Local Aggregate Assessment for the North Yorkshire Sub-region

Eighth Review 2023

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

Contents

Summary

1. This 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. It constitutes a eighth review of the Local Aggregates Assessment for the sub-region, which was first published in January 2013. It includes information for 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022 and an updated forecast of demand for sand and gravel, based on the latest available data. It also contains information on movements of aggregate, derived from the 2019 Aggregates Monitoring Survey.

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 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, particularly for concreting sand and gravel.

The sub-region has high overall reserves of crushed rock and sand and gravel for the period to 2030, although a potential shortfall for building sand has been identified. There is potential for shortfall in supply of Magnesian and Jurassic Limestone in particular in the mid term in the absence of release of further reserves.

This LAA suggests future provision for sand and gravel at an overall annual rate equivalent to 2.44mt and for crushed rock at an annual rate of 3.75mt for the period 2023 to 2030 for the North Yorkshire County Council minerals plan area. These levels are significantly higher than that derived using current 10 year average sales.

High PSV aggregate is worked at four sites in the Yorkshire Dales National Park. Permission for extraction of an additional 3.1mt of PSV was granted in 2017. In 2019 permission was granted for extraction of an additional 11.3mt crushed rock. At the current level of sales,

permitted reserves of high PSV aggregate are sufficient into the mid term and permitted reserves of crushed rock are sufficient into the long 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 (i.e. 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 cross-boundary movements of aggregate to/from other areas have been identified which should be considered further where appropriate through preparation of local minerals plans. Whilst the latest data on movements indicates some differences from the 2014 data reported in previous LAAs, the overall picture of flows to and from the North Yorkshire sub-region remains broadly unchanged.

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. 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 (NYMNPA) combined (See Map A). The main purpose of the LAA is to set out information on the current supply of, and demand for, 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. The ability and suitability of North Yorkshire 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[1].

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 and carried through to the July 2021 revised version. The 2021 NPPF 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, 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)*". Maintenance of a landbank of at least 7 years for sand and gravel and at least 10 years for crushed rock is a key objective of national planning policy for minerals, as expressed in Para. 213 of the 2021 NPPF.

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 as part of a range of online planning guidance in March 2014. This confirms that the key role of LAAs is to provide:

    - a forecast of the demand for aggregates based on both the rolling average of 10-years sales data and other relevant local information;
    - an analysis of all aggregate supply options, as indicated by landbanks, mineral plan allocations and capacity data e.g. marine licences for marine aggregate extraction, recycled aggregates and the potential throughputs from wharves. This analysis should be informed by planning information, the aggregate industry and other bodies such as local enterprise partnerships; and
    - an assessment of 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 a surplus of supply and, if the former, how this is being addressed.

[1] 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.

7. At the time of preparation of the first LAA there was no active AWP in the Yorkshire and Humber region. An AWP was constituted during 2013 and, at a meeting on 25 July 2013, agreed the content of the first LAA. There have been several meetings since then and a first review of the LAA was produced in 2015 and considered by the AWP in 2016. A second, third, fourth, fifth, sixth and seventh review have been completed since then and this is the eighth review.

8. Within the NY sub-region local mineral plans are at a range of stages of preparation. A joint minerals and waste plan for the three authorities, North Yorkshire County Council, City of York Council and North York Moors National Park Authority has been produced. A first consultation was completed in June 2013, a Preferred Options consultation was completed in early 2016, and a Publication Draft consultation completed in late 2016. The Plan was submitted for Examination in Public in November 2017 and was adopted in February 2022 by North Yorkshire County Council, in March 2022 by the North York Moors National Park Authority. Maintaining supply of aggregate minerals has been identified as a key issue to address in the Joint Plan and April by City of York Council. The Yorkshire Dales National Park Local Plan 2015-2030 was adopted on 20th December 2016, they are currently working on a new Local Plan

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. 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.

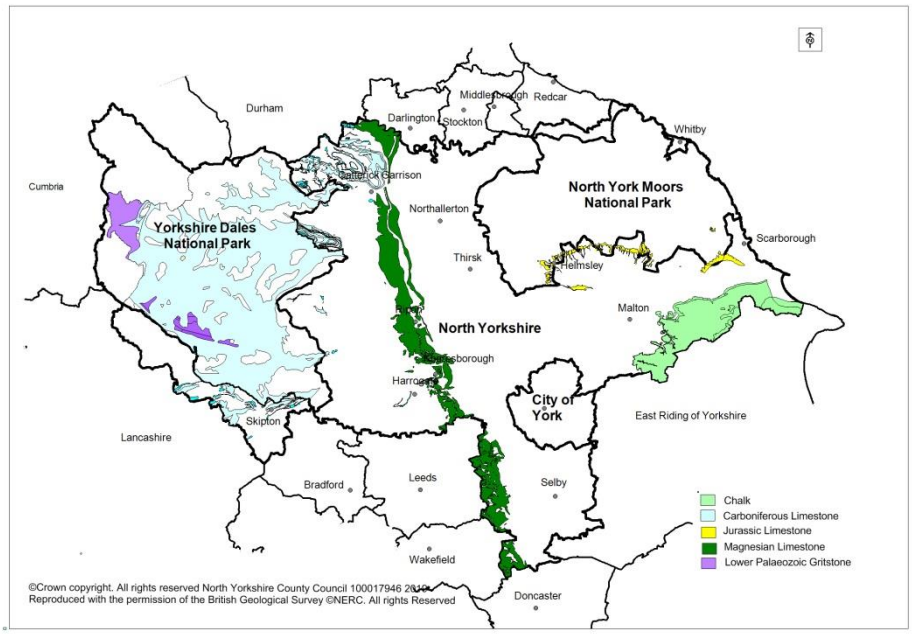
11. National planning policy in the NPPF requires LAAs to be prepared on an annual basis. It is therefore expected that the information in the LAA will be updated accordingly and therefore help contribute to the on-going monitoring of patterns and trends in aggregates supply relevant to the sub-region.

Map A: North Yorkshire sub-regional boundary

Aggregate resources in the NY sub-region

12. The geology of the sub-region is very varied but contains extensive deposits of minerals with potential for use as aggregate, spanning a number of geological periods. Deposits of commercial interest fall into two main types, sand and gravel and crushed rock. The maps below illustrate the location of minerals in the North Yorkshire sub-region. The boundary for the Yorkshire Dales National Park does not show the additional area which was added in the Yorkshire Dales National Park in August 2016 as this area is not included in the Yorkshire Dales Local Plan which was adopted in December 2016 and also the Authorities do not currently have access to the BGS minerals resource data for the new area.

    a. Crushed rock



Map B: Distribution of crushed rock resources in NY sub-region

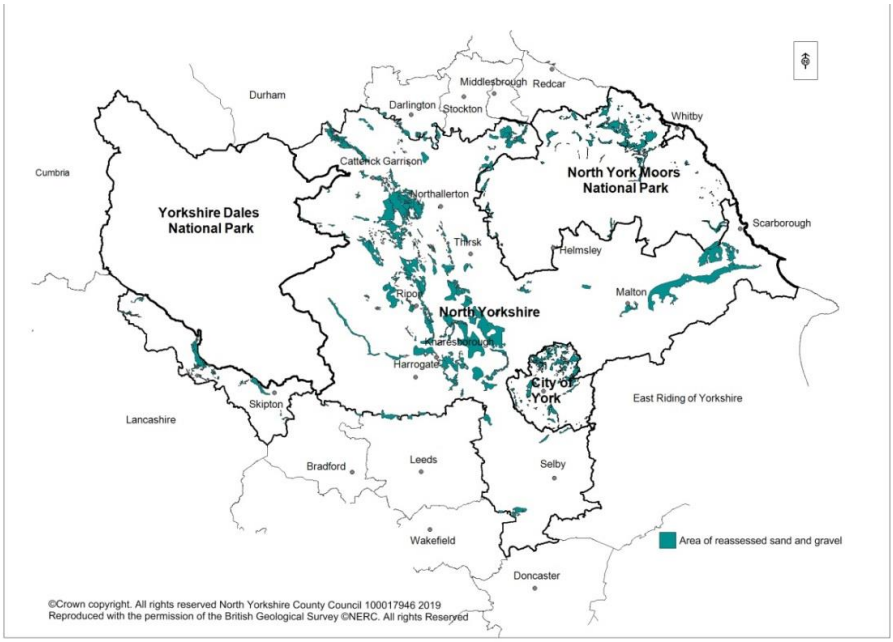
13. A number of different rock types are worked in the sub-region, shown on Map B above. The oldest of these are the Lower Palaeozoic siltstones and greywackes (‘gritstones’) which occur beneath Carboniferous age strata in Ribblesdale and Chapel-le-Dale in the Yorkshire Dales NP. These are quarried to 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.

14. 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 NYC 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.

15. 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 NYC 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.

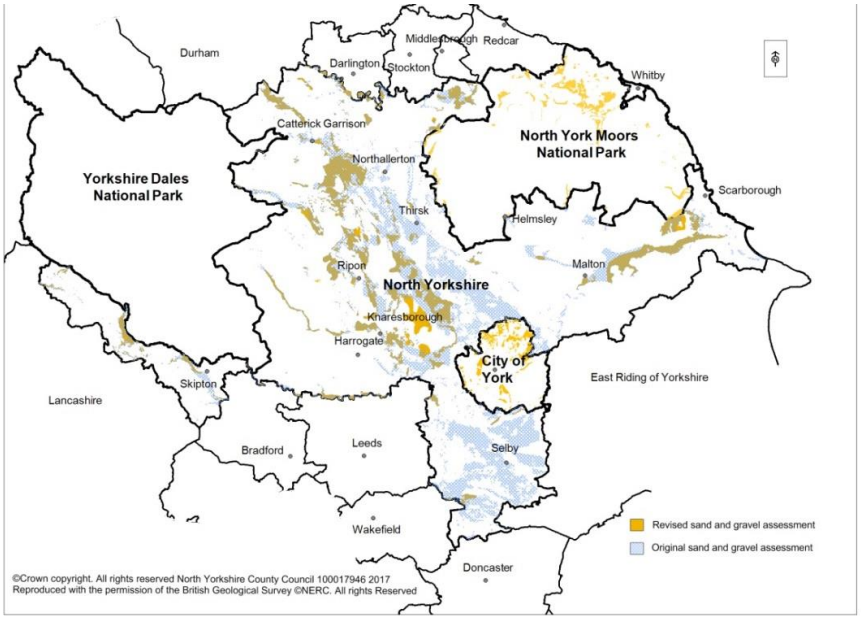
b. Sand and gravel



Map C: Distribution of concreting sand and gravel resources

16. 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.

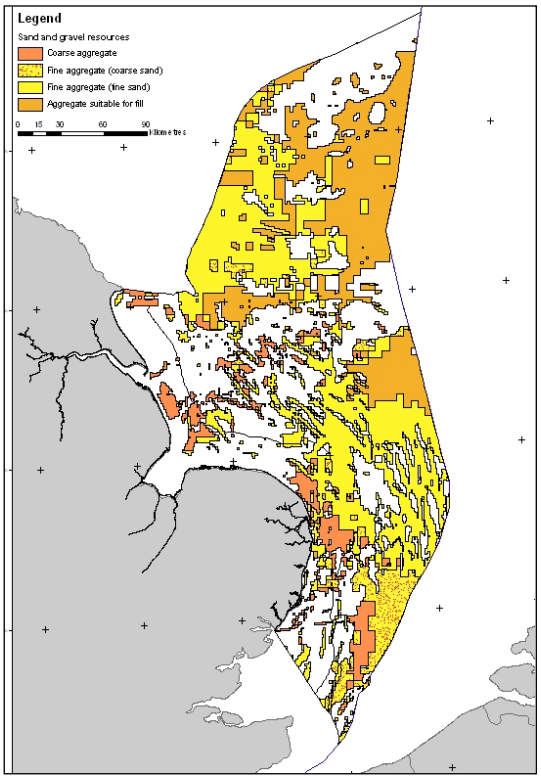
17. North Yorkshire County Council commissioned the British Geological Survey (BGS) in 2011 to reassess the extent of sand and gravel resources within North Yorkshire (excluding the City of York and National Park areas), taking into account the most up to date geological information and updated viability criteria (the full report can be viewed at North Yorkshire sand and gravel assessment 2011 final. 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. City of York Council also commissioned BGS to carry out an assessment of the sand and gravel resource in their area. Results suggest that there are large volumes of sand and gravel present within the City of York area. However the majority of the resource is lower quality sand and gravel and is subject to various constraints such as being in heavily developed areas, having a thick clay overburden or subject to other environmental constraints. Map D below shows the mapped extent of potential concreting sand and gravel resources in the NYC and CYC area before and after the 2012 and 2013 BGS reassessments.



Map D: Comparative distribution of viable sand and gravel resources in North Yorkshire and City of York area following reassessment in 2012 and 2013

18. 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. Leeds City Council commissioned a Marine Aggregates Study[2], which was jointly funded by mineral planning authorities in the Yorkshire and Humber area, to assess the future potential for increasing the amount of marine dredged sand and gravel supplied into the Yorkshire and Humber Region. A further Marine Aggregates Study. was produced by West Yorkshire Combined Authority Further discussion on this is included later in the LAA. The current extent of the Humber dredging area is shown on Map H on page 13)

[2] URS Marine Aggregates Study, Final, January 2014.



Map E: Marine sand and gravel resources in East Inshore and East Offshore areas.[3]

c. Secondary and recycled aggregates

19. 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[4] or recycled aggregate[5]. Within the NY sub-region secondary aggregates currently include two main potential sources; colliery spoil arising from deep mining of coal in Selby District (NYC area) and combustion ash from power generation, also arising within Selby District. The closure of the last remaining colliery in North Yorkshire at the end of 2015 means that the availability of spoil is likely to be reduced in future. 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 NYC 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).

Principal uses of aggregate supplied from the sub-region

20. 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:

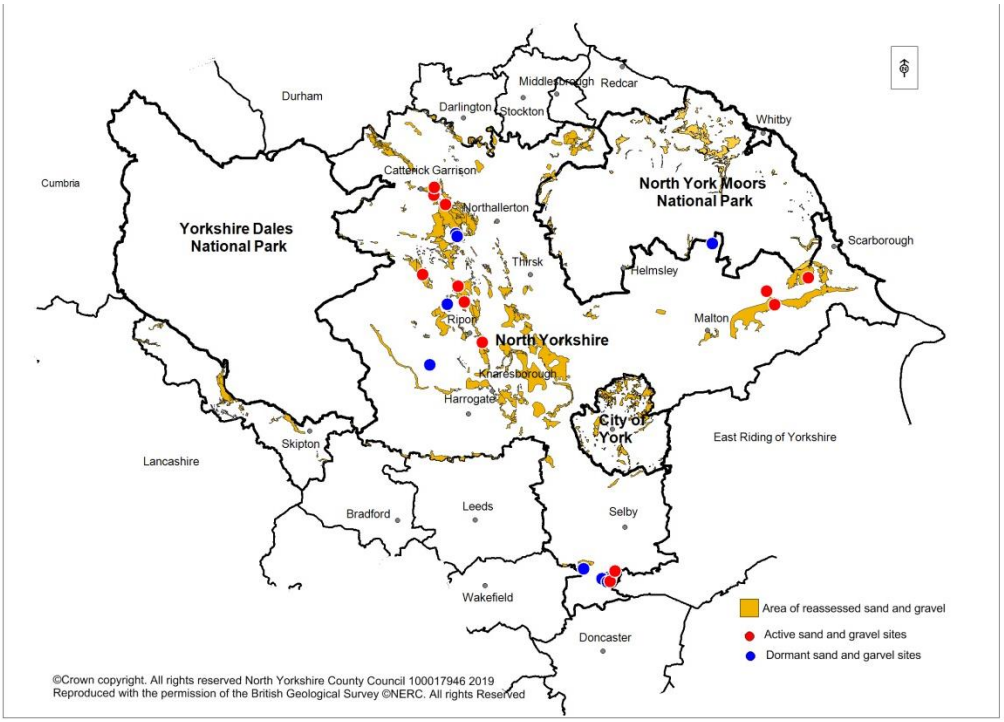
[3] BGS; The Mineral Resources of East Inshore and East Offshore Marine Plan Areas, Southern Northern Sea. 2011
[4] Secondary aggregates are derived from a range of materials which may be used as aggregate, including power station ash and colliery spoil.
[5] Recycled aggregates can be sourced from construction and demolition waste, highway maintenance waste and excavation and utility operations and which can then be reused as aggregate.

Deposit	Principle uses/markets	Main Occurrences
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), large volumes occur in northern CYC area with smaller pockets in the south of CYC.
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	Production at Kellingley colliery (Selby District of NYCC area) ceased at the end of 2015. A major completed and landscaped spoil disposal mound is located at Sherburn-in-Elmet (Selby District) and a partially restored mound is located near Womersley (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). Drax power station is moving away from coal to biomass and gas, Eggborough power station has now closed. 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

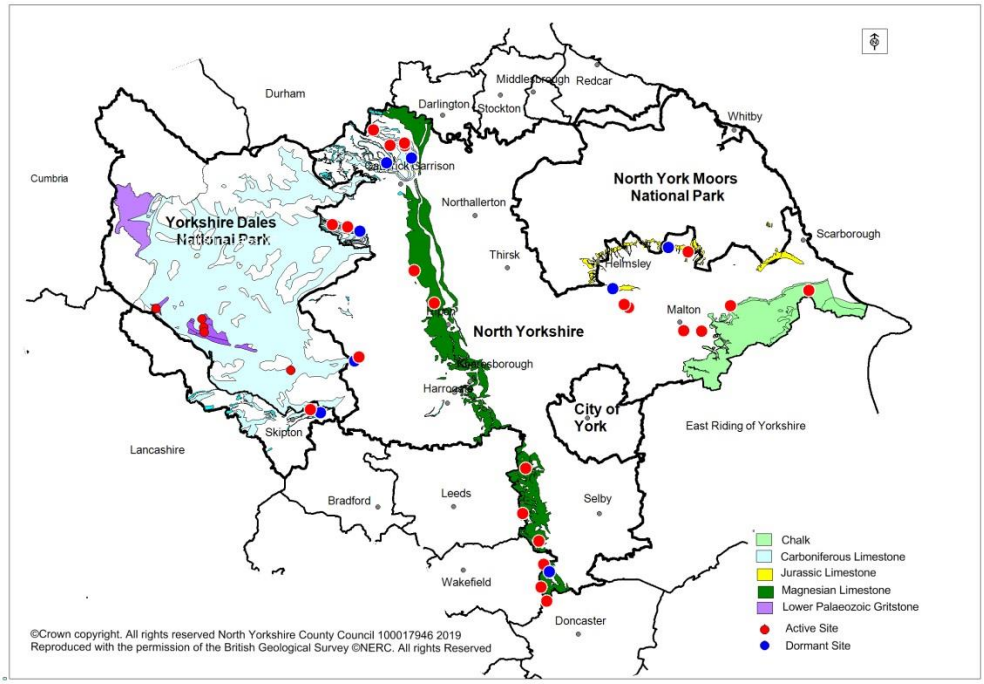
Part B - Monitoring

Existing minerals sites and infrastructure

21. 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

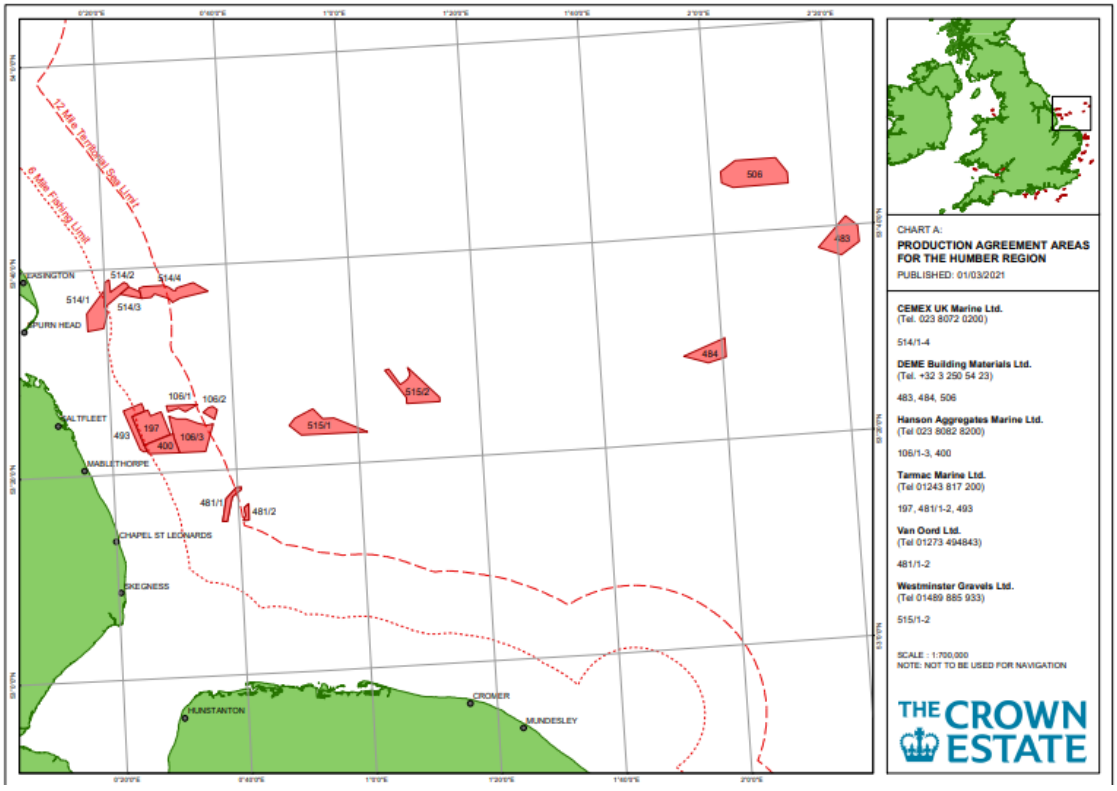


Map G: Active and dormant crushed rock sites in the NY sub-region

22. Production of primary aggregate currently only takes place in two of the four MPAs in the sub-region; NYC and YDNP. The majority of current aggregates quarries and infrastructure are located within the NYC 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.

23. Dormant primary aggregate sites are only present in the NYC 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[6] until such time as updated working and reclamation schemes have been approved.

24. A number of licensed marine aggregate dredging areas are located in relatively close proximity to the coast of the NY sub-region (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.

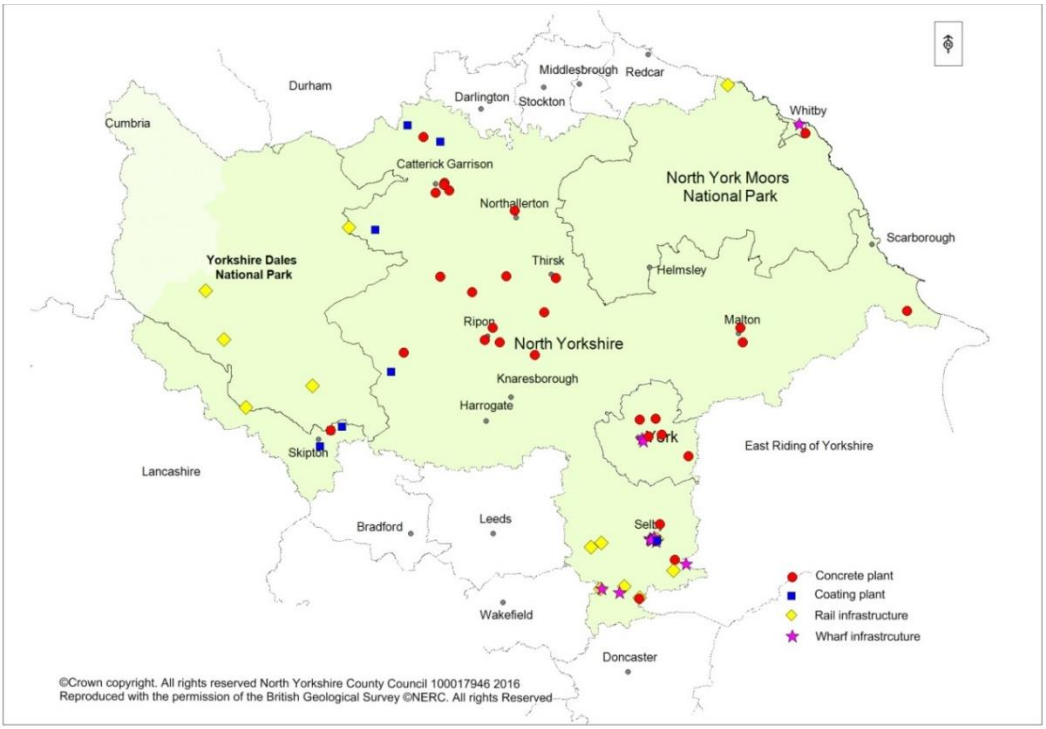


Map H: Licensed marine dredging areas and application areas in the Humber dredging region[7]

25. 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.

[6] 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).

[7] Crown Estates Regional dredging area charts | The Crown Estate 2021.



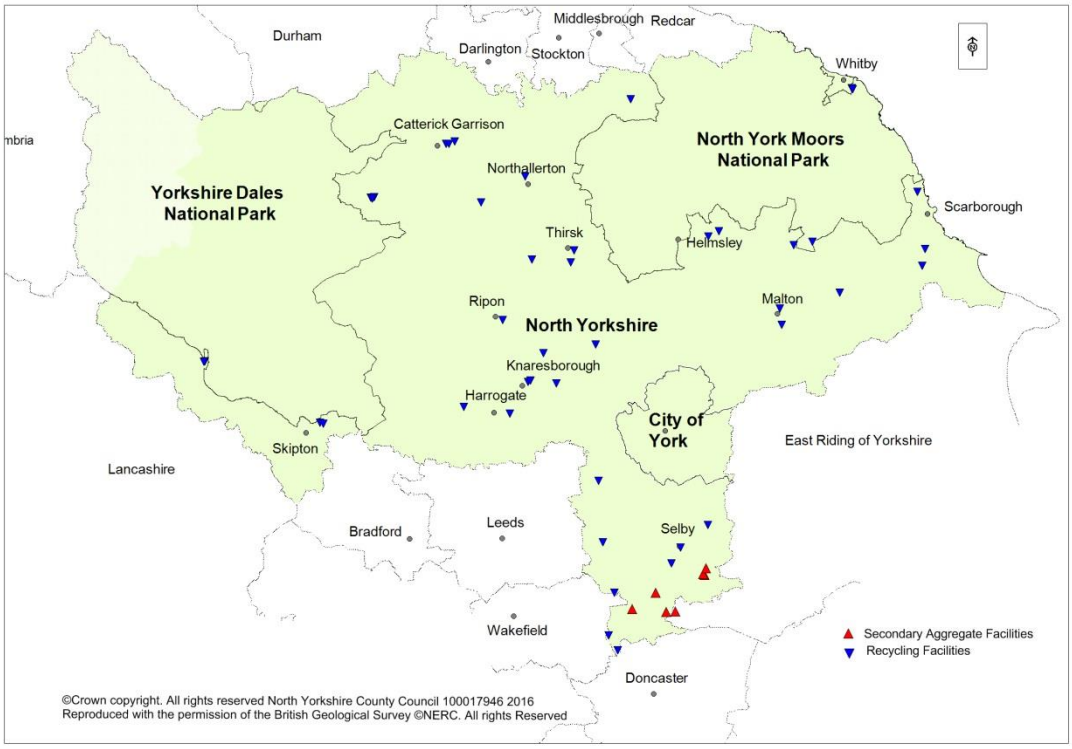
Map I: Minerals supply and transport infrastructure

26. 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 at operational quarries and others are standalone facilities located on industrial land.

27. 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, or have recently been, used for transporting non-aggregates minerals including coal, such as at Kellingley Colliery and at Eggborough and Drax power stations, as well as potash from 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; Ribblehead sidings which are used to transport stone from Ingleton Quarry (also located in the YDNP) and a new railhead at Arcow Quarry in the YDNP, used by both Arcow and Dry Rigg quarries, which became operational in 2016. An import railhead at the Potter Group site in Selby is also in use for reception of aggregate. Some of the other rail heads and sidings have been used, or might have the potential to be developed, for minerals transport as referred to in the table in Appendix 1.

28. Map J below shows the main known locations of secondary aggregate production and sites producing recycled aggregate. There were 2 sites in the sub-region which previously supplied secondary aggregate on a significant scale. These were the coal fired power stations at Eggborough and Drax, which produce Furnace Bottom Ash (FBA) and Pulverised Fuel Ash (PFA), Eggborough Power Station closed in 2018 and has now been demolished. Drax Power Station has converted to using biomass as fuel and stopped using coal in March 2021. A third site (Kellingley Colliery) produced colliery spoil which could also be used as aggregate. However, this site closed at the end of 2015. Ash not sold for use as secondary aggregate is disposed of at dedicated waste disposal sites at Barlow and Gale Common ash disposal facilities located in Selby District. Ash from Ferrybridge power station, in West Yorkshire, used to be also disposed of at the Gale Common facility but the coal fired element Ferrybridge Power Station is now closed and being demolished but will leave the cooling towers. 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.

29. 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.



Map J: Known secondary and recycled aggregate supply locations

Aggregate sales and reserves

a. Sales

30. 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 from surveys carried out by the Yorkshire and Humber Aggregates Working Party (YHAWP) or directly by NYC or YDNP. For the years 2010 and 2011 only NYC and YDNP survey information is available as there was no active aggregates working party. This may influence the direct comparability of figures between 2009 and 2010, and between 2010 and 2014. Any such differences are not considered to be significant at a strategic level. For the purposes of reporting 2013 data, and for subsequent years up to 2016, it has been agreed that crushed rock sales from Wakefield Metropolitan District Council area would be included within NYCC figures. This is because the figure cannot be reported separately for confidentiality reasons and the main reserve in Wakefield is worked through a processing plant located within North Yorkshire. Although sales from Wakefield are relatively low compared to the NY sub-region, this does impact on the direct comparability of crushed rock sales figures compared with earlier years to some extent. Some sales and consumption data is only available at sub-regional level. The crushed rock figures for Wakefield have not been included in the 2016, 2017, 2018, 2019, 2020, 2021 and 2022 North Yorkshire County Council figures as they have been included in the West Yorkshire LAA.

i) Primary land-won aggregate

	Sand and Gravel (mt)				Crushed Rock (mt)				
	NYC	YDNP	NYMNP	CYC	NYC	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
2012	1.6	0	0		2.4	2.6	0.8	0	0
2013	1.5	0	0		2.8[8]	2.9	0.8	0	0
2014	1.7	0	0		3.4	3.2	0.7	0	0
2015	1.7	0	0		3.7	3.3	0.6	0	0
2016	1.7	0	0		3.3	3.4	0.7	0	0
2017	1.75	0	0		3.2	3.5	0.8	0	0
2018	1.8	0	0	0	3.5	3.4	0.8	0	0
2019	1.4	0	0	0	3.0	2.37	0.91	0	0
2020	1.5	0	0	0	3.2	2.0	0.79	0	0
2021	1.5	0	0	0	3.3	2.1	0.82	0	0
2022	1.5	0	0	0	3.1	2.1	1.2	0	0
10 year Average	1.6	0	0		3.3	2.8	0.8	0	0

Table 1: Historic sales of land-won aggregate by MPA and aggregate type 2009 - 2022

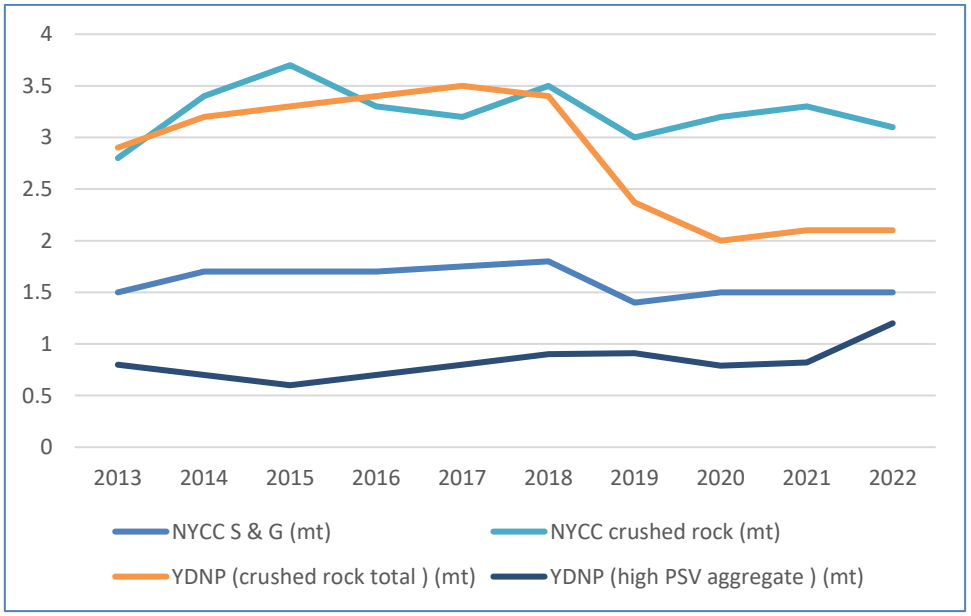


Figure 1: Sand and gravel and crushed rock sales in NY sub region, 2012 – 2021

31. For the purposes of reporting sand and gravel reserves and landbanks data (but not sales data) in previous YHAWP 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

[8] Includes sales from reserves located in Wakefield but processed via plant in North Yorkshire

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 and the Humber area. 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 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
2012	0.57	0.89	0.12
2013	0.50	0.87	0.12
2014	0.66	0.99	0.07
2015	0.58	1.03	0.13
2016	0.65	1.04	0.04
2017	0.63	1.08	0.04
2018	0.78	0.90	0.10
2019	0.47	0.88	0.10
2020	0.52	0.87	0.08
2021	0.4	1.05	0.05
2022	0.5	0.9	0.07
10yr average	0.57	0.96	0.08
10yr average (as % of 10 year average for all areas)	35%	60%	5%

Table 2: Sales of land-won sand and gravel for NYC split into distribution areas
Note- sales of sand and gravel was not split by distribution area in AWP reports, therefore the information in this table is based on the NYCC survey data only available for the years 2011 to 2022.

32. Sales of crushed rock in the NYC area can also be broken down by crushed rock type. This is represented in the table below.

	Carboniferous limestone (mt)	Magnesian limestone (mt)	Jurassic limestone (mt)
2009	1.41	0.88	0.25
2010	1.48	1.12	0.31
2011	0.99	0.68	0.28
2012	0.98	0.88	0.52
2013	1.12	1.34[9]	0.35
2014	1.52	1.51[9]	0.32
2015	1.79	1.52[9]	0.40
2016	1.67	1.18	0.42
2017	1.5	1.26	0.42
2018	1.52	1.43	0.53
2019	1.3	1.2	0.4
2020	1.5	1.3	0.4
2021	1.5	1.4	0.4
2022	1.3	1.4	0.4

[9] Includes sales from reserves located in Wakefield.

10yr average	1.50	1.4	0.4
10yr average (as % of 10 year average for all rock types)	46%	42 %	12%

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

33. Carboniferous limestone accounts for the majority of crushed rock sales in the NYC area, followed by Magnesian limestone, with Jurassic limestone making a much smaller contribution to total sales.

ii) Marine aggregate

34. 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)
2004	0.277
2005	0.277
2006	0.322
2007	0.322
2008	0.322
2009	0.322
2010	0.234
2011	0.234
2012	0.234
2013	0.234
2014	0.008
2015	0.008
2016	0.008
2017	0.008
2018	0.008
2019	0.040

Table 4: Consumption of marine aggregate in Yorkshire and Humber between 2004 - 2019

35. The figures in the above table are recorded in the BGS Minerals Yearbooks which are currently available through to 2014, 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. The Aggregate Minerals Survey data for 2019 was published in 2021 which stated that consumption of marine aggregate in the Yorkshire and Humber region was 40,000tns, and this was all imported from the North East Region.

36. Of the marine aggregate dredged for construction from the Humber dredging region in 2022, 70.7% was delivered to the continent, 22.9% was delivered to the Humber region (which includes landings in the Tyne, Tees and Humber estuaries) with 4.8% being delivered to the Thames Estuary and 1.3% delivered to the East English Chanel with 0.2% delivered to the East Coast. Of the marine aggregate landed in the Humber region in 2022 25.7% was landed at Hull[10]. Sales/consumption into the Yorkshire and Humber region are detailed above. According to the Crown Estate,[11] over the 10 years up to 2012 on average 76%[12] of the permitted tonnage has been dredged from the Humber Region and at present there was an

[10] Crown Estate Marine Aggregates Summary of Statistics, 2021
[11] Crown Estates Briefing Note: Issue 3 Marine Aggregates Opportunities, Region: Humber, May 2012
[12] In 2013 less than half the tonnage permitted was actually removed.

opportunity to dredge approximately 2.1mt more per annum. In the year 2014[13] 33% of the permitted tonnage was dredged, there was an opportunity to dredge 3.13mt more in this year, for 2015[14] 18% of the permitted tonnage was dredged with an opportunity to dredge 5.88mt more and for 2016 24% of the permitted tonnage was dredged with an opportunity to dredge 4.25mt more[15]. The amount dredged between 2014 and 2015 reduced by 0.25mt this stayed constant in 2016, but there was in increase in the amount permitted to be dredged of 2.5mt in 2017 due to the issuing of new licences, this has stayed constant in 2018[16]. According to the Crown Estate[17] in 2022 3.69mt construction aggregate was dredged from a permitted tonnage of 6.88mt, which is 54%, and 0.69mt was dredged for beach nourishment.

37. 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 Yorkshire sub-region came from landings in the North East landward region. There has been a more recent national collation of aggregates monitoring data and this covers the year 2014. In this year 8,000 tonnes of marine aggregate was imported into North Yorkshire sub-region and this came from North Tyneside, therefore in 2014 all the marine aggregate supplied into the North Yorkshire sub-region came from landings in the North East landward region. There has been a subsequent national collation of aggregates monitoring data in 2019 which identified that 40,000 tonnes of marine aggregate were landed in the North East Region and all of this was sold to North Yorkshire.

38. The graph below illustrates the trend in landings of marine dredged sand and gravel between 2004 and 2022 in the North East Region and the Yorkshire and Humber Region. Data is provided for the North East region because this includes landings on Teesside and Tyneside, which were known to supply into the NY sub-region in 2022.

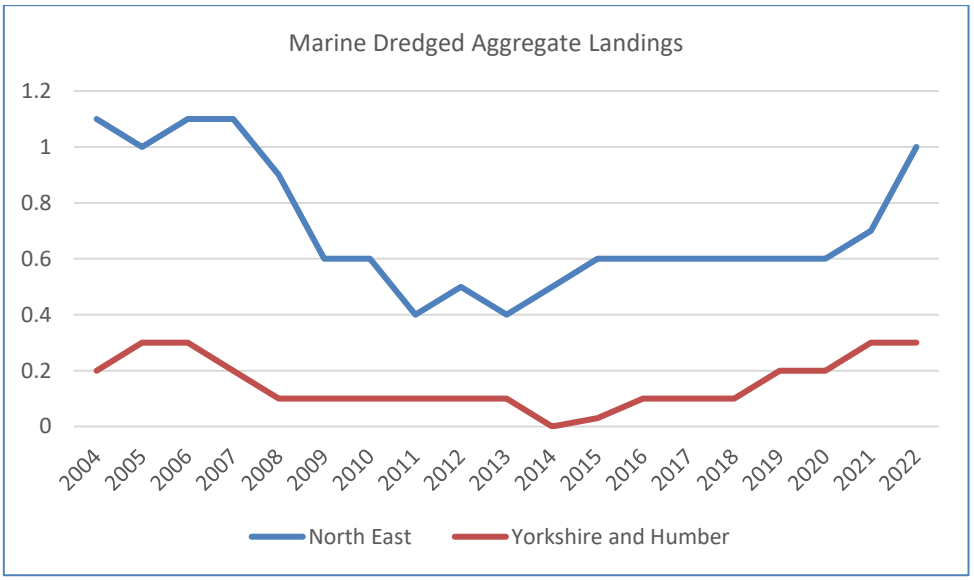


Figure 2: Marine dredged aggregates landing at Yorkshire and Humber and North East Ports[18]

[13] Crown Estate Marine Aggregates Capability and Portfolio 2015
[14] Crown Estate Marine Aggregates Capability and Portfolio 2016
[15] Crown Estate Marine Aggregate Capability and Portfolio 2017
[16] Crown Estate Marine Aggregate Capability and Portfolio 2018
[17] Crown Estate Area involved 25th Annual Report 2022
[18] Yorkshire and Humber RAWP and North East RAWP 2001 to 2009 and Crown Estates Marine Aggregates, Summary of Statistics 2010, 2011, 2012, 2013 ,2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

39. Historically, there have been substantially greater landings 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 land-won aggregate. Landings in the North East have increased since 2013 whereas landing in Yorkshire and Humber have reduced over 2014 and 2015 but increased slightly in 2016 and in subsequent years.

iii) Secondary and recycled aggregate

40. In the past NYC was the only MPA in the NY sub-region which had significant sources of secondary aggregate. These were mainly in the form of ash from coal fired power stations at Drax and Eggborough and colliery spoil from Kellingley Colliery (although this site closed at the end of 2015). Both Drax and Eggborough power stations have moved away from using coal, to stop using coal completely so the suitable secondary aggregate will not be produced. Ash from a third coal-fired power station, Ferrybridge, is located just outside the Sub-region and disposed of the ash at a facility (Gale Common) inside the Sub-region but this power station has now closed. The graph below shows the trend in sales of ash and colliery spoil up to the end of 2014. Specific data on sales of recycled aggregate are not available.

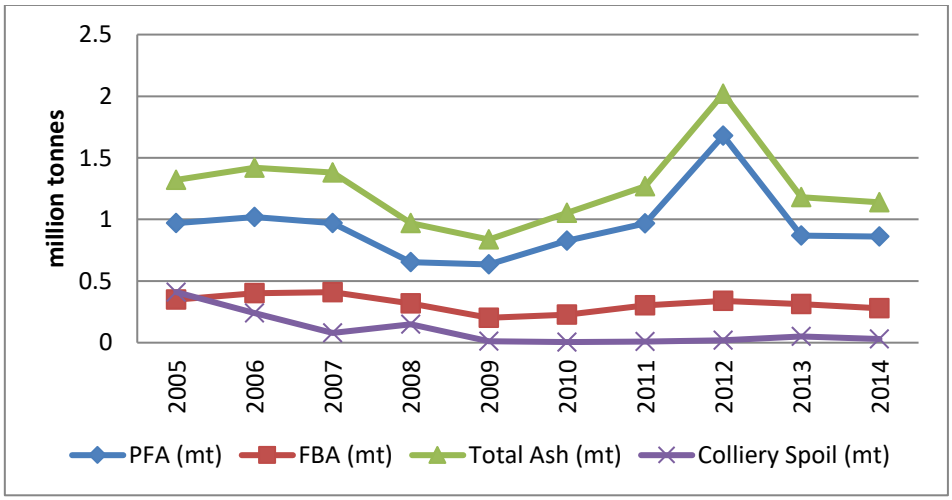


Figure 3: Sales of secondary aggregate in the North Yorkshire sub-region

Discussion on aggregate sales

41. 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 fluctuated around a lower level. Through the availability of more detailed NYCC survey data for the NYC 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 10 years. Production in the southern distribution area increased slightly in the years 2015 to 2017 then dropped back to previous levels with an increase in 2021 dropping down again in 2022, but production in the northern distribution area and building sand has fluctuated more.

42. 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, 2011, 2012 and 2013, dropping to 0.008mt in 2014 and raising to 0.04mt in 2019 the most recent year for which data is available.

43. The trend in crushed rock production levels has generally been very similar for both NYC and the YDNP, with sales of crushed rock within both NYC and the YDNP increasing slightly in recent years following a significant decline in sales during 2008-2010, the sale of crushed rock in the Yorkshire Dales has decreased significantly in 2019, 2020, 2021 and 2022. Sales of high PSV stone from the YDNP have remained relatively stable over the past 10 years with a slight increase in 2022.

44. The main secondary aggregates available in the sub-region were ash, from Drax and Eggborough coal fired power stations. Although these have now stopped using coal, Colliery spoil has been supplied from Kellingley Colliery but the mine closed at the end of 2015. The average amount of ash used for secondary aggregate over the 10 years to 2013 is 1.26mt per annum, with 75% coming from PFA and 25% from FBA. The average amount of colliery spoil used as secondary aggregate over the past 10 years to 2014 is relatively small at c.0.08[19]mt per annum. Ash and colliery spoil not used as secondary aggregate is disposed of at dedicated waste sites, although these may in themselves represent a further source of supply if re-working of deposited material were to take place.

45. The amount of secondary and recycled materials produced is dependent upon the health of the economy and also on the continued existence of 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 FBA was generally fully utilised whereas availability of PFA and colliery spoil exceeded utilisation. Sales of PFA increased over the period 2010 to 2012 but have since reduced. The reason for this is not known. The conversion to biomass fuel of a proportion of generation capacity at Drax and Eggborough power stations and the closure of coal fired generation capacity at Ferrybridge will have an impact on availability of material with potential for use as secondary aggregate over the next few years and beyond as there has been a move away from using coal in the power stations, with the aim of coal not being used at all by 2025, and this has been achieved already. 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. There has been recent permission granted in April 2021, for the extraction and export of 23 million tonnes of PFA from Gale Common. This permission is currently subject of a legal challenge and so cannot be taken into account in this LAA. 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 not utilised. The closure of Kellingley Colliery at the end of 2015 has removed this potential direct source of secondary aggregate, although previously tipped spoil remains at the Womersley spoil disposal site in North Yorkshire.

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

Table 5: Usage of secondary minerals produced in Yorkshire and Humber in 2005 in million tonnes[20]

[19] Source: UK Coal email 5 Sept 2014
[20] DCLG, Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005: Construction, Demolition and Excavation Waste

46. 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.

47. 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[21], 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). The North Yorkshire Sub-Region Waste Arisings and Capacity Evidence study[22] states that in 2014 there were 0.93mt of construction, demolition and excavation waste under waste management in the sub region, of this 12% was imported. The study indicates that there is likely to be an uneven geographical distribution of construction, demolition and excavation waste arisings across the sub-region with the majority concentrated in urban areas. 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. 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

48. 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

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

i) Primary land-won aggregate

	Sand and Gravel (mt)	Crushed Rock (mt)				
		Carboniferous Limestone	Magnesian Limestone	Jurassic Limestone	Chalk	High PSV

[21] Source: Table 7.2 in 'Survey of arisings and use of alternative to primary aggregates in England 2005 construction demolition and excavation wastes'
[22] Urban Vision, North Yorkshire Sub-Region Waste Arisings and Capacity Report Update September 2016

North Yorkshire Council	24.3	58.9	29.0	3.3	Some available reserves but site closed by operator	-
Yorkshire Dales National Park	-	74.9	-		-	9.6
North York Moors National Park	-	-	-	-	-	-
City of York Council	-	-	-	-	-	-
Total	24.3	133.8	29.0	3.3	Some available reserves but site closed by operator	9.6

Table 6: Reserves of primary land-won aggregate, by MPA and aggregate type at end of 2022

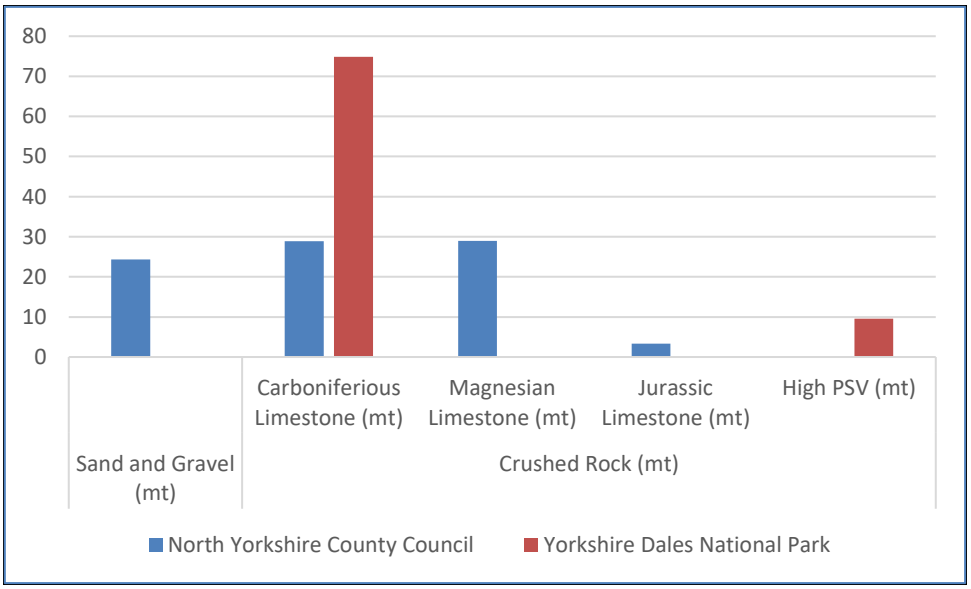


Figure 4: Reserves of primary land-won aggregate, by MPA and aggregate type at end of 2022.

50. The table and graph below illustrate the trend over time in reserves for sand and gravel and crushed rock in the NYC 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 NYC and the YDNP.

	NYC sand and gravel reserves	NYC crushed rock reserves	YDNP crushed rock reserves*
2006	22.85	105.2	128
2007	20.65	101.1	124
2008	20.02	100.5	120.2
2009	18.42	103.9	106.24
2010	17.98	101	103.63
2011	16.24	97.7	104.49
2012	14.6	97	89.21
2013	18.63	104.37	85.36
2014	16.91	100.65	85.3
2015	19.46	95.42	83.59
2016	20.4	88.6	82.1
2017	17.4	83.5	81.8
2018	28.2	81.3	75.7
2019	25.5	79.7	88.65
2020	24.8	78.8	83.34
2021	26.2	72.2	80.2
2022	24.3	91.2	84.5

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. The further reduction in reserves for the YDNP between 2011 and 2012 is a result of a reassessment by an operating company of saleable reserves at one quarry.

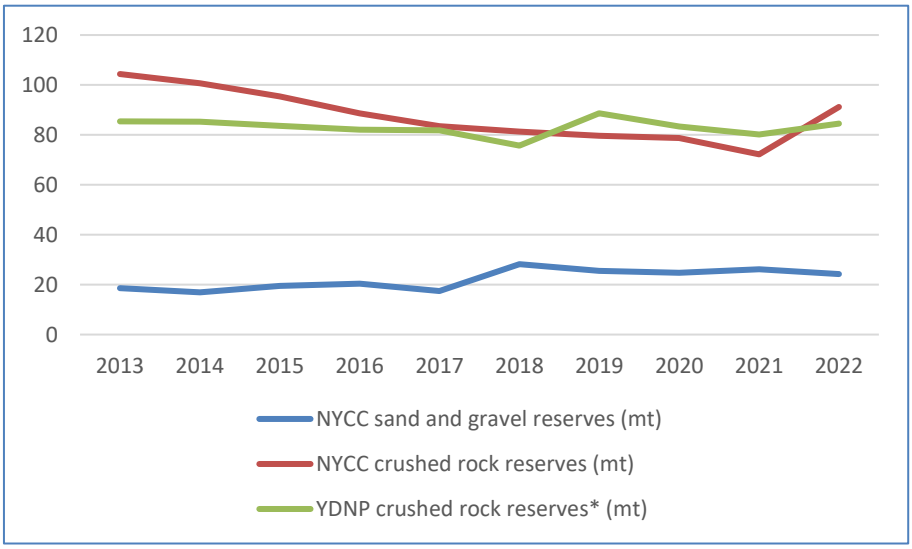


Figure 5: Reserves of sand and gravel and crushed rock over time by MPA area

51. 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 31.

	Northwards distribution area (mt)	Southwards distribution area (mt)	Building sand (mt)	Total (mt)
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	9.2	7.5	1.69	18.42
2010	8.53	7.84	1.6	17.98
2011	7.78	6.97	1.49	16.24
2012	6.6	7.1	1	14.6
2013	6.98	10.71	0.94	18.63
2014	6.78	9.36	0.78	16.91
2015	6.18	12.42	0.86	19.46
2016	5.2	13.7	1.5	20.4
2017	4.2	12.4	0.8	17.4
2018	15.1	12.5	0.6	28.2
2019	14.7	10.3	0.5	25.5
2020	14.0	10.3	0.45	24.75
2021	14.4	11.3	0.5	26.2
2022	13.6	10.3	0.4	24.3

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

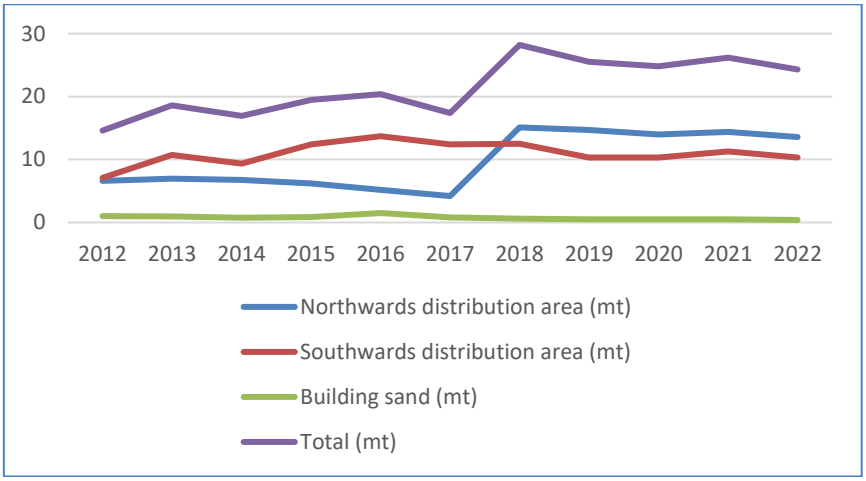


Figure 6: Reserves of land-won sand and gravel for North Yorkshire Council over time split by distribution areas.

Discussion on primary aggregate reserves

52. The trend for all crushed rock has been for a gradual decline over time, but due to new permissions the reserves for sand and gravel have increased. Although levels of reserves fluctuate year on year in response to grant of new permissions and/or in response to re-assessment by operators. At the end of 2018 the NYC sand and gravel total reserve was higher than in any year in the 10 year average period. Comparability of the trend in reserves of crushed rock for the NYC is affected between 2013 and 2015 by the inclusion of some reserves of Magnesian Limestone in Wakefield, which have been included within NYC figures for confidentiality reasons and to reflect the fact that, whilst located in Wakefield, the

reserves are worked through processing plant located in North Yorkshire. New permissions for crushed rock were granted in 2022 in the NYC area increasing the level of reserves significantly.

53. As with sales, the sand and gravel reserve in NYC is further broken down into a northern distribution area, southwards distribution area and building sand. There has been a general decline in reserves in the northwards distribution area until 2018 when a new permission was granted with a large quantity of reserves. For building sand there has been a gradual decline, over the past 10 years, whereas reserves in the southwards distribution area were at their highest level for 10 years in 2016 as a result of the grant of new permissions but this dropped slightly in following years. The reserves in the northwards distribution area increased dramatically in 2018 due to the grant of a new planning permission.

54. 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).

55. The only MPA in the sub-region with such sites is NYC. 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.

56. 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	Crushed Rock				
		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	-	-	-	-	-	-
Total	?	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

57. The Humber dredging region had estimated reserves of 41.88 mt[23] of marine aggregate at the end of 2021 giving a regional reserve life of 18.69 years[22]. Information published by the Crown Estate for 2022[24] indicates that, in the Humber Region, 6.88 million tonnes per annum of marine aggregate is currently permitted for extraction with around 3.69mt actually dredged

[22] Crown Estates: Marine Aggregates Annual Review 2022
[23] Crown Estates: Marine Aggregates Annual Review 2022
[24] Crown Estates: Marine Aggregates Annual Review 2022

in 2022. Other information published by the Crown Estate in 2021 indicates that wharf infrastructure in the Region is well established and can cope with the tonnage currently delivered [25] although a number of infrastructure constraints to increasing supply of marine aggregate via the Humber were identified in a recent studies commissioned by Mineral Planning Authorities in the Yorkshire and Humber area[26]. The graph below illustrates the difference between the tonnage permitted to be extracted and the actual tonnage extracted in recent years.

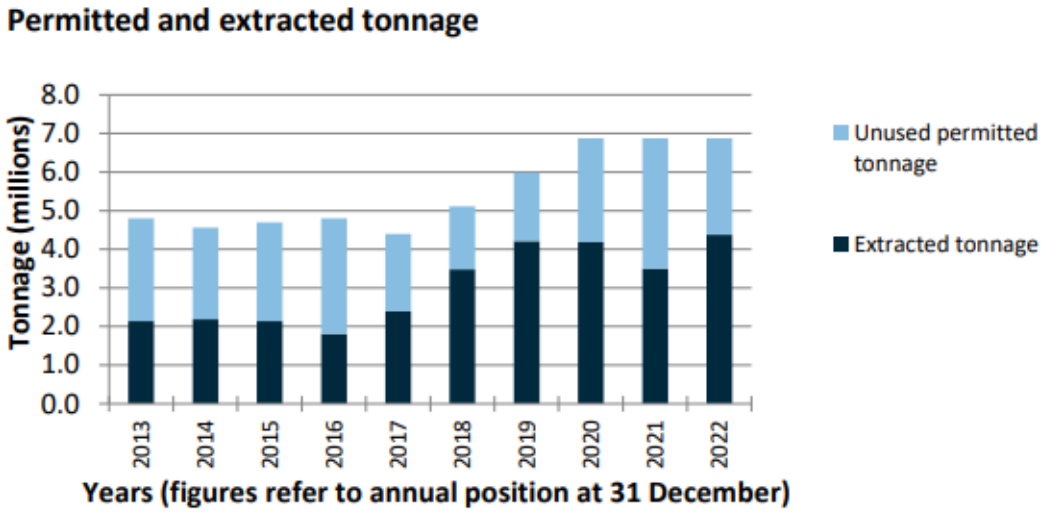


Figure 7: Marine aggregates permitted tonnage and extracted tonnage in the Humber Region[27]

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

58. 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[28]. The most recent published data is for 2019 and is presented below, representing an update on information presented in earlier LAAs, which presented data for 2005, 2009 and 2014.

59. The data indicates that in 2019 over 4mt of primary aggregate, mainly crushed rock, was consumed in the sub-region, representing an increase on the 2014, 2009 and 2005 figures. As shown in Table 1, total sales of primary aggregate extracted in the sub-region in 2019 were around 7.5mt, principally crushed rock, making the sub-region a substantial net exporter of aggregate. Sales of both sand and gravel and crushed rock significantly exceeded consumption, with all sales of sand and gravel being from the NYCC area and all sales of crushed rock from sites in either the NYCC area or YDNP.

Consuming sub-region	Sand and gravel total	Crushed rock	Aggregates total (2019)	Aggregates total (2014) (for comparison)	Aggregates total (2009) (for comparison)	Aggregates total 2005 (for comparison)
North Yorks	**1,263kt**	**2,901kt**	**4,165kt**	**3,926kt**	**3,131kt**	**2,591kt**

Table 10: Consumption of primary aggregate in the North Yorkshire Sub Region 2019, 2014, 2009 and 2005

[25] Crown Estates: Marine Aggregates Annual Review 2022
[26] URS, Marine Aggregates Study, Final Report, January 2014 and West Yorkshire Combined Authority, Marine Aggregates Study, December 2022
[27] Crown Estates: Marine Aggregates, The Crown Estate Licences, Summary of Statistics 2022
[28] A 2013 survey on consumption is not being carried out but one took place for 2014.

Source: BGS 2019, 2014, 2009 and 2005 Aggregate Minerals Surveys

60. 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.

61. Summary information on aggregates movements was published by BGS in August 2016, based on data for 2014. This enables an updated position on movements to or from the Sub-region to be presented, compared with previously published LAAs. 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. 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. Movements representing less than 1% of recipient area consumption or producer area sales have been excluded from the Tables.

Source of imports	% of North Yorkshire sub-region total consumption of crushed rock	Equivalent Tonnage (kt)
Durham	10 to 20	280 to 560
Cumbria	1 to 10	28 to 280
Doncaster	1 to 10	28 to 280

Table 11: Imports of crushed rock into North Yorkshire sub region in 2014

Destination of exports	% of NYCC area total sales of crushed rock	Equivalent Tonnage (kt)
Unknown destinations in Yorkshire and Humber region	80 to 90	658 to 740
West Yorkshire sub-region	10 to 20	254 to 507
South Yorkshire sub- region	1 to 10	21 to 212
Humber sub-region	10 to 20	72 to 145
Durham sub-region	4 to 9	150 to 300
Tees Valley sub-region	10 to 20	71 to 143
Unknown destinations in North East region	30 to 40	48 to 64
Destination of exports	% of YDNP area total sales of crushed rock	Equivalent Tonnage (kt)
West Yorkshire sub-region	30 to 40	761-1014
Lancashire sub-region	10 to 21	332- 665
Manchester/Merseyside sub-region	1 to10	34 to 347
Cumbria sub-region	1 to 10	15 to 152
Tees Valley sub-region	1 to 10	7 to 72
Scotland	40 to 50	6 to 8
Humber sub-region	30 to 40	217 to 290

Table 12: Exports of crushed rock from North Yorkshire County Council area in 2014

Source of imports	% of North Yorkshire sub-region total consumption of sand and gravel	Equivalent Tonnage (kt)
East Riding	1 to 10	11 to 113
Nottinghamshire	1 to 10	11 to 113
Sunderland	1 to 10	11 to 113

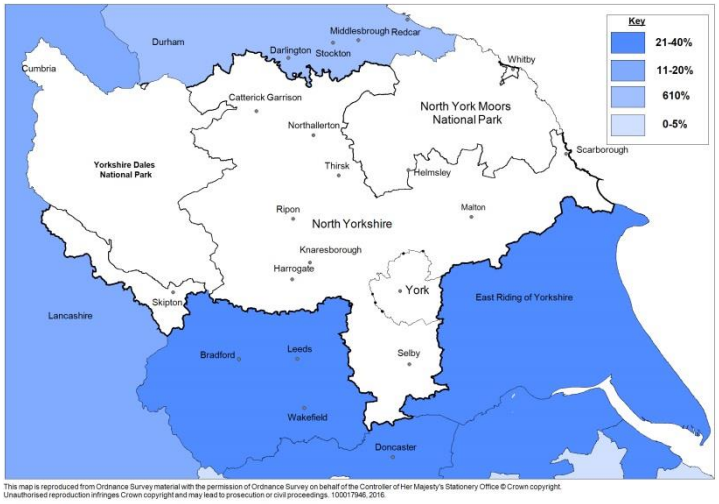
Table 13: Imports of Sand and gravel into North Yorkshire sub region in 2014

Destination of exports	% of North Yorkshire County Council area total sales of sand and gravel	Equivalent Tonnage (kt)
West Yorkshire sub-region	40 to 50	280 to 351
Humber sub-region	20 to 30	85 to 127
South Yorkshire sub -region	1 to 10	8 to 76
Unknown destinations in the Yorkshire and Humber region	20 to 30	85 to 128
Sand and gravel supplied from Durham sub region	40 to 50	171 to 214
Tees Valley sub region	10 to 20	37 to 74
Tyne and Wear sub-region	1 to 10	4 to 43
Unknown destinations in North East Region	10 to 20	29 to 58
Lancashire sub-region	1 to 10	4 to 42

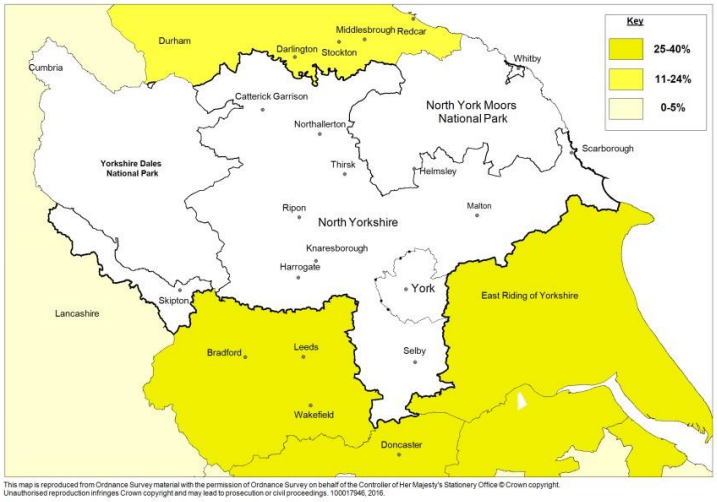
Table 14: Exports of sand and gravel from North Yorkshire County Council area in 2014

62. In summary the data appears to suggest that there are a relatively small number of potentially significant 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 other locations in Yorkshire and Humber and the North East region. Sales of sand and gravel to the North East region and to other locations in Yorkshire and Humber, particularly West Yorkshire, also appear to be important[29]. Volumes of imports are generally much lower but the larger movements into the sub-region appear to include crushed rock from Durham, Cumbria and Doncaster and sand and gravel from East Riding, Nottinghamshire and Sunderland (this latter movement is likely to be marine dredged material landed at wharfs on the Tyne). Although the specific patterns and volumes of movements display some differences compared with information presented in earlier LAAs, based on 2009 data, the overall picture remains one of the sub-region being a major exporter of aggregate, particularly to locations elsewhere in Yorkshire and the Humber and to the North East and North West regions, with smaller import movements, mainly from immediately adjacent authority areas, which is likely to reflect local market conditions. This information is presented in summary in the maps below.

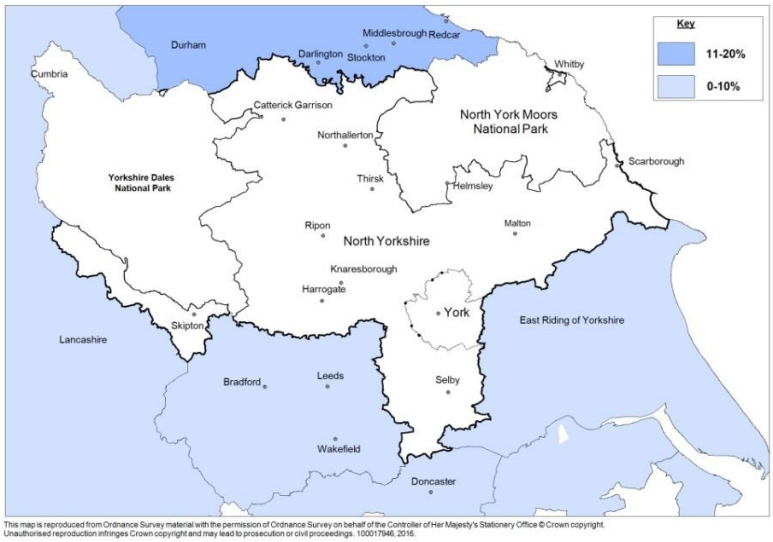
[29] Durham County Council, in response to consultation on the first LAA indicate that, although actual data is not available, they consider that the majority of the flows of both sand and gravel and crushed rock from North Yorkshire to the NE Region will be to destinations in the Tees Valley. They consider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



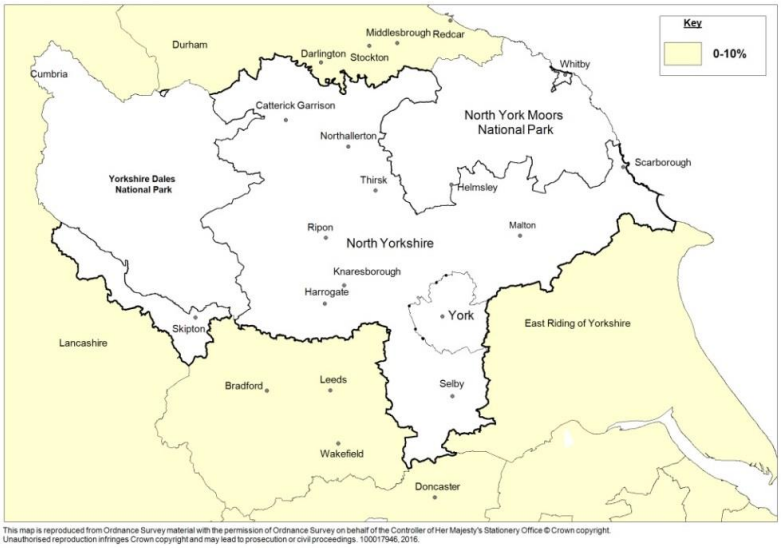
Map K: Exports of crushed rock from NY sub-region (% ranges relate to proportion of total NY sub-regional sales that the export movement represents) 2014 data



Map L: Exports of sand and gravel from NY sub-region (% ranges relate to proportion of total NY sub-regional sales that the export movement represents) 2014 data



Map M: Imports of crushed rock into the NY sub-region (% ranges reflect proportion of total NY sub-regional consumption that the import movement represents). 2014 data



Map N: Imports of sand and gravel into the NY sub-region (% ranges reflect proportion of total NY sub-regional consumption that the import movement represents). 2014 data

Aggregates landbanks in the North Yorkshire sub-region

63. 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 the former RSS[30]. 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 2013 the landbank has been calculated on the basis of average sales over the previous 10 years. Subject to agreement by the AWP to the approach to apportionment set out in this LAA, landbanks for sand and gravel and NYCC crushed rock are calculated based on the agreed apportionment (i.e. 2.44mt pa for sand and gravel and 3.75mt pa for crushed rock), in line with national guidance. More information on the derivation of this apportionment is set out in Appendix 2. 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. The crushed rock landbank in years for the YDNP, provided in Table 15, is based on 10 year average sales as there is no specific apportionment for the National Park area.

	Sand and gravel		Crushed rock			
	NYCC		NYCC		YDNP	
	Reserves (mt)	**Landbank (years)**	Reserves (mt)	**Landbank (years)**	Reserves (mt)	**Landbank (years)**
2009	18.4	**7.4**	103.9	**28.3**	106.2	**28.7**
2010	18.0	**7.5**	101.0	**28.1**	103.2	**30.0**
2011	16.2	**7.4 (7.0)***	97.7	**29.6 (28.0)***	104.5	**31.3 (29.6)***
2012	14.6[31]	**6.6**	97.0	**28.5**	89.2	**26.5**

[30] The Regional Strategy for Yorkshire and Humber (RSS) was revoked with effect from 22 February 2013, with the exception of policies relating to the York Green Belt, which have been retained.
[31] This is the total permitted reserve figure at the end of 2012. It does not include a further 4.5mt of sand and gravel in an extension to Wykeham Quarry in a permission which was, at the end of 2012, awaiting completion of a

	Sand and gravel		Crushed rock			
	NYCC		NYCC		YDNP	
	Reserves (mt)	**Landbank (years)**	Reserves (mt)	**Landbank (years)**	Reserves (mt)	**Landbank (years)**
2013	18.6	**8.9**	104.4	**31.6**	85.4	**25.9**
2014	16.9	**6.9**	100.6	**26.7**	85.3	**26.6**
2015	19.5	**8.0**	95.4	**25.4**	83.6	**27.0**
2016	20.4	**8.4**	88.6	**23.6**	82.0	**26.4**
2017	17.4	**7.1**	83.5	**22.3**	81.8	**26.3**
2018	28.2	**16.6**	81.3	**27.1**	75.7	**25.2**
2019	25.5	**15.9**	79.6	**26.5**	88.65	**30.5**
2020	24.8	**15.5**	78.8	**26.2**	83.34	**26.9**
2021	26.2	**16.4**	72.2	**22.5**	80.2	**21.7**
2022	24.3	**15.1**	91.2	**27.6**	84.5	**23.4**

Table 15: Reserves and landbank by mineral type
* See para 63 for explanation

64. The sand and gravel information for NYCC can be further broken down to provide landbank data by distribution areas. The split of sales between the northwards and southwards distribution areas and building sand has typically been in the vicinity of 45%, 50% and 5% of total sales respectively. These shares can be applied to the 2.44mt pa total requirement figure to generate an annual requirement figure for each area. This produces an indicative annual requirement for each area of 1.10mt, 1.22mt and 0.12mt respectively and can also be used to generate an indication of the current landbank for each area, as summarised in Table 16. This information is only provided for 2014, 2015 2016, 2017, 2018. 2019, 2020, 2021 and 2022 as the methodology had not been agreed in previous years.

	Northwards distribution area		Southwards distribution area (mt)		Building sand (mt)	
	Reserves (mt)	**Landbank (years)**	Reserves (mt)	**Landbank (years)**	Reserves (mt)	**Landbank (years)**
2014	6.8	**6.2**	9.4	**7.7**	0.8	**6.7**
2015	6.2	**5.6**	12.4	**10.2**	0.9	**7.5**
2016	5.2	**4.7**	13.7	**11.2**	1.5	**12.5**
2017	4.2	**3.8**	12.4	**10.2**	0.8	**6.7**
2018	15.1	**13.7**	12.5	**10.2**	0.6	**5.0**
2019	14.7	**13.4**	10.3	**8.4**	0.5	**4.2**
2020	14.0	**12.7**	10.3	**8.4**	0.45	**3.8**
2021	14.4	**13.1**	11.3	**9.3**	0.5	**4.1**
2022	13.6	**12.3**	10.3	**8.4**	0.4	**3.3**

Table 16: Reserves and landbank by distribution area for sand and gravel (2014-2021)

S106 legal agreement. The agreement was subsequently completed and the permission issued in March 2013. It should be noted that reserves quoted in the published AWP Annual Report for 2012 include the 4.5mt additional tonnage.

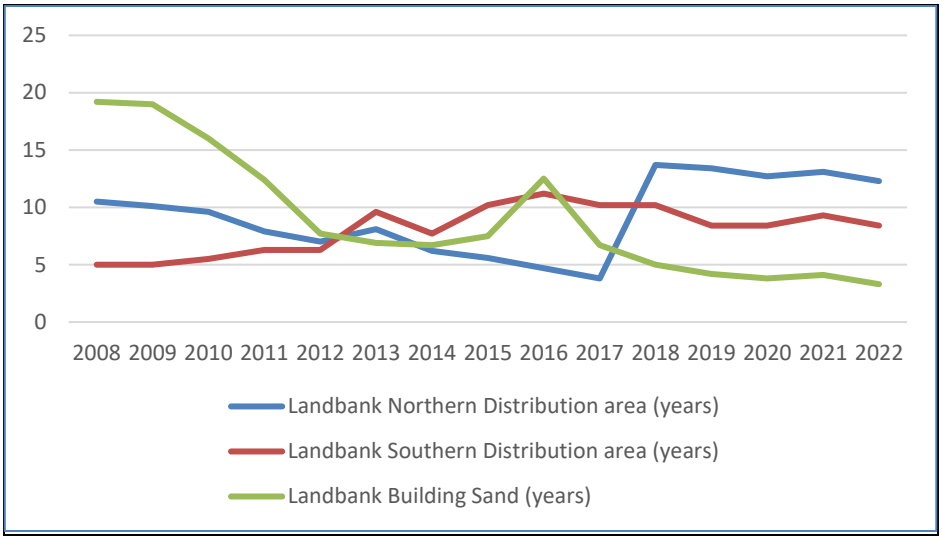


Figure 8: Landbanks by distribution area

65. The NPPF requires that mineral planning authorities should plan for a steady and adequate supply of sand and gravel by making provision for the maintenance of a landbank of at least 7 years. The overall sand and gravel landbank in the NYCC area (and hence for the whole of the sub-region) has generally remained slightly above but relatively close to a period of 7 years. This rose in 2018 due to new permissions and is currently over 15 years. At the end of 2017 the landbank in the northwards distribution area was below 7 years level but was above it in the southwards distribution area, in 2018 due to new permissions the landbanks for both the northern and southern distribution areas increased and are both currently over 7 years. The landbank of building sand was also above 7 years in 2016 went below in 2017 but since 2018 has been above 7 years landbank.

66. Commercially viable sand and gravel resources are not thought to 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. An updated assessment of potential sand and gravel resources in the City of York area was undertaken by BGS for City of York Council during 2013, utilising the same methodology applied in the recent re-assessment of sand and gravel resources in the North Yorkshire County Council area. The assessment concludes that good quality sand and gravel resources are not common in the City of York area. In particular, glaciofluvial sediments, which are the most extensively worked resources within North Yorkshire, are not as common in the York area and are generally of poorer quality. Sterilisation by surface development is also a significant factor. Glacial sand and gravel deposits in the York area are also found to be not as common or as prospective. The study indicates that significant quantities of blown sand are present to the north of the City, containing significant tonnages of fine sand. However these are expected to be only suitable for building sand, not concreting and are subject of a range of constraints to development. There has not been any apparent interest from the minerals industry in the development of resources within York.

67. Crushed rock is currently extracted in two MPA areas in the sub-region, NYCC and YDNP. The NPPF requires that mineral planning authorities should plan for a steady and adequate supply of crushed rock by making provision for the maintenance of a landbank of at least 10 years. The landbank for crushed rock in NYC is currently over 25 years.

68. 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 45mt over the past 15 years, partly as a result of reassessment of reserves by industry, 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. An application has been permitted for deepening of Arcow Quarry in the YDNP which will generate an additional 3.1mt of reserves of high PSV stone. This has been included in the 2017 figures. A planning application to deepen Swinden Quarry, to supply an additional 11.3mt of Carboniferous Limestone and extend its life to 2039 was approved in 2019, hence the increase in landbank.

69. Extraction of crushed rock ceased in 2007 in the NYMNP, upon closure of Spaunton Quarry. Extraction of limestone for use as aggregate had also previously taken place at Spikers Hill quarry in the North York Moors National Park although this ceased prior to 2005. There are therefore no other remaining permitted reserves and national policy constraints suggest that it may be unlikely that future reserves 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

70. 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 former RSS.

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**
Yorkshire & Humber	**78**	*73*	**212**	*220*	**5**	*3*	**133**	*128*	**3**	*0*
England	**1028**	1068	***1492***	*1618*	**259**	*230*	**993**	*919*	**136**	*169*

*Table 17: Comparison of National and Regional apportionment guidelines for England published in **2009** and 2003*

71. 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.

72. National planning guidance on LAAs, published in March 2014, indicates that the two main roles of the aggregates Guidelines are to:

a) 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.
b) 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.

73. This reflects policy 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).

74. The 2009 aggregates Guidelines have not been subject to apportionment[32] in the Yorkshire and Humber area. The Regional Spatial Strategy for Yorkshire and Humber (now revoked) contained an agreed apportionment of 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 former RSS should no longer be used and it is therefore not considered to represent an appropriate basis for future planning. As the RSS itself has been revoked the apportionment it contained is presented below for information only and as a comparison with actual sales over recent years (see Table 1).

Area	Land-won sand and gravel (mt)	Land-won crushed rock (mt)
North Yorkshire - North Yorkshire CC - Yorkshire Dales NP - North York Moors NP	42.1 (42.1)	140.8 (74.0) (66.0) (0.8)
South Yorkshire	13.0	53.5
West Yorkshire	5.5	17.8
Humber - East Riding - North Lincolnshire	12.4 (8.3) (4.1)	7.9 (5.3) (2.6)
TOTAL	73.0	220.0

Table 18: Sub-regional apportionments for aggregates in the Yorkshire and Humber Region, 2001 to 2016 (mt) as incorporated into former RSS 2008.

75. Planning Practice Guidance on LAAs (March 2014) 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. They should also look at average sales over the last 3 years in particular to identify the general trend of demand, as part of consideration of whether it might be appropriate to increase supply. Comparative figures for 10 year and 3 year average sales are provided in Table 19 below.

76. With regard to calculation of landbanks, the 2014 Planning Practice Guidance advises that these should be calculated annually, with the length of the landbank being the sum in tonnes of all permitted reserves for which valid permissions are extant, divided by the annual rate of future demand based on the latest annual Local Aggregate Assessment. The NPPF also states that MPAs should plan for a steady and adequate supply of aggregate by making provision for the maintenance of a landbank of at least 7 years for land-won sand and gravel and at least 10 years for crushed rock.

77. Taking into account current policy and guidance referred to above, the approach in this LAA is therefore to use the 2009 aggregates Guidelines as an indicator against which any other sources of information about possible future requirements can be compared, including 10 years average sales data.

78. 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*

[32] 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

minerals from outside National Parks, the Broads, Areas of Outstanding Natural Beauty and World Heritage sites, Scheduled Monuments and Conservation Areas' (NPPF). National planning policy also indicates that planning permission for major development in such areas should be refused except in exceptional circumstances

79. 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, 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.

Comparison of actual sales with apportionment

80. In the following tables and graphs, which compare actual sales with the former 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. The apportionment figures for the years 2007 to 2008 are based on the sub-regional apportionment of the 2003 National and Regional Aggregate Guidelines for 2003 – 2016 as contained in former RSS. 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. For 2012 and 2013, for the purposes of the Table below, 10 years average sales has been assumed as the initial basis for apportionment. For 2014 and 2015 the demand forecast identified in this LAA has been used. Information on average sales over the most recent 3 years for which data is available is also included to facilitate monitoring of trends, in line with current Government guidance. It should be noted that crushed rock sales for 2013 include sales from reserves located in Wakefield but processed in North Yorkshire.

	Sand and gravel (mt) (NYCC)		Crushed rock (mt) (NYC)	
	Sales	Agreed Apportionment (or demand forecast for years 2014 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022)	Sales	Agreed Apportionment (or demand forecast for years 2014 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022)
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*
2012	1.6	2.2#	2.4	3.4#
2013	1.5	2.1#	2.9	3.3#
2014	1.7	2.44	3.4	3.75
2015	1.7	2.44	3.7	3.75
2016	1.7	2.44	3.3	3.75
2017	1.75	2.44	3.2	3.75
2018	1.8	2.44	3.5	3.75
2019	1.4	2.44	3.0	3.75
2020	1.5	2.44	3.2	3.75
2021	1.5	2.44	3.3	3.75
2022	1.5	2.44	3.1	3.75
10 Year Average	1.6	-	3.2	-
3 year average	1.5	-	3.2	-

Table 19: Sales relative to previous apportionment by mineral type

* based on 7 years average sales

based on 10 years average sales

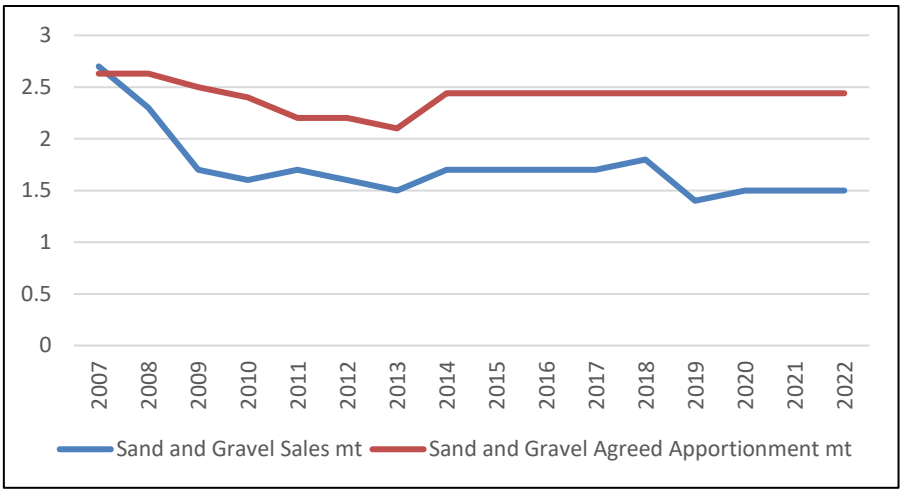


Figure 9: Trend in sales relative to apportionment for sand and gravel in the NYC area

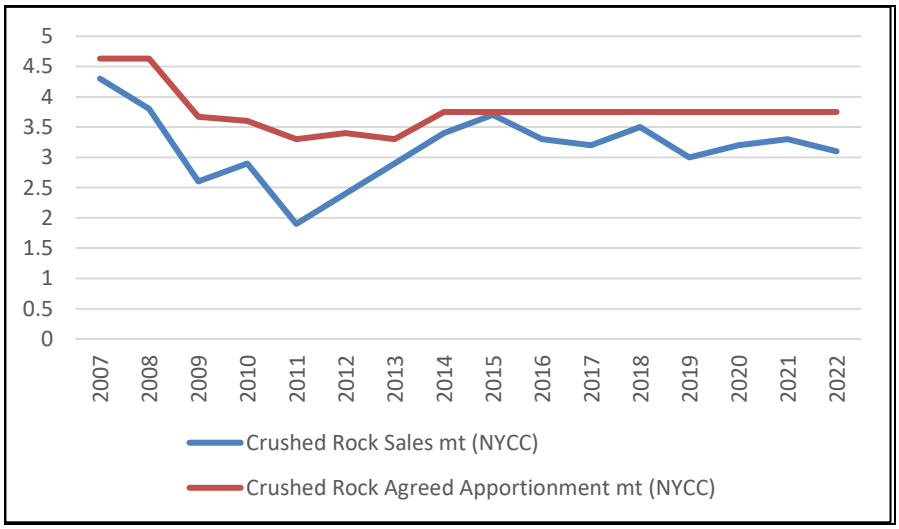


Figure 10: Trend in sales relative to apportionment for crushed rock in the NYCCarea

81. The data shows that, until 2008, sales of sand and gravel broadly reflected the sub-regional apportionment of the 2003 Guidelines contained in former RSS. Since then, sales have been significantly below the agreed apportioned figure. For crushed rock, sales from NYCC have been variable but consistently below the RSS apportionment. For 2014, 2015 2016, 2017 2018, 2019 2020 and 2021 sales have been moving closer to the current agreed forecast figure but dropped slightly in 2022.

82. 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 been subject to any formal 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
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 20: Hypothetical sub-regional apportionment of 2009 National and Regional Guidelines

83. 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 former 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 1.6mt and average sales over the past 3 years of 1.6mt 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.

84. For crushed rock the hypothetical sub-regional apportionment of the 2009 Guidelines is, at 3.84mt per annum for NYC, substantially below the former RSS apportionment of 4.63mt. However, it remains over 15% higher than average sales of 3.0mt 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.

85. As with the NYC area, sales of crushed rock from the Yorkshire Dales National Park reduced significantly between 2007 and 2009, (although sales of high PSV aggregate from the National park have remained relatively steady). The proportionate contribution to total sub-regional supply from the NYC 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

86. A range of methods could be used to help identify the potential scale of future requirements for aggregate. It is considered that any method used should be compatible with national policy and guidance, be relatively straightforward to calculate and lead to a realistic forecast capable of being monitored.

87. Whilst use of historic average sales over the previous 10 year period as an indicator of future requirements has advantages in terms of simplicity and transparency it has significant disadvantages. 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. In particular, it does not reflect current national and local aspirations for growth, particularly expected growth in house building, which links directly to a requirement for aggregate. National guidance requires account to be taken of other local information, although 10 year average sales data can provide a useful benchmark against which the implications of local factors can be assessed. It is therefore considered further below.

	Sand and Gravel (10 year average sales, mt, 2013-2022)	Crushed Rock (10 year average sales, mt, 2013-2022)
North Yorkshire County Council	1.6	3.2
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 21: 10 year average sales data (2013-2022) for crushed rock and sand and gravel for North Yorkshire County Council

88. 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 19 over the 10 year period 2021 to 2030 (i.e. average annual sales x 9).

	Sand and gravel requirement 2022 to 2030 (mt)	Crushed Rock requirement 2022 to 2030 (mt)
Based on 10 year average sales data		
North Yorkshire County Council total	12.8	25.6
Yorkshire Dales National Park*	-	-
North York Moors National Park*	-	-
City of York Council*	-	-

Table 22: Summary of hypothetical future requirements over the 9 year period 2022 to 2030 by mineral type and MPA (based on 10 year average sales).

89. 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. Taking into account the level of permitted reserves at the end of 2022 the above information can be used to generate an indicative shortfall in reserves over the 8 year period to the end of 2030.

		North Yorkshire County Council	NY sub-region
Total sand and gravel (mt)	Potential future requirements to 2030 based on 10 year average sales	12.8	12.8
	Current reserves (end 2022)	24.3	24.3
	Hypothetical shortfall	0	0
Total crushed rock (mt)	Potential future requirements to 2030	25.6	Figure not provided due to policy constraints
	Current reserves (end 2022)	91.2	175.5
	Hypothetical shortfall	0	0

Table 23: sand and gravel and crushed rock Indicative requirements and shortfalls 1 January 2023 – 31 December 2030 (based on 10 year average sales)

90. For both sand and gravel and crushed rock the methodology suggests that, in overall terms, there are adequate reserves with permission to ensure adequate supply though to 31 December 2030.

Alternative methods of identifying future demand

92. As noted earlier, a 10 year historic sales approach does not take into account a range of other local factors which may impact on potential future demand for aggregate. Consultation with the minerals industry[33] has also suggested that other factors should be taken into consideration, particularly for sand and gravel. An alternative approach to predicting demand for aggregate for the NYC area was developed in the LAA 2014 and is summarised in Appendix 2. It is considered appropriate to continue to utilise this approach which, based on the most up to date data available, leads to an estimated requirement of 2.44mt per annum for sand and gravel over the period to 31 December 2030. Predicted sand and gravel requirements and indicative shortfalls over this period are summarised in the following Table.

		NY sub-region (excluding YDNP)	NY sub- region
Total sand and gravel (mt)	Potential future requirements 1 January 2023 to 31 December 2030 (at assumed 2.44mtpa)	19.5	19.5
	Current reserves (end 2021)	24.3	24.3
	Indicative shortfall	0	0
Sand and gravel (northwards distribution area) (mt)	Potential future requirements 1 January 2022 to 31 December 2030 (at assumed 0.66mtpa)	5.28	5.28
	Current reserves (end 2021)	13.6	13.6
	Hypothetical shortfall	0	0
Sand and gravel (southwards distribution area) (mt)	Potential future requirements 1 January 2023 to 31 December 2030 (at assumed 1.70mtpa)	13.6	13.6
	Current reserves (end 2021)	10.3	10.3
	Hypothetical shortfall	3.3	3.3
Building sand (mt)	Potential future requirements 1 January 2022 to 31 December 2030 (at assumed 0.07mtpa)	0.56	0.56
	Current reserves (end 2021)	0.4	0.4
	Hypothetical shortfall	0.16	0.16

Table 24: sand and gravel indicative requirements and shortfalls 1 January 2023 – 31 December 2030 (based on demand forecast methodology)

93. A similar approach can be followed to generate updated requirements and indicative shortfalls for the main types of crushed rock worked in the area, based on the assumed total annual requirement of 3.75mtpa and the share of total sales represented by each

[33] Eg Forecasting Demand for Aggregates Minerals - Discussion Paper July 2014 and September 2014 and North Yorkshire County Council, City of York Council and North York Moors National Park Authority Minerals and Waste Joint Plan Issues and Options Consultation February 2014.

main type, based on historical data (see table 3). This indicates that sales of the main rock types have been in the proportions: Carboniferous Limestone 45%, Magnesian Limestone 42% and Jurassic Limestone 13%. This gives an indicative annual requirement of 1.8 mt, 1.50mt and 0.45mt respectively.

		NY sub-region excluding YDNP	NY sub-region
Total crushed rock (mt)	Potential future requirements 1 January 2023 to 31 December 2030 (at assumed 3.75mtpa)	30.0	-
	Current reserves (end 2022)	91.2	
	Indicative shortfall	-	
Carboniferous Lst (mt)	Potential future requirements 1 January 2023 to 31 December 2030 (at assumed 1.8mtpa)	14.4	
	Current reserves (end 2022)	58.9	
	Hypothetical shortfall	-	
Magnesian Lst (mt)	Potential future requirements 1 January 2023 to 31 December 2030 (at assumed 1.50mtpa)	12.0	
	Current reserves (end 2022)	29.0	
	Hypothetical shortfall	-	
Jurassic Lst (mt)	Potential future requirements 1 January 2023 to 31 December 2030 (at assumed 0.45mtpa)	3.6	
	Current reserves (end 2021)	3.3	
	Hypothetical shortfall	0.3	

Table 25: Crushed rock indicative requirements and shortfalls 1 January 2023 – 31 December 2030 (based on demand forecast methodology)

Other relevant local information influencing supply of and demand for aggregate

94. Guidance on the preparation of Local Aggregates Assessments indicates that consideration should be given to a range of other matters which might impact on supply of aggregate, in order to gain an overall view of the capability of the Sub-region to match potential demand with supply. 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) Geographical distribution of reserves and markets

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, particularly for concreting quality sand and gravel.

- Principal markets for sand and gravel are the internal North Yorkshire market, the North East Region and West/South Yorkshire and the Humber area. Available information suggests a relatively clear distinction between reserves in the northernmost part of NYC which mainly serve markets in the NE region, and reserves elsewhere which serve markets within North Yorkshire and adjacent areas in Yorkshire and Humber. The landbank of reserves in both these areas, but particularly the southern distribution area, is relatively low compared with sales, although recent permissions in both distribution areas have increased both landbanks. The geographical distribution of available reserves may, in future, affect the ability of NYC to continue to meet current patterns of supply without increased haulage distances. Continued availability of sand and gravel in the Vale of Pickering area is 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 NYC 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 overall 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 NYC reserves of Magnesian Limestone in relation to supply were relatively low, but new permissions have increased the level of reserve so there is currently no shortfall. 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 NYC are also remote from other sources of crushed rock and are of relevance to maintaining a local source of supply of crushed rock in the eastern part of the sub-region and is thus a strategic issue for this part of the sub region. Although the generally lower quality of this stone limits its range of uses which means that it cannot provide for all local demand this does not affect its importance to the local market in keeping travel distances for minerals down to a minimum for its core uses as bulk fill concrete products.

ii) Availability of different main types of aggregate

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 relevant 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 recent investigation into the aggregates, cement and ready mix market[34]. 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*[35] *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 NYC). 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. This point was

[34] Eg Aggregates, Cement and Ready-mix Concrete Market Investigation: Updated Statement of Issues, Competition Commission 26 November 2012.
[35] Ready Mixed Concrete

also raised by a supplier of crushed rock in the NYC area in response to Issues and Options consultation on the Minerals and Waste Joint Plan. 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.

- Consultation with industry during preparation of the first LAA suggested that substitution of sand and gravel by 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 obtain. 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 is readily capable of substituting for land-won sand and gravel for concreting purposes[36] and may be used in a mix with crushed rock. It can represent a premium product which can reduce the amount of cement required for a given concrete strength. Although substitution of marine aggregate for land-won sources 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 and Humber areas). A study of this potential was commissioned by minerals planning authorities within the Yorkshire and Humber area and concluded that, in the short term, a significant increase in supply into the Yorkshire and Humber Region was unlikely but would become increasingly likely in the medium term and inevitable in the longer term (20 years and beyond for the purposes of the study). To enable marine aggregate to become more readily available investment will be required in supply-related infrastructure, although it is likely that the majority of this would need to be located outside the North Yorkshire sub-region in order that it could serve key market areas in West and South Yorkshire. Increased use of marine aggregate in markets currently supplied by quarries in North Yorkshire would reduce the pressure on sand and gravel supply from the North Yorkshire sub-region. Leeds City Council granted permission for a new canal wharf in 2015 in Leeds for the receipt of up to 120ktpa of marine aggregate. They further comment that downward pressure on land-won supply of sand and gravel from North Yorkshire may assist moves to safeguard wharfs and rail sidings in Leeds and move towards an approach where a greater overall proportion of supply in West Yorkshire is provided from marine sources.

- 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*

[36] E.g. The strategic importance of the marine aggregate industry to the UK (BGS Research Report, OR/07/019, 2007)

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 first LAA suggested that secondary aggregate was being used as a replacement for both RMX and block manufacture, with FBA being particularly important in concrete block manufacture). One power station operator indicated that secondary aggregate sold from the station played 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, subject to their availability, there could be 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.

- A decision by North Yorkshire County Council to grant permission for a major new waste recovery facility at Allerton Park Quarry in central North Yorkshire has led to the production of up to 70kt per annum of recycled Incinerator Bottom Ash with potential for use as a secondary aggregate. This represents an additional source of alternative aggregate in the sub-region. The potential for further development of energy from waste capacity in the Sub-region (such as that proposed in a permission for a major EfW facility at Kellingley Colliery in southern North Yorkshire) could also lead to further availability of such material in future. On the other hand, a known source of secondary aggregate, Kellingley Colliery, closed at the end of 2015. Therefore an overall increase in the proportion of supply met by secondary and recycled materials is considered unlikely.

iii) Planning and infrastructure constraints and issues

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

- There is pressure for growth, particularly in the form of increased rates of house building and associated infrastructure, which is likely to generate upward pressure on demand for construction aggregate. This pressure is likely to arise both within the NY sub-region and within key external market areas supplied from the Sub-region.

- 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 long term as a result of 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 has been influenced significantly by the outcome of a number of planning permissions for new sand and gravel reserves within the NYCC area, changing the potential risk to supply from near term to long term. The potential substitutability of crushed rock for sand and gravel for concreting uses (see above) may help offset the effect of any reduced supply of sand and gravel. Similarly, in the medium term and beyond marine aggregate may be able to play a greater role in offsetting the effects of any sand and gravel supply constraints in North Yorkshire.

- 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, Magnesian Limestone and to a lesser extent Jurassic 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. Access from these reserves to the A1 and key external markets has been facilitated by the completion of the Bedale, Aiskew and Leeming Bypass in 2016.

- In the YDNP, Swinden and Horton Quarries are major producers of limestone aggregate and have planning permissions until 2039 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. An application to deepen Swinden Quarry approved in 2019 provided an additional 11.3mt of Carboniferous Limestone and extended the life of the site until 2039.

- The four high PSV quarries in the YDNP, Dry Rigg, Arcow, Horton and Ingleton, currently have planning permission to 2034, 2029, 2042 and 2025. 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. An application to deepen Arcow Quarry was received in 2016 and granted in July 2017, permissions have also recently been granted for Dry Rigg and Ingleton. Working of high PSV stone commenced in 2017 at Horton Quarry. There are also significant additional resources beneath the base of the Carboniferous Limestone in Horton Quarry. These schemes have significantly increased the reserves of high PSV stone. 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 on-going with Cumbria County Council, the nearest authority with quarries producing high PSV stone, so that both authorities remain aware of the current situation in their areas. 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 very 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 upgrade to the A1(T) to motorway standard between Leeming to Barton (now completed) may have implications for access to some areas of sand and gravel resource in the area south of Catterick. As noted above, construction of the Bedale, Aiskew and Leeming bypass (now completed) will facilitate road access to/from reserves of crushed rock in the Leyburn area.

- The YDNP is in discussions with operating companies on the establishment of rail sidings to serve the Ribblesdale quarries, according to the YDNP Local Plan 2015 - 2030 limited tonnages from Ingleton Quarry are transported by rail via sidings at Ribblehead. Planning applications for the construction of a railhead at Arcow Quarry to be used to transport stone from both Arcow and Dry Rigg Quarries have been approved by the Yorkshire Dales National Park Planning Committee and the railhead at Arcow is now operational. Detailed proposals for rail sidings at Horton Quarry have been approved.

- 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 fully 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.

- 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, biodiversity and agricultural land quality constraints and the prevalence of airfield safeguarding zones, as well as accessibility issues taking into account the highly rural nature of the area.

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

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 Local Aggregates Assessments for West Yorkshire and for Doncaster and Rotherham) 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 the first LAA resulted in the view that resources in West Yorkshire are likely to be less than indicated in Local Plans and that North Yorkshire is likely to remain a key source of supply, 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 their Local Aggregate Assessment[37], which concludes that resource depletion in the Idle Valley is likely to be the biggest factor potentially influencing exports to South Yorkshire. The Doncaster and Rotherham Local Aggregate Assessment[38] states that South Yorkshire has an adequate supply of sand and gravel in the short term, but further reserves will need to be made available from alternative sources to ensure a steady and adequate supply. It also notes that production of sand and gravel in Nottinghamshire is moving southward away from the Idle Valley, which could impact on supply later on in the plan period. A joint position statement relating to aggregates supply into Doncaster and Rotherham from Nottinghamshire and Derbyshire has been completed by the relevant authorities to help safeguard the aggregates supply position. A possible approach to factoring in increased demand on North Yorkshire sand and gravel, arising from constraints on availability in West and South Yorkshire, was included in the Forecasting Demand for Aggregates Minerals Discussion Paper July 2014 and incorporated in the forecasting methodology outlined in Appendix 2 of this LAA.

- The West Yorkshire Combined Authority points out that West Yorkshire has a high construction aggregate demand and is highly dependent upon aggregate supplies from the North Yorkshire sub-region as they are unable to meet their own needs and has limited current alternative resources of supply identified within the Aggregates Minerals Survey 2014 data, other than Doncaster Magnesian Limestone. The consequences of

[37] Nottinghamshire Minerals Local Plan, Local Aggregate Assessment July 2017
[38] Doncaster and Rotherham Local Aggregate Assessment 2023

reduced supplied of aggregate from the North Yorkshire sub-region diminishing in the mid-term, without alternative sources being identified, has the potential to be a significant economic risk to the Leeds City Region.

- Any tendency for increased supply into West or South Yorkshire could have corresponding implications for the ability for the sub-region to continue to supply sand and gravel into the NE Region, which is another main export market for sand and gravel worked in the Sub-region. The Tees Valley area currently does not produce any land-won aggregate to help meet local requirements, although some importation of marine aggregates takes place. There is therefore a substantial reliance on supply from surrounding areas, mainly North Yorkshire and Durham. If the level of supply from either North Yorkshire or Durham is reduced then there is likely to be increased pressure on the other Authority to increase their level of supply. The Joint Local Aggregate Assessment for Durham, Northumberland and Tyne and Wear indicates that Durham will not require any extra provision of either sand or gravel or crushed rock during the period up to 2030 as there are sufficient reserves with planning permission or in the pipeline to deliver the supply requirements over the Plan period. Tees Valley authorities have indicated that there is potential for increased levels of marine dredged sand and gravel to be supplied into Tees Valley, which could ease pressure on land-won supply from North Yorkshire, but this is unlikely to occur in the short term. A first Local Aggregates Assessment for the Tees Valley was produced in February 2015 both it and subsequent Local Aggregate Assessments do not suggest any expectation of a significantly increased supply of aggregate from the Tees Valley area in future as a result of resource constraints.

- 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 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 aggregate grade crushed rock in Derbyshire, compared to many other areas of the country, along with the importance of maintaining supply in order to sustain and stimulate national economic growth, is acknowledged in the joint Local Aggregates Assessment for Derbyshire County Council, Derby City Council and the Peak District National Park. The LAA states that there is a large enough landbank of aggregate grade crushed rock to be able to supply current markets as required through the plan period up to 2030.

- 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. A study[39] suggests that in the medium to long term the supply of marine aggregate will increase provided there is investment made into the infrastructure required to land and transport it.

- Imports from further away (including from overseas sources) in response to increased road haulage costs or other commercial factors might also occur. The extent to which this may be the case is currently unknown.

95. 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 future requirements and to help inform

[39] URS, Marine Aggregates Study, Final Report January 2014

coordination between relevant mineral planning authorities within and around the Yorkshire and Humber area.

96. The Mineral Products Association paper[40] states that the 2016 annual survey shows potential shortage of supply for sand and gravel nationally in the past 10 years. For every 100tns of sand and gravel used only 61tns on average is replaced through new planning permissions resulting in significant declines in permitted reserves. The report indicates that the demand for aggregates could increase by 18% by 2030. The major challenge will be tackling the decline in land-won sand and gravel permitted reserves by compensating through an increasing supply from alternatives.

97. 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

98. 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:

Crushed rock supply

99. 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 identified in this LAA. This would be dependent on continuing supply of currently permitted resources from within the Yorkshire Dales National Park and from within AONBs in NYCC. However, unless new permissions are granted, there is potential for reserves of Magnesian Limestone in particular to be significantly reduced in the mid term. The recent adoption of the Minerals and Waste Joint Plan, which covers all of the sub area apart from the YDNPA, will provide more certainty over future supply options for crushed rock.

100. 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. Extensions to working areas (where possible) may also be beneficial at some sites in order to help maintain production capacity, unless output at other remaining sites could be increased. A range of physical, economic and environmental constraints could impact on this, although it should also be noted that crushed rock reserves and production are spread across a substantial number of sites and operators, which should help with flexibility in terms of the ability to match changes in demand with corresponding adjustments in supply. It is also likely that resources in dormant sites would be able to make a significant contribution to crushed rock supply in the mid-term and beyond.

Sand and gravel supply

101. Future 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 long term. This would have a substantial impact on supply into the adjacent NE Region and elsewhere in the Yorkshire and Humber Region. The recent adoption of the Minerals and Waste Joint Plan,

[40] Mineral Products Association Long-term aggregates demand & supply scenarios 2016 -30

which covers all of the sub area apart from the YDNPA, will provide more certainty over future supply options for sand and gravel.

102. Supply constraints outside the NY sub-region, and the probable lack of opportunity for development of significant 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[41].

103. Maintenance of supply in both northwards and southwards distribution areas, and for building sand, will be important in helping to maintain an appropriate overall balance of supply of sand and gravel. In the absence of more specific information it is considered that the total sand and gravel requirement should be sub-divided across the northwards and southwards distribution areas and for building sand in accordance with their current approximate share of the total (i.e. 27% Northwards distribution area, 70% Southwards distribution area and 3% Building Sand).

104. 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 continued 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. As with crushed rock sand, albeit to a lesser extent, reserves and production of sand and gravel is spread across a number of sites and operators, providing some flexibility to match changes in demand with corresponding levels of supply.

105. 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 discussion earlier in this LAA). 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.

Marine aggregate supply

106. The national Marine Policy Statement (2011) highlights the importance of marine aggregate in UK supply and the NPPF and associated guidance also provide support for use of this source of supply. Data suggests that the current contribution from marine aggregate to overall supply of aggregate within the NY sub-region is relatively small. The expected 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 and increased.

107. A recent study 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 land-won aggregate from the NY sub-region in the mid to longer term. However it is considered reasonable to assume at this stage that the proportion of overall supply in both the Yorkshire and Humber region and the NY sub-region will remain broadly static, or only increase relatively slightly, in the short term. Safeguarding of relevant infrastructure in line with national policy will be important in helping to support supply capability in future. Marine Conservation Zones have recently been

[41] Durham County Council indicated, in response to consultation on the first LAA, that on the basis of current and expected permitted reserves and subject to the commercial decisions on operators in respect of sites not currently worked, 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.

identified off the North East Coast but the impact of this, if any, on the potential overall supply of marine dredged aggregate from the area is not known.

Secondary aggregate supply

108. 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 likely that levels of supply of some secondary aggregate, 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. The closure of Kellingley Colliery at the end of 2015 is an example of this and the move of power stations away from using coal as a fuel source. Any further 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). The marketability of secondary aggregate has been impacted adversely by the 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 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. There has been recent permission granted in April 2021, for the extraction and export of 23 million tonnes of PFA from Gale Common. This permission is currently subject of a legal challenge and so cannot be taken into account in this LAA.

109. There is potential for a new, relatively small scale of 70kt per annum, 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 provides 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. Further permitted but not yet operational EfW capacity in or close to the sub-region (such as proposals for EfW capacity at Kellingley Colliery), both FM1 and FM2 at Ferrybridge Power Station are now operational leading to additional such sources of supply.

Recycled aggregate supply

110. 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 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 in line with levels prevailing over recent years.

Imports from elsewhere

111. 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.

112. 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. In response to consultation on an earlier version of this LAA, Leeds City Council have indicated that there is current interest in development of a new rail-linked aggregate unloading facility in Leeds for receipt of aggregate worked outside the Yorkshire and Humber area.

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

Key messages for local planning in the NY sub-region

113. Taking into account the range of information presented in this updated 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 an assumed annual equivalent demand of 2.44mtpa for sand and gravel and 3.75mtpa for crushed rock for the period 1st January 2023 to 31 December 2030 is considered appropriate for the NYC area.

2) The previous shortfall in the provision of sand and gravel from the NYC identified in previous LAA's has been positively influenced by new planning permissions being granted, so much so that there is currently no shortfall forecast in sand and gravel supply up to 2030 and beyond.

3) The current supply patterns for concreting sand and gravel can be maintained without increasing overall haulage distances as there is no shortfall forecast in either the northwards or southwards distribution area up to 2030.

4) Some further provision of building sand (an indicative total of 0.16mt) is also likely to be required in order to maintain supply over the period 1st January 2022 to 31 December 2030.

5) Consideration should be given to the extent to which further resources of Magnesian and Jurassic 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. Reserves in dormant crushed rock sites in the NYCC area are also likely to become of more significance in contributing to future supply.

6) 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.

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

Key issues for cross-boundary liaison

114. Preparation of this updated LAA has also allowed identification of a number of cross-boundary relationships in aggregate supply which may be of current relevance. These include:

A. Imports

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

2) East Riding Council and Nottinghamshire County Council in respect of imports of land-won sand and gravel

3) Durham, Cumbria and Doncaster Councils in respect of imports of crushed rock

It should be noted that whilst the above import movements represent the more significant movements (by volume) as reported through the national collation of the 2014 Aggregates Monitoring survey, they are nevertheless relatively small in scale. In each case, with the exception of imports of crushed rock from Durham, they represent potentially as little as 1% of total NY sub-regional consumption. In the case of imports from Durham the estimated figure is between 1 and 10% of total NY sub-regional consumption 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 and the Humber area

It should be noted that a high level of the exported sand and gravel and crushed rock is utilised by developments in the West Yorkshire region and so is an important market for the North Yorkshire sub-region.

Key matters that should be kept under review

115. In addition to routine monitoring of sales, reserves and landbanks, preparation of the 7th LAA has identified a number of issues where on-going monitoring and/or review, including through LAAs prepared by other mineral planning authorities, will be useful, subject to necessary data being available These are:

1) The trend in supply of marine aggregate into main markets currently served by land-won concreting aggregate from the NY sub-region should be monitored.

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 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) Any proposed major infrastructure projects that may give rise to unforeseen high level of demand for aggregate in the NY sub-region.

Appendix 1 – Information relating to specific sites and facilities

Aggregates quarries in the NYCC area (with active permissions[42])	Location	Status at April 2022	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer tem = 16 years +)
Crushed rock quarries				
Carboniferous Limestone				
Skipton Rock	Craven District	Mothballed	Large reserves but not been worked for extensive period of time. The only non-dormant crushed rock permission in the Craven area of NYCC. Permission expires in 2042	Has capability to make substantial additional contribution to supply subject to commercial decision by operator. Has potential to offset any reduced production from the YDNP
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.	May become exhausted around 2035
Barton	Richmondshire District	Active	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
Duckett Hill	Richmondshire District	Active	Close to NYCC boundary with NE region. Proximity to A1(M). Estimated life of site is to 2042	Potential to maintain supply to 2030 and beyond
Forcett	Richmondshire District	Active	Close to NYCC boundary with NE region. In close proximity to A66. Permission currently expires in 2026 following extension of time for working being granted.	May become exhausted by 2026.
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. Has substantial shared dormant reserves with Wensley Quarry in adjoining Cote Pastures IDO area	Potential to maintain supply to 2030 and beyond
Low Grange Quarry	Richmondshire District	Active	Located close to NYCC boundary with NE region. Extracts limestone, also has concrete silos on site. Permission expires 2042.	Potential to maintain supply to 2030 and beyond
Wensley	Richmondshire District	Active	Located on edge of Yorkshire Dales and is close to Leyburn Quarry. Relatively remote from SRN. Permission for extraction until 2042. Has substantial	Potential to maintain supply to 2030 and beyond

[42] 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[42])	Location	Status at April 2022	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer tem = 16 years +)
			shared dormant reserves with Leyburn Quarry in adjoining Cote Pastures IDO area	
Magnesian Limestone				
Potgate	Harrogate Borough	Active	Located north of Ripon and mainly supplies the North Yorkshire market. Has permission for extraction until June 2022.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term. Lateral extension permitted in 2015 containing 3.3mt additional reserves. Permission to extend extraction period up to 2042, approved by Members but waiting for Legal Agreement to be signed.
Gebdykes	Hambleton District	Active	Located north of Masham and mainly supplies the North Yorkshire market. Permitted for extraction until 2039	Further reserves may be required to maintain supply to 2030 and beyond. Lateral extension containing 5.3mt approved with extraction until 2037
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. Permission granted in 2016 for a further 0.7mt of reserves to be extracted by June 2020.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term. Permission granted in 2020 for extraction of additional 7mt up to 2040.
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 2020, Estimated lifespan of 2 years from recommencement	Limited future supply capability. Extraction complete, time for restoration extended until 2025.
Smeaton/Went Edge	Selby District	Active	Located near the NYCC boundary with Wakefield, close to the A1(M).	Extension of time and/or extension to permitted working area may be needed to

Aggregates quarries in the NYCC area (with active permissions[42])	Location	Status at April 2022	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer tem = 16 years +)
			Extraction on the site is allowed until 2023.	maintain supply capability beyond mid term. Application for extension approved for additional 4.9mt over 8 years.
Jackdaw Crag	Selby District	Active	Located near Tadcaster in Selby District. Current permission allows extraction until 2017.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term. Application for extension granted for extraction of 1.75mt over 7 years.
Darrington Quarry	Selby District	Extraction complete in North Yorkshire	Straddles the boundary with Wakefield. Extraction in North Yorkshire complete, with working continuing in Wakefield area. Mineral is processed in North Yorkshire. Current permission for processing site expired in December 2012.	Output from this site contributes to the sales figures in West Yorkshire. Reserve within Wakefield expected to last into longer term
Newthorpe Quarry	Selby District	Mothballed	Located near the boundary with Wakefield. Estimated life span is 20 years from recommencement. Permission for extraction runs until 2042	Potential to maintain supply to 2030 and beyond
Jurassic Limestone				
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 December 2026.	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 December 2022.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond short term
Wath	Ryedale District	Mothballed	Located near Hovingham in Ryedale and in the Howardian Hills AONB. Permission expires in October 2023. The site is currently mothballed	Estimated remaining life of 20 years at end 2012. Extension of time may be needed to maintain supply capability in mid term. Potential to make contribution to supply

Aggregates quarries in the NYCC area (with active permissions[42])	Location	Status at April 2022	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer tem = 16 years +)
				subject to commercial decision by operator
Whitewall	Ryedale District	Active	Located south of Norton in Ryedale. Permission expires in 2023.	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	Has potential to make contribution to supply subject to commercial decision by operator
Chalk				
Knapton	Ryedale District	Mothballed	Located east of Malton and has produced chalk but further working not expected. Restoration of the site is to be complete by 2037	No significant future supply capability
Flixton	Scarborough Borough	Mothballed	Near Flixton Village in Scarborough District. Has produced chalk. Permitted until 2042 but is currently mothballed.	Limited future supply capability subject to commercial decision by operator
Sand and gravel quarries				
Concreting sand and gravel				
Marfield	Harrogate Borough	Active	Located north of Masham. Current permission allows extraction until December 2030. Estimated lifespan of the current permitted area is approximately 17 years.	Application for 4mt extension granted in 2016 Potential to maintain supply to 2030.
Ripon	Harrogate Borough	Active	Located near North Stainley, north of Ripon. Current permission allows extraction until 2030. Estimated 7-8 years reserves in the current permitted area.	Application for 3mt extension granted in January 2018. Potential to maintain supply until 2030.
Ripon City	Harrogate Borough	Active	Located to the south east of Ripon. Extraction has been completed and site currently being restored	Extraction completed in 2017, no more supply capability on site.
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	Has potential to make contribution to supply subject to commercial decision by operator
Nosterfield	Hambleton District	Active	Located 8km north of Ripon near West Tanfield. Adjacent to Thornborough Henges Scheduled Ancient	Extension of time and/or extension to permitted working area may be needed to

Aggregates quarries in the NYCC area (with active permissions[42])	Location	Status at April 2022	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer tem = 16 years +)
			Monument. Currently permitted for extraction until May 2024. Application for extension (2mt) recently granted.	maintain supply capability beyond mid-term. Application for extension (1mt) under consideration.
Bridge Farm/Pallett Hill	Richmondshire District	Active	Located north of Catterick Village.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term. Extension of time request is under consideration which if granted will run until December 2024, application also includes additional extraction of 0.37mt sand and gravel.
Kiplin Hall	Richmondshire District	Closed	Located just north of Great Langton in Richmondshire. Extraction completed in 2011 and site is currently being restored	May have future supply capability to process material from adjacent Manor House Farm site
Scorton	Richmondshire District	Active	Located near Scorton in Richmondshire and incorporates the previously separate Tancred Quarry site. Permission authorises extraction until December 2022	Extraction completed no more supply capability on site. 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	Understood to have long term supply capability at low output
Wykeham	Scarborough Borough	Active	Located 6km west of Scarborough. Permission for an extension has been granted. Life of new permission is 20 years from commencement of development.	Supply capability to 2030 and beyond.
Killerby Quarry	Richmondshire/Hambleton Districts	Not commenced	Located east of the A1(M) and North East of Kiplin Quarry near Kirkby Fleetham village. 2.13ha site with 11.37mt reserves to be extracted over 20 years from date of commencement.	Potential to maintain supply to 2030 and beyond
Building sand				

Aggregates quarries in the NYCC area (with active permissions[42])	Location	Status at April 2022	Comment on significance	Potential supply capability to 2030 (near term = 5 years or less) (Mid term = 6 to 15 years) (Longer tem = 16 years +)
West Heslerton	Ryedale District	Active	Building sand site located in Ryedale district.. Permission for extraction currently until 2030. Estimated remaining reserves of 7 years	May become exhausted around 2030
Mill Balk	Selby District	Mothballed	Building sand site located in Selby District. Site is currently mothballed. Permitted until February 2042	Has potential to make contribution to supply subject to commercial decision by operator
Hensall	Selby District	Active	Building sand site located in Selby district. Permission runs until 2031. Estimated remaining lifespan of reserve c.15 years.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond mid term
Eggborough Sandpit	Selby District	Active	Permission granted for extraction of 40,000mt the residual deposit of sand from land west of the sandpit, until January 2019. Application now being considered for extension of time up to 31 December 2022.	Extension of time and/or extension to permitted working area may be needed to maintain supply capability beyond near term
Dormant aggregates sites/permissions[43]				
Crushed rock				
Carboniferous limestone				
Hambleton	Craven District	Dormant		Not known
Black Scar	Richmondshire District	Dormant		Not known
Breckonborough	Richmondshire District	Dormant		Not known
Cote Pastures	Richmondshire District	Dormant	Reserves of 29.5mt Carboniferous limestone in recent ROMP submission	
Harmby	Richmondshire District	Dormant		Not known
Long Acres	Richmondshire District	Dormant		Not known
Jurassic limestone				
Cropton	Ryedale District	Dormant		Not known
Laysthorpe	Ryedale District	Dormant		Not known
Magnesian limestone				
Lodge	Selby District	Dormant		Not known
Building sand				
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

[43] Dormant permissions are sites with permissions but where working cannot recommence until new schemes of working and reclamation have been agreed.

Aggregates quarries in the YDNP area (with active permissions)	Location	Status at April 2022	Comment on significance
Crushed rock quarries			
Carboniferous Limestone			
Horton Quarry	Horton in Ribblesdale, Settle	Active	Supplies limestone and high PSV aggregate mainly to Greater Manchester and Lancashire. 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 and Hull). Existing permission until 2039.
High PSV aggregate			
Arcow Quarry	Helwith Bridge, Settle	Active	High PSV stone supplied mainly to North and West Yorkshire, Greater Manchester and Lancashire. Existing permission until 2029. Railhead approved for use by Arcow and Dry Rigg Quarries
Dry Rigg Quarry	Helwith Bridge, Settle	Active	High PSV stone, including for slurry seals, with sales throughout Great Britain. Existing permission until 2034.
Ingleton Quarry	Ingleton	Active	High PSV stone, including surface dressing and slurry seals, with sales mainly to North and West Yorkshire and the North West. Existing permission until 2025. Some export by rail to Leeds through Ribblehead sidings.

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 April 2022	Comment
Transport			
Railheads/ railway sidings			
Swinden Quarry	YDNP	Active	Railhead, aggregate trains to Leeds, Hull.
Ribblehead	YDNP	Active	Use of railhead for transport of Ingleton stone to Leeds and also used for timber.
Arcow Quarry	YDNP	Active	Transports stone from Arcow and Dry Rigg to Leeds and Greater Manchester. Permission granted to extend life of permission to 2029.
Kellingley Colliery railhead	NYCC, Selby District	Not used	Colliery closed end 2015
Eggborough Power Station railway sidings	NYCC, Selby District	Active	fuel transported from Immingham/Goole
Selby Depot railhead	NYCC, Selby District	Active	Cemex and Potter Group import of aggregates
Great Heck railhead	NYCC, Selby District	Active	Plasmor and Tarmac transport lightweight

Significant rail/water transport infrastructure in the NY sub-region	Location (MPA area and District if applicable)	Status at April 2022	Comment
			blocks and import aggregate
Drax Power Station railway sidings	NYCC, Selby District	Active	Transportation of gypsum, coal and secondary 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
Hellifield railway sidings	NYCC, Craven District	Not currently used for minerals transport	Have been considered in the past for potential use for minerals transport
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
Wharves			
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
Kellingley Colliery canal wharf	NYCC, Selby District	Not currently used for minerals transport	Coal and colliery spoil have been transported in the past, but not currently used for freight. Colliery closed end 2015
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, Westfield Foods Wharf, Selby	NYCC, Selby District	Not currently used for minerals transport	Occasional use for rice transport
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.
Heck Lane Wharf	NYCC, Selby District	Not currently used for minerals transport	Not currently used, in poor condition
Queen Staithes Wharf	City of York	Not currently used for minerals transport	Used to moor boats
Dukes Wharf (Terrys Avenue)	City of York	Not currently used for	Used to moor boats

Significant rail/water transport infrastructure in the NY sub-region	Location (MPA area and District if applicable)	Status at April 2022	Comment
		minerals transport	

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 April 2022	Comment
Concrete batching			
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
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
Pallett Hill Quarry, Catterick	NYCC/ Richmondshire District	Active	Part of mineral site
The Gravel Works, Brompton on Swale	NYCC/ Richmondshire District	Active	Stand alone facility
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
Nosterfield Quarry, Bedale	NYCC/Hambleton District	Active	Part of mineral site
Showfield Lane, Malton	NYCC/Ryedale District	Active	Stand alone facility
Whitewall 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
Roadstone Coating			
Halton East Quarry, Skipton	NYCC/Skipton	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
Black Quarry, Leyburn	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
Block making			
Bridge Road, Brompton on Swale, Catterick	NYCC/ Richmondshire District	Active	Stand alone facility
Ricall Airfield, Barlby, Selby	NYCC/Selby District	Active	Stand alone facility

Ancillary minerals infrastructure	Location (MPA area and district if applicable)	Status at April 2022	Comment
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

Demand forecasting for the North Yorkshire County Council, City of York and North York Moors National Park Authority Minerals and Waste Joint Plan

i) Demand for aggregate arises from a wide range of construction activity. The extent and nature of activity in the construction sector of the economy will therefore be a key influence on the amount and types of aggregate required. Activity in the construction sector will itself be influenced by wider economic conditions as well as the effects of a range of plans and strategies for future growth. Construction activity has been heavily impacted by recent recession, as demonstrated by the recent trend in sales of aggregate and this is reflected in current 10 year average sales. Although there has been recent growth in the economy, there is some uncertainty about the future economic outlook.

ii) In July 2014 NYCC, CYC and the NYMNPA produced and consulted on a Discussion Paper on demand forecasting (which is available via the Minerals and Waste Joint Plan web pages) as part of work towards preparation of a Joint Minerals and Waste Plan for the three Authority areas. This identified a range of issues that could be relevant to generating a forecast of demand for aggregate (particularly sand and gravel) for the area covered by the Joint Plan. It considered a range of methods including linking future demand to general growth in the economy, growth in population and growth in house building. It also considered how supply constraints outside the area could impact on demand for aggregate originating within it. The Paper recognised a number of difficulties and uncertainties around forecasting demand but suggested an approach based on linking future demand to the predicted rate of change in the amount of house building across the main market areas served by the Plan, in order to generate an additional 'increment' of demand to add to the historic sales average. It also identified two specific issues relating to the potential impact of future supply constraints in West and South Yorkshire and made a further incremental allowance for these, in order to generate an overall forecast for sand and gravel.

iii) In summary the methodology looked at previous housing completions over a 10 year period 2003/4 to 2012/13 for the main market areas for aggregate served by the Plan area (i.e. North Yorkshire, West Yorkshire, South Yorkshire and Tees Valley) and compared this with projected house building rates over the same geographical area as set out in adopted or emerging local plans. The most up to date data available at that time suggested a projected 85% increase in house building compared with previous completion rates. Further data was obtained during preparation of the LAA (first review 2015), based on more up to date data on housing completions and projections, which indicated a 53%[44] uplift in house building compared with previous rates this has been followed through to this sixth review where the projected increase is 44% as indicated in Appendix 3 of this report. The methodology then assumed that house building accounts for 15% of total demand for sand and gravel (based on a figure quoted by the Construction Products Association[45]) and used this as a basis to 'grow' 15% of total sales by 53%, in order to generate an increment to add to the 10 year historic sales figure. Further allowances were then made to reflect the impact of possible supply constraints in West and South Yorkshire and the effect these could have on demand for sand and gravel in the Plan area. These allowances were added on to the overall projected figure to generate a total forecast of demand[46].

[44] The equivalent figure used in the Forecasting Demand for Aggregates Minerals Paper (July 2014), based on earlier data on housing completions and projections, was 85%. The LAA (first review) published in 2015 presented a figure of 53%, The LAA (sixth review) present a figure of 44%.
[45] Eg Construction Products Association Press Release 14 April 2014.
[46] The methodology used for this is explained in the Forecasting Demand for Aggregates Minerals Paper (July 2014).

iv) Whilst this approach helps address some of the concerns associated with relying solely on a historic sales average, it also has a number of disadvantages. There is uncertainty about the exact nature of the link between house building and demand for sand and gravel; robust data on past housing completions is not available over a long time period and projected future housing requirements are also subject to change as local plans are prepared and reviewed. Furthermore, industry has expressed the view that such an approach may not be appropriate for predicting future demand for crushed rock.

v) In response to the July 2014 Discussion Paper the Mineral Products Association raised a number of further issues and suggested a modified approach to linking future demand to housing growth, by assuming that housing growth represents a proxy for total demand for sand and gravel rather than just 15%, reflecting the relationship between house building and other related infrastructure requirements which may generated demand for aggregate. An updated Discussion paper was produced in September 2014 providing information about this suggested approach. The mineral planning authorities had some concerns about this suggested methodology, particularly with regard to the assumptions made about the use of house building as a proxy for total demand (for example this LAA concludes elsewhere that the impact of major infrastructure projects in the area on overall demand is expected to be neutral) and in relation to the likelihood that some increased demand arising from house building outside the NY Sub-region would be likely to fall on other supply areas. It is not therefore considered appropriate to carry it forward for the purposes of this LAA.

vi) Taking into account views received on the discussion papers and the need to identify a relatively straightforward method for predicting demand, an approach was therefore developed based on the assumption that house building is a proxy for 50% of total demand for sand and gravel. This would in effect allow an additional element for demand related to house building, such as associated infrastructure and employment development, whilst recognising that there is also uncertainty about the exact nature of the link between house building and demand, that major infrastructure projects are expected to have a neutral impact on demand across the Sub-region and that local housing trajectories are subject to change including potential downward revision in some cases. For the purposes of sixth review of the LAA, a further updating and rolling forward of data on housing completions for the 10 year period to 2018/19 and projections based on local plans or their evidence bases has been carried out (see summary in Appendix 3) which indicates a 44% increase uplift in house building compared with previous rates. This figure can be used to generate a more up to date base forecast of demand by applying a 44% uplift to 50% of the 10 year average sales figure as at 2020 of 1.6mt. Based on this approach, this leads to an additional increment of 0.35mt pa of demand to add to the base 10 year average figure. A further consideration with this methodology is that it is considered unlikely that increased demand generated by growth in house building will step up immediately to the predicted higher level, taking into account current low levels of sales and an expectation that rates of house building may increase over time as the economy recovers and local plans are implemented. Therefore the method assumes a progressive build up in demand over a five year period to the projected higher level of 2.38mtpa (see Table 30).

vii) A further issue, addressed elsewhere in the LAA and in the Demand Forecasting discussion paper (July 2014), is the expectation that supply constraints in West and South Yorkshire may result in additional demand for concreting sand and gravel being 'transferred' onto North Yorkshire. More information about this is contained in the Discussion Papers and in sections in the LAA dealing with other factors which might impact on demand. The assumed effect of these factors is to lead to a total additional demand of around 1.5mt. over the period 2014 to 31 December 2030.

viii) Consideration also needs to be given to the potential impact on demand of major 'one-off' infrastructure projects that could give rise to a significant additional requirement for aggregate.

ix) Work commenced in 2014 on an upgrade of the A1(T) between Leeming and Barton to motorway standard. Approval had also been given for construction of the Bedale, Aiskew and Leeming bypass in North Yorkshire and work is now completed. Both of these projects have given rise to a requirement for significant quantities of aggregate. 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 as identified in the base 10 year historic average. The Bedale Aiskew and Leeming Bypass was completed in August 2016 so this is unlikely to be reflected in 2016 figures but may influence future sales. Although A1 upgrading work in North Yorkshire is now substantially complete or underway, the Chancellor announced on 1st December 2014, and confirmed in March 2020that a number of specific road improvement schemes around the country are to be funded. These include upgrading of the A1 between Darrington (Wakefield MDC) and Redhouse (Doncaster MBC). Although this stretch lies essentially outside North Yorkshire it is in very close proximity and could lead to some demand for supply from quarries in the Sub-region.

x) Other major infrastructure schemes which may impact on the demand for aggregates in the Sub-region include the Thorpe Marsh Gas Pipeline[47] in Selby and the Knottingley Power Project gas pipeline. These projects are all located on the fringes of the North Yorkshire Sub-region and could potentially receive supply from a variety of sources. A further scheme which could be relevant is the York Potash Project, located in the north eastern part of the North York Moors National Park, which received planning permission in 2015 The scheme, which commenced in 2017 , indicates a potential requirement for several hundred thousand tonnes of aggregate for construction of the main and associated works and that the requirement for construction materials are most likely to be met from the North East, although more local sources in the eastern part of North Yorkshire could be used, albeit at rates not exceeding historic output rates at relevant quarries.

xi) Overall it is considered that, whilst there are indications of a range of some major development schemes coming forward over the next few years, and that these together with other planned growth and development in the area would be likely to help sustain demand for aggregate supplied by the Sub-region, there is no strong expectation at this stage of an unusually high level of demand. 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.

xii) Taking the above information into account, the following Table identifies a forecast of demand for sand and gravel.

	Sand and gravel base demand (mt)	Assumed additional demand from West Yorkshire (mt)	Assumed additional demand from South Yorkshire (mt)	Total (mt)
2016	2.1	0.017	0	2.117
2017	2.3	0.023	0	2.323
2018	2.38	0.030	0	2.410
2019	2.38	0.038	0	2.418
2020	2.38	0.046	0	2.426
2021	2.38	0.054	0.03	2.464
2022	2.38	0.064	0.03	2.474
2023	2.38	0.073	0.03	2.483
2024	2.38	0.084	0.03	2.494
2025	2.38	0.095	0.03	2.505
2026	2.38	0.106	0.03	2.516
2027	2.38	0.119	0.03	2.529
2028	2.38	0.132	0.03	2.542

[47] As of April 2021 there is no new progress and the plant is presumed cancelled

2029	2.38	0.147	0.03	2.557
2030	2.38	0.162	0.03	2.572

Table 30: Sand and gravel demand forecast linked to housing growth and external supply factors

xiii) Over the 15 year period 2016 to 31 December 2030 this approach forecasts, for sand and gravel, an annual average of 2.46mt, or around 29% higher than the 10 year average as at the end of 2016. It would also lead to predicted sales which are very similar to that contained in the former RSS apportionment (2.63mtpa - see Table 18) and the hypothetical sub-regional apportionment of the 2009 National and Regional Guidelines (2.68mtpa - see Table 20). The figure is also similar to typical pre-recession sales.

Conclusions on approach to forecasting demand to 2030

xv). A number of potential approaches to predicting future demand for the NYCC area have been considered during preparation of this LAA. Local factors likely to influence the scale of demand have been taken into account, including factors arising outside the NY Sub-region. Consideration has also been given to ten year and three year average historic sales levels and the content of former and current national and regional guidelines for aggregates, as well as previous sub-regional apportionments. In considering demand, account needs to be taken of the fact that current 10 year average sales (and three year average sales in particular) are still affected by the recent recession.

xvi) The requirement in national policy and guidance for account to be taken of other local factors indicates that relying solely on current 10 year average sales as a basis for predicting future requirements, as suggested in the first NY Sub-region LAA, is unlikely to be appropriate. Local information does suggest that there is a reasonable expectation of increased demand, particularly for sand and gravel, compared with the current 10 year average level. This arises mainly as a result of expected significant growth in house building across markets served by the Sub-region and the likelihood that house building will, in turn, give rise to a requirement for other built infrastructure generating demand for aggregate.

xviii) A wide range of factors that may impact on demand, and the difficulties of establishing a clear, quantifiable link between any particular factor and the scale of demand for aggregate that may fall on the area, is a constraint to deriving a forecast.

xvii) However, there is a high degree of consistency between a forecast for sand and gravel derived through a link to growth in house building and the level of demand which persisted prior to the recession. There is also a good degree of consistency with the level of demand envisaged in the previous sub-regional apportionment set out in the former RSS, and with a theoretical sub-regional apportionment of the current (2009) National and Regional Guidelines on the same basis. Together, these factors suggest that the approach, combined with a further allowance for external factors which may impact on demand for sand and gravel, should be sufficiently robust for current forward planning purposes. Such an approach leads to predicted demand for sand and gravel of around 2.46mt annual equivalent averaged over the period 2016 to 2030, with an overall upward trend in demand from 2.117mt in 2016 to 2.572mt in 2030. This level of predicted demand is around 29% higher than that derived purely on the basis of 10 year average sales.

viii) For crushed rock, aggregates industry representatives have expressed the view that there is more uncertainty about the future level of demand. In general terms it is likely that there will be some growth in demand for crushed rock, compared with recent low levels of sales, in response to general growth in the economy and, to some extent, the influence of other factors such as predicted higher rates of house building. However, the market for crushed rock is wider than for sand and gravel, with a wider range of opportunities for delivering supply to key markets

also served by the NY Sub-region[48]. The current high level of reserves of crushed rock in the NY Sub-region also suggests that the precise level of any forecast demand is of less significance, in terms of the implications for delivery of future supply, than is the case for sand and gravel. The various approaches considered in this LAA range above and below an annual equivalent level of 4mt, compared with current 10 year average sales in the NYCC area of around 3.1mt. It is therefore considered reasonable to assume an annual demand of around 3.75mt per annum for the NYCC area for current forward planning purposes.

[48] This statement may not apply to more scarce types of crushed rock, particularly high psv aggregate, which is very limited in distribution

Appendix 3 - Summary data on housing completions and future requirements

The following table compares historic completions with projected future requirements, based on information provided by individual local planning authorities but collated and presented at sub-regional level. A 10 year period has been used in each case in in order to facilitate comparison with 10 year average aggregate sales data and the availability of 10 year housing completions data in local authority AMRs.

Sub-region	Actual completions 2012/13 -2021/22	10 year forecast requirements 2021-2030	% change in completions
West Yorkshire	70,091	94,155	5.0%
South Yorkshire	41,797	50242	2.2%
North Yorkshire	25,105	33930	22.5%
Tees Valley	21,275	22550	-33.3%
Total	158,268	200877	1.9%

Table 31: Comparison of 10 year forecast requirements 2021-2030 for key aggregate market areas and actual completions for the 10 year period 2012/13-2021/22

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 which 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 area 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.
Licenced 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.
Northwards distribution area for concreting sand and gravel	Concreting sand and gravel from these sites tend to be transported north to the Tees Valley area and adjacent areas in the North East
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 RSS was revoked in 2013
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
Southwards distribution area for concreting sand and gravel	Concreting sand and gravel form these sites tend to supply the North Yorkshire market, West Yorkshire and other areas to the south as well as east into the Humber.
Sub Regional Apportionment	The splitting of regional supply guidelines for aggregate minerals between planning authorities or sub regions

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