the past 10 years and the level of requirements envisaged in the 2009 Guidelines (which, as noted above, have not yet been subject to sub-regional apportionment) the table below shows a hypothetical sub-regional apportionment of the 2009 Guidelines. This has been calculated by allocating a proportion of the total 2009 Regional Guideline figure for Yorkshire and Humber to the North Yorkshire sub-region on a pro-rata basis based on average historic sales for the 10 year period 2000-2009 (the most recent 10 year averaging period for which data is available for the whole Y&H Region). It is emphasised that this is presented here for broad comparison purposes only and the approach has not been subject of any agreement within the Region.

	Sand and Gravel (mt)		Crushed Rock (mt)		
	NY sub region	Y & H Region	NY sub region	NYCC only	Y & H Region
2000	2.6	4.7	7.9	3.8	14.9
2001	2.6	5.2	8.2	3.9	15.8
2002	2.5	5.0	8.4	4.1	15.8
2003	2.5	4.8	8.0	3.7	14.7
2004	2.8	4.8	8.2	4.2	12.7
2005	2.8	4.7	8.1	3.9	12.7
2006	2.7	4.7	7.7	3.8	11.7
2007	2.7	4.7	8.4	4.3	12.1
2008	2.3	4.0	7.6	3.8	10.9
2009	1.7	3.2	5.3	2.6	7.7
10 Year Average	2.5	4.6	7.8	3.8	12.9
NY sub region sales as % of Y&H total	55%		60%	29%	
Indicative total requirement 2005-2020 from Regional Guidelines		78mt			212mt

<sup>24</sup> The Government announced on 29 January 2013 that the Regional Strategy for Yorkshire and Humber (RSS) is to be revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which are to be retained.

	Sand and Gravel (mt)		Crushed Rock (mt)		
	NY sub region	Y & H Region	NY sub region	NYCC only	Y & H Region
Hypothetical apportionment 2005-2020	42.9mt			61.5mt	127.2mt
Hypothetical apportionment 2005-2020 expressed on an annual basis	2.68mt			3.84mt	7.95mt

Table 18: Hypothetical sub-regional apportionment of 2009 National and Regional Guidelines

85. The hypothetical sub-regional apportionment of the 2009 Guidelines referred to above is, at 2.68mt per annum for sand and gravel, very similar to the RSS apportionment of 2.63mt based on the 2003 Guidelines. However, as noted earlier both values are significantly higher than average sales over the past 10 years of 2.3mt (and particularly so when compared with the past 3 years) and unless sales recover rapidly to a level substantially higher than average sales over the past 10 years, it is very unlikely that 10 year average sales would reach the overall levels envisaged in the hypothetical apportionment figures for the period to 2020. Such a scenario is considered unlikely based on current levels of sales, although there is less certainty about the longer term trend in demand.
86. For crushed rock the hypothetical sub-regional apportionment of the 2009 Guidelines is, at 3.84mt per annum for NYCC, substantially below the RSS<sup>25</sup> apportionment of 4.63mt. However, it remains around 10% higher than average sales of 3.5mt over the past 10 years. As with sand and gravel, it is considered very unlikely that sales of crushed rock in the sub-region will rise to a level such that the hypothetical apportionment figures for the period to 2020 would be reached when sales are averaged over a 10 year period.
87. As with the NYCC area, sales of crushed rock from the Yorkshire Dales National Park reduced significantly between 2007 and 2009, since then they have remained relatively steady. The proportionate contribution to total sub-regional supply from the NYCC area and the YDNP has remained broadly similar over the past 10 years. As noted earlier, national policy prioritises the maintenance of landbanks from outside National Parks and Areas of Outstanding Natural Beauty.

#### Potential approaches to identifying future requirements

88. A range of methods could be used to help identify the potential scale of future requirements for aggregate. The use of a method based on carrying forward the previous approach to sub-regional apportionment would avoid the need to rely on selection of an averaging period based on past sales but is not consistent with the most recent advice of the YHRAWP. It might also result in identifying future requirements at a level which does not reflect actual sales levels very closely, or acknowledge the effects of recent economic slowdown.
89. The use of historic average sales as an indicator of future requirements has disadvantages in that it is essentially backward looking and does not anticipate future changes in aggregates supply patterns or economic trends, or take into account any emerging environmental issues or constraints. However, it has the advantage of simplicity and transparency and is supported in principle in national planning guidance and by the former YHRAWP.

<sup>25</sup> The Government announced on 29 January 2013 that the Regional Strategy for Yorkshire and Humber (RSS) is to be revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which are to be retained.

90. With regard to selection of an appropriate averaging period, the use of a 10 year period recommended by the NPPF may help to smooth out the effects of recent economic slowdown on the calculation of future requirements, compared with use of a shorter term average, such as a 7 year period previously advised by the YHRAWP on an interim basis and, subject to consideration of any other local factors, is considered the most appropriate period for use in this LAA.

#### Other relevant local information

91. National planning policy and guidance indicates that other relevant local information can be taken into account in deriving an apportionment. A key consideration in the North Yorkshire sub-region is the existence of significant crushed rock aggregate resources (and reserves) in areas designated as National Park or AONB. As noted earlier, national policy seeks to ensure that, so far as practicable, landbanks should be maintained in locations outside such areas. This suggests that it may not be appropriate to identify a specific apportionment for either the Yorkshire Dales or North York Moors National Parks. In practice the scale of permitted reserves in the YDNP, relative to recent average sales, suggests that the absence of a specific apportionment for the YDNP is unlikely to have any significant adverse impact on the overall availability of supply of aggregate over at least the next 20 years or so, although as noted elsewhere in this LAA, there is more uncertainty over long term availability of high PSV aggregate currently worked in the YDNP.

92. It is also considered that, in the current absence of knowledge of the existence of potentially viable resources of sand and gravel (and the known absence of resources of crushed rock) in the City of York area, it would not be appropriate to seek to identify separately any potential future requirements for sand and gravel, to be provided specifically by City of York. This position may need to be reviewed in future reviews of the LAA if further evidence becomes available.

93. With regard to the balance of supply between primary landwon and alternative sources, it is considered that, overall, the evidence suggests that there is some potential for an increase in supply from secondary and recycled aggregates. There may also be some potential for an increase in the proportion of supply from marine dredged sources. Mineral planning authorities in the Yorkshire and Humber Region are in the process of procuring research into the potential deliverability of an increased volume of marine aggregate into the Region. Until this work has been completed it would not be appropriate to make any assumptions about the potential scale of supply (if any) which could be derived from such sources and the extent to which any increase in supply into the Region may impact on the overall balance of supply derived from the North Yorkshire sub-region. Future LAAs will update on the position with this work and the potential implications, if any, for future supply patterns.

94. No major developments of a scale so substantial as to constitute an expected exceptional source of demand in the sub-region are known with sufficient certainty at this stage to predict their potential impact on the supply situation. The recent (December 2012) announcement in the Government's Autumn budget statement of the reactivation of proposals to upgrade the A1(T) between Leeming and Barton to motorway standard may constitute a significant source of demand. However, A1 upgrading has been proceeding progressively within the sub-region over a substantial number of years and any associated demand is already likely to be reflected in sales over recent years and hence would be reflected in the scale of any future requirements identified through a historic averaging method. There is also potential for the recently announced phase 2 extension of the proposed High Speed Rail link through to West Yorkshire to impact on the aggregate supply situation in the mid to longer term, although there is substantial uncertainty about the scale of any additional demand this could place on the sub-region, if any. The requirement for annual review of the LAA suggests that this and other factors relating to the trend in requirements for aggregate can be kept under review. In addition, the fact that the

10 year average approach utilises a rolling average, progressively updated in response to updated information on sales, is likely to help ensure that it continues to reflect any developing trend in supply.

95. It is therefore considered that there is no significant local information at this stage that suggests, with a sufficient level of confidence, that an alternative approach to identifying provision should be used in this LAA. Notwithstanding this, industry expressed the view during consultation on preparation of this LAA that, although it was agreed that 10 year average sales should be used as a starting point, more weight should be given to “background” levels of production prior to the recession, as that is more representative of long term average demand, given that production in North Yorkshire was relatively stable prior to the recession. Industry therefore also suggested taking the 2007 sales figure as representative of long term demand for sand and gravel.
96. Overall this assessment concludes that current published Guidelines are likely to overestimate the requirement for landwon aggregate from the sub-region over the period to 2020, as described in paragraphs 84 and 85, although there is less certainty beyond that date. It is therefore considered that, in view of the difference between recent historic sales (particularly over the past few years) and the Guidelines, it would be appropriate, in the absence of any other relevant local information, to assess future requirements within the NYCC area on the basis of average sales over the past 10 years. However it is also recognised that there may be a need, where practicable, to incorporate a degree of flexibility in Minerals Local Plans, particularly in respect of sand and gravel provision, as this could help address some of the views expressed by industry about the effects of recession on the “background” level of demand. In the absence of up to date figures for future provision in adopted plans in the sub-region, 10 year average sales figures should also be used, where appropriate, for the calculation of landbanks. For the two National Parks, for the policy reasons outlined above, it is not considered appropriate to assume that future apportionments will be based on past sales. Under the NPPF requirement to, as far as practical, provide for the maintenance of landbanks outside of National Parks (and AONBs), there may be implications in the longer term future for other, non-designated minerals planning areas in terms of meeting future demand which would have been supplied from within these areas should past trends have continued. For the City of York area the identification of potential future requirements would need to be based on any new evidence on the existence of potentially viable sand and gravel resources.

Indicative future requirements for primary land won aggregate

97. The implications of using 10 year average sales, in terms of potential future supply requirements, are shown below.

	Sand and Gravel (10 year average sales, mt, 2002-2011)	Crushed Rock (10 year average sales, mt, 2002-2011)
North Yorkshire County Council	2.3	3.5
- northwards distribution area	1.03*	-
-southwards distribution area	1.15*	-
- building sand	0.12*	-
Yorkshire Dales National Park	-	No assumed supply requirement - See explanation above
North York Moors National Park	-	No assumed supply requirement - See explanation above
City of York Council	No landbank required based on current evidence - See explanation above	-

Table 19: 10 year average sales data (2002-2011) for crushed rock and sand and gravel (by distribution area) for North Yorkshire County Council

\*Note – YHRAWP monitoring reports do not provide sand and gravel sales data by distribution area, only reserves. The figures provided in this Table are indicative and have been calculated by applying the % share that each subdivision represents of total sand and gravel sales (based on NYCC survey data for 2009, 2010 and 2011) to total average sales for the 10 year period 2002-2011, in order to generate an indicative 10 year average sales figure for each subdivision

98. The following Table shows the theoretical scale of provision required (outside the National Parks) based on projecting the 10 year annual average sales figures from Table 22 over the 19 year period 2012 to 2030 (ie average annual sales x 19).

	Sand and gravel requirement 2012 to 2030 (mt)	Crushed Rock requirement 2012 to 2030 (mt)
Based on 10 year average sales data		
North Yorkshire County Council	43.7	66.5
- northwards distribution area	19.6	-
- southwards distribution area	21.9	-
- building sand	2.3	-
Yorkshire Dales National Park*	-	-
North York Moors National Park*	-	-
City of York Council*	-	-

Table 20: Summary of hypothetical future requirements over the 19 year period 2012 to 2030 by mineral type and MPA.

\* Figures not provided for these MPAs for reasons explained in the text above

### Future aggregates supply capability

99. As noted earlier in this LAA, Government policy seeks the maintenance of a steady and adequate supply of aggregate. Tables 21 and 22 below compare potential future requirements for aggregate, based on the approach set out above, with available information on current reserves, therefore allowing the identification of any theoretical shortfalls over the period to 2030. For reasons of national planning policy set out earlier, the Table does not identify potential requirements for the Yorkshire Dales National Park, notwithstanding the existence of substantial reserves and relatively high levels of sales from this area. This section then goes on to consider a range of other factors which may impact on supply over the period to 2030.

		North Yorkshire County Council	NY sub-region
Total sand and gravel (mt)	Potential future requirements to 2030 based on 10 year average sales	43.7	43.7
	Current reserves	16.2	16.2
	Hypothetical shortfall	27.5	27.5
Northwards distribution (mt)	Potential future requirements to 2030	19.6	19.6
	Current reserves	7.8	7.8
	Hypothetical shortfall	11.8	11.8
Southwards distribution (mt)	Potential future requirements to 2030	21.9	21.9
	Current reserves	7.0	7.0
	Hypothetical shortfall	14.9	14.9
Building sand (mt)	Potential future requirements to 2030	2.3	2.3
	Current reserves	1.5	1.5
	Hypothetical shortfall	0.8	0.8

Table 21: sand and gravel Indicative requirements and shortfalls 2012 – 2030

		North Yorkshire County Council	Yorkshire Dales National Park	North York Moors National Park	City of York Council	Sub regional total
Total crushed rock (mt)	Potential future requirements to 2030 based on 10 year average sales	66.5	Figure not provided due to national policy constraints	-	-	-
	Current reserves	97.7	104.5	-	-	202.2
	Hypothetical shortfall	No shortfall	-	-	-	-
Carboniferous Limestone* (mt)	Potential future requirements to 2030	34.6	Figure not provided due to national policy constraints	-	-	-
	Current reserves	79.7	94.7	-	-	174.4
	Hypothetical shortfall	-	-	-	-	-
Magnesian Limestone* (mt)	Potential future requirements to 2030	23.9	-	-	-	23.3
	Current reserves	7.9	-	-	-	7.9
	Hypothetical shortfall	16.0	-	-	-	15.4
Jurassic Limestone* (mt)	Potential future requirements to 2030	8.0	-	-	-	7.8
	Current reserves	10.1	-	-	-	10.1
	Hypothetical shortfall	-	-	-	-	-
Chalk* (mt)	Potential future requirements to 2030 based on 10 year average sales	Not identified separately from other crushed rock resources	-	-	-	-
	Current reserves	-	-	-	-	-
	Hypothetical shortfall	-	-	-	-	-
High PSV (mt)	Potential future requirements to 2030 based on 10 year average sales	-	Figure not provided due to national policy constraints -	-	-	Figure not provided due to national policy constraints
	Current reserves	-	9.8	-	-	9.8
	Hypothetical shortfall	-	-	-	-	-

Table 22: Crushed rock Indicative requirements and shortfalls 2012 - 2030

\* YHRAWP monitoring reports do not provide crushed rock sales data by rock type (with the exception of Carboniferous Limestone and high psv gritstone in the YDNP). The figures provided in this Table are indicative and have been calculated by applying the % share that each rock type represents of total crushed rock sales (based on NYCC survey data for 2009, 2010 and 2011) to the total potential requirement crushed rock requirement for the period to 2030, in order to generate an indicative overall requirement for each rock type

100. The above assessment shows that, on the basis of this methodology for establishing future requirements, further reserves of sand and gravel would need to be made available to ensure an adequate and steady supply over the period to 2030. It is anticipated that at least the large majority of these reserves would need to be sourced from the NYCC area, primarily for geological reasons. The scale of the shortfall (27.5mt) may be impacted substantially by the outcome of a number of current planning applications for sand and gravel extraction which, in total, contain an estimated 25.3mt of reserves. If permitted, the reserves in these applications would eliminate the large majority of the identified shortfall. NYCC resolved in October 2012 to grant permission for one of these applications, containing an estimated 4.45mt, subject to completion of a legal agreement. For crushed rock the assessment suggests that, in overall terms, there are adequate reserves with permission to ensure adequate supply though to 2030.
101. Notwithstanding this overall assessment, it is necessary to consider whether there are any more specific factors which may impact on the expected availability of supply. Important factors may include:

- issues related to the availability of different types of aggregate (such as the different types of crushed rock) and the markets they serve
- the geographical distribution of reserves taking into account the large size of the sub-region and the wide geographical nature of markets served
- any expected major changes to the balance of overall supply from different types of aggregate (e.g. between crushed rock, sand and gravel, marine and secondary/recycled aggregates)
- planning and infrastructure constraints, including the fact that two of the MPAs in the sub-region are National Parks and these cover a large proportion of the geographical area of the sub-region
- potential influences on supply from factors external to the NY sub-region

102. These are considered further below. In the analysis that follows “near term”, “mid term” and “long term” are used to indicate issues that might arise over a time horizon of 0-5 years, 6-15 years and 16 years or beyond respectively.

i) Overall balance of supply from different types of aggregate

103. Available information suggests that a range of aggregates contribute to supply from the North Yorkshire sub-region and that the overall balance of supply between sand and gravel, crushed rock, secondary/recycled aggregate and marine aggregate is likely to remain broadly similar in the near term. However, the main factors that could influence this balance in the mid term and beyond are:

- Primary landwon aggregate – potential difficulty in identifying acceptable new locations for sand and gravel workings, given the relatively low level of the sand and gravel landbank, could have a significant impact on availability of supply in the mid-term and beyond and lead to a change in the overall balance of supply of aggregate from the sub-region. There is very limited potential for other parts of the sub-region to make up any shortfall in supply of concreting sand and gravel from the NYCC area.
- Secondary and recycled aggregate – the supply contribution from alternatives (secondary and recycled) could be influenced by changes in the availability and quality of supply from key secondary sources depending on the longer term success of the power generation and coal mining industries in the sub-region which give rise to them, leading to greater reliance on primary sources of aggregate. However, any such changes cannot be foreseen at this stage. There may be some potential for removal of potential secondary aggregate such as spoil or ash from established disposal sites at Barlow and Gale Common in Selby district. Such activity at the Gale Common ash disposal facility is subject to an annual limit of 30kt. Consultation suggests power station operators are actively seeking opportunities for increasing sales of ash as a secondary aggregate. There is also potential for a small increase in supply of secondary aggregate through Incinerator Bottom Ash from the proposed Allerton Waste Recovery Park development (see below).
- Marine aggregate - there may be potential for an increased contribution from marine aggregate supply in future. Although this may not impact substantially on markets within the sub-region, it could potentially impact on key markets outside the sub-region but served by it (particularly in the West and South Yorkshire areas). A study of this potential is currently being commissioned by minerals planning authorities within the Yorkshire and Humber area and is expected to be completed during 2013.

- Imports from elsewhere - potential for significantly increased importation of aggregate (particularly crushed rock) into markets currently served by the North Yorkshire sub-region (for example increased importation of limestone from Derbyshire into West and South Yorkshire displacing sales from the NY Sub-region).

ii) Availability of different main types of aggregate

104. There are a wide range of types of aggregate produced in the sub-region and to some extent these have differing capabilities to serve particular end uses. The following considerations are likely to be particularly important in the context of future supply:

- At a broad level different types of aggregate may be substitutable for certain types of end use. This factor has been recognised by the Competition Commission in their on-going investigation into the aggregates, cement and ready mix market<sup>26</sup>. In particular they note that, based on views expressed by the minerals industry, the use of one or other of sand and gravel or crushed rock appears to be largely influenced by geology and local availability and that *“sand and gravel aggregates are likely to be a close substitute for crushed rock aggregates for RMX<sup>27</sup> and concrete block production (where both are available) but are not a good substitute for crushed rock aggregates for use in asphalt applications, and may only be a partial substitute in general construction applications”*. At a NY sub-regional level, concreting purposes represents the predominant end use for primary aggregate (sand and gravel and crushed rock combined), representing over one-third of all sales of sand and gravel and crushed rock across the sub-region (and around 80% of all sales of sand and gravel from NYCC). This suggests there may, in principle, be potential for greater substitution of crushed rock for sand and gravel and that any shortfall in availability of sand and gravel could, to some extent, be made up through increased supply of crushed rock. Other important uses of aggregate produced in the sub-region (in terms of the proportion of overall sales) are crushed rock for coated and uncoated roadstone and constructional fill). These uses are less likely to be substitutable but given the scale of crushed rock reserves this is not likely to be of high significance.
- The Competition Commission also note that *“Secondary and recycled aggregates appear to be imperfect substitutes for primary aggregates because they cannot be used to replace primary aggregates in all applications. For low specification uses there is a substantial degree of substitutability. For the production of asphalt there also appears to be a substantial degree of substitutability, although the figures may be inflated by the inclusion of asphalt planings. For RMX and concrete block production there seems to be very little scope for substitution.”* (NB Consultation with power station operators during preparation of the LAA suggests that secondary aggregate is being used as a replacement for both RMX and block manufacture, with FBA being particularly important in concrete block manufacture). One power station operator has indicated that secondary aggregate sold from the station plays a substantial role as a replacement aggregate over an extensive area, replacing primary aggregates in Co. Durham, West and South Yorkshire and Humberside, Derbyshire, Cheshire and further afield. It is therefore possible that there is some potential for an increased proportion of supply to be provided by secondary and recycled aggregate, in substitute for some elements of sand and gravel supply, although it is not possible to quantify this.

<sup>26</sup> Eg Aggregates, Cement and Ready-mix Concrete Market Investigation: Updated Statement of Issues, Competition Commission 26 November 2012

<sup>27</sup> Ready Mixed Concrete

- Consultation with industry during preparation of the LAA suggests that substitution of sand and gravel for crushed rock is more likely to take place in the absence of availability of sand and gravel for concrete (eg for geological or planning reasons) and where the local market is accustomed to the practice, and that customers may still specify sand and gravel even where this is difficult or expensive to come by. Industry also comment that partial substitution already occurs for geological reasons with material sourced from North Yorkshire, for example mixing of coarse limestone aggregate in the NE region with sand and gravel fines from North Yorkshire, and therefore production of sand and gravel from North Yorkshire is likely to still be needed even if substitution becomes more likely. It was commented by industry that substitution has drawbacks including greater wear on plant and equipment, a more “hungry” mix of cement and aggregate and a greater average distance of sources of crushed rock to major markets, leading to increased carbon miles. Industry also expressed the view that the NY sub-region is not yet at a point where sand and gravel production cannot continue sustainably alongside crushed rock production for the long term.
- Available information suggests that marine sand and gravel may be capable of substituting for landwon sand and gravel for concreting purposes<sup>28</sup>. As noted earlier, the potential for increased supply of marine sand and gravel into the Yorkshire and Humber area is expected to be subject of further investigation during 2013.
- A recent decision by North Yorkshire County Council to grant permission for a major new waste recovery facility at Allerton Park Quarry in central North Yorkshire would, if the development is eventually implemented, lead to the production of up to 37kt per annum of recycled Incinerator Bottom Ash with potential for use as a secondary aggregate. This would represent a new and additional source of alternative aggregate in the sub-region.

### iii) Geographical distribution of reserves and markets

105. Reserves (and resources) of primary aggregate are not evenly distributed across the sub-region. The following considerations are likely to be particularly important in determining or influencing future supply:

- Sand and gravel reserves and the very large majority of resources are all located within the NYCC area, particularly within the north-central part of the NYCC area, but with significant potential resources and some reserves in the east around the Vale of Pickering. There is no realistic potential for the YDNP or NYMNP to contribute to supply and the potential for supply from the City of York is also likely to be very limited.
- Principle markets for sand and gravel are the internal North Yorkshire market, the North East Region and West/South Yorkshire. Available information suggests a relatively clear distinction between reserves in the northernmost part of NYCC which mainly serve markets in the NE region, and reserves elsewhere which serve markets within North Yorkshire and adjacent areas in West and South Yorkshire<sup>29</sup>. The landbank of reserves in both these areas is relatively low compared with sales. The geographical distribution of available reserves may, in future, affect the ability of NYCC to continue to meet current patterns of supply without increased haulage distances. Ongoing availability of sand and gravel in the Vale of Pickering area is

<sup>28</sup> E.g. The strategic importance of the marine aggregate industry to the UK (BGS Research Report, OR/07/019, 2007)

<sup>29</sup> Consultation on a draft of this LAA indicated support from the Mineral Products Association and Durham County Council to the maintenance of a sub-divided landbank for sand and gravel

likely to be important in maintaining local supply of aggregate in the Scarborough area without the need for long distance haulage.

- Crushed rock resources and reserves are more widespread across the sub-region than sand and gravel, with current reserves distributed approximately equally between the NYCC and YDNP areas. The overall scale of reserves of limestone currently available in both the NYCC and YDNP areas is such that near term changes in availability of supply or supply patterns are not expected. However, in the longer term it is likely that policy constraints to future working in the YDNP will impact on the availability of supply from that area, although this is not expected to be significant over the period to 2030. Reserves of high PSV gritstone in the YDNP are important in serving a wider geographical area with this relatively specialist product although, as noted elsewhere in this LAA, there are potential policy and environmental constraints to future availability of this material.
- Within NYCC reserves of Magnesian Limestone in relation to supply are relatively low. These reserves (and resources) are located mainly within the southern part of North Yorkshire, relatively remote from other sources of crushed rock in the sub-region. Future availability of supply of this material may become a factor in the mid term if the previous balance of supply between the different types of crushed rock worked in the NY sub-region is to be maintained. Resources of Jurassic Limestone in the Ryedale area of NYCC are also relatively remote from other sources of crushed rock and are likely to be important in maintaining a local source of supply of crushed rock in the eastern part of the sub-region. Near to mid term constraints on availability of this material are not envisaged.

#### iv) Planning and infrastructure constraints and issues

106. Planning and infrastructure issues and constraints may also impact on supply. Key factors which can be identified at this time include:

- Available information suggests that there are no immediate constraints on the overall supply of aggregate from the sub-region. However, constraints on supply of sand and gravel could arise in the relatively near term as a result of on-going depletion of the landbank, potentially impacting on security of supply to the North Yorkshire internal market, the West and South Yorkshire areas and into the North East Region. The potential for this may be influenced significantly by the outcome of a number of current planning applications for new sand and gravel reserves within the NYCC area, which in combination contain in excess of 20mt of sand and gravel. Potential reserves in these applications are split approximately equally between the NYCC northwards and southwards distribution areas. The potential substitutability of crushed rock for sand and gravel for concreting uses may help offset the potential effect of any reduced supply of sand and gravel.
- There are a number of important aggregates production sites in the sub-region where temporary planning permissions will expire over the next few years (see Appendix 1). The outcome of any applications for renewal of permission for these sites, as well as the potential for acceptable extensions in depth or area to release further reserves, could have a significant impact on availability of supply, particularly for sand and gravel but also for high PSV aggregate and Magnesian Limestone. Release of reserves at dormant sites (through agreement to new working and reclamation schemes) could also impact positively on longer term availability of crushed rock. In particular, submissions are currently being prepared by mineral operators for new schemes of working relating to dormant Carboniferous Limestone resources in the Leyburn area. If submitted and subsequently approved these schemes could add

significantly to the overall permitted reserve and landbank of crushed rock in the NYCC area.

- In the YDNP, Swinden and Horton Quarries are major producers of limestone aggregate and have planning permissions until 2030 and 2042 respectively. Both quarries have reserves that are adequate to maintain their planned levels of production over the currently permitted lives. These quarries are therefore expected to maintain their contribution to supplies of limestone aggregate, principally within the YH Region and to the NW Region.
- The three high PSV quarries in the YDNP, Dry Rigg, Arcow and Ingleton, currently have planning permission to 2021, 2015 and 2018 respectively. Comparable high PSV material is not available from other parts of the NY sub-region. Although potential future resources of high PSV material are limited by geological conditions at the three existing quarries, it is expected that planning applications will be submitted for additional reserves and/or extended lives at some of these sites at least. The operating company at Ingleton Quarry has indicated that an application for working additional reserves over an extended time period will be submitted in 2013. In addition, there are significant additional resources beneath the base of the Carboniferous Limestone in Horton Quarry. Only part of this resource has planning permission at present, but the operator has indicated the intention to seek planning approval to work the full resource. At this time, the planning authority does not have sufficiently detailed, publically available information to quantify these additional resources, but if approved these schemes would significantly increase the reserves of high PSV stone. These and related issues will be addressed in the new Yorkshire Dales Local Plan for which an Issues Consultation was published in November 2012. It is not expected that there will be a shortfall in supply in the short to medium term, but it is recognised that until schemes are submitted and approved the actual extent of future reserves cannot be stated with certainty. Accordingly discussions are ongoing with Cumbria County Council, the nearest authority with quarries producing high PSV stone, so that they remain aware of the current situation in YDNP. Detailed information about high PSV resources in the UK and related matters is contained in the Capita Symonds report: 'The Sustainable Use of High Specification Aggregates for Skid-Resistant Road Surfacing in England' (November 2004). This report was published in 2004 and it would be useful for the work to be brought up to date.
- With regard to major infrastructure constraints and opportunities which may impact on supply in overall terms, the recent reactivation of plans to upgrade the A1(T) to motorway standard between Leeming to Barton (announced in the Chancellors' Autumn budget statement in December 2012) may have implications for access to some areas of sand and gravel resource in the area south of Catterick, as well as potentially representing a significant source of demand for aggregate in the NY sub-region.
- The YDNP is in discussions with operating companies on the establishment of rail sidings to serve the Ribblesdale quarries. It is expected that a planning application will be received in 2013 for the construction of a rail siding at Arcow Quarry, that would be used to transport stone from both Arcow and Dry Rigg Quarries.
- The NPPF states that as far as is practical, landbanks of non-energy minerals should be provided for outside of National Parks and AONBs. As mentioned previously within this LAA, the fact that two of the MPAs in the sub-region are National Parks and that there are two AONBs in the NYCC area could have a significant bearing on the amount and pattern of aggregates production in the sub-region in the mid to long

term as a result of policy and environmental constraints. This will need to be addressed through the production of minerals plans.

- There are likely to be a range of other planning and environmental constraints to further aggregate extraction in the NYCC area, including landscape, historic environment and biodiversity constraints and the prevalence of airfield safeguarding zones, as well as accessibility issues taking into account the highly rural nature of the area.

v) Potential influences on supply from factors external to the NY sub-region

107. Available information demonstrates that there are significant flows of aggregate across the sub-regional boundary. As a substantial net exporter of a range of types of aggregate (with a correspondingly low relative reliance on imports) supply constraints outside the sub-region are unlikely to impact substantially on availability of aggregate supplies within it. However, it is possible that increased demand elsewhere (for example as a result of growing shortages of local supply in markets served by the NY sub-region) could increase demand for exports and/or lead to changes in the pattern of movements of aggregate across the sub-regional boundary. Possible influences that can be identified at this stage include:

- Growing shortfalls in concreting sand and gravel in the West and South Yorkshire areas (as identified in previous reports of the YHRAWP) leading to increased demand for aggregate worked in North Yorkshire. This would be most likely to impact on reserves in the NYCC southwards distribution area, which lie in closest proximity to the West and South Yorkshire areas, but could also place greater pressure on reserves in the northwards distribution area despite the longer haulage distances involved. Consultation with industry during preparation of this LAA resulted in the view that resources in West Yorkshire are likely to be less than indicated in Local Plans and that the only viable sources of sand and gravel to maintain supplies are in North Yorkshire, whereas the acute shortage of concreting sand and gravel in South Yorkshire is more likely to be made up by imports from the East Midlands. Pressure on NY sand and gravel resources to supply into West and South Yorkshire could also arise through any increasing constraints on supply of sand and gravel from other established supply areas such as the Idle Valley area in northern Nottinghamshire, as identified by Nottinghamshire County Council in background documents supporting preparation of the Nottinghamshire Minerals Local Plan<sup>30</sup>, although this issue is not mentioned specifically in the draft Local Aggregate Assessment consultation for Nottinghamshire published in November 2012. Consultation during preparation of this LAA has indicated that the proposed HS2 rail route through West Yorkshire transects two areas of search for sand and gravel, which could impact on availability of the resource.
- Any tendency for the latter effect to occur could have corresponding implications for the ability for the sub-region to continue to supply sand and gravel into the NE Region, which is the principle export market for sand and gravel worked in the sub-region.
- Increased demand for crushed rock for concreting purposes in the West and South Yorkshire areas, as a partial replacement for sand and gravel from NY or elsewhere, could place increased pressure on higher quality crushed rock reserves, including those in the Yorkshire Dales National Park. The extent to which any increased crushed rock supply from the East Midlands into the Y&H region might fulfil this role

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<sup>30</sup> Eg Nottinghamshire Minerals Local Plan Background Paper: Aggregates – sand and gravel. Options for meeting shortfalls. January 2012

instead could be significant in terms of the scale of any effect on the NY sub-region. The existence of substantial reserves and resources of crushed rock in Derbyshire, compared to many other areas of the country, along with the importance of maintaining supply, is acknowledged in the draft Local Aggregates Assessment for Derbyshire County Council, Derby City Council and the Peak District National Park (September 2012).

- Potential increased supply of marine aggregate into the main urban centres in West and South Yorkshire as an alternative to land won supply could affect future supply patterns from the NY sub-region. The extent to which this may occur is currently unknown.
  - Potential imports from further away (including from overseas sources) in response to increased road haulage costs of other commercial factors. The extent to which this may occur is currently unknown.
108. The likelihood of any of the above issues arising and the extent to which they may impact on availability of aggregate will be strongly influenced by a range of factors, including commercial decisions taken by industry. They are identified here in order to facilitate monitoring of future trends in supply patterns and to help inform coordination between relevant mineral planning authorities within and around the Yorkshire and Humber area.
109. Overall this assessment concludes that there is no basis to assume a substantially different pattern of supply in the near term, compared to that which has operated in recent years, although in the mid to longer term it is more likely that changes in supply patterns may start to occur in response to some of the factors identified above. This assessment will need to be kept under review in order to identify any emerging trends in supply and demand.

### **Conclusions on future supply capability**

110. Available information suggests that the following conclusions regarding the capability of the North Yorkshire sub-region to maintain future supply of aggregate would be reasonable:
- A) Crushed rock supply
111. There is good potential to maintain the overall supply of limestone crushed rock from within the sub-region over the period to 2030 at levels similar to those sustained in recent years and in line with the indicative requirements set out in Table 22 above. This would be dependent on ongoing supply of currently permitted resources from within the Yorkshire Dales National Park and from within AONBs in NYCC.<sup>31</sup> However, unless new permissions are granted, and if recent levels of sales are maintained, there is potential for reserves of high PSV aggregate and Magnesian Limestone to be significantly reduced in the mid term.
112. In the longer term, maintenance of an adequate overall supply of crushed rock is likely to be dependent on the granting of permissions for an extension of the time period for completion of development at some quarry sites and extensions to working areas (where possible) would be needed at some sites in order to maintain an adequate overall level of production capacity, unless output at other remaining sites could be increased. A range of physical, economic and environmental constraints could impact on this. It is also likely that resources in dormant sites would be able to make some contribution to crushed rock supply in the mid term and beyond.

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<sup>31</sup> Durham County Council, in response to consultation on a draft of this LAA, has indicated that it expects to be able to continue supply of Carboniferous Limestone crushed rock within the NE Region and into adjoining sub-regions (which would include the North Yorkshire Sub-region), in line with historic sales.

#### B) Sand and gravel supply

113. Ongoing supply of sand and gravel from the sub-region is dependent on the availability of supply from the NYCC area, for geological reasons. In the absence of new reserves being brought forward, current reserves would become exhausted in the mid-term. This would have a substantial impact on supply into the adjacent NE Region and elsewhere in the Yorkshire and Humber Region.
114. Supply constraints outside the NY sub-region, and the probable lack of opportunity for development of alternative sand and gravel resources within the sub-region but outside the NYCC area, are likely to result in the strategic significance of NYCC's resources of concreting sand and gravel being maintained or increased over time<sup>32</sup>.
115. The outcome of a number of current planning applications for sand and gravel working in NYCC will be important in determining the future scale of any additional provision that may be required over the period to 2030. Maintenance of supply will also be influenced by the ongoing availability of reserves at a number of sites subject to temporary permissions and where the current expiry date is likely to pre-date exhaustion of current permitted reserves.
116. The extent of any trend to substitute (or partially substitute) crushed rock for sand and gravel for certain key end uses such as ready-mix concrete may also have an impact on supply and requirements in future (see para 104). It is unlikely that any reserves in dormant sites would have a significant direct impact on the overall sand and gravel supply position. There is less pressure on reserves of building sand but some additional resources are likely to be needed to maintain supply in the mid to longer term.

#### C) Marine aggregate supply

117. Data suggests that the current contribution from marine aggregate to overall supply of aggregate within the NY sub-region is relatively small. The expected ongoing availability of resources in dredging areas in the Humber dredging region, together with the availability of existing landing infrastructure in the Humber and Tees Estuaries (outside but relatively close to the NY sub-region) suggests that there is potential for this supply to be maintained.
118. The Crown Estate has identified potential for a significant increase in supply of marine sand and gravel into the Yorkshire and Humber region. Should such a scenario occur it may impact on the scale of future requirements for landwon aggregate from the NY sub-region in the mid to longer term. Further work is being commissioned to consider the deliverability of this. In the meantime it is considered reasonable to assume that the proportion of overall supply in both the Yorkshire and Humber region and the NY sub-region will remain broadly static.

#### D) Secondary aggregate supply

119. It is reasonable to assume that there is capability to maintain supply of secondary aggregate at levels similar to those prevailing in recent years, at least in the near term. It is

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<sup>32</sup> Durham County Council indicates, in response to consultation on a draft of this LAA, that on the basis of current and expected permitted reserves, it may be able to make a greater contribution to supply of sand and gravel into the adjacent Tyne and Wear and Tees Valley sub-regions as well as being self-sufficient in its own needs

likely that levels of supply of some secondary aggregate, particularly PFA and colliery spoil, could be increased if suitable markets could be identified. However, availability of secondary aggregate within the sub-region is directly linked to the future success of those industries which give rise to them. Any unforeseen change such as the closure of a major producer could impact significantly on availability of secondary aggregate and place correspondingly greater pressure on other aggregate resources in the sub-region (or lead to alternative, more remote sources of supply, being used, or the re-location elsewhere of existing operations reliant on supply of such materials). There may also be the potential for the marketability of secondary aggregate to be impacted adversely by the expected partial conversion of current electricity generation capacity in the sub-region from coal to biomass burning. However, there are large volumes of power station ash and colliery spoil in existing disposal facilities (at Barlow and Gale Common ash disposal facilities and Womersley spoil disposal facility) which could represent a potential ongoing source of supply. Upward revision of the current 30kt per annum limit on export of ash from the Gale Common site could theoretically increase supply from this particular source.

120. There is potential for a new, relatively small scale, supply of secondary aggregate to become available in the near term in the form of Incinerator Bottom Ash from the proposed Allerton Waste Recovery Facility in central NYCC. This would provide a source of secondary aggregate in a part of the NY sub-region away from current secondary sources, which are all located in Selby District.

#### E) Recycled aggregate supply

121. Good quality data on the supply, or availability, of recycled aggregate does not exist. In the absence of more data it is considered reasonable to assume that, in line with the position understood to prevail generally across the country, the majority of material potentially suitable for use as recycled aggregate is already put to beneficial use. Production of this first LAA has not revealed any specific data that would suggest that an alternative position prevails in the NY sub-region. It is therefore considered realistic to assume that the proportionate contribution to overall supply from recycled aggregate sources in the sub-region is likely to remain broadly on line with levels prevailing over recent years.

#### F) Imports from elsewhere

122. Available information suggests that imports of aggregate into the NY sub-region are currently relatively small, both in absolute terms and particularly as a proportion of total consumption. However, the existence of some rail linked infrastructure in the Selby area, currently used for the import of aggregate on a relatively small scale, suggests that there is some potential for import of aggregate from sources a significant distance away. The extent to which this may occur in future is likely to be dependent on commercial decisions by industry as well as the continued availability of the necessary transport infrastructure.
123. Greater potential for significantly increased rail haulage of aggregate from more remote sources is likely to exist for imports into major urban areas in and around the West and South Yorkshire. This could have an indirect impact on supply from the NY sub-region by offsetting some of the demand currently met by supply from the sub-region and/or could help mitigate the impact of any shortfall in supply from the sub-region that may emerge in the mid or longer term. The existence of very substantial resources of limestone in the East Midlands region, including at sites with rail links, may be relevant in this respect.

## **Key messages for minerals plans, cross-boundary liaison and future review**

### Key messages for local planning in the NY sub-region

124. Taking into account the range of information presented in this first LAA for the NY Sub-region, a number of key messages emerge which are likely to be of relevance to preparation of minerals local plans in and around the sub-region. These are summarised below:

1) Assessment of future supply requirements on the basis of 10 year average sales is considered appropriate for those parts of the sub-region outside the National Parks.

2) There is a need to address future provision of concreting sand and gravel from the NYCC area to ensure on-going supply capability for the sub-region. An indicative shortfall of around 27.5mt has been identified in this assessment. The actual scale of new provision needed to be made will be influenced by the outcome of a number of current planning applications for sand and gravel working, as well as the potential for any contribution to sand and gravel supply from the City of York area (see below).

3) Updated assessment of potentially viable sand and gravel resources for the City of York area, in order to further evaluate the potential for the supply of sand and gravel from that authority area, would be beneficial in informing the evidence base for minerals plans.

4) In order to maintain current supply patterns without increasing overall haulage distances, it is likely that further sand and gravel provision in both the NYCC northwards and southwards distribution areas would be needed.

5) Some further provision of building sand (an indicative total of 0.8mt) is also likely to be required in order to maintain supply over the period to 2030.

6) Consideration should be given to the extent to which further resources of Magnesian Limestone should be made available from within the NYCC area, in order to maintain a balance of supply between the main types of crushed rock currently worked in the area.

7) Consideration should also be given to the extent of any potential to maintain supply of high PSV aggregate from the YDNP area. Liaison between Cumbria County Council and the YDNPA in relation to supply of high PSV aggregate would be useful and is already taking place.

8) A number of existing quarry sites are likely to require extensions of time and/or extensions in working area in order to maintain the broad level and distribution of production capacity that currently exists.

### Key issues for cross-boundary liaison

125. Preparation of this LAA has also identified a number of important cross-boundary relationships relevant to aggregate supply within or from the NY sub-region and to which consideration should be given during the preparation of minerals plans. These include:

#### A. Imports

1) Stockton on Tees and Tyneside Councils in respect of imports of marine sand and gravel

- 2) East Riding Council in respect of imports of land won sand and gravel
- 3) Durham Council in respect of imports of crushed rock and sand and gravel
- 4) Cumbria County Council in respect of imports of crushed rock and sand and gravel
- 5) Derbyshire County Council in respect of imports of crushed rock
- 6) Wakefield Metropolitan District Council in respect of imports of crushed rock

#### B. Exports

- 1) Sand and gravel and crushed rock exports from the NYCC area to the North East Region (expected to include particularly Durham and the Tees Valley authorities)
- 2) Crushed rock exports from the YDNP to the NW region (expected to include particularly Lancashire, Cumbria and Greater Manchester)
- 3) Crushed rock exports from both the YDNP and NYCC area to destinations elsewhere in Yorkshire and Humber, particularly in West and South Yorkshire
- 4) Sand and gravel exports from NYCC to West and South Yorkshire

#### Key matters that should be kept under review

126. In addition to routine monitoring of sales, reserves and landbanks, preparation of this first LAA has identified a number of issues where on-going monitoring and/or review will be particularly important. These are:
- 1) The potential for increased supply of marine aggregate into main markets currently served by landwon concreting aggregate from the NY sub-region should be considered further when more evidence becomes available.
  - 2) The trend in the balance of supply between land won sand and gravel and crushed rock from the sub-region should be monitored.
  - 3) The potential for significant change in the availability of supply of secondary aggregate from key sources, as well as the potential introduction of any significant new sources, should be kept under review.
  - 4) Where practicable, the trend in balance of consumption met by imports from outside the sub-region should be monitored, as well as the extent to which imports from elsewhere may impact on supply into key markets currently served by the NY sub-region.
  - 5) Where practicable, the trend in balance of exports from the sub-region to key external markets should be monitored.
  - 6) Delivery, or proposed delivery, of any significant new aggregates minerals supply infrastructure or infrastructure that may impact on supply of aggregate.
  - 7) Monitoring and review of aggregates supply matters would be facilitated by the re-establishment of an Aggregates Working Party covering the Sub-region.

## Appendix 1 – Information relating to specific sites and facilities

Aggregates quarries in the NYCC area (with active permissions <sup>33</sup> )	Location	Status at August 2012	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer term = 16 years +)
Crushed rock quarries				
<i>Carboniferous Limestone</i>				
Skipton Rock	Craven District	Mothballed	Large reserves but not been worked for extensive period of time. The only active crushed rock permission in the Craven area of NYCC. Permission expires in 2042,	Longer term supply capability uncertain
Pateley Bridge	Harrogate Borough	Active	Largest production unit in NYCC area. Remote location in AoNB but supplies markets in West Yorks. Extraction permitted until 2047, estimated 17 years' worth of reserves in 2011	May become exhausted around 2030
Barton/Duckett Hill	Richmondshire District	Mothballed	Close to NYCC boundary with NE region. Proximity to A1(M). Recent permission for extension, Estimated life of site is to 2028 or beyond	May become exhausted around 2030
Forcett	Richmondshire District	Active	Close to NYCC boundary with NE region. In close proximity to A66. Permission currently expires in 2016,	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term
Leyburn	Richmondshire District	Active	Located on edge of Yorkshire Dales and is close to Wensley Quarry. Relatively remote from SRN. Permission for extraction until 2042. Have shared dormant reserves with Wensley Quarry in adjoining Cote Pastures IDO area	Potential to maintain supply to 2030 and beyond
Melsonby	Richmondshire District	Active	Located close to NYCC boundary with NE region. Worked intermittently and is also permitted to produce building stone. Permission expires end 2017.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term
Wensley	Richmondshire District	Active	Located on edge of Yorkshire Dales and is close to Leyburn Quarry.	Potential to maintain supply to 2030 and beyond

<sup>33</sup> Active permissions are sites with valid permissions which may be working or mothballed on a temporary basis (and for which new working and reclamation schemes are not required before working can recommence)

Aggregates quarries in the NYCC area (with active permissions <sup>33</sup> )	Location	Status at August 2012	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer term = 16 years +)
			Relatively remote from SRN. Permission for extraction until 2042. Have shared dormant reserves with Leyburn Quarry in adjoining Cote Pastures IDO area	
<i>Magnesian Limestone</i>				
Potgate	Harrogate Borough	Active	Located north of Ripon and mainly supplies the North Yorkshire market. Has permission for extraction until June 2022. Application for extension recently submitted	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term
Gebdykes	Hambleton District	Active	Located north of Masham and mainly supplies the North Yorkshire market. Permitted for extraction until 2040	Potential to maintain supply to 2030 and beyond
Barnsdale Bar	Selby District	Active	Located near to southern boundary of Selby District adjacent to A1(M). Part of the site now falls within the adjoining Doncaster Metropolitan Council area. Permitted for extraction until 2025, Estimated remaining reserve of 8 years.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term
Brotherton/Foxcliffe	Selby District	Mothballed	The site is near the A1(M) in the Selby District. It has been mothballed since 2008 due to the economic downturn. Permitted for extraction until December 2016, Estimated lifespan of 2 years from recommencement.	Limited future supply capability. Extension of time may be needed to maintain supply capability in near term
Smeaton/Went Edge	Selby District	Active	Located near the NYCC boundary with Wakefield, close to the A1(M). The current permission is unlimited although extraction on the site is allowed until 2042. Application for extension recently submitted	
Jackdaw Crag	Selby District	Active	Located near Tadcaster in Selby District. Application for extension currently under consideration. Current permission allows extraction until 2014	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term
Darrington Quarry	Selby District	Extraction complete in	Straddles the boundary with Wakefield.	Output from this site contributes to NYCC

Aggregates quarries in the NYCC area (with active permissions <sup>33</sup> )	Location	Status at August 2012	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer term = 16 years +)
		North Yorkshire	Extraction in North Yorkshire complete, with working continuing in Wakefield area. Mineral is processed in North Yorkshire. Current permission for processing site expires in December 2012, but application submitted to extend this by 20 years.	sales but no corresponding reserve in NYCC area. Reserve within Wakefield expected to last into longer term
Newthorpe Quarry	Selby District	Mothballed	Located near the boundary with Wakefield. Currently mothballed due to economic downturn. Estimated life span is 20 years from recommencement. Permission for extraction runs until 2042	Potential to maintain supply to 2030 and beyond
<i>Jurassic Limestone</i>				
Newbridge	Ryedale District	Active	Located near Pickering in the Ryedale District and supplies the North Yorkshire area. Permission was granted in 2009 to extend the site. Permission expires in 2022.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term
Settrington	Ryedale District	Active	Located on the outskirts of Malton in Ryedale. It is a relatively small quarry. The expiry date for the permission is January 2015	
Wath	Ryedale District	Active	Located near Hovingham in Ryedale and in the Howardian Hills AONB. Permission expires in October 2023.	Estimated remaining life of 20 years at end 2012. Extension of time may be needed to maintain supply capability in mid term
Whitewall	Ryedale District	Active	Located south of Norton in Ryedale and is a relatively small quarry. Permission expires in 2023. Estimated remaining life of the current reserves is 12 years	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term
Hovingham	Ryedale District	Mothballed	Located near Hovingham in the Ryedale District. Currently mothballed. It is located in the Howardian Hills AONB and the permission runs until February 2042	Longer term supply capability uncertain
<i>Chalk</i>				
Knapton	Ryedale District	Mothballed	Located east of Malton and has produced chalk but further working not	No significant future supply capability?

Aggregates quarries in the NYCC area (with active permissions <sup>33</sup> )	Location	Status at August 2012	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer term = 16 years +)
			expected. Restoration of the site is to be complete by 2037	
Flixton	Scarborough Borough	Mothballed	Near Flixton Village in Scarborough District. Has produced chalk. Permitted until 2042 but is currently mothballed.	Limited future supply capability?
Sand and gravel quarries				
<i>Concreting sand and gravel</i>				
Allerton Park	Harrogate Borough	Active	Reserves now exhausted	No significant future supply capability
Marfield	Harrogate Borough	Active	Located north of Masham. An application to extend the site is currently under consideration. Current permission allows extraction until 2020. Estimated lifespan of the current permitted area is approximately 11 years.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term
Ripon	Harrogate Borough	Active	Located near North Stanley, north of Ripon. An application to extend the site is currently under consideration. Current permission allows extraction until 2015. Estimated 7 years reserves in the current permitted area.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term. Site is subject of current application for extension (4mt/13-15 years)
Ripon City	Harrogate Borough	Active	Located to the south east of Ripon. Extension recently permitted with 7 year life.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term
Manor House Farm	Hambleton District	Mothballed	Also known as Ellerton Quarry. Sand and gravel was transported to neighbouring Kiplin Hall Quarry for processing but this has now ceased. Site is currently mothballed. The permission is due to expire in December 2030	
Nosterfield	Hambleton District	Active	Located 8km north of Ripon near West Tanfield. Adjacent to Thornborough Henges Scheduled Ancient Monument. An application to extend the site is currently under consideration. Currently permitted for extraction	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term

Aggregates quarries in the NYCC area (with active permissions <sup>33</sup> )	Location	Status at August 2012	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer term = 16 years +)
			until October 2014. with approximately 3 years reserves remaining	
Bridge Farm/Palmet Hill	Richmondshire District	Active	Located north of Catterick Village. Permission for extraction runs until 2017	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term
Kiplin Hall	Richmondshire District	Closed	Located just north of Great Langton in Richmondshire. Extraction completed in 2011 and site is currently being restored. Plant authorised to be retained until 2017	May have future supply capability to process material from adjacent Ellerton site
Scorton	Richmondshire District	Active	Located near Scorton in Richmondshire and incorporates the previously separate Tancred Quarry site. Permission authorises extraction until 2017	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term
Ings Farm	Ryedale District	Active	Small site located near Yedingham in Ryedale District. Produces small amount of sand and gravel. Permitted for extraction until 2042	
Wykeham	Scarborough Borough	Active	Located 6km west of Scarborough. Permission for an extension has recently been granted, subject to completion of a legal agreement. Current permission expires in 2014. Expected life of new permission is 20 years from commencement of development.	Supply capability to 2030 and beyond subject to granting of permission
<i>Building sand</i>				
West Heselton	Ryedale District	Active	Building sand site located in Ryedale district. A screening opinion relating to potential extension of the site has been sought. Permission for extraction currently until 2020. Estimated remaining reserves of 7 years	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term
Mill Balk	Selby District	Mothballed	Building sand site located in Selby District. Site is currently mothballed. Permitted until February 2042	
Hensall	Selby District	Active	Building sand site located in Selby district.	Extension of time and/or extension to

Aggregates quarries in the NYCC area (with active permissions <sup>33</sup> )	Location	Status at August 2012	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer term = 16 years +)
			Permission runs until 2031. Estimated remaining lifespan of reserve c.15 years.	permitted working area may be needed to maintain supply capability beyond mid term
Dormant aggregates sites/permissions <sup>34</sup>				
Crushed rock				
<i>Carboniferous limestone</i>				
Hambleton	Craven District	Dormant		No known
Black Scar	Richmondshire District	Dormant		Not known
Breckonborough	Richmondshire District	Dormant		Not known
Cote Pastures	Richmondshire District	Dormant	Reserves of 29.5mt in recent ROMP submission.	
Harmby	Richmondshire District	Dormant		Not known
Long Acres	Richmondshire District	Dormant		Not known
<i>Jurassic limestone</i>				
Cropton	Ryedale District	Dormant		Not known
Laysthorpe	Ryedale District	Dormant		Not known
<i>Magnesian limestone</i>				
Lodge	Selby District	Dormant		Not known
<i>Building sand</i>				
Saintoft Grange	Selby District	Dormant		Not known
Beal	Selby District	Dormant		Not known
Intake Lane	Selby District	Dormant		Not known

Table 26: Minerals sites and dormant permissions within North Yorkshire County Council Plan Area

Aggregates quarries in the YDNP area (with active permissions <sup>35</sup> )	Location	Status at August 2012	Comment on significance
Crushed rock quarries			
<i>Carboniferous Limestone</i>			
Horton Quarry	Horton in Ribblesdale, Settle	Active	Supplies limestone aggregate mainly to Greater Manchester, Lancashire and North Yorkshire. Existing permission until 2042
Swinden Quarry	Cracoe, Grassington	Active	Supplies limestone aggregate to Yorkshire and Humber and the North West. Rail linked with trains to Leeds, Hull and Teesside (non-aggregate). Existing

<sup>34</sup> Dormant permissions are sites with permissions but where working cannot recommence until new schemes of working and reclamation have been agreed.

<sup>35</sup> Active permissions are sites with valid permissions which may be working or mothballed on a temporary basis (and for which new working and reclamation schemes are not required before working can recommence)

			permission until 2030
<i>High PSV aggregate</i>			
Arcow Quarry	Helwith Bridge, Settle	Active	High PSV stone supplied mainly to North and West Yorkshire, Greater Manchester and Lancashire. Existing permission until 2015
Dry Rigg Quarry	Helwith Bridge, Settle	Active	High PSV stone, including for slurry seals, with sales throughout Great Britain. Existing permission until 2021
Ingleton Quarry	Ingleton	Active	High PSV stone, including for surface dressing, with sales mainly to North and West Yorkshire. Existing permission until 2018

Table 27: Minerals sites within the Yorkshire Dales National Park

Significant rail/water transport infrastructure in the NY sub-region	Location (MPA area and District if applicable)	Status at August 2012	Comment
<i>Transport</i>			
<i>Railheads/ railway sidings</i>			
Swinden Quarry	YDNP	Active	Railhead, aggregate trains to Leeds, Hull and non-aggregates to Teesside
Ribblehead	YDNP	Not currently used for minerals transport	Railhead, previously used for aggregate but used for timber trains at present.
Kellingley Colliery railhead	NYCC, Selby District	Active	Transports coal to power stations
Eggborough Power Station railway sidings	NYCC, Selby District	Active	Coal transported from Immingham/Goole
Selby Depot railhead	NYCC, Selby District	Active	Cemex and Potter Group transport aggregates
Great Heck railhead	NYCC, Selby District	Active	Plasmor and Tarmac transport lightweight blocks and aggregate
Gascoigne Wood railway sidings	NYCC, Selby District	Not currently used for minerals transport	Formerly used to transport coal to Drax Power Station. Mining ceased in 2004
Drax Power Station railway sidings	NYCC, Selby District	Active	Transportation of gypsum, coal and secondary aggregate
Hellifield railway sidings	NYCC, Craven District	Not currently used for minerals transport	Lafarge investigating creating a railhead for transporting aggregate as a potential alternative to a railhead at Arcow/Dry Rigg
Milford railway sidings	NYCC, Selby District	Not currently used for minerals transport	Between Ferrybridge and Monk Fryston
Redmire railway sidings and railhead	NYCC, Richmondshire District	Not currently used for minerals transport	Previously used for minerals transport from former Redmire Quarry. Could load under license
Boulby Mine	NYMNP	Active	Transport potash and other minerals from Boulby mine
<i>Wharves</i>			
Kellingley Colliery canal wharf	NYCC, Selby District	Not currently used for	Coal and colliery spoil have been transported in

Significant rail/water transport infrastructure in the NY sub-region	Location (MPA area and District if applicable)	Status at August 2012	Comment
		minerals transport	the past, but not currently used for freight
Whitley Aire and Calder Navigation Canal, A19 crossing	NYCC, Selby District	Not currently used for minerals transport	No longer used for freight, currently in private ownership
Whitby Port	NYCC, Scarborough District	Not currently used for minerals transport	Not usually used for freight
River Ouse, Nr Drax Power Station	NYCC, Selby District	Active	Transports ash from Drax to Goole Dock for export to Europe. Has been used for the transport of secondary aggregate
River Ouse, Westfield Foods Wharf, Selby	NYCC, Selby District	Not currently used for minerals transport	Occasional use for rice transport
River Ouse, Bridge Wharf, Selby	NYCC, Selby District	Not currently used for minerals transport	Under development but mooring facilities retained
River Ouse, Ousegate Wharf, Selby	NYCC, Selby District	Not currently used for minerals transport	Under development
River Ouse, Potter Group, Selby	NYCC, Selby District	Not currently used for minerals transport	Maintain wharfage rights along river frontage, not been used for some time
River Ouse, BOCM, Olympia Mill Wharf, Selby	NYCC, Selby District	Not currently used for minerals transport	Not currently used, in poor condition.

Table 28: Transport infrastructure used (or with potential for) minerals transport in NY sub-region

Ancillary minerals infrastructure	Location (MPA area and district if applicable)	Status at August 2012	Comment
<i>Concrete batching</i>			
Fairfield Way, Whitby Business Park	NYMNP/Scarborough District	Active	Stand alone facility
Snaygill Industrial Estate, Skipton	NYCC/Craven District	Active	Stand alone facility
Standard Way, Northallerton	NYCC/Hambleton District	Active	Stand alone facility
Thirsk Industrial Estate, Thirsk	NYCC/Hambleton District	Active	Stand alone facility
Pickhill, Thirsk	NYCC/Hambleton District	Active	Stand alone facility
Eldmire Mill, Dalton, Thirsk	NYCC/Hambleton District	Active	Stand alone facility
Ure Bank Top Quarry, Ripon	NYCC/Harrogate District	Active	Part of mineral site
Allerton Park Quarry, Harrogate	NYCC/Harrogate District	Active	Part of mineral site
Ripon Quarry, Ripon	NYCC/Harrogate District	Active	Part of mineral site
Ripon City Quarry, Ripon	NYCC/Harrogate District	Active	Part of mineral site
Marfield Quarry, Masham	NYCC/Harrogate District	Active	Part of mineral site
The Old Station Yard, Milby, Boroughbridge	NYCC/Harrogate District	Active	Stand alone facility
Potgate Quarry, Ripon	NYCC/Harrogate District	Active	Part of mineral site
Wath, Ripon	NYCC/Harrogate District	Active	Stand alone facility
Black Quarry, Leyburn	NYCC/ Richmondshire District	Active	Part of mineral site
Palsett Hill Quarry, Catterick	NYCC/ Richmondshire District	Active	Part of mineral site
The Gravel Works, Brompton on Swale	NYCC/ Richmondshire District	Active	Stand alone facility
Forcett Quarry, Richmond	NYCC/ Richmondshire District	Active	Part of mineral site

Ancillary minerals infrastructure	Location (MPA area and district if applicable)	Status at August 2012	Comment
Low Grange Farm, Richmond	NYCC/ Richmondshire District	Active	Part of mineral site
Walkerville Industrial Estate, Catterick	NYCC/ Richmondshire District	Active	Stand alone facility
Barton Quarry, Darlington	NYCC/ Richmondshire District	Active	Part of mineral site
Scorton Quarry, Catterick	NYCC/ Richmondshire District	Active	Part of mineral site
Nosterfield Quarry, Bedale	NYCC/Hambleton District	Active	Part of mineral site
Showfield Lane, Malton	NYCC/Ryedale District	Active	Stand alone facility
Whitehall Quarry, Malton	NYCC/Ryedale District	Active	Part of mineral site
Barry's Lane, Seamer Road, Scarborough	NYCC/Scarborough District	Active	Stand alone facility
Wykeham Quarry, Wykeham, Scarborough	NYCC/Scarborough District	Active	Part of mineral site
Hunmanby Industrial Estate, Filey	NYCC/Scarborough District	Active	Stand alone facility
Cochranes Shipyard, Selby	NYCC/Selby District	Active	Stand alone facility
The Old Quarry, Long Lane, Heck, Selby	NYCC/Selby District	Active	Stand alone facility
Bawtry Road, Selby	NYCC/Selby District	Active	Stand alone facility
Outgang Lane, Osbaldwick, York	York CC	Active	Stand alone facility
Pigeon Cote Industrial Estate, Monks Cross, York	York CC	Active	Stand alone facility
Tarmac, Auster Road, York	York CC	Active	Stand alone facility
Elvington Industrial Estate	York CC	Active	Stand alone facility
Hazel Court, James Street, York	York CC	Active	Stand alone facility
<i>Roadstone Coating</i>			
Halton East Quarry, Harrogate	NYCC/Harrogate	Active	Stand alone facility
Skipton Rock Quarry, Skipton	NYCC/Skipton	Active	Part of mineral site
Pateley Bridge Quarry, Harrogate	NYCC/Harrogate	Active	Part of mineral site
Potgate Quarry, Ripon	NYCC/Harrogate	Active	Part of mineral site
Black Quarry, Leyburn	NYCC/Richmondshire	Active	Part of mineral site
Forcett Quarry, Richmond	NYCC/Richmondshire	Active	Part of mineral site
Barton Quarry, Richmondshire	NYCC/Richmondshire	Active	Part of mineral site
Selby Asphalt and recycling centre	NYCC/Selby	Active	Stand alone facility
<i>Block making</i>			
Bridge Road, Brompton on Swale, Catterick	NYCC/ Richmondshire District	Active	Stand alone facility
Ricall Airfield, Barlby, Selby	NYCC/Selby District	Active	Stand alone facility
The Old Quarry, Long Lane, Heck, Selby	NYCC/Selby District	Active	Stand alone facility
Drax Power Station, Selby	NYCC/Selby District	Active	Stand alone facility

Table 29: Minerals supply infrastructure for NY sub-region

## Appendix 2 – further information on movements of aggregate into the Sub-region

The information in this appendix is intended to supplement information on minerals movements already provided in the main body of the LAA. It is based on further information supplied by BGS utilising data in the 2009 Collation of Aggregate Minerals Surveys for England and Wales. Due to the methodology by which sub-regional data was collected and collated during the Aggregates Minerals Survey process, it is not possible to break the data down to MPA level, so it was supplied by BGS at sub-regional level. In order to preserve confidentiality, BGS supplied the data on imports from outside the NY sub-region grouped on a percentage range basis, reflecting the contribution made by various MPAs to total supply in the sub-region. Data was provided as a % of total sub-regional consumption (i.e. imports plus indigenous supply combined) met by imports of either marine dredged aggregate, sand and gravel or crushed rock. The percentage range figures provided by BGS were then converted to tonnage ranges, by applying the percentage range figures to total known sub-regional consumption expressed in tonnes, thereby providing the indicative volume of sub-regional consumption met by imports from particular MPA sources.

In order to gain an indication of the relative significance of imports, data on known total consumption was also used to express the indicative volume of imports from each source as a percentage of total sub-regional consumption. Sales from each producing area, where known, were also used to provide an indication of the proportion of total sales from the source MPA that the export to the North Yorkshire sub-region represents. The information is summarised in the following Table.

Movement	2009			
	% of total NY sub-regional consumption for this aggregate type that the import represents**	Tonnage kt (% range from column 1 expressed as tonnage, based on total sub-regional consumption derived from Table 12)	% of recipient consumption for sand and gravel or crushed rock	% of producer sales
Marine sand and gravel supplied to North Yorks sub region from South Tyneside	50 to 60	20 to 24	2.5 to 3	Unknown
Marine sand and gravel supplied to North Yorks sub region from Stockton –on-Tees	40 to 50	16 to 20	2 to 2.5	Unknown
Land won sand and gravel supplied to North Yorks sub region from quarries within North Yorks	78	600	74	35
Land won sand and gravel supplied to North Yorks sub region from quarries within East Riding	5 to 10	38 to 60	5 to 7	4 to 7
Land won sand and gravel supplied to North Yorks sub region from quarries within Doncaster	1 to 5	8 to 38	1 to 5	1 to 3
Land won sand and gravel supplied to North Yorks sub region from quarries within Durham	1 to 5	8 to 38	1 to 5	4 to 19
Land won sand and gravel supplied to North Yorks sub region from quarries within Cumbria	1 to 5	8 to 38	1 to 5	2 to 7
Crushed rock supplied to North Yorks sub region from quarries within North Yorks	63	1463	63	56
Crushed rock supplied to North Yorks sub region from quarries within Yorkshire Dales NP	17	395	17	15
Crushed rock supplied to North Yorks sub region from quarries within Cumbria	5 to 10	116 to 232	5 to 10	4 to 8

Movement	2009			
	% of total NY sub-regional consumption for this aggregate type that the import represents**	Tonnage kt (% range from column 1 expressed as tonnage, based on total sub-regional consumption derived from Table 12)	% of recipient consumption for sand and gravel or crushed rock	% of producer sales
Crushed rock supplied to North Yorks sub region from quarries within Derbyshire	5 to 10	116 to 232	5 to 10	1 to 3
Crushed rock supplied to North Yorks sub region from quarries within Durham	1 to 5	23 to 116	1 to 5	1 to 6
Crushed rock supplied to North Yorks sub region from quarries within Wakefield	1 to 5	23 to 116	1 to 5	3 to 13

*Table:30 Known imports to the NY sub-region by MPA origin and by mineral type, including information on the % share of producer sales and recipient consumption that the movement represents for 2009*  
Data based on AM2009 and the collation of the results of the 2009 and 2005 Aggregates Monitoring Surveys unless otherwise indicated by \*\*

\*\* Sub regional data supplied by BGS on request (in some cases as a % range)

### Discussion on the main inter-relationships identified and their relative significance.

The data shows that there are substantial exports from the sub-region of both crushed rock and sand and gravel, with the former being most significant in volume terms. There are substantial exports to destinations both within and beyond the boundary of the Yorkshire and Humber region. The principle export destinations within the Region are West and South Yorkshire. Principal export destinations outside the Region are the North West and North East regions.

Some data is available on exports by MPA origin and this suggests that the most significant movements are exports of crushed rock from the YDNP to destinations outside the Y&H region, particularly to the North West Region, and to destinations elsewhere within the Y&H region. Sales of sand and gravel from NYCC to the NE region are also very significant. There are also substantial flows of crushed rock from NYCC to the North East region and important movements of sand and gravel and crushed rock from NYCC to both the West and South Yorkshire sub-regions.

Principal imports from outside the sub-region are crushed rock from Cumbria and Derbyshire, with lesser amounts from Durham and Wakefield, although these movements are generally of much smaller scale than the exports referred to above. Very small amounts of sand and gravel are also imported into the sub-region from sources including East Riding, Cumbria, Durham and Doncaster. Small amounts of marine sand and gravel are also imported from South Tyneside and Stockton on Tees.

As noted earlier, where available the data in the above tables shows movements of aggregate in the context of the proportion of total producing area sales and recipient area consumption that the movement represents, in an attempt to better understand the relative significance of the various known movements.

At a sub-regional level this suggests that exports of crushed rock from the sub-region to elsewhere in Yorkshire and Humber are particularly important, as are exports of sand and gravel to the North East region. In both these cases the movement represents around one-third of sub-regional sales and recipient area consumption, suggesting a relatively strong dependency on supply from the North Yorkshire sub-region as well as an important export market for the NY sub-region.

Comparator information for 2005 has also been provided (the only other year for which data is available). This suggests that, whilst the significance of exports of both sand and gravel and crushed rock exports to markets elsewhere in Yorkshire and Humber was less in 2009 than in 2005, the relative significance of crushed rock exports to destinations outside the Region remained approximately the same (despite reduced absolute volumes) and the relative significance of exports of sand and gravel to the North East region increased, along with a relatively small increase in absolute volume. However, the absence of equivalent data for other years means it is not possible to gain a clear idea of whether this may be indicative of any longer term trends.

At individual Mineral Planning Authority level the data suggests that exports of crushed rock from the YDNP to destinations elsewhere in Yorkshire and Humber, as well as to destinations outside the Region, mainly the North West region, are particularly significant, accounting in 2009 for around half and one-third respectively of all sales from the National Park. Sales of sand and gravel from NYCC to the North East region are also very significant, accounting for around one-third of NYCC sales and one-third of North East region consumption. Sales of sand and gravel from NYCC to West Yorkshire, although less significant in terms of absolute volume and proportion of NYCC total sales, are also significant in that they represented, in 2009, around one-third of total sand and gravel consumption in West Yorkshire.

The data suggests that, in 2009, the sub-region met around 80% of both its sand and gravel and crushed rock consumption requirements from supplies originating within the sub-region. However, with regard to the relative significance of known imports into the NY sub-region, the data suggests that imports of crushed rock from Cumbria and Derbyshire are most significant in volume and percentage terms (consumption) although in both cases imports in 2009 represented less than 10% of total NY sub-regional consumption of crushed rock. Lesser amounts of crushed rock were also imported from Durham and Wakefield. Imports of sand and gravel from East Riding, Doncaster, Durham and Cumbria also took place in 2009 although volumes were small and represented a low proportion of total NY sub-regional consumption of sand and gravel and of the producing area's total production. No comparator data on imports for 2005 is available.

## Glossary

Active Permissions	Sites with valid permissions which may be working or mothballed on a temporary basis (and for which new working and reclamation schemes are not required before working can recommence)
Aggregate	Sand and gravel, crushed rock and other bulk materials used in the construction industry for purposes such as the making of concrete, mortar, asphalt or for roadstone, drainage or bulk filling
Aggregate Reserves	The amount of crushed rock or sand and gravel which is covered under planning permissions for working, but is still to be extracted. This does not include dormant sites.
Aggregate Resources	All of the deposits of crushed rock and sand and gravel which are present in the ground
Aggregate Working Party (AWP)	The AWP is a technical working group with membership drawn from mineral planning authorities, the minerals industry and Department for Communities and Local Government (DCLG).
Colliery Spoil	The waste material produced during coal mining, which can be used instead of primary aggregate in some cases.
AONB	An area of land designated as being an Area of Outstanding Natural Beauty.
Construction, Demolition and Excavation Waste (CD&E)	Waste arising from site construction or refurbishment, demolition or excavation.
Crushed Rock	Hard rock (such as limestone) which has been quarried, fragmented and graded for use as aggregate
Dormant Permission	Dormant permissions are sites with permissions but where working cannot recommence until new schemes of working and reclamation have been agreed. Reserves in dormant permissions do not contribute to permitted reserves.
Duty to Cooperate	Planning Authorities will be expected to address strategic issues in conjunction with neighbouring authorities who have to deal with the same issues.
Extant Permission	Existing planning permission
Furnace Bottom Ash (FBA)	Furnace bottom ash is the coarser fraction of ash produced in coal burning power stations resulting from the fusion of pulverized-fuel ash particles which fall to the bottom of the furnace. It varies in size from fine sand to coarse gravel and has a porous nature and can be used instead of primary aggregate in some instances.
Incinerator Bottom Ash (IBA)	This is a form of ash produced by waste incinerators, it can be processed and then used as a substitute for primary aggregate in some instances.
Landbank	A landbank is the sum in tonnes of all permitted reserves for which valid planning permissions are extant, this includes current non-working sites but excludes dormant sites and 'inactive sites'. They are a monitoring tool to provide MPA's with early warning of possible disruption to the provision of an adequate and steady supply of land-won aggregate in their area.
Licensed Marine Aggregate Dredging Areas	Areas allocated under the sea where dredging is allowed to take place with the permission of the Marine Management Organisation.
Local Aggregate Assessment (LAA)	A report prepared by a Minerals Planning Authority or group of Authorities which assesses the demand for and supply of aggregates now and in the future.
North Yorkshire Sub-region	The North Yorkshire Sub-region includes North Yorkshire County Council (NYCC), York City Council (YCC), Yorkshire Dales National Park (YDNP), North York Moors National Park (NYMNP)
Marine Dredged Sand and Gravel	Sand and gravel dredged from the sea
Minerals Planning Authority (MPA)	The Local Authority responsible for the control of mineral extraction and waste management development, through forward planning,

	determining of planning applications, monitoring and enforcement
Primary Aggregate	Crushed rock and sand and gravel which is extracted directly from the ground.
Polished Stone Value aggregate(PSV)	High PSV aggregates are used in surfacing roads as they have a high skid resistance and so are an important mineral
Pulverised Fuel Ash (PFA)	Also known as fly ash, pulverised fuel ash (PFA) is the ash resulting from the burning of pulverised coal in coal-fired electricity power stations. The ash is very fine and it is removed from the flue gases and can be used as a replacement for primary aggregate in some instances
Recycled Aggregate	Can be sourced from construction and demolition waste, highway maintenance waste and excavation and utility operations and then be reused as aggregate.
Regional Spatial Strategy (RSS)	A Regional level of Strategic Planning which core strategies need to be broadly consistent with. The Government currently intend to revoke the RSS <sup>36</sup>
Sand and Gravel	Rock which nature has already broken into fragments mostly by weathering and by erosion during the ice age.
Secondary Aggregate	Derived from a range of materials which may be used as aggregate, including power station ash and colliery spoil
Sub Regional Apportionment	The splitting of regional supply guidelines for aggregate minerals between planning authorities or sub regions

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<sup>36</sup> The Government announced on 29 January 2013 that the Regional Strategy for Yorkshire and Humber (RSS) is to be revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which are to be retained.

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