

Joint Local Aggregates Assessment for County Durham, Northumberland and Tyne and Wear



April 2022

(2020 and 2019 Sales & Reserves Data)

Prepared jointly by

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Gateshead Council

Newcastle City Council

North Tyneside Council

Northumberland County Council

Northumberland National Park Authority

South Tyneside Council

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Executive Summary

This Local Aggregates Assessment (LAA) has been jointly prepared by the eight mineral planning authorities in County Durham, Northumberland and Tyne and Wear. It is updated on an annual basis and this version has been updated using sales and permitted reserve data from 2019 and 2020.

The LAA monitors the provision of aggregates and likely future demands and provides supporting evidence for the preparation and review of Local Plans. It contains three main elements:

- A forecast of demand for aggregates;
- An analysis of supply options; and
- An Assessment of the balance between supply and demand.

Aggregates in the Joint LAA area

Within the Joint LAA area, the geology gives rise to the following aggregate resources:

- **Carboniferous limestone** – Found in the west of County Durham along the sides of Weardale and to the south of Barnard Castle. In Northumberland it is extracted from the Great Limestone resource and is also found alongside the Whin Sill.
- **Permian magnesian limestone** – This resource underlies the majority of the east of County Durham and also occurs in South Tyneside and Sunderland in Tyne and Wear.
- **Igneous rock** – In Northumberland the Whin Sill is an important resource that outcrops in the south and west of the county and in the north of the county around Longhoughton and Belford. In County Durham this resource outcrops in Upper Teesdale.
- **Sand and gravel (superficial deposits)** – Fluvial, glacial and beach and blown sand deposits are found in the Joint LAA area, including the major river valleys such as Breamish, Coquet and Till in Northumberland, the River Tyne in Gateshead and Northumberland and the River Wear and River Tees in County Durham.
- **Sand (bedrock deposits)** – Basal Permian sand is found in County Durham and Sunderland and outcrops intermittently along the magnesian limestone escarpment.

Aggregates are also supplied from the following sources with the Joint LAA area:

- **Marine dredged sand and gravel** – Landed at the Port of Blyth in Northumberland, at sites on the River Tyne and at the Port of Sunderland.
- **Imports of rock by sea** – Landed at the Port of Blyth in Northumberland, at sites on the River Tyne and at the Port of Sunderland. This is sourced from Scotland and Norway.
- **Recycled and secondary aggregates** – Main sources of recycled and secondary aggregates within the Joint LAA area are construction and demolition waste as well as ash from Lynemouth Power Station in Northumberland.

Demand indicators

In line with the NPPF and the accompanying guidance outlined in Planning Practice Guidance, the starting point to calculating future demand has been to use the rolling ten year sales average and other relevant local information. In terms of other relevant information consideration has been given to demand from future house building and major infrastructure / construction projects. The LAA has also looked at average sales three year periods to identify the general trend of demand in comparison to the ten year average as part of the consideration of whether it might be appropriate to increase supply. We have also had regard to the published National and Regional Aggregate Supply Guidelines which were published in June 2009. We have also considered peak sales over the last ten years and pre-recession average sales figures.

In terms of major infrastructure and construction projects, a number of future projects have also been identified but as these types of schemes are of a similar types and scale to those that have been delivered during the period of the 10 year sales average it is not anticipated that this will place an increase in demand for aggregates over and above that captured by the sales average figure.

The Joint LAA recognises that the coronavirus pandemic has had an impact on construction output and the demand for aggregates. Within the Joint LAA area, sand and gravel sales rose from 1,047,000 tonnes in 2018 to 1,099,000 tonnes in 2019 (a 4.9% year on year rise) and then fell to 917,000 tonnes in 2020 (a 16.6% year on year fall). Similarly, within the Joint LAA area crushed rock sales have fallen from 5,675,000 tonnes in 2018 to 5,500,000 tonnes in 2019 (a 3.1% year on year fall) and then fell to 4,928,000 tonnes in 2020 (a further 10.4% year on year fall). Between 2018 and 2020 in the Joint LAA area sand and gravel sales fell by 131,000 tonnes and crushed rock sales fell by 747,000 tonnes. The Joint LAA authorities consider that the significant fall in sales in 2020 is a result of the impact of the Coronavirus pandemic and as such 2020 is not representative of the demand for aggregates which would have otherwise occurred. Accordingly, it is proposed that future demand forecasts are not based upon 2020 sales information.

Balance between supply and demand

A quantitative assessment of the balance between the quantum of permitted reserves and the calculated demand is set out below. Demand has been calculated using the provision set out in this LAA and this annual figure has been extrapolated forward for a period of 16 years (2021 to 2036) to understand the impact on demand over time. In addition forecasts have also been prepared to align with the period of the County Durham Plan which runs to 2035 and these are set out in Chapter 6.

Table 1.1 Balance between supply and demand (thousand tonnes)

Sub-area	Resource	Permitted Reserves 2019	Permitted Reserves 2020	Annual demand Requirement	Demand 2021 to 2036	Balance Between Demand and Supply 2021 to 2036
County Durham	Crushed rock	111,060	97,468	3,125	50,000	47,468
	Sand and gravel	5,600	5,247	438	7,008	-1,761
Northumberland	Crushed rock	80,070*	79,060*	1,717	25,755	53,305
	Sand and gravel	5,585*	4,594*	356	5,340	-746
Tyne and Wear	Crushed rock	5,948e	5,496e	467	7,472	-1,976
	Sand and gravel	5,701e	5,498e	240	3,840	1,658
Joint LAA Area	Crushed Rock	197,078	182,024	5,309	84,944	97,080
	Sand and gravel	16,886	15,339	1,034	16,544	-1,205

e - Sand and gravel and crushed rock permitted reserve figure for Tyne and Wear are Mineral Planning Authority estimates. * Includes permitted reserves from Northumberland National Park.

The table above shows that:

- County Durham** has sufficient permitted reserves of crushed rock to meet future need from quarries in this sub-area in the long term. However, previous consideration of the composition of the crushed rock landbank has led to a need being identified for additional carboniferous limestone working. This need has in turn been reflected in the adopted County Durham Plan (October 2020) and two allocations for further working have been made, one of which has now

been granted planning permission. Through the previous Joint LAA based upon 2018 permitted reserves and sales data a need for further sand and gravel working has been previously identified. However, through the preparation of this Joint LAA using more recent 2019 and 2020 based permitted reserve information and updated forecasts, the identified need for further sand and gravel working has now increased. The Council should seek to allocate further permitted reserves of sand and gravel to meet longer term need through future work to prepare its Minerals and Waste Policies and Allocations Document. Several crushed rock quarries and one sand and gravel quarry have been inactive for a number of years, whilst two crushed rock and three sand and gravel quarries all have end dates before 2036. In order to maintain productive capacity, planning decisions will need to ensure that proposals to reopen inactive sites and extend the period of working at existing active sites, if permitted reserves still remain at the quarry end date of working, are considered positively.

- Northumberland** has sufficient permitted reserves of crushed rock in quantum to meet future need in the long-term. However the overall picture is more complex as there are issues around the distribution of reserves, the productive capacity of sites and the end dates of some sites, indicating a need to allocate further sites in the Northumberland Local Plan⁽ⁱ⁾, which covers the area of Northumberland outside of the Northumberland National Park, and given appropriate weight when assessing individual planning applications. For sand and gravel, the figures indicate that there is a shortfall in permitted reserves to meet the calculated demand. Annual sales from Northumberland have fallen steadily from historic levels in recent years despite a general pattern of increasing sales across North East England. It is unclear whether the fall in sales from Northumberland has been caused by identified issues with productive capacity of sites or a re-balancing of supply. Given the lack of significant imports to the region, it is not thought appropriate to adjust Northumberland's annual demand requirement at this stage, however this will be closely monitored. However, even with a lower annual demand requirement than that calculated in previous LAAs, a shortfall still exists indicating a need for additional provision for sand and gravel to be made in the Northumberland Local Plan.
- Tyne and Wear** has sufficient permitted reserves of sand and gravel to meet the calculated demand from quarries in this sub-area. However, it does not have sufficient permitted reserves of crushed rock to meet the calculated demand from quarries in this sub-area. It is noted that sand and gravel production is limited to one quarry and crushed rock production is currently limited to two quarries. The permitted reserves of crushed rock at one of these quarries would be exhausted by the mid-2020s and the remaining quarry would not have sufficient productive capacity to meet the demand forecast. Local Plans and decisions on planning applications should therefore support additional areas for extraction where environmentally acceptable.

Inter mineral planning authority issues

Information on movements of aggregate minerals from quarries and wharves to destination sub-regions is provided by the national aggregate minerals survey, which was last undertaken for 2019 by the British Geological Survey on behalf of the Department for Communities and Local Government and the Welsh Assembly. From the survey the most significant cross boundary movements involving the Joint LAA area have been identified as:

- Supply of crushed rock and sand and gravel from quarries in County Durham and Northumberland to Tyne and Wear;
- Supply of crushed rock and sand and gravel from County Durham to Tees Valley;
- Supply of crushed rock from County Durham to North Yorkshire; and
- Supply of crushed rock and sand and gravel from quarries in North Yorkshire to County Durham.

These are the key cross boundary issues that the MPAs should give consideration to in the preparation and review of Local Plans.

i The Northumberland Local Plan was submitted for examination in May 2019 and is currently undergoing examination.

Dashboard

Table 1.2 Dashboard for County Durham sub-region

	Sales 2019 (tonnes)	Sales 2020 (tonnes)	Ten year sales average (tonnes)	Three year sales average 2017 - 2019 (tonnes)	Trend	Annual Demand Requirement (tonnes)	Permitted Reserves 2020 (tonnes)	Landbank (Years)	Comments
Sand and Gravel	537,000	438,000	325,900	437,667	↗	438,000	5,247,000	11.98	Sales have increased since 2018 due to four sites being in production.
Crushed rock	3,256,000	2,613,000	2,629,900	3,125,333	↗	3,125,000	97,468,000	31.2	Significant permitted reserves remain available in active and inactive sites.
Recycled & secondary aggregates	67,000	135,000			↗	N/A	N/A	N/A	Sales in 2020 have risen compared to 2019.
Marine sand and gravel	0	0	0	0	N/a	0	N/A	N/A	No current wharf sites so no landings.
Rock imports by sea	0	0	0	0	N/a	0	N/A	N/A	No current wharf sites so no landings.
General comments	County Durham continues to make a very good contribution to the steady and adequate supply of aggregates. Crushed Rock permitted reserves are extensive, they are distributed across a number of sites which are well related to the market in the North East and have been replenished by a number of new permissions in recent years. Crushed Rock sites also contain significant unrealised productive capacity and in recent years have been able to successfully respond to increases in demand by increasing sales. The potential for a number of inactive and dormant permissions to recommence working in future years is good. Due to the reported fall in permitted reserves of sand and gravel and increase in the annual demand requirement the Council should seek to allocate further permitted reserves of sand and gravel to meet longer term need through work to prepare its Minerals and Waste Policies and Allocations document.								

Table 1.3 Dashboard for Northumberland sub-region (Northumberland County and Northumberland National Park)

	Sales 2019 (tonnes)	Sales 2020 (tonnes)	Ten year sales average (tonnes)	Three year sales average (tonnes) (2016 - 2019)	Trend	Annual demand requirement (tonnes)	Permitted Reserves 2020 (tonnes)	Landbank (years)	Comments
Sand and gravel	312,000	276,000	368,100	356,333	↕	356,000	4,594,000	46	A shortfall in the medium to long-term has been identified as a number of existing sites have end dates prior to 2036 or are predicted to have been worked out.
Crushed rock	1,742,000	1,863,000	1,488,900	1,717,000	↕	1,717,000	79,060,000	12.9	Substantial permitted reserves available but significant proportion contained in one site and five other quarries have end dates prior to 2036.
Recycled & secondary aggregates	123,900	89,700			↕	N/A	N/A	N/A	No sales of ash from Lynemouth Power Station in 2018 due to biomass conversion work. Material stored on site can be extracted and used in future. Sales in 2020 have fallen compared to sales in 2019.
Marine sand and gravel	Confidential				↔	N/A		N/A	Crown Estate published data on landings from licensed dredging sites in the Humber area. Landings at Port of Blyth.
Rock imports by sea	0				↕	N/A		N/A	No landings from outside England and Wales at Port of Blyth in 2020. Capacity remains.
General comments	Northumberland continues to make an important contribution to the steady and adequate supply of aggregate to meet both local and wider needs. Permitted reserves of crushed rock and sand and gravel are available to maintain supply but for sand and gravel there is an identified shortfall for sand and gravel in the medium to long-term. There is currently only one active aggregate producing quarry in the Northumberland National Park with the remainder of supply from Northumberland County.								

Table 1.4 Dashboard for Tyne and Wear sub-region (Gateshead, Newcastle, North Tyneside, South Tyneside and Sunderland)

	Sales i2019 (tonnes)	Sales 2020 (tonnes)	Ten year sales average (tonnes)	Three year sales average (tonnes)	Trend	Annual demand requirement (tonnes)	Permitted Reserves 2020 (tonnes)	Landbank (years)	Comments
Sand and gravel	250,000	203,000+	213,900	240,000	↗	240,000	5,498,000	22.9	Supply is from a single quarry. Three year sales above ten year sales showing increasing demand.
Crushed rock	550,000	502,000+	361,000	467,330	↗	467,000	5,496,000	11.7	Supply is from two quarries. Three year sales average above the ten year sales average showing increasing demand.
Recycled & secondary aggregates	314,900	297,300		↘	N/A	-		N/A	Sales in 2020 have fallen compared to sales in 2019.
Marine sand and gravel	Confidential	Confidential			N/A	-		N/A	Landings were estimated at 300,000 tonnes per annum.
Rock imports by sea	Confidential	Confidential			N/A	-		N/A	Landings on River Tyne at Hayhole Road Wharf, Port of Tyne and at Sunderland.
General comments	Tyne and Wear contributes to the steady and adequate supply of aggregates from two quarries but demand is from this area is significantly more than current supply. Permitted reserves of crushed rock at Marsden Quarry will be exhausted in the next few years and supply will then be limited to Eppleton Quarry which now has planning permission to 2040. Without additional permissions, the ability of sub-region to make a contribution to meeting its own needs for both crushed rock and sand and gravel will be limited to the productive capacity of Eppleton Quarry.								

+ Mineral Planning Authority best estimate.

1 Introduction

1.1 To plan for a steady and adequate supply of aggregates the National Planning Policy Framework (NPPF) (July 2021) states, amongst other things, that mineral planning authorities should prepare a Local Aggregate Assessment (LAA). The LAA provides a forecast of demand for aggregates, an analysis of supply options and assesses the balance between supply and demand. It therefore provides a key evidence base on which to base decisions on the scale, and geographical distribution of future aggregates supply in minerals plans.

1.2 This LAA covers County Durham, Northumberland and Tyne and Wear and has been jointly prepared by the following eight minerals planning authorities as part of their ongoing commitment to work collaboratively on cross boundary minerals planning issues:

- Durham County Council;
- Gateshead Council;
- Newcastle City Council;
- North Tyneside Council;
- Northumberland County Council;
- Northumberland National Park Authority;
- South Tyneside Council; and
- Sunderland City Council.

1.3 **Chapter 2** of this document provides further background information on LAAs, the Managed Aggregates Supply System and how this LAA was prepared. **Chapter 3** provides details of the aggregate resources in the joint LAA area. **Chapter 4** provides information of aggregate sales and reserves with planning permission and productive capacity of existing sites. **Chapter 5** provides a sets out a forecast of demand. **Chapter 6** assesses supply options, including marine derived materials, recycled and secondary materials and imports and **Chapter 7** sets out the key conclusions and recommendations of this LAA. **Appendix A** includes information on existing extraction sites, **Appendix B** includes information on recycled aggregates and secondary aggregates facilities and **Appendix C** includes information on mineral transport and processing infrastructure. **Appendix D** includes information on existing and emerging Local Plans.

2 Background/context

2.1 This section provides background information on the purpose of the LAA, the Managed Aggregates Supply System and how the document has been prepared.

What are aggregates?

2.2 Aggregates are defined as being hard, granular materials which are suitable for use either on their own or with the addition of cement, lime or a bituminous binder in construction. The most important applications for aggregates include concrete, mortar, roadstone, asphalt, railway ballast, drainage courses and bulk fill.

2.3 A distinction is often made between primary aggregates and aggregates from alternative sources (i.e. secondary aggregates and recycled aggregates):

- **Primary aggregates** are produced from naturally occurring mineral deposits, extracted specifically for use as aggregates and are used for the first time. Most primary aggregates are produced from hard, strong rock formations by crushing to produce crushed rock aggregate or from naturally occurring particulate deposits such as sand and gravel.
- **Secondary aggregates** are usually defined as aggregates obtained as a by-product of other mining or quarrying operations or aggregates obtained as a by-product of other industrial processes.
- **Recycled aggregates** arise from various sources including the demolition or construction of buildings and structures or from asphalt planings as a result of work to resurface roads and from railway track ballast. Recycling involves the processing of the waste material so that it can be made into new materials for aggregate uses.

What is a Local Aggregate Assessment?

2.4 The principal purpose of an LAA is to set out the current and future aggregate supply situation in a particular area with respect to all aspects of aggregates supply including:

- Land won resources including landbanks and allocations;
- Secondary aggregates, whose sources come from industrial wastes such as glass, ash, railway ballast, fine ceramic waste and scrap tyres; and industrial and minerals by-products, notably waste from china clay, coal and slate extraction and spent foundry sand;
- Marine sources, from areas licensed by the Marine Management Organisation (MMO) for marine sand and gravel dredging. The MMO has been preparing Marine Plans around England to guide the licensing process and the the North East Marine Plan was adopted in June 2021⁽ⁱⁱ⁾; and
- Imports into, and exports out of, the MPA area. The MPA must capture the amount of aggregate that it is importing and exporting as part of its Assessment.

2.5 In particular an LAA is expected to include:

- A forecast of the demand for aggregates based on the average of 10 years sales data and other relevant local information, including for example, the National Infrastructure Plan. MPAs should also look at the average 3 year sales in particular to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase supply;
- An analysis of all aggregate supply options, as indicated by landbanks, development plan allocations and capacity data e.g. marine licences for marine aggregate extraction and the

ii <https://www.gov.uk/government/publications/the-north-east-marine-plans-documents>

potential throughput's from wharves. This analysis should be informed by planning information, the aggregate industry and other bodies such as Local Enterprise Partnerships; and

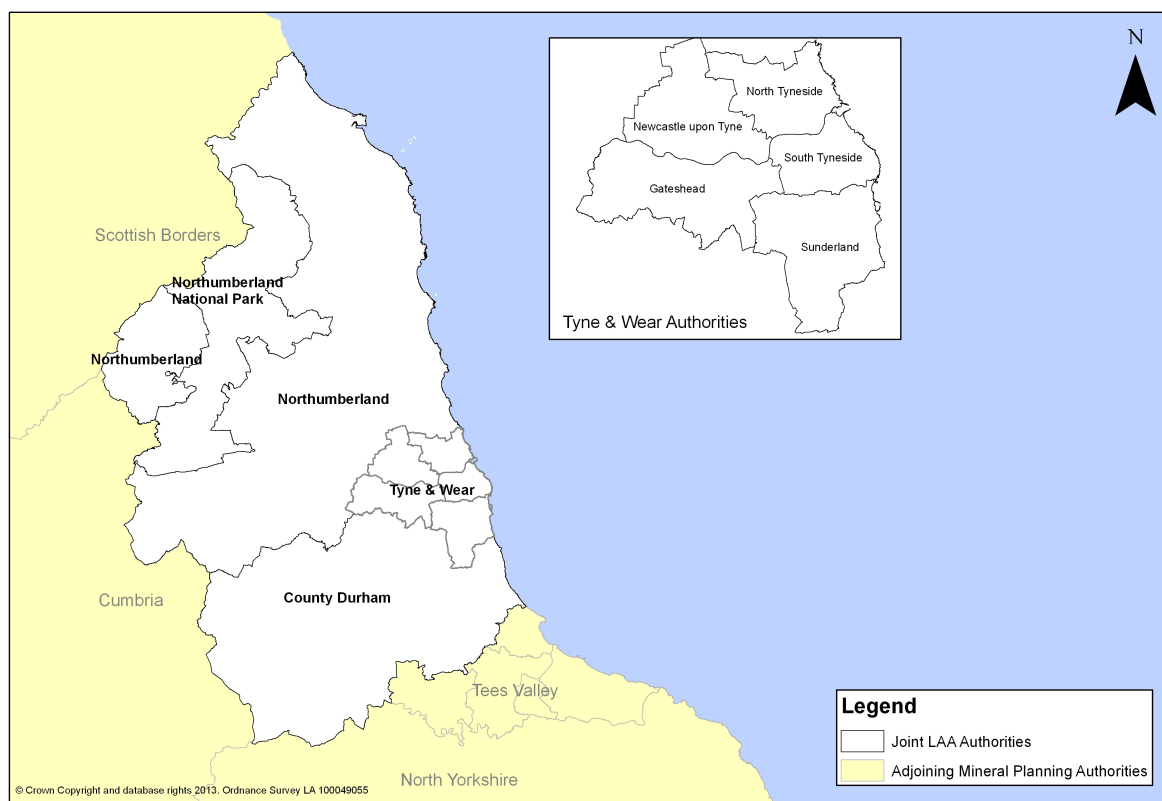
- An assessment of the balance between demand and supply, and the economic and environmental opportunities and constraints that might influence the situation. It should conclude if there is a shortage or a surplus of supply and, if the former, how this is being addressed.

2.6 It is intended that LAA will provide the evidence base on which decisions could be taken on the scale, and geographical distribution of future aggregates production.

Joint approach to the Local Aggregate Assessment

2.7 The NPPF advises that an annual LAA can be prepared by either individual or jointly by agreement with another or other mineral planning authorities. This LAA has been jointly prepared by Durham County Council, Northumberland County Council, Northumberland National Park Authority and the Tyne and Wear authorities of Gateshead Council, Newcastle City Council, North Tyneside Council, South Tyneside Council and Sunderland City Council.

Map 1 Joint Local Aggregate Assessment Area - County Durham, Northumberland and Tyne and Wear



2.8 The mineral planning authorities have sought to work together in the preparation of this joint LAA as part of their ongoing commitment to work collaboratively on cross boundary minerals planning issues and in order to satisfy the 'Duty to Cooperate'⁽ⁱⁱⁱ⁾ as set out in Section 110 of the Localism Act.

iii Section 110 of the Localism Act sets out a 'duty to co-operate'. This applies to all local planning authorities, national park authorities and county councils in England – and to a number of other public bodies. The duty: relates to sustainable development or use of land that would have a significant impact on at least two local planning areas or on a planning matter that falls within the remit of a county council; requires that councils set out planning policies to address such issues; requires that councils and public bodies 'engage constructively, actively and on an ongoing basis' to develop strategic policies; and requires councils to consider joint approaches to plan making.

Managed Aggregates Supply System

2.9 The Managed Aggregates Supply System (MASS) exists to ensure a steady and adequate supply of aggregate minerals is available to meet the needs of the construction industry. It seeks to ensure that the geographical imbalances between supply (i.e. the locations where the mineral resources are found and can be extracted) and demand (i.e. the locations where the mineral resources are required) are appropriately addressed at the local level. MASS has operated since the 1970s and involved the Government providing guidelines for the provision of aggregates at both a national and regional level, based on forecasts of demand, and then apportioning these guidelines to individual MPAs based on the advice of the AWP.

2.10 In line with the Government's principles of a more local approach to planning matters, the approach to the MASS has been amended. These reforms maintain the main principles of MASS but each MPA is now required to prepare an LAA. The LAA is required to assess the demand for aggregates and the supply of aggregates to determine the appropriate level of aggregate extraction in their area.

2.11 The national and sub-national guidelines, published by Government, provide an indication of the total amount of aggregate the MPAs within each AWP cluster should collectively seek to provide as well as providing the MPAs with some context and understanding of the overall demand. The guidelines are based on forecasts of demand for aggregates. The most recent 'National and Regional Guidelines for the provision of aggregate minerals in England' were published in June 2009 and cover the 16 year period from 2005 to 2020 (see Table 2.1). These guidelines are considered in Chapter 5 of this Joint LAA.

Table 2.1 National and sub-national guidelines for aggregates provision in England, 2005 to 2020 (all figures are million tonnes)

	Guidelines for land-won production		Assumptions		
	Sand and gravel	Crushed rock	Marine sand and gravel	Alternative materials	Net imports to England
South East England	195	25	121	130	31
London	18	0	72	95	12
East of England	236	8	14	117	7
East Midlands	174	500	0	110	0
West Midlands	165	82	0	100	23
South West England	85	412	12	142	5
North West England	52	154	15	117	55
Yorkshire Humber	78	212	5	133	3
North East England	24	99	20	50	0
England	1,028	1,492	259	993	136

Source: DCLG (2009). National and regional guidelines for aggregates provision in England 2005-2020. Department for Communities and Local Government, June 2009. Available at: <https://www.gov.uk/government/publications/national-and-regional-guidelines-for-aggregates-provision-in-england-2005-to-2020>.

Timescale for the Local Aggregate Assessment

2.12 Given the long-term nature of aggregate mineral working and the need to ensure that a steady and adequate supply of aggregates is maintained in the long term, this LAA looks forward over a time horizon that allows an understanding of aggregate supply requirements that Local Plans should make provision for. A default period of sixteen years, from 2021 to the end of 2036, has been used in line with the time horizon that the national and sub national guidelines for aggregates has covered in the past. This time period aligns with the Plan period for the Northumberland Local Plan^(iv). For County Durham the LAA also looks forward to 2035 in line with time period of adopted County Durham Plan.

Overview of the data used

2.13 In accordance with the guidance on the preparation of LAAs, a wide range of data has been used to inform the preparation of this report, including:

- The Aggregate Minerals Survey for England and Wales on sales, movement, consumption and permitted reserves of aggregate minerals normally undertaken every four years^(v);
- North East Aggregates Working Party Annual Aggregates Monitoring Reports and survey results^(vi);
- Report for the North East Aggregates Working Party Apportionment of North East Region Guidelines for Aggregates Provision Environmental Report (Entec, May 2010)^(vii);
- Relevant information from planning application documentation;
- Information on permitted reserves and sales provided to the MPAs in planning applications and non-confidential survey information returned by operators to individual MPAs (where available) or where such information is not available best estimates have been used;
- Data and information on mineral resources held by the British Geological Survey and the Crown Estate; and
- Environment Agency and other local data on the arisings of and recovery/disposal routes of construction and demolition waste, including inert waste to restore mineral sites.

iv The Northumberland Local Plan covers the area of Northumberland outside of the Northumberland National Park. The end date of the emerging Northumberland National Park Local Plan is 2037.

v The Collation of the Results of the 2019 Aggregate Minerals Survey for England and Wales can be downloaded here: <https://www.gov.uk/government/publications/aggregate-minerals-survey-for-england-and-wales-2019>

vi North East Aggregates Working Party Annual Monitoring Reports can be downloaded here:

<http://www.northumberland.gov.uk/Planning/Planning-policy/Reports.aspx#mineralswastestudies>

vii The Report for the North East Aggregates Working Party Apportionment of North East Region Guidelines for Aggregates Provision Environmental Report can be downloaded here:

<http://www.northumberland.gov.uk/Planning/Planning-policy/Reports.aspx#mineralswastestudies>

3 Aggregate resources

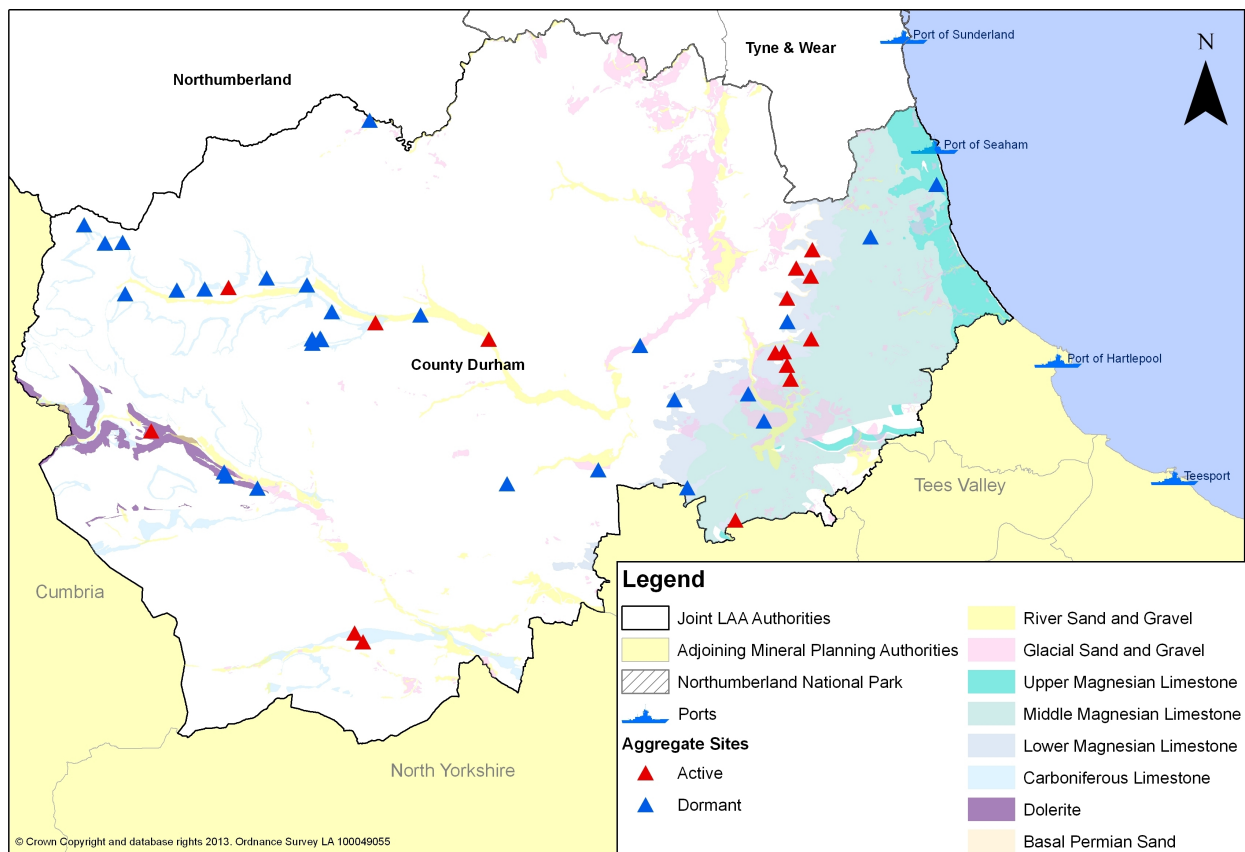
3.1 For each of the mineral planning authorities in County Durham, Northumberland and Tyne and Wear this section identifies the range and distribution of aggregate resources.

County Durham

3.2 County Durham is a geologically complex County. A wide range of rocks and more recent sedimentary deposits are found throughout the County. The extent of potential mineral resources which are potentially available for extraction is defined by this complex geology. County Durham's geology gives rise to the following aggregate resources:

- Permian magnesian limestone;
- Carboniferous limestone;
- Igneous rock; and
- Sand and gravel (fluvial, glacial and basal Permian sand).

Map 2 Aggregate resources and mineral permissions in County Durham



Hard rock

Limestone

3.3 Two types of limestone are extracted in County Durham, magnesian limestone and carboniferous limestone. Although both are limestones, the two types are different in terms of their physical properties and make up. This is related to the environment in which they were formed, as well as the types of materials that formed them.

Permian magnesian limestone

3.4 The magnesian limestone resource in County Durham is of both local and national importance and it is the most important mineral resource currently worked in County Durham.

3.5 Magnesian limestone underlies the majority of east Durham and at its eastern edge forms a bold escarpment running in a north-south direction between Pitlington and Ferryhill and then south-westwards, with the escarpment gradually disappearing to the south of Shildon. To the north of Pitlington, the escarpment gradually disappears towards the adjoining MPA area of Sunderland in Tyne and Wear.

3.6 The magnesian limestone resource is understood to be highly variable, both regionally and locally. Within County Durham the lower magnesian limestone (also known as the Raisby formation), which only outcrops extensively along the escarpment between Pitlington and Shildon in County Durham, is the most important formation of the magnesian limestone succession due to its chemical qualities, purity and range of applicable uses. In the past most quarrying for aggregate uses has been from the lower magnesian limestone, with the overlying limestones of the Middle Magnesian Limestone (Ford formation) generally not being suitable for aggregate use, apart from granular sub-base of fill applications. Similarly, the Upper Magnesian Limestone has not been extensively quarried as generally (although with some exceptions) it is only suitable for low grade aggregate uses, such as granular sub-base roadstone and fill.

Carboniferous limestone

3.7 The carboniferous limestone resource in County Durham outcrops in West Durham fairly continuously along the sides of Weardale above Frosterley and to the south of Barnard Castle along the A66. Although similar in some respects to magnesian limestone, carboniferous limestone often differs in some of its physical properties. In particular, it tends to be harder and more durable than magnesian limestone. It resists weathering and can be used in situations where it is frequently exposed to precipitation and freezing. Accordingly, it is used predominantly for such things as road building and maintenance, concrete manufacture and sea defence works.

Dolerite

3.8 The dolerite resource in County Durham is found as intrusions in the carboniferous limestone series in the west of the County. It is considered an important source of crushed rock aggregate. The most important of these is the series of intrusions collectively known as the Whin Sill, from which the term whinstone is derived. The Whin Sill is a sheet intrusion of dolerite and is up to 70 metres thick where it outcrops in Upper Teesdale (within the North Pennines). Coupled to the sill are a number of dykes which run through the country rock to the eastern side of County Durham.

3.9 Dolerite is an igneous rock it is exceptionally hard and durable and has a high polished stone value (PSV). These qualities make it an important source of high specification roadstone for the top wearing course of roads which have to withstand heavy volumes of traffic. It is also used as a concrete aggregate and in the construction of sea defences.

Sand and gravel

3.10 County Durham contains two main categories of sand and gravel:

- Superficial deposits which include sand and gravel which was deposited by fluvial, fluvio-glacial or fluvial processes and beach and blown sand deposits; and
- Bedrock deposits and these are only represented by basal permian sand as it is understood that the working of beach sand deposits is not a prospect.

3.11 Information on the known or suspected location of sand and gravel resources in the County are set out in two principal sources. The British Geological Society (BGS) report 'Durham and the Tees Valley Mineral Resources and Constraints' and an independent study carried out by Engineering Geology Ltd for the Department of the Environment in 1989 using existing borehole and geological information, 'Assessment of the potentially workable sand and gravel resources of County Durham'. Both reports draw upon a series of sand and gravel Mineral Assessment Reports produced by the Institute of Geological Sciences in the period between 1979 and 1982. While the information which is available is recognised as the best available it is important to note that there is no definitive information on the precise extent and occurrence of sand and gravel in the County. As the BGS report notes, "The variability of sand and gravel together with their possible concealment within or beneath glacial till (boulder clay), means that, compared to other bulk minerals, it is more difficult to infer the location and likely extent of potentially workable resources from geological maps."

3.12 Glacial sand and gravel deposits are found in all parts of the County although they are more common in the central and eastern parts including around Chester-le-Street and Durham. In certain areas they have been assessed as being up to 30 metres thick, but this assessment is problematic, given their origin they can disappear within a short distances. In addition in certain areas such as the Durham Coalfield area they can contain a significant proportion of organic material, particularly coal. Fluvial sand and gravel deposits include post-glacial river terrace deposits, alluvial deposits and fluvio-glacial deposits. Alluvial deposits are developed along the major river valleys. They are widespread and are well developed on both the River Tees and River Wear and some of the major tributaries. Fluvio-glacial deposits also occur in the area. These are the material left by the melt waters of glaciers. They give rise to more uniform deposits of sand and gravel than glacial deposits, although the quality is generally not up to that of river terrace deposits, particularly those of the River Tees.

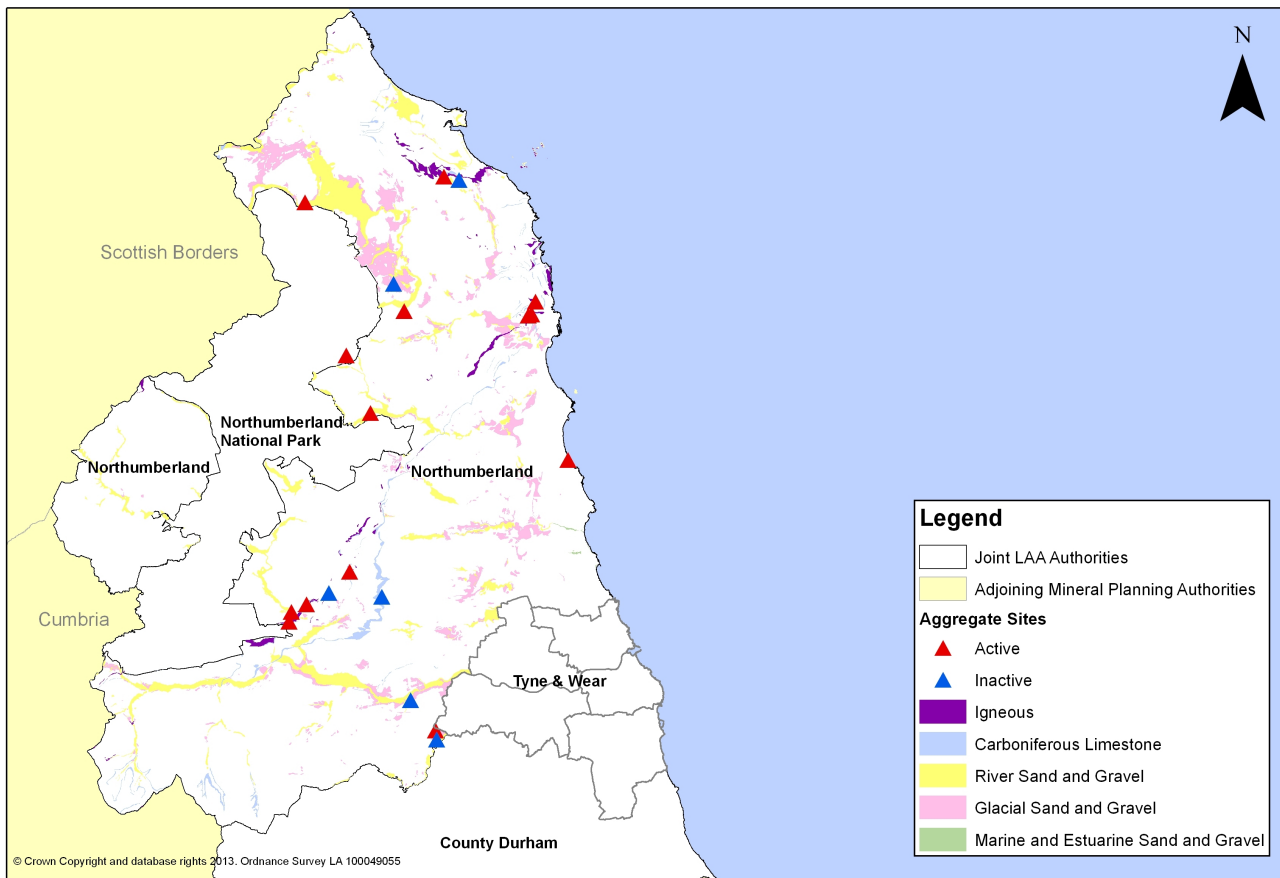
3.13 Basal Permian Sand is a bedrock deposit of sand, laid down under desert conditions. It consists of weakly cemented, yellow, fine to medium grained well sorted sands of wind blown origin, with only a small proportion of fines or coarse sand and gravel. It occurs in County Durham in four linear deposits, or ridges (southwest of Hetton, Haswell, Thornley and West Cornforth) which outcrop intermittently along the base of the Magnesian Limestone Escarpment and continue for some distance and dip to the east under the Magnesian Limestone. It is understood that that these ridges are between one and two kilometres wide with sand thicknesses of up to 35 metres in depth. Due to the eastward dip of the resource and due to the presence of the overlying deepening magnesian limestone, the economically accessible resources does not occur very far beyond the outcrop unless the resource is worked following the extraction of the overlying magnesian limestone.

Northumberland

3.14 A wide range of rocks and more recent sedimentary deposits are found throughout Northumberland. The geology of Northumberland gives rise to the following aggregate resources:

- Carboniferous limestone;
- Igneous rock; and
- Sand and gravel (fluvial, glacial, marine and estuarine, beach and blown deposits).

Map 3 Aggregate resources and mineral permissions in Northumberland



The geology of the Northumberland National Park area can be seen on the Mineral Resource Map for Northumberland and Tyne and Wear which was produced by the British Geological Survey which can be downloaded here: <http://www.bgs.ac.uk/downloads/start.cfm?id=2578>

Hard rock

3.15 In Northumberland, the Whin Sill is an important resource of igneous rock for crushed rock aggregate. The Whin Sill is a tabular, sheet-like intrusive body of quartz dolerite and is known locally as 'whinstone'. The Whin Sill has an average thickness of 25 to 30 metres and may be up to 70 metres thick in places. It underlies most of the Carboniferous rocks in northern Northumberland. Within the Northumberland National Park the Whin Sill is drift-free and gives rise to an escarpment along or to the north of Hadrian's Wall. Due to its properties this resource is particularly valued for roadstone. There are active planning permissions for the extraction of the resource at Barrasford Quarry, Belford (Easington) Quarry, Cragmill Quarry, Divethill Quarry, Howick Quarry, Keepersfield Quarry, Longhoughton (Ratcleugh) Quarry and Swinburne Quarry.

3.16 Within the northern part of the Northumberland National Park intrusive and extrusive rocks are associated with the Cheviot Igneous Complex, which is of Devonian age. The core of the Cheviot Hills is formed of the Cheviot Granite, the surface outcrop of which occupies an area of some 70 kilometres square. The granite is surrounded by volcanic rocks consisting of mainly andesitic and rhyolitic lavas. The igneous complex is deeply weathered and altered and forms a remote, upland, massif characterised by rounded features. The potential of both the granite and the volcanic rock as a source of aggregate is thought to be low. However, a small intrusion of felsite in the complex is worked at Harden Quarry on the edge of the Northumberland National Park. Harden Quarry produces a range of aggregate products and the material is valued for its red colour. This resource is known as the 'red whin'.

3.17 The Carboniferous limestones in Northumberland occur in a cyclical sequence of limestone, mudstone and sandstone beds. The limestones are less than 10 metres thick and, therefore, are too thin to support a modern quarrying operation and are excluded from the British Geological Survey mineral resources map. However, there is potential to extract this resource where it is closely associated with the Whin Sill and it is currently extracted at Barrasford and Keepersfield quarries. The main exception is the 'Great Limestone' which is sufficiently thick (up to 20 metres), extensive and consistent in quality to form a workable resource. The Great Limestone is a basal limestone of Upper Carboniferous sediments. It produces a relatively strong and durable crushed rock aggregate. Current sites in Northumberland with planning permission to extract this resource are Mootlaw Quarry and Cocklaw Quarry. Extraction at Cocklaw Quarry has yet to commence following the approval of consent to reactivate a dormant planning permission and Mootlaw Quarry is currently mothballed^(viii).

Sand and gravel

3.18 The sand and gravel resources in Northumberland are superficial deposits. These resources are divided into four categories:

- Fluvial sand and gravel
- Glacial sand and gravel
- Marine and estuarine sand and gravel
- Beach and blown sand deposits

3.19 Post glacial river terrace and alluvial deposits are developed along the major river valleys in Northumberland such as the Breamish, Coquet, Till and Tyne. Fluvioglacial deposits may also occur beneath these deposits. River gravels are generally well-sorted, well-rounded and of a high commercial quality. Terrace deposits are generally well- to fairly well-graded with moderate fines content. Narrow belts of floodplain gravel are also common in valleys. Fluvioglacial sands and gravels, generally thicker deposits than river alluvium, have been partially, but imperfectly, sorted by streams issuing from the melting glaciers. The largest spread of such deposits is near Wooler where extensive terraces of sand and gravel are up to 9 metres thick. Terraces are also present along the River Tyne and its tributaries.

3.20 The glacial sand and gravel deposits typically occur as lenses within or beneath the till (boulder clay). The composition and thickness of these deposits is highly variable, although characteristically sandy, except in the Tyne Valley where gravels predominate. They may also grade into till as fines content increases. Impersistent glacial beds may reach up to 30 metres in the Tyne Valley. British Geological Survey have assessed part of the area for sand and gravel and within these areas the extent of sand and gravel including the possible extent of sand and gravel beneath the till is shown on the British Geological Survey mineral resource maps. Outside the areas assessed only the glacial sand and gravel at the outcrop is shown.

3.21 Marine and estuarine sand and gravel resources are found in the estuaries of the Blyth and Wansbeck rivers, where they consist of silt, pebbly clay and sand and gravel. The deposits are up to 11 metres thick in the Wansbeck estuary but are not currently worked.

3.22 Beach deposits are found along the length of the Northumberland coast. They are generally clean fine- and medium-grained sands of uniform quality and are suitable for use as concreting and building sand. There are currently no active planning permissions for extraction of this resource; planning permission to extract sand from an area of Druridge Bay expired in 2020. Blown or dune sand deposits are of variable thickness and consist of uncemented fine- to medium-grained

viii A recent planning application, granted permission on 11 February 2015, has allowed further time for extraction of the permitted reserve at this site and the completion of the restoration

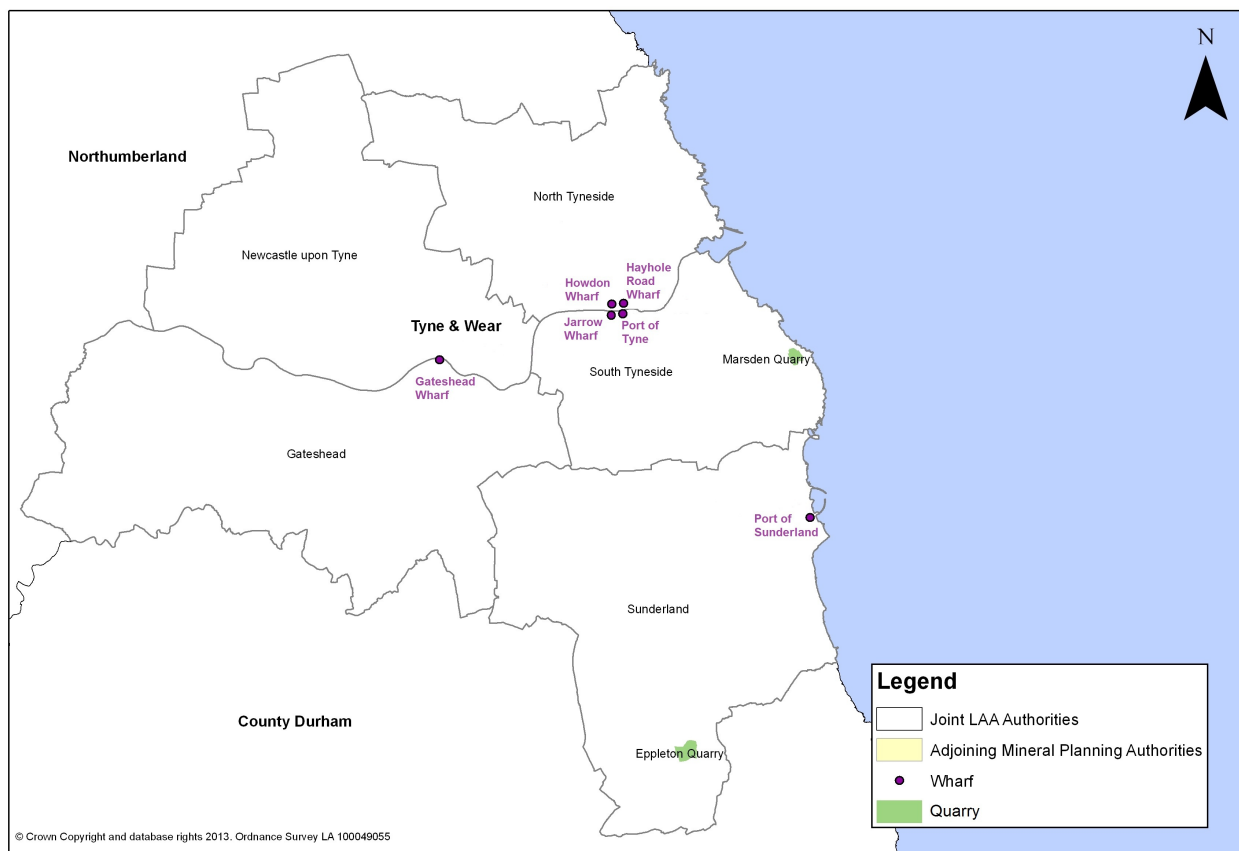
sands. Sand dunes often back the beach deposits along the Northumberland Coast. Blown deposits are not currently extracted in Northumberland as these areas often have nature conservation designations.

Tyne and Wear

3.23 Tyne and Wear is geologically similar to the adjoining areas of County Durham. The geology of Tyne and Wear gives rise to the following aggregate resources:

- Permian magnesian limestone; and
- Sand and gravel (fluvial, glacial and basal Permian sand).

Map 4 Quarries and wharves in Tyne and Wear



The geology of Tyne and Wear can be seen on the Mineral Resource Map for Northumberland and Tyne and Wear which was produced by the British Geological Survey which can be downloaded here: <http://www.bgs.ac.uk/downloads/start.cfm?id=2578>

Hard rock

3.24 Dolomites, dolomitic limestones and limestones of Permian age (the magnesian limestone) naturally occur in Sunderland and South Tyneside with a small area within North Tyneside. These rocks which have a complex geology, mineralogy and chemistry form the northernmost narrow part of a narrow, easterly dipping outcrop which extends from South Tyneside to Nottingham.

3.25 The magnesian limestone is traditionally divided into three formations (Upper, Middle and Lower). It is highly variable in its physical, chemical and mechanical properties and thus its suitability for particular uses. In South Tyneside all formations from the magnesian limestone are capable of producing aggregates suitable for sub-base roadstone and fill. In Sunderland Eppleton Quarry works

the lower magnesian limestone (Raisby formation) and underlying Permian basal sands. Towards the top of the sequence, the better quality Upper Magnesian Limestone (concretionary limestone) is worked at Marsden Quarry in South Tyneside. This is a relatively hard, crystalline limestone and is capable of producing higher grades of aggregate materials suitable for roadbase usage or even concreting aggregates.

Sand and gravel

3.26 Tyne and Wear contains deposits of fluvial, glacial sand and gravel laid down in the last two million years and bedrock deposits in the form of the Basal Permian Sands. The variability of the fluvial and glacial deposits together with their potential concealment within or beneath glacial till means that it is difficult to infer the location and likely extent of potentially workable deposits. However, within Tyne and Wear, the majority of the fluvial deposits lie on the River Tyne within Gateshead. Similarly, the majority of glacial deposits also lie within Gateshead, with lesser areas in both South Tyneside and in Newcastle. Reflecting the overall distribution of fluvial and glacial sand and gravel deposits, past working within Tyne and Wear has been concentrated within Gateshead.

3.27 The basal Permian sands outcrop intermittently along the base of the magnesian limestone escarpment and dip to the east beneath the limestone and is worked with overlying magnesian limestone aggregate at Eppleton Quarry.

4 Aggregate sales and permitted reserves

4.1 Section 4 sets out known information on sales and permitted reserves of both sand and gravel and crushed rock in the Joint LAA area. It includes some estimates of sales and reserves where figures are not otherwise available. Due to the use of estimates there may be some minor discrepancies between the figures quoted here and those provided in the annual monitoring reports published by the North East Aggregates Working Party.

Sand and gravel (from quarries in the Joint LAA area)

Sand and gravel sales

4.2 Information on sales of land won sand and gravel for aggregate use from quarries in County Durham, Northumberland, Tyne and Wear in 2019 and 2020 and over the ten year period between 2011 and 2020 is provided in Table 4.1 below. Sales from the Joint LAA area were 1.099 million tonnes in 2019 with 48.9% of sales from quarries in County Durham, 28.4% of sales from quarries in Northumberland and 22.7% from quarries in Tyne and Wear. Sales from the Joint LAA area were 917,000 tonnes in 2020 with 47.76% of sales from quarries in County Durham, 30.1% of sales from quarries in Northumberland and 25.1% from quarries in Tyne and Wear.

4.3 Table 4.1 shows a three year sales average calculated using the sales figures from the years 2017-2019 and discounting figures from 2020. Sales in 2020 will have been affected by the impact of the pandemic both through restrictions affecting production at sites (supply) and restrictions affecting constructions sites using aggregates (demand) and are therefore not considered an accurate representation for the calculation and comparisons of long-term trends in changes in demand. This is discussed in more detail in Chapter 5.

Table 4.1 Sales of land won sand and gravel from County Durham, Northumberland and Tyne and Wear, 2011 to 2020 (thousand tonnes)

	County Durham	Northumberland	Tyne and Wear	Total for Joint LAA area
2011	237	450	162+	849
2012	199	349	165+	713
2013	218	319	177+	714
2014	276	361	236+	873
2015	256	420	240+	916
2016	322	436	214+	972
2017	330	405	220+	955
2018	446	352	250+	1,048
2019	537*	312	250+	1,099*
2020	438*	276	203+	917*
Ten year Sales average (2011 to 2020)	325.9	368.1	211.7	905.6
Three year sales average (2017 to 2019)	437.6	356.3	240	1034

Notes: + Mineral Planning Authority estimates. *Sales figure differs from North East Aggregates Working Party Annual Monitoring Report figure for 2019 and 2020 due to adjustment to reflect the limestone fines component of sand sales at one quarry in County Durham.

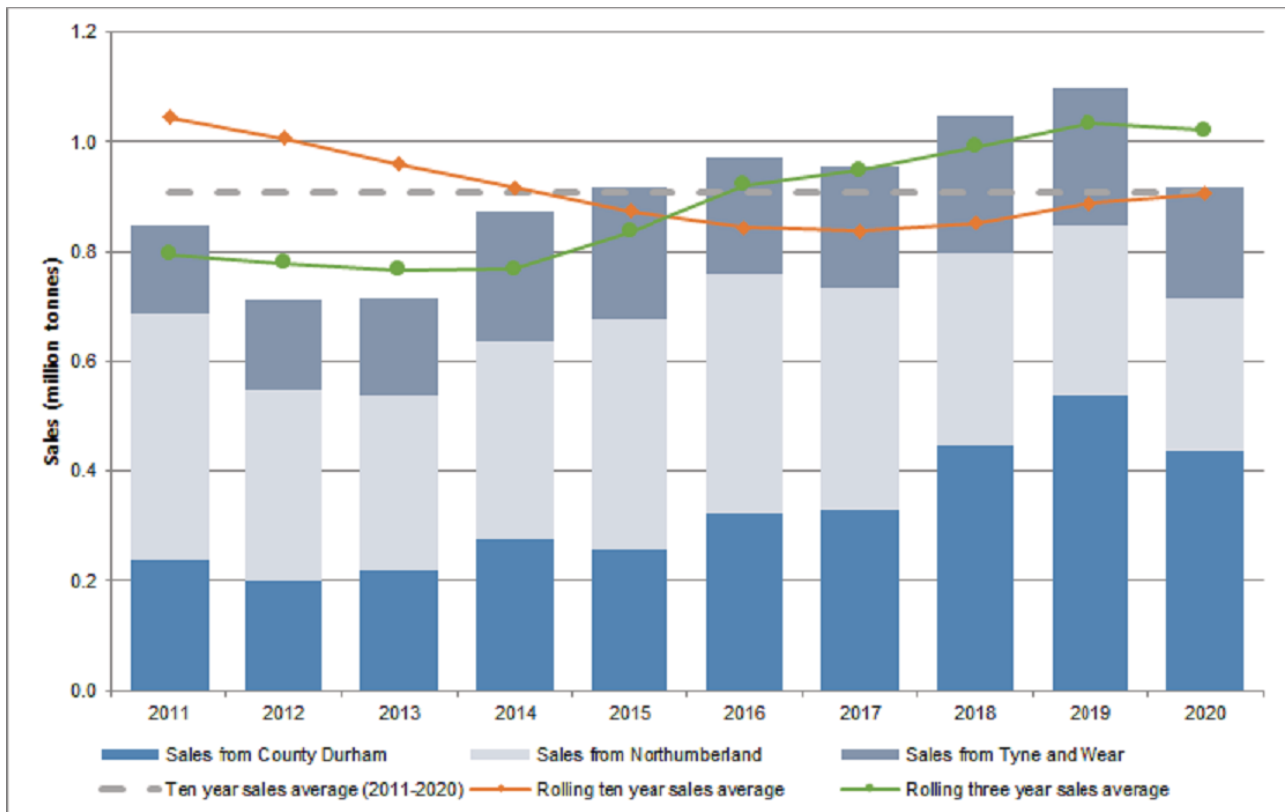
4.4 Sales in the Joint LAA area fell from 849,000 tonnes in 2011 to a ten year low of 713,000 tonnes in 2012 before gradually rising to a ten year high of 1,099,000 tonnes in 2019. A comparison between sales and the rolling ten year sales averages is provided in Figure 1 below. Also shown are the rolling three years sales averages, which help to illustrate how demand has changed over the ten year period from 2011 to 2020.

4.5 Figure 1 shows how the rolling ten year sales average has decreased over the period from 2011 to 2017 before rising slightly more recently. This was due to the ten year sales averages including a period of depressed sales as a result of the economic recession post 2009. The rolling three year sales averages have also varied over time but have risen after 2014 due to the annual rise in sales as the economy has recovered post 2009. For both 2019 and 2020 the overall three year sales average is above the ten year sales average.

4.6 While the general pattern has been for sales sand and gravel to have increased in 2019 compared to 2018, sales decreased in 2020 due to the Coronavirus pandemic due to the fall in demand in the economy. In sub-regional terms sand and gravel sales:

- In County Durham sales have risen substantially since 2018 as a result of mineral working commencing at two quarries resulting in sales from four quarries whereas sales prior to 2018 occurred from only two quarries.
- In Northumberland sales have fallen from a high of 450,000 tonnes in 2011, before falling to a low of 319,000 tonnes in 2013, the rising to 436,000 tonnes in 2016 then falling to a ten year low of 276,000 tonnes in 2020. One of the reasons for the decrease since 2016 is as a result of a reduced number of operational sites, with production from Hedgeley Quarry ceasing in the first quarter of 2018. It is currently unclear whether this decrease can be attributed to the resulting fall in productive capacity of the remaining sites or a rebalancing of demand. These issues will be discussed further in this document.
- In Tyne and Wear sales have generally risen since 2011 reflecting sales at Eppleton Quarry rising to the quarries maximum productivity in 2018 and 2019 before falling once more in 2020.

Figure 1 Comparison of actual land won sand and gravel sales from the Joint LAA area and the sales averages



Sand and gravel reserves

4.7 Table 4.2 identifies the extent of permitted reserves in County Durham, Northumberland, Tyne and Wear and within the Joint LAA area at the end of each calendar year from 2011 to 2020 and the percentage of permitted reserves in each sub-region on 31 December 2020. Since 2011 permitted reserves have increased to a high point in 2015 due to the grant of additional planning permissions before falling to a ten year low in 2020. At the end of 2020 34.2% of permitted reserves in the Joint LAA area lay in quarries County Durham, 30% of permitted reserves lay in quarries in Northumberland and 35.8% of permitted reserves lay in quarries in Tyne and Wear. Taking into account the distribution of both permitted reserves and sales of the three sub-regions permitted reserves in 2020 were:

- Highest in Tyne and Wear, but sales were the lowest of the three sub-regions reflecting the reliance of sales on one quarry;
- Second highest in County Durham, but sales were highest reflecting the number of active sand and gravel working (four sites); and
- Lowest in Northumberland, but sales were second highest reflecting the number of active sand and gravel workings (five sites).

Table 4.2 Permitted reserves of sand and gravel reserves for aggregate use in County Durham, Northumberland and Tyne and Wear at the end of each calendar year, 2011 to 2020 (thousand tonnes)

	County Durham	Northumberland	Tyne and Wear	Joint LAA Area
2011	4,606	8,969	118+	16,173
2012	6,679	8,331	1,200+	17,551

	County Durham	Northumberland	Tyne and Wear	Joint LAA Area
2013	8,923	7,727	1,022+	20,220
2014	8,650	7,414	853+	18,198
2015	8,354	7,337	6,600+	23,571
2016	7,610	6,045	6,400+	21,315
2017	7,113	5,410	6,200+	19,956
2018	6,474	5,104	5,951+	18,752
2019	5,600	5,585	5,701+	16,886
2020	5,247	4,594	5,498+	15,339
Percentage of permitted reserves in Joint LAA area at 31 December 2020	34.2%	30%	35.8%	100%

Notes: The reserves for both the Tees Valley and Tyne and Wear are included in the regional figure in the relevant AWP report for the year concerned. + Mineral Planning Authority estimates.

County Durham

4.8 Permitted reserves of sand and gravel in County Durham were 5,247,000 tonnes at 31 December 2020. These permitted reserves were located in five sites:

- Thrislington Quarry;
- Crime Rigg Quarry;
- Old Quarrington and Cold Knuckles Quarry;
- Low Harperley; and
- Hummerbeck.

4.9 Durham County Council has sought to understand the extent of permitted reserves within sites, the spatial distribution of the reserves and the potential capacity of sites to supply. Due to site specific information not being available from the North East Aggregates Working Party this has been achieved through the Council's own annual survey of mineral operators and through the consideration of information submitted as part of planning applications.

4.10 The results of this work are set out in Table 4.3 below. It should be noted the overall sum of the Council's permitted reserves figures differs only slightly to the overall sand and gravel permitted reserve figure for County Durham, as set out in Table 4.2 above. This has been due to the Council having to rely on best estimates for two sites. This work gives an indication that a significant proportion of the permitted sand and gravel reserves in County Durham are not simply found in a limited number of the sites and that sites are distributed in three broad areas (upon the magnesian limestone escarpment, east of Wolsingham in Weardale and south of West Auckland in Teasdale), all of which are well related to the market in the North East.

4.11 Table 4.3 below also includes the Council's assessment of maximum productive capacity which has been prepared taking into account all available information including that found within past planning applications, operator monitoring reports and operator submissions to the Council's own monitoring survey. The Council's assessment sets out that County Durham's existing sand and gravel

sites are likely to have a maximum productive capacity which is in excess of both recent sales and historic sales levels. It should be noted that these are estimates and that individual operators will within the constraints afforded by their existing planning permissions seek to increase or decrease supply in accordance with market demand. An assessment of supply options is set out in chapter 6.

Table 4.3 Distribution of permitted reserves of sand and gravel permitted in County Durham and Council estimate of supply/production capacity in 2020

Quarry	Estimate of Permitted reserves at 31 December 2020 (tonnes)	Estimate of maximum productive capacity (tonnes per annum)	Comments on potential future supply
Thrislington Quarry West	1,146,000 ⁽¹⁾	200,000	Site has permission until 2030. Future extraction anticipated to be around 200,000 tonnes of sand per annum which could mean permitted reserves could be exhausted by 2025. Note up to 100,000 tonnes of limestone fines are also added to the sand to produce a Midas product. Building/soft sand, asphalt and fill sand is also produced. Deepening of the sites has also been proposed as part of work to prepare the County Durham Minerals and Waste Policies and Allocations Document.
Crime Rigg Quarry	350,000 ⁽²⁾	75,000	Site has permission until 2022. Future extraction anticipated to be around 30,000 tonnes per annum with unworked permitted reserves remaining at the end of 2022 when planning permission is due to end. It is anticipated that a planning application to extend the time period for extraction will be made in due course and that the current permitted reserves at this site may be available to contribute to supply over a longer period of time, possibly until 2032. A northern extension to the quarry has also been proposed through work to prepare the County Durham Minerals and Waste Policies and Allocations Document.
Old Quarrington and Cold Knuckles Quarry	1,177,000 ⁽³⁾	140,000	Future extraction anticipated to be approximately 140,000 tonnes per annum. It is anticipated that permitted reserves could be exhausted by 2029. Deepening of the quarry has also been proposed as part of work to prepare the County Durham Minerals and Waste Policies and Allocations Document.
Hummerbeck	670,000 ⁽⁴⁾	80,000	Site inactive. It is not anticipated that this site will be worked in the short to medium term. It is currently uncertain whether this site will contribute to future supply. Contribution to future supply currently assumed to be zero.
Low Harperley	1,900,000 ⁽⁵⁾	200,000	Site has permission to 2032. Based upon remaining permitted services and the planning permission end date future extraction anticipated to be approximately 160,000 tonnes until 2032. An extension to the quarry has also been proposed through work to prepare the County Durham Minerals and Waste Policies and Allocations Document.

1. Durham County Council Mineral Survey
2. Durham County Council best estimate.
3. Durham County Mineral Survey
4. Durham County Council Planning Committee Report.
5. Durham County Council best estimate.

Northumberland

4.12 Permitted reserves of sand and gravel in Northumberland were 4,594,000 tonnes at 31 December 2020. These reserves were contained within five quarries listed in the table below. All of the sites are located outside of the Northumberland National Park.

4.13 Since 31 December 2017, planning permission for an extension of Wooperton Quarry involving an additional 500,000 tonnes of reserves was granted planning permission. At the time of writing, Northumberland County Council is deliberating an application for extraction of sand and gravel at Anick Grange Haugh. If approved, this site would provide reserves of 5.8 million tonnes.

4.14 Northumberland County Council has sought to understand the extent of reserves within sites and the spatial distribution of the reserves. The remaining permitted reserves in sites have been estimated based on the information on reserves and the anticipated level of production provided in planning applications. As these figures are estimates they will need to be treated with a degree of caution. The comparison with the figure for Northumberland set out in the North East Aggregates Working Party Annual Monitoring Report indicates that the level of reserves is slightly overestimated using this method. Nonetheless this information provides a reasonable estimate of reserves. It also provides an indication of the split in the total reserves between different sites and an indication of the level of reserves within individual sites.

4.15 This work indicates that just over half of Northumberland's reserves of sand and gravel are held at Ebchester Quarry which is not currently active. Current planning permission at this site lapses in 2023, however it is anticipated that an application for an extension of time will be made and the current permitted reserves will be available to contribute to the landbank beyond this date. Overall, approximately 60% of reserves are held in sites in the south and west of the county, with the remainder located in sites in North Northumberland. Given the contribution this site makes to the landbank in Northumberland, this situation will be closely monitored.

Table 4.4 Estimated permitted reserves of sand and gravel in Northumberland at 31 December 2020 (tonnes) and the productive capacity of the quarries (tonnes per annum)

Quarry	Mineral Planning Authority	Estimate of permitted reserves at 31 December 2020 (tonnes)	Estimate of productive capacity (tonnes per annum)	Comments on potential future supply
Ebchester (Broadoak) Quarry	Northumberland County Council	2,310,000	150,000	Extraction is not currently taking place. Current planning permission due to lapse in 2023 but it is anticipated that a planning application to extend the time limit for extraction will be made and the current permitted reserves at this site will be available to contribute to supply over a longer period of time.
Houghton Strother Quarry	Northumberland County Council	15,000	150,000	It is anticipated remaining reserves will be worked out by end of 2021.
Lanton (Cheviot) Quarry	Northumberland County Council	970,000	150,000	Extraction anticipated to be around 150,000 tonnes per annum until 2028.
Merryshields Quarry	Northumberland County Council	370,000	30,000	Limited reserves of sufficient quality remaining,
Wooperton Quarry	Northumberland County Council	930,000	100,000	Extraction anticipated at a rate of 100,000 tonnes per annum until reserve worked out.

Notes: The reserve information presented in this table are Mineral Planning Authority best estimates based on reserve and output information provided in planning applications. The estimates have been made on a site-by-site basis and therefore do not necessarily sum to the actual total permitted reserves for Northumberland.

Tyne and Wear

4.16 The North East AWP Annual Monitoring Reports does not provide permitted reserves information for Tyne and Wear at the 31 December 2020. Information on permitted reserves for Tyne and Wear in these reports has been combined into the figure for North East England in order to avoid disclosing individual site information which is treated confidentially by the North East AWP. An estimate of the reserves has, therefore, been made and is provided below.

4.17 The reserves in this area are contained with one site, Eppleton Quarry in Sunderland. Sand and gravel extraction at Crawcrook Quarry in Gateshead is understood to have now ceased and is therefore not included in the reserve figures.

Table 4.5 Estimated permitted reserves of sand and gravel in Tyne and Wear at 31 December 2020 (tonnes)

Quarry	Mineral Planning Authority	Estimate of permitted reserves at 31 December 2020 (tonnes)	Comments on potential future supply
Eppleton Quarry	Sunderland City Council	5,498,000+	Future extraction anticipated to be around 250,000 tonnes per annum until 2040.

Notes: + Mineral Planning Authority estimate based upon permitted reserve information in the Collation of the National Aggregates Survey 2019, estimated reserves in previous Joint LAA and estimated sales in 2019 and 2020.

Crushed rock (from quarries in Joint LAA area)

Crushed rock sales

4.18 Information of sales of crushed rock from quarries in County Durham, Northumberland and Tyne and Wear in the period 2011 to 2020 is provided in Table 4.6 below. Sales from the Joint LAA area in 2019 were 5.5 million tonnes with 59.2% of sales were from quarries in County Durham, 31.7% were from quarries in Northumberland and the remaining 9.1% were estimated from sites in Tyne and Wear. Similarly, sales from the Joint LAA area in 2020 were 4.928 million tonnes with 53% of sales were from quarries in County Durham, 37.8% were from quarries in Northumberland and the remaining 9.2% were estimated from sites in Tyne and Wear.

Table 4.6 Sales of crushed rock for aggregate uses from quarries in County Durham, Northumberland and Tyne and Wear, 2011 to 2020 (thousand tonnes)

	County Durham	Northumberland	Tyne and Wear	Total for Joint LAA area
2011	1,955	1,230	224+	3,409
2012	1,696	1,233	212+	3,141
2013	2,245	1,060	236+	3,541
2014	2,654	1,171	309+	4,134
2015	2,770	1,473	225+	4,468
2016	2,990	1,708	550+	5,248
2017	2,636	1,768	350+	4,754
2018	3,484	1,641	550+	5,675
2019	3,256*	1,742	502+	5,412

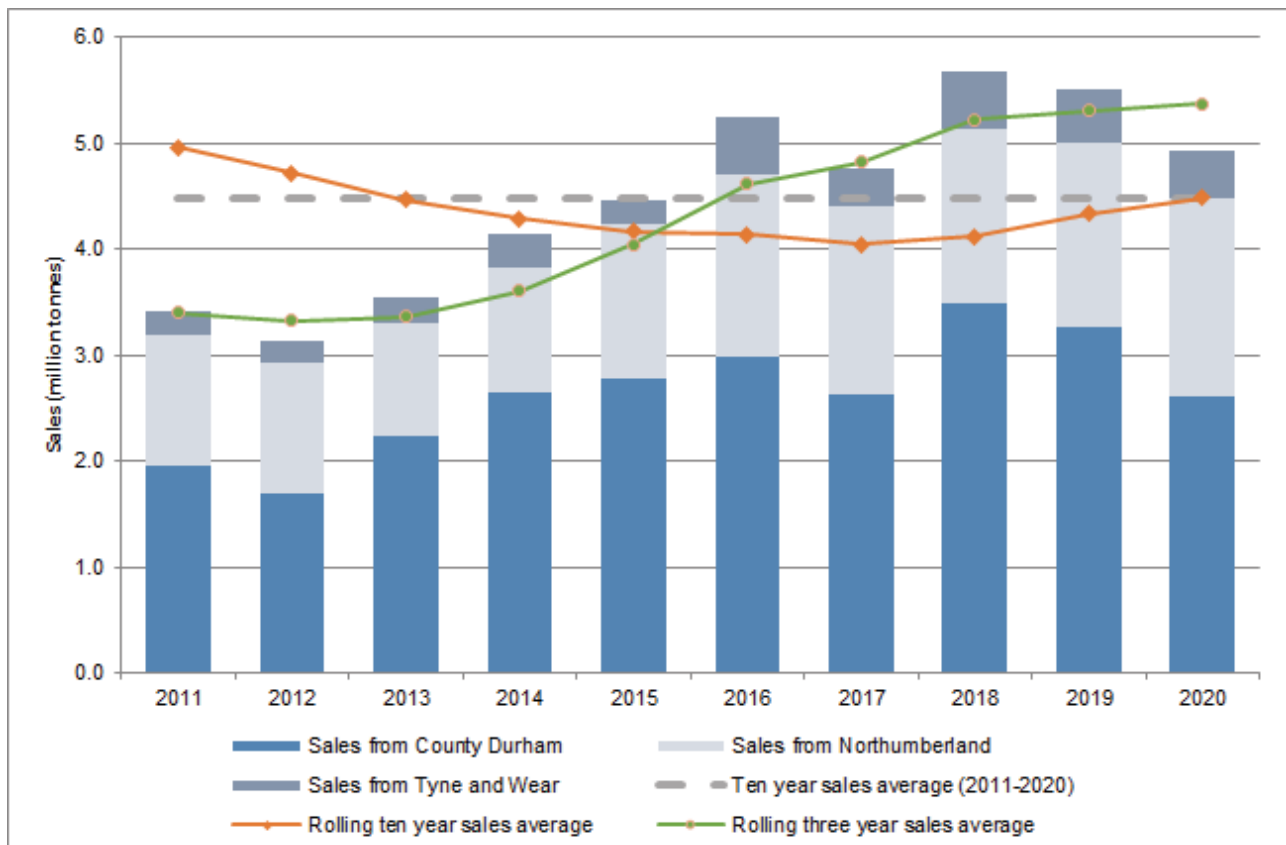
	County Durham	Northumberland	Tyne and Wear	Total for Joint LAA area
2020	2,613*	1,863	452+	4,881
Ten year sales average (2011 to 2020)	2,629	1,488.9	361	4,479.8
Three year sales average (2017 to 2019)	3,125.3	1,717	467.3	5,309.6

Notes: + Mineral Planning Authority estimate. *Sales figures differ from North East Aggregates Working Party Annual Monitoring Report figure for 2019 and 2020 due to an adjustment to reflect the limestone fines component of sand sales at one quarry in County Durham.

4.19 A comparison between actual sales and the ten year sales average is provided in Figure 2. Also shown are the rolling three years sales averages, which help to illustrate how demand has changed over the ten year period from 2011 to 2020.

4.20 The ten year sales average has decreased over the period from 2011 to 2017 due to this including a period of depressed sales between 2008 and 2013 in particular. For 2019 and 2020 the overall and the sub-regional three year sales average is above the ten year sales average.

Figure 2 Comparison of actual crushed rock sales from the Joint LAA area and the sales averages



Crushed rock reserves

4.21 Table 4.7 below identifies the extent of permitted reserves in County Durham, Northumberland and Tyne and Wear on the 31 December 2020 and also provides a comparison of permitted reserves over the last ten years since 2011 within County Durham, Northumberland and Tyne and Wear.

Table 4.7 Permitted reserves of crushed rock for aggregate use in County Durham, Northumberland and Tyne and Wear at the end of each calendar year, 2011 to 2020 (thousand tonnes)

	County Durham	Northumberland	Tyne and Wear	Joint LAA Area
2011	136,734	78,003	1,176+	215,913
2012	134,065	77,264	964+	212,293
2013	140,731	76,642	728+	218,101
2014	138,345	77,972	560+	216,877
2015	138,326	83,991	6,700+	228,927
2016	131,389	82,917	6,600+	220,906
2017	130,745	81,016	7,000+	218,761
2018	122,259	78,520	6,450+	207,229
2019	111,060	80,070	5,952+	197,082
2020	97,468	79,060	5,498+	182,024
Percentage of permitted reserves in Joint LAA area at 31 December 2020	53.55%	43.43%	3.02%	

Notes: # The reserves for Tyne & Wear are included in the regional figure in the relevant AWP Annual Monitoring Report. + Mineral Planning Authority best estimates.

County Durham

4.22 Durham County Council has sought to understand the extent of permitted reserves within each of County Durham's crushed rock quarries, the spatial distribution of permitted reserves and the split of permitted reserves by resource type. This has been achieved through the Council's own annual survey of mineral operators and through the consideration of information submitted as part of planning applications. Where information has not been available from operators best estimates have been made. The results of this work are set out in Table 4.8. It should be noted that there has been a significant fall in permitted reserves from 2019 onwards, this has been due to a reduction in the quantity of dolerite which now remains available within Force Garth Quarry following the issue of a planning permission in February 2020.

4.23 This work gives an indication that in 2020 a significant proportion of the permitted crushed rock reserves in County Durham were contained within eight sites. Of these sites seven are magnesian limestone sites (Old Quarrington and Cold Knuckles Quarry, Thrislington Quarry East, Thrislington Quarry West, Cornforth West Quarry, Cornforth East Quarry, Coxhoe Quarry and Bishop Middleham Quarry) and one a dolerite site (Force Garth Quarry). It can also be seen that the majority of crushed rock permitted reserves in County Durham were magnesian limestone. In 2020 it is estimated that approximately 81% of permitted reserves were magnesian limestone, 13% carboniferous limestone and 6% were dolerite.

4.24 Unlike the previous Joint LAA where Table 4.8 reflected the grant of new permitted reserves at Heights Quarry in 2019 in a separate column, these permitted reserves are now shown in the table for 2020. However, Table 4.8 still shows an additional potential reserve (8.2 million tonnes) which could become available from an allocation on land to the east of Hulands Quarry in the recently adopted County Durham Plan.

4.25 The table also shows the Council's estimate of productive capacity. These estimates have been prepared taking into account all available information including that found within past planning applications, operator monitoring reports and operator submissions to the Council's own annual monitoring survey. It should be noted that some sites have in the past produced both above and below the Council's estimate of productive capacity. This being particularly true of some of the County's carboniferous limestone sites, in particular Hulands Quarry which has in recent years been worked more quickly than originally anticipated due to works to improve and upgrade major roads within the North East and North Yorkshire.

Table 4.8 Estimate of Permitted Reserves, Maximum and Potential Productive Capacity on 31 December 2020

Quarry Name	Estimate of permitted reserves 31 December 2020 (tonnes).	Additional Permitted Reserves granted since 31 December 2020 (tonnes)	Unpermitted allocations in Local Plans (tonnes)	Estimate of productive capacity (tonnes per annum)	Comments on potential future supply
Carboniferous Limestone					
Heights Quarry	6,170,000			300,000	Future extraction anticipated at a rate of up to 300,000 tonnes per annum in the longer term to at approximately 2042.
Hulands Quarry	1,100,000		8,200,000	300,000	Future extraction anticipated to be at a rate of up to 300,000 tonnes per annum. Future working in the medium and longer term dependent on new planning permission as current permission for extraction ends in 2024. 8.2 million tonne extension allocated in County Durham Plan. Subject to a future planning application being granted planning permission the site the would be able to supply until approximately 2051.
Kilmondwood Quarry	5,110,000			300,000	Future extraction anticipated to be at a rate of up to 300,000 tonnes per annum in the long term to approximately 2042.
Broadwood Quarry	355,000			Not known	It is not certain that working will resume in Phase 3. Contribution to future supply is currently considered to be zero. The extraction of limestone in Phase 2 ceased on 24 September 2009 when the reserves were exhausted. The Council has previously taken the view that mineral working has ceased at the site and that a restoration scheme is now required.
Magnesian Limestone					
Witch Hill Quarry	1,500,000			Not known	Site currently inactive. Periodic Review Submission awaiting determination. Future extraction anticipated at between 150,000-250,000 tonnes (all minerals) of which 50,000-150,000 tonnes will be aggregates. There is no definitive timescale for working to resume. Contribution to future supply in the short to medium term is

Quarry Name	Estimate of permitted reserves 31 December 2020 (tonnes).	Additional Permitted Reserves granted since 31 December 2020 (tonnes)	Unpermitted allocations in Local Plans (tonnes)	Estimate of productive capacity (tonnes per annum)	Comments on potential future supply
					currently considered to be zero. However, it is assumed that permitted reserves will be worked in the longer term but prior to 2042. Operator has also proposed an extension to site through the County Durham Plan but the site has not been allocated.
Running Waters Quarry	350,000			Not known	Site currently inactive. Uncertainty as to whether the site will be worked. Contribution to future supply is currently considered to be zero. Previous owner had sought to exchange permitted reserves for new reserves at Witch Hill Quarry.
Crime Rigg Quarry	790,000			100,000	Site has permission for working until 2022. Extraction anticipated to be around 100,000 tonnes per annum with unworked permitted reserves remaining at 2022. It is anticipated that a planning application to extend the time limit for extraction will be made and that the current permitted reserves at this site will be available to contribute to supply over a longer period of time, possibly until around 2028. Operator has also proposed an extension to site through the County Durham Plan but the site has not been allocated.
Bishop Middleham Quarry	4,505,000			450,000	Site has permission for working until 2029. Extraction anticipated to be at up to 450,000 tonnes per annum (excluding mineral extracted for agricultural lime).
Old Quarrington and Cold Knuckles Quarry	9,757,000			300,000	Site has permission for working until 2042. Operator has previously advised that the site could produce up to 300,000 tonnes of crushed rock aggregate per annum. In 2019 Tarmac submitted two planning applications to vary the existing permissions on the site. Permitted reserves at this site will be sufficient to contribute to supply over the long term to at least 2042.
Thrislington Quarry West	1,833,000			200,000	Site has permission for working until 2030. Extraction anticipated to be at approximately 200,000 tonnes per annum.
Thrislington Quarry East	11,158,000			600,000	Site has permission until 2045. Operator has submitted a planning application seeking a variation to existing permission which proposes site to be worked for aggregate purposes only to 2022/2023. Production is then proposed to be transferred into Cornforth West Quarry. Thrislington East will then be mothballed. It is assumed that the site will resume working in the early/middle 2030s. Future working

Quarry Name	Estimate of permitted reserves 31 December 2020 (tonnes).	Additional Permitted Reserves granted since 31 December 2020 (tonnes)	Unpermitted allocations in Local Plans (tonnes)	Estimate of productive capacity (tonnes per annum)	Comments on potential future supply
					dependent on demand for high grade dolomite and availability of permitted reserves elsewhere in the UK. Extraction anticipated to be approximately 600,000 tonnes per annum to 2022/23 with production resuming in the the mid 2030s.
Cornforth West Quarry	10,500,000			600,000	Site currently inactive. Periodic Review Submission awaiting determination. Production forecast to commence in second half of 2022 until approximately 2040. Future extraction anticipated to be approximately 600,000 tonnes per annum and will replace sales from Thrislington East Quarry.
Cornforth East Quarry	20,000,000				Site currently inactive. Periodic Review Submission awaiting determination. Operator proposes that working will commence following cessation of working at Cornforth West Quarry. A new planning permission would be required. Subject to planning permission being granted permitted reserves sufficient for 30+ years at a rate of 600,000 tonnes and will replace sales at Cornforh West Quarry.
Coxhoe Quarry (formerly Raisby Quarry)	18,540,000			850,000	Site contains extensive permitted reserves. New planning permission pending issue to allow working to 2042. Future extraction anticipated to be approximately 850,000 tonnes per annum, although this could be higher.
Hawthorn Quarry	0			300,000	Site currently inactive. Periodic Review Submission 8/MRA/5/1 and DM/17/04033/MIN awaiting determination. Uncertainty as to when this site will be worked. Future scale of extraction has been previously proposed as at approximately 700,000 tonnes (all grades of materials) including 300,000 tonnes of aggregates. It is assumed that working will commence in the long term with site being fully worked by 2042. Contribution to future supply in the short to medium term is currently considered to be zero.
Force Garth Quarry	5,800,000			290,000	Extraction anticipated to be up to 290,000 tonnes per annum when in full production. Following issue of discharge of condition application in February 2020 permitted reserves have fallen.

Northumberland

4.26 Permitted reserves of crushed rock for aggregate use in Northumberland were 79 million tonnes at 31 December 2020. These reserves were contained within the eleven quarries listed in the table below, including Harden Quarry which is located within the Northumberland National Park. Belford Quarry, Mootlaw Quarry and Swinburne Quarry have been worked in the past but were inactive in 2020. The activation of a dormant planning consent at Cocklaw Quarry was permitted in 2010 but extraction has yet to commence and this site is also inactive.

4.27 At the time of writing, Northumberland County Council is deliberating an application for the extension of Divet Hill Quarry. If approved, this site would provide additional reserves of 2.7 million tonnes of crushed rock.

4.28 Northumberland County Council and the Northumberland National Park Authority have sought to understand the extent of reserves within sites, the spatial distribution of the reserves and the split of reserves by resource type. The remaining permitted reserves in sites have been estimated based on the information on planning reserves and the anticipated level of production provided in planning applications. As these figures are estimates they will need to be treated with a degree of caution. The comparison with the figure for Northumberland set out in the North East Aggregates Working Party Annual Monitoring Report indicates that the level of reserves is underestimated. Nonetheless this information provides an indication of split in the total reserves between different sites and an indication of the level of reserves within individual sites.

4.29 This work gives an indication that a significant proportion, in the region of 60 to 65%, of the permitted crushed rock reserves in Northumberland are estimated to be contained within a single site (Barrasford Quarry). It is also estimated that around 90% of crushed rock reserves in Northumberland are igneous rock and 10% are Carboniferous limestone, which broadly reflects the current split in sales between these resources.

Table 4.9 Estimated permitted reserves of crushed rock in Northumberland by site at 31 December 2020 (tonnes) and the productive capacity of the quarries (tonnes per annum)

Quarry	Mineral Planning Authority	Estimate of permitted reserves at 31 December 2020 (tonnes)	Productive capacity (tonnes per annum)	Comments on potential future supply
Barrasford Quarry	Northumberland County Council	45,500,000	750,000 to 1,500,000	Large reserve remaining at site and full productive capacity (up to 1.5 million tonnes per annum) has not been utilised. Production at a rate of 750,000 tonnes per annum anticipated, although it is estimated current production is lower than this.
Belford (Easington) Quarry	Northumberland County Council	3,600,000	180,000	Site currently inactive. Production at the site will recommence when extraction at Howick Quarry ceases.
Cocklaw Quarry	Northumberland County Council	700,000	150,000	A 'dormant' planning permission for this site was reactivated in 2009 but development has yet to commence. Uncertainty as to whether there will be production from this site in future years.
Cragmill Quarry	Northumberland County Council	7,450,000	200,000 (average 150,000)	Extraction anticipated at a rate of around 150,000 tonnes per annum.

Quarry	Mineral Planning Authority	Estimate of permitted reserves at 31 December 2020 (tonnes)	Productive capacity (tonnes per annum)	Comments on potential future supply
Divethill Quarry	Northumberland County Council	400,000	300,000	Extraction in current permitted area expected at a rate of around 300,000 tonnes per annum until worked out by the end of 2021 (This includes additional reserves permitted from an area within the existing site boundary in 2019).
Harden Quarry	Northumberland National Park Authority	890,000	150,000	Extraction anticipated at a rate of around 150,000 tonnes per annum until planning permission expires in 2029.
Howick Quarry	Northumberland County Council	2,000,000	180,000	Extraction anticipated at a rate of around 180,000 tonnes per annum until permitted reserve is worked out. This would require an extension to the current time limit for extraction, which is 31 December 2021.
Keepersfield Quarry	Northumberland County Council	6,400,000	250,000	Extraction anticipated at a rate of around 250,000 tonnes per annum.
Longhoughton (Ratcleugh) Quarry	Northumberland County Council	300,000	200,000	Extraction anticipated at a rate of around 200,000 tonnes per annum until 2030 (This includes the extraction of additional 1.75 million tonnes of reserves from eastern extension to site granted in 2019).
Mootlaw Quarry	Northumberland County Council	4,185,000	750,000	Site currently mothballed with no production since 2008. Some uncertainty regarding when production will recommence and whether the site will be worked again.
Swinburne Quarry	Northumberland County Council	5,250,000	150,000	Site currently mothballed with no production since early 2000s. Extraction unlikely to recommence until production from Keepersfield Quarry ceases.

Notes: The reserve information presented in this table are Mineral Planning Authority best estimates based on reserve and output information provided in planning applications. The estimates have been made on a site-by-site basis and do not sum to the actual total permitted reserves for Northumberland.

Tyne and Wear

4.30 The permitted reserves of crushed rock for aggregate uses within Tyne and Wear are contained within two magnesian limestone quarries:

- Marsden Quarry in South Tyneside; and
- Eppleton Quarry in Sunderland.

4.31 No published reserve figure is available for Tyne and Wear to avoid disclosing confidential individual site information. The MPAs have, therefore, sought to estimate the reserves to help understand if there are any supply issues.

Table 4.10 Estimated permitted reserves in Tyne and Wear by site at 31 December 2020 (tonnes) and the estimated productive capacity of the quarries (tonnes per annum)

Quarry	Mineral Planning Authority	Estimated permitted reserves at 31 December 2020 (tonnes)	Comments on potential future supply
Eppleton Quarry	Sunderland City Council	4,500,000+	Future extraction anticipated at a rate of around 250,000 tonnes per annum until 2040.
Marsden Quarry	South Tyneside Council	1,000,000+	Site has planning permission for working to 2027. Future extraction anticipated at a rate of around 300,000 tonnes per annum until approximately 2023 when site may be exhausted.

Notes: + Mineral Planning Authority best estimates.

Marine sand and gravel

4.32 Within the Joint LAA area there are a number of wharves where marine dredged sand and gravel is landed and sold for aggregate uses. This includes the Port of Blyth in Northumberland, wharves on the River Tyne and the Port of Sunderland.

4.33 The sales figures in Table 4.11 are for North East England and include sales from both the Joint LAA area and from Tees Valley. Table 4.11 shows that in 2019 sales were 533,000 tonnes and that sales in 2020 were 611,000 tonnes. Based on previous trends it is estimated that in 2020 around 300,000 tonnes of the sales were from Tyne and Wear and 30,000 tonnes from Northumberland.

4.34 In recent years sales of marine sand and gravel have not increased to the same extent as sales from quarries in the Joint LAA area and a significant factor in this is that a number of the wharves have not been active. For example, the Gateshead and Howdon wharves on the River Tyne are currently inactive and have not imported marine sand and gravel since 2010 and 2014 respectively.

4.35 Notwithstanding the above, marine sand and gravel makes an important contribution to the supply of sand and gravel from the Joint LAA area, supplying an estimated 26% of sand and gravel from quarries and wharves in the Joint LAA area.

Table 4.11 Sales of marine sand and gravel from wharves in North East England, 2011 to 2020 (thousand tonnes)

Year	Sales
2011	509
2012	491
2013	343
2014	536
2015	595
2016	499
2017	535
2018	525
2019	533

Year	Sales
2020	611
Ten year sales average (2011 to 2020)	475.1
Three year sales average (2018 to 2020)	556.3

Imports of crushed rock by sea

4.36 In addition to the supply from quarries within the Joint LAA area, crushed rock for aggregate uses is landed at a number of wharves. This includes Port of Blyth in Northumberland, Hayhole Road Wharf (North Tyneside) and Port of Tyne (South Tyneside) on the River Tyne and the Port of Sunderland. It is understood that the material is sourced from Norway and Glensanda Quarry in Scotland.

4.37 Information on sales of crushed rock imported by sea is presented below. Sales in 2019 were 244,000 tonnes and 116,000 tonnes in 2020. This represented a significant rise in 2019 compared to previous years before fall back again in 2020. As there are only a small number of sites in the Joint LAA area, an increase or decrease in sales at one site can have a significant effect on overall sales.

4.38 The supply of crushed rock from the wharves supplements the supply from quarries in the Joint LAA with the wharves supplying 3% of crushed rock from the Joint LAA area in 2020.

Table 4.12 Sales of crushed rock from wharves for aggregate use from North East England, 2012 to 2020 (thousand tonnes)

Year	County Durham	Northumberland	Tyne and Wear	North East England
2012	0	0	73	73
2013	0	#	#	160
2014	0	#	#	148
2015	0	#	#	145
2016	0	0	246	246
2017	0	0	98	98
2018	0	0	107	107
2019	0	0	#	244
2020	0	0	#	116
Three year sales average (2018-2020)	0	0	129	156

Notes: # Confidential figure included in the total figure for the Joint LAA area.

Imports and exports

4.39 The most up-to-date information on imports and exports of primary aggregate minerals is provided from the results of the 2019 national aggregate minerals survey undertaken by British Geological Survey on behalf of the Department of Communities and Local Government and the Welsh Government. Table 4.13 shows the import, export and consumption data for aggregates in the North East (including Tees Valley). This highlights that in 2019, the North East exported slightly more sand and gravel than imported. As a percentage of overall consumption, the amount imported was 17%. In 2019, the region imported roughly twice as much crushed rock as was exported, roughly 11% of overall consumption. Given the low proportion of overall consumption made up by imported aggregates, it is not thought that this demonstrates any issues with supply in the region. Tables 4.14 and 4.15 explore some of these inter-regional movements in more detail.

Table 4.13 Imports & Exports of Sand & Gravel and Crushed Rock in/out of North East in 2019.

	Sand and Gravel			Crushed Rock		
	Imports	Exports	Total consumption	Imports	Exports	Total consumption
North East	292	384	1,729	658	356	5,771

Source: Table 3 Summary of exports and imports of primary aggregates in 2019, North East. Table 5i Consumption of primary aggregates by region in 2019: North East. Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales.

Destination of sales from quarries and wharves in the Joint LAA area

4.40 Table 4.14 shows the sales of primary aggregates from the quarries and wharves in each sub-region within the Joint LAA area and the principal destinations of these sales. For land-won sand and gravel, it highlights that County Durham recorded significantly higher sales to other parts of the North East than were recorded within the county. In Northumberland and Tyne and Wear, sales to the rest of the North East were roughly the same as those recorded internally. Both County Durham and Tyne and Wear recorded their highest percentage of sales of land won sand and gravel to other regions. The vast majority of these sales (88%) were recorded in Yorkshire and Humber. Of the remainder, 10% were recorded in the East Midlands and 2% in the North West. In Northumberland there were no sales of sand and gravel outside of the region. Overall, 21% of sales of all sand and gravel in the North East were to other regions.

4.41 For crushed rock, all sales in Tyne and Wear occurred in this area. The majority of sales in County Durham and Northumberland occurred within these counties with some sales occurring in the wider North East regions. Both counties also recorded some sales to other regions. Of these, 52% occurred in Yorkshire and Humber, 24% in the North West, 12% in Europe, 6% in the East Midlands and 4% in the East of England. Small numbers of sales were also recorded in the South East, Scotland and the West Midlands. Overall, 6% of sales of all crushed rock in the North East were to other regions.

Table 4.14 Sales of primary aggregates by sub-region and principal destination sub-region, 2019 (thousand tonnes)

Source sub-region	Destination	Land won sand and gravel	MPA %	Marine sand and gravel	MPA %	Crushed rock	MPA %
County Durham	County Durham	141	23%	-	-	2,201	70%
	North East	246	39%	-		701	22%

Source sub-region	Destination	Land won sand and gravel	MPA %	Marine sand and gravel	MPA %	Crushed rock	MPA %
	Elsewhere	239	38%	-	-	266	8%
Total for County Durham sub-region		625		-	-	3,168	
Northumberland	Northumberland	149	48%	4	35%	1,193	69%
	North East	164	52%	7	65%	459	26%
	Elsewhere	0	0%	0	0%	90	5%
Total for Northumberland sub-region		361		10	-	1,742	
Tyne and Wear	Tyne and Wear	75	30%	189	67%	502	100%
	North East	70	28%	91	32%	0	0%
	Elsewhere	105	42%	2	1%	0	0%
Total for Tyne and Wear sub-region		250		283		502	

Source: Table 9i Sales of primary aggregates by MPA and principal destination sub-region in 2019: North East. Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales.

Imports of aggregate minerals

4.42 The imports of primary aggregates by sub-region and for North East England (includes the Joint LAA area and Tees Valley) in 2019 are shown in Table 4.15. It includes not only imports from other regions (inter-regional flows) but also flows from sub-region to sub-region within North East England. In the case of sales of marine sand and gravel and crushed rock, imports are only shown where material has been moved outside the home sub-region where the wharf is located. Tables 4.16 and 4.17 look in more detail about where these imports have originated from.

Table 4.15 Imports of primary aggregates by sub-region in 2019 (thousand tonnes)

Sub-region	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed rock	Total primary aggregates
County Durham	170	77	247	275	522
Northumberland	16	17	33	252	285
Tyne and Wear	297	3	300	689	989
Unknown North East	57	38	95	506	600
Total	771	135	906	1,986	2,892

Source: Table 10 Imports of primary aggregates by sub-region in 2019. Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales.

4.43 The consumption of crushed rock in County Durham, Northumberland and Tyne and Wear is shown in Tables 4.16. The table categorises for each destination sub-region the percentage of overall consumption that is received from source MPAs. The main points for each of the sub-regions in the Joint LAA area are summarised as follows:

- County Durham - A large proportion of consumption (80% to 90%) is supplied from quarries within County Durham itself. There are also some notable movements from the adjoining areas

of North Yorkshire, Cumbria and Northumberland (each 1% to 10% of consumption), as well as 1% to 10% of consumption from outside England and Wales.

- Northumberland - A large proportion of consumption (70% to 80%) is supplied from quarries within Northumberland itself. There are also some notable movements from the adjoining areas of County Durham (10-20% of consumption) and Cumbria (1% to 10% of consumption), as well as 1% to 10% of consumption from outside England and Wales.
- Tyne and Wear - A significant level of supply is recorded from the adjoining areas of County Durham (30% to 40% of consumption) and Northumberland (20% to 30% of consumption). Notwithstanding this, supply from South Tyneside and Sunderland (including crushed rock landed at the Port of Sunderland) make an important contribution to supply.

4.44 It is worth noting in this data set that 600,000 tonnes are classified with a destination of 'Unknown but somewhere in the North East'. The predominant sources of these materials were County Durham (40-50%) and South Tyneside (30-40%).

Table 4.16 Consumption of crushed rock for aggregate use in 2019 identifying for each sub-region the principal supplying MPAs

Source region	Source MPA	Destination sub-region		
		County Durham	Northumberland	Tyne and Wear
North East England	Durham County Council	80-90%	10-20%	20-30%
	Northumberland County Council	1-10%	70-80%	30-40%
	Northumberland National Park Authority	<1%	1-10%	<1%
	Sunderland City Council	-	-	30-40%
Yorkshire and the Humber	North Yorkshire County Council	1-10%	-	<1%
	Yorkshire Dales National Park	<1%	<1%	-
North West England	Cumbria County Council	1-10%	-	-
East Midlands	Derbyshire County Council	<1%	<1%	-
	Leicestershire County Council	<1%	<1%	<1%
	Peak District National Park Authority	-	<1%	-
West Midlands	Shropshire County Council	-	<1%	-
Wales	Powys	-	<1%	-
	Rhondda Cynon Taf	-	<1%	-
	Neath Port Talbot	<1%	-	-
	Outside England and Wales	1-10%	1-10%	10-20%
Total consumption (thousand tonnes)		2,476	1,444	1,037

4.45 Consumption of sand and gravel for aggregate uses from quarries and wharfs in County Durham, Northumberland and Tyne and Wear is shown in Table 4.17. The table categorises for each destination sub-region the percentage of overall consumption that is received from source MPAs. The main points for each of the sub-regions in the Joint LAA area are summarised as follows:

- County Durham - A significant level of supply is recorded from quarries in North Yorkshire (40 to 50% of consumption), a quarry in Sunderland (10 to 20% of consumption) and marine dredged material landed at a wharf in South Tyneside (30 to 40% of consumption).
- Northumberland - A significant level of sand and gravel consumption is supplied from quarries and the wharfs located within Northumberland (80 to 90% of consumption). There are some notable cross boundary movements from the neighbouring MPA areas of County Durham and Cumbria and from South Tyneside with each recorded as supplying between 1% and 10% of consumption.
- Tyne and Wear - Marine dredged material landed in South Tyneside (20% to 30% of consumption) and quarried material from Sunderland (10% to 20% of consumption) make a significant contribution to supply. However, a significant level of supply is also recorded from the adjoining areas of County Durham and Northumberland.

Table 4.17 Consumption of sand and gravel for aggregate use in 2019 identifying for each sub-region the principal supplying MPAs

Source region	Source MPA	Destination sub-region		
		County Durham	Northumberland	Tyne and Wear
North East England	Durham County Council	30-40%	1-10%	10-20%
	Northumberland County Council	1-10%	80-90%	20-30%
	South Tyneside Council	10-20%	1-10%	30-40%
	Sunderland City Council	10-20%	-	10-20%
Yorkshire and the Humber	North Yorkshire County Council	20-30%	<1%	1-10%
North West England	Cumbria County Council	<1%	1-10%	1-10%
West Midlands	Staffordshire County Council	<1%	-	-
Total consumption (thousand tonnes)		388	186	565

Comparison between sales, imports and consumption

4.46 A comparison between sales, imports and consumption of primary by sub-region in 2019 is shown in Table 4.18. This table usefully shows that while some sub-regions import a significant proportion of their consumption (see Table 4.14 and Table 4.15), a significant portion of sales from quarries and wharves in their areas is exported to other sub regions (see Table 4.17). In respect to sand and gravel consumption in County Durham, for example, it shows while imports account for 90% of sand and gravel consumption this sub-region actually produces 60% of its consumption with a significant proportion being exported to other sub-regions in North East England.

Table 4.18 Comparison between sales and consumption in 2019 (thousand tonnes)

Sub-area	Crushed rock			Sand and gravel (land won and marine)		
	Sales	Imports	Consumption	Sales	Imports	Consumption
County Durham	3,256	275	2,476	537	247	388
Northumberland	1,742	252	1,444	327	33	186
Tyne and Wear	550	689	1,037	532	300	565

Analysis

4.47 Flows of aggregate minerals between MPA areas are complex but it has been possible to identify those movements that are considered to be of significance. Movements generally occur between those areas where suitable resources are found and those areas where there is demand but suitable resources are less abundant. This can be seen within the Joint LAA where County Durham and Northumberland supply significant amounts of material to the Tyne and Wear sub-region and from County Durham to the Tees Valley sub-region. These movements are significant and ongoing discussions between the Joint LAA authorities, particularly through the preparation of this document, are essential.

4.48 The complexity of the movements is also illustrated through some areas that are apparent significant importers of primary aggregates from other sub-regions also being significant exporters from quarries and wharves in these areas.

4.49 The figures also recognise the relationship between North Yorkshire and North East England, which reflects the proximity of the resource areas in North Yorkshire to North East England and historic patterns of supply. Previous and ongoing discussions and liaison with North Yorkshire County Council during the preparation of the Joint LAA have indicated that this pattern of supply is expected to continue. It has, however, also been highlighted that there has been some reduction in the tonnages supplied northwards over the last 10 years or so. A declining level of permitted reserves in the northern part of North Yorkshire may also have an impact on supply in the medium to long-term and the implications of this will be kept under review through the LAA process.

4.50 A less significant relationship with Cumbria is also identified from the figures. Again this is likely to be where sites are located in close proximity to parts of Northumberland and Cumbria. Movements to and from Scotland into North East England are not significant. Sites in the adjoining Scottish Borders, for example, tend to supply minerals north to the Edinburgh city region and central Scotland rather than south to the Joint LAA area.

4.51 Movements from and to other regions of England and Wales, other than Yorkshire and Humber (namely North Yorkshire) and North West England (namely Cumbria) that are discussed separately above and are very small and are considered to be of little significance in terms of supply patterns to the Joint LAA area.

Recycled and secondary aggregates

4.52 Recycled and secondary aggregates play an important role in the total supply of aggregates from County Durham, Northumberland and Tyne and Wear. Various types of recycled and secondary aggregate materials suitable for aggregate use are produced from the Joint LAA area. Recycled aggregates are those derived from construction, demolition and excavation work that have been reprocessed to provide materials or a product suitable for aggregate uses. It includes materials such as stone, concrete, brick or asphalt for re-use. A significant amount of recycled aggregates is produced on development and construction sites, but a large amount is also processed at dedicated freestanding sites or at facilities located within existing minerals and waste sites such as active quarries, waste transfer sites and landfill sites (see Appendix B). Secondary aggregates are different to recycled aggregates and are usually by-products of other construction or industrial processes, for example the production of furnace bottom ash. The use of recycled and secondary aggregates has both environmental and economic benefits, driving the more sustainable use of resources by maximising the re-use of materials, minimising new extraction of mineral and diverting waste from landfill.

4.53 Within the Joint LAA area, recycled aggregates are produced principally from construction and demolition projects whilst materials derived from spent railway ballast and recovered asphalt planings also make a significant contribution to supply. Secondary aggregates in the North East are

produced from pulverised fuel ash and furnace bottom ash from the Lynemouth Power Station in Northumberland, however there have been no sales of ash for aggregate use recorded from Lynemouth Power Station since the power station was converted to 100% biomass firing beginning in 2015.

4.54 Information on the arisings of secondary and recycled aggregates is not as comprehensive or robust as the information available on the production of primary aggregates. In the past, data has been collected through an annual survey of surveyed operators of fixed construction and demolition recycling sites and recycling producers in North East England by the North East AWP and the MPAs. However this approach has limitations as some producers do not provide a response to the survey, whilst other producers may not be picked up at all. An alternative approach for recycled aggregates involves using the data provided by the Government's Waste Data Interrogator. This method progressively filters out types of waste which cannot be used for recycled aggregates, leaving waste which is classified as either 'Concrete, bricks, tiles and ceramics', 'Bituminous mixtures' or 'Other construction and demolition wastes'. From this total, any waste whose fate is not recorded as 'recovery' is also subtracted.

4.55 This has been used to estimate the sales of recycled aggregates in the North East in 2019 and 2020 and is shown in Table 4.18. Analysis of the information shows that recycled aggregate sales rose slightly from 2019 to 2020. County Durham saw a large rise whilst Northumberland a large fall. Site specific analysis shows that an individual site in each county was responsible for a large proportion of this change. As both sites are operated by the same operator, it is assumed that a relocation of resources for this operator was the reason behind this change.

4.56 However this information should still be treated with a degree of caution, as this method will not take into account mobile crushers and screens which are known to make an important contribution to overall supply.

Table 4.19 Sales of recycled and secondary aggregates in County Durham, Northumberland and Tyne and Wear, 2019 and 2020 (thousand tonnes)

	County Durham	Northumberland	Tyne and Wear	Joint LAA Area
Recycled aggregate sales 2019	67.0	123.9	314.9	505.8
Secondary aggregate sales 2019	0	0	0	0
Total recycled and secondary aggregates 2019	67.0	123.9	314.9	505.8
Recycled aggregate sales 2020	135.0	89.7	297.3	522.0
Secondary aggregate sales 2020	0	0	0	0
Total recycled and secondary aggregates 2020	135.0	89.7	297.3	522.0

Source: North East Aggregates Working Party.

5 Forecasting demand

5.1 The National Planning Policy Framework (NPPF) states that mineral planning authorities should plan for a steady and adequate supply of aggregates by preparing a LAA based on a rolling average of 10 years sales data plus other relevant local information^(ix). Relevant local information that could influence future aggregates provision includes demand from future house building rates and demand from large construction and infrastructure projects. There is also a need to consider resource availability and other supply options in identifying the relevant level of provision.

5.2 This section sets out the calculation of the ten year sales average, an analysis of the local information that could influence demand and a forecast of demand.

Sales averages

5.3 Table 5.1 and Table 5.2 provide a summary of sales of crushed rock and sand and gravel within the Joint LAA area for the period 2001 to 2020 respectively. The tables also provide a summary of the following:

- 10 year sales average (2011 to 2020) - To understand past supply and provide the basis of forecasting future demand in line with the NPPF.
- 3 year sales average (2018 to 2020) - To understand the general trend of demand in comparison to the 10 year average as part of the consideration of whether it might be appropriate to increase supply as advised by the Planning Practice Guidance.
- 3 year sales average (2017 to 2019) - To understand the general trend of demand discounting the effect of the pandemic on sales in 2020.
- 20 year sales average (2001 to 2020) - To understand trends over a longer period of time, including sales prior to the economic downturn after 2008.

5.4 As discussed in Chapter 3, sales in 2020 will have been affected by the impact of the pandemic both through restrictions affecting production at sites (supply) and restrictions affecting constructions sites using aggregates (demand). For this reason it is thought most appropriate to discount 2020 sales figures from the calculation of the three years sales average, as this is unlikely to be representative of a typical year of sales. It is still considered appropriate to include the year 2020 in calculations of the 10-year and 20-year averages as these cover a longer period and therefore conditions which are unrepresentative make less of an impact to this calculation.

5.5 A comparison of the ten year sales average (2010 to 2020) with the most three year sales average discounting 2020 (2017 to 2019) shows that for both crushed rock and sand and gravel, the three year average is higher for the overall joint LAA area. For crushed rock, the three year sales average is 18% higher whilst for sand and gravel it is 14% higher. This pattern is mirrored across the joint LAA area, with higher three year sales averages for all Local Authorities apart from sand and gravel sales in Northumberland, where the ten year sales average is higher than the three year figure. This reflects that the ten year period includes a number of years of depressed sales (particularly 2011 to 2014) as a result of the economic downturn during part of the period covered. In comparison the three year sales average includes a period (2017 to 2019) where sales have increased as a result of increased demand thus indicating a trend of increased sales in recent years over and above those levels experienced during the economic downturn.

ix Paragraph 064 of National Planning Practice Guide (ID: 27-064-20140306) states, "Local Aggregate Assessments must also consider other relevant local information in addition to the ten year rolling supply, which seeks to look ahead at possible future demand, rather than rely solely on past sales. Such information may include, for example, levels of planned construction and housebuilding in their area and throughout the country. Mineral Planning Authorities should also look at average sales over the last three years in particular to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase supply".

5.6 The information also shows that the highest annual sales over the previous ten year monitoring period were in 2018 for crushed rock (5,675,000 tonnes) and 2019 for sand and gravel (1,099,000 tonnes) . Prior to this ten year period, sales of sand and gravel last exceeded these sales levels in 2006, and sales of crushed rock last exceeded 2018 levels in 2004. The sales prior to 2008 are generally of a different magnitude to sales after 2008 and reflect the buoyancy and growth in the economy in the early 2000s.

5.7 It is therefore considered that the three year sales average would provide a more appropriate basis of identifying demand compared to the ten year sales average and an average over a longer time frame. This is because the ten year period includes a period of depressed sales as a result of the economic downturn whereas the three year period reflects a period of increased construction activity. The three year average also would reflect more current trends in the economy. As the three year sales averages are generally higher than the ten year average, using the three year sales average as a the basis for identifying demand would in effect represent an uplift over and above the ten year sales average.

5.8 Using sales over a longer period, such as a twenty year period between 2001 and 2020 is also not deemed to be appropriate because it includes a period when the magnitude of sales were different. There have also been innovations that have reduced the quantities of virgin materials required in some products and applications.

Table 5.1 Crushed rock sales and sales average information, 2001 to 2020

	County Durham	Northumberland	Tyne and Wear	Total for Joint LAA area
2001	3,570	1,473	278	5,321
2002	3,378	1,957	288	5,623
2003	3,885	2,381	288	6,554
2004	3,417	2,281	236	5,934
2005	3,777	1,696	184	5,657
2006	3,384	1,796	393	5,573
2007	3,559	1,676	375	5,610
2008	3,036	1,664	375	5,075
2009	1,920	1,153	282+	3,355
2010	2,056	1,188	194+	3,438
2011	1,955	1,230	224+	3,409
2012	1,696	1,233	212+	3,141
2013	2,245	1,060	236+	3,541
2014	2,654	1,171	309+	4,134
2015	2,770	1,473	225+	4,468
2016	2,990	1,708	550+	5,248
2017	2,636	1,768	350+	4,754
2018	3,484	1,641	550+	5,675

	County Durham	Northumberland	Tyne and Wear	Total for Joint LAA area
2019	3,256	1,742	502+	5,412
2020	2,613	1,863	452+	4,881
3 year sales average (2018 to 2020)	3,118	1,749	501	5,323
3 year sales average (2017 to 2019)	3,125	1,717	467	5,310
10 year sales average (2011 to 2020)	2,623	1,489	361	4,480
20 year sales average (2001 to 2020)	2,911	1,608	325	4,845

Notes: + Mineral Planning Authority estimate.

Table 5.2 Sand and gravel sales and sales average information, 2001 to 2020

	County Durham	Northumberland	Tyne and Wear	Total for Joint LAA area
2001	421	556	162	1,139
2002	302	582	215	1,099
2003	263	610	312	1,185
2004	375	638	282	1,295
2005	411	576	353	1,340
2006	371	505	409	1,285
2007	201	574	241	1,016
2008	183	515	188	886
2009	199	425	113+	737
2010	164	402	171+	737
2011	237	450	162+	849
2012	199	349	165+	713
2013	218	321	177+	716
2014	276	361	236+	873
2015	256	420	240+	916
2016	322	436	214+	972
2017	330	405	220+	955

	County Durham	Northumberland	Tyne and Wear	Total for Joint LAA area
2018	446	352	250+	1,048
2019	537	312	250+	1,099
2020	438	276	203+	917
3 year sales average (2018 to 2020)	473.7	313.3	234.3	1021.3
3 year sales average (2017 to 2019)	437.6	356.3	240.0	1,034.0
10 year sales average (2011 to 2020)	325.9	368.1	211.7	905.7
20 year sales average (2001 to 2020)	307.5	453.2	228.2	988.8

Notes: + Mineral Planning Authority estimate.

Local factors influencing demand

5.9 In line with the advice contained in the Planning Practice Guidance, other local relevant information has been considered in addition to the information on past supply (i.e. the information derived from sales). This has included planned construction from large infrastructure projects and house building. These are activities that create demand for construction aggregates and any significant changes in the level of these activities can influence demand in future years.

House building

5.10 A comparison between housing completions in North East England and sales of primary aggregates from quarries and wharves in North East England is shown in Figure 3. This illustrates that there is a strong relationship between housing completions and primary aggregate sales in both the Joint LAA area and the North East England region.

5.11 While aggregate sales reflect wider demands than just house building (it is estimated that the construction of new housing makes up around 30% of construction output by value), it is considered that house building does potentially provide a useful proxy of overall demand and changes in demand. This is in part because house building will impact on demand for associated infrastructure and can provide an indication of wider growth.

5.12 Table 5.3 below provides a summary of figures on estimated future house building requirements in both adopted and emerging Local Plans and housing completions for the last three years for which data is available^(x). The information for North East England show that housing completions in recent years have been higher than the future housing need figures in County Durham, the Tees Valley and Northumberland, with the figures in Northumberland being substantially higher. The figures for Tyne

x Housing completion data has been sourced from the Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government unless more up to date local information is available from Annual Monitoring Reports.

and Wear show that in recent years have been lower than the future housing need figures. However, in all three years a sizeable decline can be seen in 2020/21 due to the Coronavirus pandemic's impact on the economy and on the construction industry.

5.13 Given the level of current housing completions in the Joint LAA area in previous years and the figures presented in Table 5.3, it is felt that the previous sales captures the level of demand for future housing as a whole. In particular, the three year sales average captures a period of higher demand within North East England.

Figure 3 Comparison Between Housing Completions and Aggregate Sales in North East England

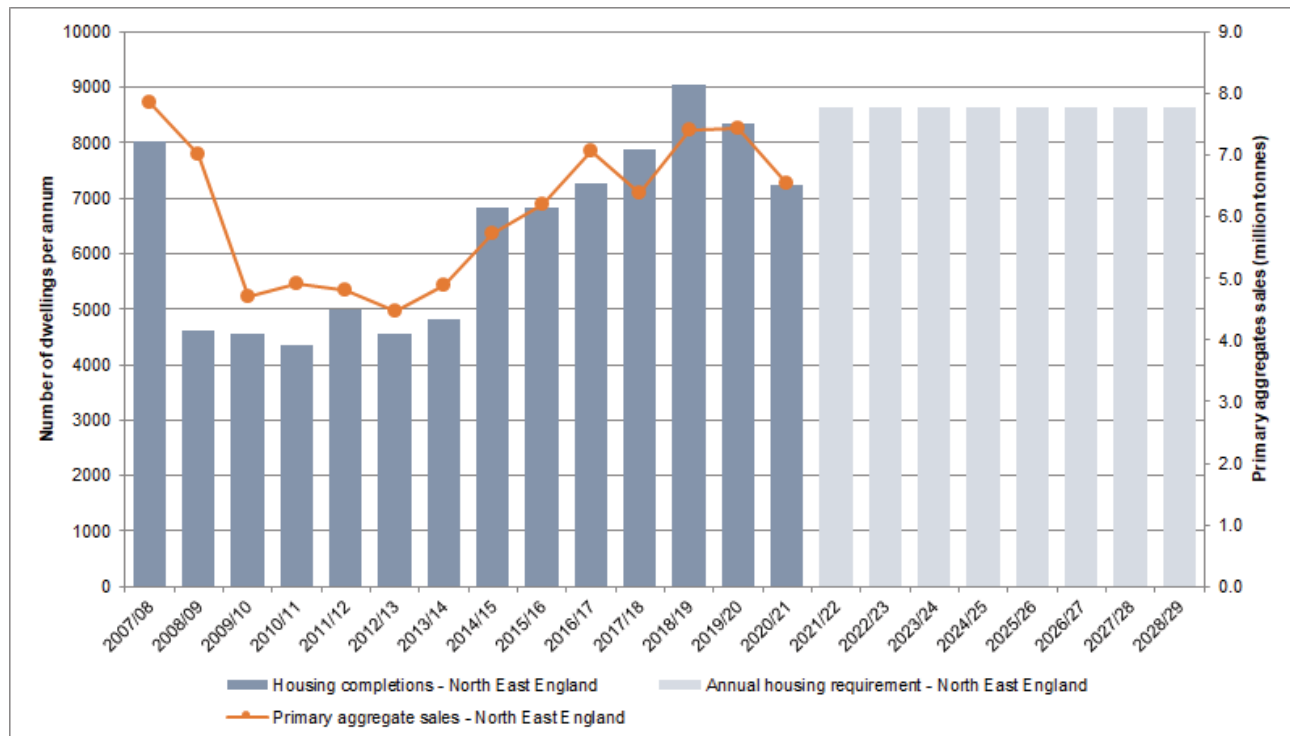


Table 5.3 Comparison between local assessment of housing need and housing completions between 2018/19 and 2020/21.

Sub region	Local Planning Authority	Current local assessment of housing need in Adopted and emerging Local Plans	Net Annual Completions 18/19	Net Annual Completions 19/20	Net Annual Completions 20/21
Durham	Durham County Council ⁽¹⁾	1,308	1,580	1,628	1,328
Northumberland	Northumberland County Council ⁽²⁾	885	1,720	1,690	1,350
Tyne and Wear	Newcastle ⁽³⁾	1,500	1,040	810	1,130
	Gateshead ⁽⁴⁾		290	300	310
	Sunderland ⁽⁵⁾		745	706	570

Sub region	Local Planning Authority	Current local assessment of housing need in Adopted and emerging Local Plans	Net Annual Completions 18/19	Net Annual Completions 19/20	Net Annual Completions 20/21
	South Tyneside ⁽⁶⁾	350	400	190	170
	North Tyneside ⁽⁷⁾	790	760	490	370
	Total for Tyne and Wear	3,385	3,196	2,360	2,590
Tees Valley	Hartlepool ⁽⁸⁾	410	330	170	160
	Middlesbrough ⁽⁹⁾	410	480	510	350
	Stockton on Tees ⁽¹⁰⁾	655	780	990	590
	Darlington ⁽¹¹⁾	492	600	450	490
	Redcar and Cleveland ⁽¹²⁾	234	430	350	350
	Total for the Tees Valley	2,201	2,620	2,470	1,940

1. County Durham Plan (Adopted October 2020)
2. Publication Draft Local Plan (January 2019)
3. Core Strategy and Urban Core Plan (Adopted 2015)
4. Core Strategy and Urban Core Plan (Adopted 2015)
5. Core Strategy and Development Plan (Adopted 2020)
6. Regulation 18 Pre-Publication Draft Local Plan Consultation (August 2018)
7. North Tyneside Local Plan (Adopted 2017)
8. Hartlepool Borough Local Plan (Adopted 2018)
9. Middlesbrough Housing Local Plan (Adopted 2014).
10. Stockton-on-Tees Borough Local Plan (Adopted 2019)
11. Darlington Local Plan 2016-2036 Schedule of proposed main modifications (October 2021)
12. Redcar and Cleveland Local Plan (Adopted 2018)

Major infrastructure / construction projects

5.14 Table 5.4 provides details of past and future planned major infrastructure projects and construction both within the Joint LAA area and in adjoining areas.

5.15 Information on the aggregates required for many of the projects is not readily available to inform this analysis which means the resulting demand for aggregate minerals cannot be clearly quantified. Those projects that were taking place in recent years have contributed to overall sales of aggregate minerals from quarries and wharves in the Joint LAA area. It is considered that any additional demand on aggregates from the future projects that have been identified is unlikely to be significant and they are unlikely to place significant additional demand for aggregate minerals over and above the levels captured in the sales figures recorded in previous years. This is because the future projects are of a similar nature to those taking place in recent years and which would have been captured in the sales figures. It is, however, considered that there could be some local implications such as the A1 dualling project in Northumberland (which could place additional demand from sites local to the project in the north of Northumberland) and the upgrading of the A66 in North Yorkshire, County Durham and Cumbria.

Table 5.4 Major development projects of note in the Joint LAA area and surrounding areas

Project	Location	Details	Timeframe	Demand for aggregates
	Completed projects or projects currently being constructed:			
A1 upgrade at Lobley Hill	Gateshead, Tyne and Wear	Upgrade of two junctions to include new parallel road links between the junctions and three lanes in each direction.	Construction commenced in summer 2014 and was completed in summer 2016.	Not known.
Morpeth Northern Bypass	Morpeth, Northumberland	3.8 km of new single carriageway road.	Construction commenced in Spring 2015 and was completed in April 2017.	216,000 tonnes of primary aggregates were supplied from Barrasford and Howick quarries in Northumberland and 5,000 tonnes of recycled material. In addition aggregate was used in the concrete supplied to the project.
A1 Leeming to Barton	North Yorkshire	12 mile section of dual carriageway to be replaced with a new three lane motorway.	Construction commenced in 2014 and was completed in 2018.	Quarries in the south of County Durham have contributed to supply for this project.
Waverley Line re-opening	Scottish Borders	Re-opening of a 30 mile section of the Waverley Line between Tweedbank and Newcraighall near Edinburgh.	Major construction works commenced in spring 2013 and were completed in summer 2015.	Understood materials supplied from quarries in Scotland. Therefore unlikely to influence on demand from Joint LAA area.
A19 Silverlink Junction improvements	North Tyneside, Tyne and Wear	Improvements to the A19/A1058 Coast Road junction by upgrading the existing grade separated roundabout to a three level interchange.	Construction commenced in 2016. Completion by March 2019.	Materials include 4,785 m ³ of concrete, 11,042 m ³ of sub-base, 1,454m ³ and 10,838 m ³ of bituminous material.
A19 Testos and Downhill Junction improvements	South Tyneside, Tyne and Wear	It is planned to raise the A19 above the A184 on a flyover.	Development Consent Order submitted in	Graded aggregates 140,000 m ³ ,

Project	Location	Details	Timeframe	Demand for aggregates
			Summer 2017. Construction commenced in 2019 and completion is expected in 2022.	asphalt 40,000 m ³ , concrete (<i>in situ</i>) 4,800 tonnes and pre-cast concrete 648 tonnes.
International Advanced Manufacturing Park (IAMP)	South Tyneside and Sunderland, Tyne and Wear.	Development of manufacturing site targeting the automotive and advanced low carbon manufacturing sectors on 150 hectares of land to the north of the Nissan car manufacturing plant alongside the A19.	Phase one underway.	Not known.
A1 Brunton to Scotswood widening	Newcastle, Tyne and Wear	Widening of A1 within existing carriageway to provide three lanes between Brunton and Scotswood.	Scheme commenced 2020. Expected completion 2022-2023.	Not known.
A1 Birtley to Coal House Roundabout	Gateshead, Tyne and Wear	Widening of A1 to provide three lane carriageway and replacement of railway bridge.	Construction commenced summer 2021 and expected to be completed 2024/25.	Not known.
A19 Norton to Wynyard widening	Stockton on Tees, Tees Valley	Widening of existing dual carriageway to provide three lanes in each direction.	Work commenced in Spring 2020 and is expected to be complete by Spring 2022.	Not known.
Jade Enterprise Zone	County Durham	20 ha business park including improvements to A19 junction and internal roads as well as new energy infrastructure.	Phase 1 granted planning permission in July 2019. Phase 1 of site now complete.	Not known.
Integra 61	County Durham	83 ha mixed use development including industrial, storage and distribution uses, retail, housing, leisure and community facilities.	Planning permission granted February 2017. Phase 1 now complete.	Not known.
Durham City developments	County Durham	New business district on the current site of County Hall together with new County Hall and other developments on the River Wear at Durham and further expansion of premises for Durham University.	A number of projects underway.	Not known.

Project	Location	Details	Timeframe	Demand for aggregates
	Potential future projects or projects yet to commence:			
A1 dualling in Northumberland	Northumberland	Upgrade 13 miles of existing single carriageway to dual carriageway between Morpeth and Felton and between Alnwick and North Charlton.	Development Consent Order examination period ended in July 2021, with a decision by the Secretary of State expected in January 2022. Construction could start soon after this.	Not known. Likely to create demand from quarries in the north of Northumberland in particular.
A66 dualling	North Yorkshire, County Durham and Cumbria	Upgrade 18 miles of existing single carriageway to dual carriageway between A1(M) at Scotch Corner and M6 at Penrith.	Preferred route consultation in 2021. Development Consent Order expected to be submitted in spring 2022 with work expected to commence 2024-25.	Not known. Likely to create additional demand from quarries in the south of County Durham, including those along the A66 corridor.
Teesside Combined Cycle Power Plant	Redcar and Cleveland	Construction of gas fired power station with an output of 1,700 MWe.	Development Order Consent granted 5 April 2019. Construction expected to take three years when begun.	Not known.
York Potash Harbour Facilities	Redcar and Cleveland	Construction of wharf facilities to handle polyhalite from a planned mine in North Yorkshire.	Consent granted. Construction believed to have commenced.	Not known.
Teesside Cluster Carbon Capture and Usage Project	Redcar and Cleveland	Combined cycle gas turbine electricity generating station with output of up to 2,000 MW.	Development Consent Order application submitted in 2020.	Not known.
Forest Park	County Durham	55 ha expansion of Aycliffe Business Park including new road, energy infrastructure and leisure and community uses.	Start date to be confirmed.	Not known.
British Volt Gigafactory	Northumberland	235 ha electric car battery manufacturing site.	Received planning permission July 2021. Start date to be confirmed.	Not known.

National and sub-national guidelines for provision

5.16 In accordance with Paragraph 213 (d) of the NPPF (July 2021), the published National and Sub National Guidelines for provision have been taken into account. The latest published guidelines date from June 2009 and cover the period 2005 to 2020 (these guidelines are reproduced in Chapter 2). The guidelines were partly informed by the findings of the 2005 Aggregate Minerals Survey. Given

the base date of the information used to inform these guidelines, which do not necessarily reflect more recent economic conditions and demand, and given that these guidelines only look towards 2020 it is considered that they do not provide a reliable basis for calculating the annual demand requirement into the 2030s. This position will be reviewed on the publication of updated guidelines.

Impact of the Coronavirus Pandemic

5.17 As a consequence of the restrictions to control the spread of coronavirus the vast majority of construction sites were temporarily closed for a period from mid-March 2020. The majority of the active sites producing aggregate minerals were also temporarily closed during this time. As shown in Chapter 3 this has had an effect on the sales of aggregate minerals and sales in 2020 are may be down on those in previous years.

5.18 Within the Joint LAA area, sand and gravel sales fell from 1,099,00 tonnes in 2019 to 917,000 tonnes in 2020 (a 16.6% year on year fall). Similarly, within the Joint LAA area crushed rock sales have fallen from 5,500,000 tonnes in 2019 to 4,928,000 tonnes in 2020 (a 10.4% year on year fall). The Joint LAA authorities consider that the significant fall in sales in 2020 is a result of the impact of the Coronavirus pandemic and as such 2020 is not representative of the demand for aggregates which would have otherwise occurred.

5.19 The economic impact of the pandemic is also expected to extend beyond 2020 into 2021 and into future years. This could, for example, result in a slowdown in the rate of house building that would in turn have some impact on the demand for aggregate minerals. At this stage it is too early for the extent of the longer term impact of the pandemic on the demand for aggregate minerals to be fully understood.

Recommended method and provision

5.20 It is recommended that the three year sales average is used to forecast future demand from the Joint LAA area, calculated using sales figures from 2017-2019 and discounting figures from 2020. This is because the three year period reflects more recent demand and also does not include those years where sales were significantly depressed because of the economic downturn and a resulting decrease in construction output and thus demand for aggregates. As discussed, sales in 2020 will have been affected by the impact of the pandemic both through restrictions affecting production at sites (supply) and restrictions affecting constructions sites using aggregates (demand). For this reason it is thought most appropriate to discount 2020 sales figures from the calculation of the three years sales average, as this is unlikely to be representative of a typical year of sales. It is recognised that the coronavirus pandemic is going to have an impact on construction output and the demand for aggregates. The economic impact of the pandemic is also expected to extend into future years meaning the impact on aggregates supply will extend over this period. The implications for aggregate supply and demand are not yet understood and will be kept under review in future iterations of the LAA.

5.21 As well as considering the three year sales average and the ten year sales average, consideration has been given to other relevant local information that could influence demand for aggregates. This has included an analysis of house building and planning major infrastructure / construction projects. The information does not indicate that additional provision over and above the three year sales average is required. Taking major infrastructure and construction projects as an example, there are no schemes identified that would result in a level of demand that are not reflected in the three year sales average where similar projects have taken place previously. In terms of house building it is also considered that the three year period provides a comparable rate of housing delivery compared to those levels being planned for in future years.

5.22 An approach that has been used in previous iterations of this Joint LAA has been to use planned growth in house building within the Joint LAA area and the adjoining Tees Valley sub-region to provide an uplift to the forecast demand above the ten year sales average. However, it is not considered appropriate to use a housing based methodology to calculate the annual demand requirement because it is considered that this housing growth is now largely captured by the three year sales average.

Proposed annual demand requirement

5.23 Table 5.5 sets out the recommended annual demand requirement calculated by this iteration of the Joint LAA. The figures in this table will be used to inform the scale of provision in Local Plans and the ongoing monitoring of this. These figures will be revisited each year through the preparation of the LAA to take account of the most up-to-date information on sales and changes to demand based on the local factors identified such as planned house building and major infrastructure and construction projects.

Table 5.5 Proposed annual demand requirement for land-won sand and gravel and crushed rock based upon the three year sales average (tonnes)

Sub area	Crushed rock	Sand and gravel
County Durham	3,125,000	438,000
Northumberland	1,717,000	356,000
Tyne and Wear	467,000	240,000
Total Across three sub-regions	5,309,000	1,034,000

6 Assessment of supply options

Land-won primary aggregates - County Durham

Crushed rock

6.1 County Durham has been a regionally important source of crushed rock aggregate from the North East AWP cluster of MPAs, producing 58.7% of crushed rock from this cluster of MPAs over the period 2011 to 2020^(xi).

6.2 As at 31 December 2020 it is estimated that 97.468 million tonnes of permitted reserves of crushed rock for aggregate use remain to be worked in County Durham. Based on the demand forecast and the recommended annual provision from County Durham of 3.125 million tonnes, this equates to a landbank of permitted reserves of 31.1 years at 31 December 2020 (based upon the annual demand requirement in this Joint LAA).

6.3 A quantitative assessment of the balance between supply and demand is set out below. Demand has been calculated using the recommended provision and in quantitative terms it can be seen that County Durham has sufficient permitted reserves to meet this identified demand over the period to 2036 (which is line with the standard sixteen year forecasting period) and the remaining fifteen years of the County Durham Plan.

Table 6.1 Assessment of the balance between supply and demand for crushed rock from County Durham

	Forecast period 2021 to 2036 (16 years)	Forecast period 2021 to 2035 (15 years)
Permitted reserves at 31 December 2020	97,468,070 tonnes	97,468,070 tonnes
Ten year sales average (2011 to 2020)	2,629,900 tonnes	2,629,900 tonnes
Three year sales average (2017-2019)	3,125,333 tonnes	3,125,333 tonnes
Annual demand forecast in LAA	3,125,000 tonnes	3,125,000 tonnes
Demand forecast	50,000,000 tonnes	46,875,000 tonnes
Landbank based on LAA provision	31.1 years	31.1 years
Balance between supply and demand	+47,468,070 000 tonnes	+50,593,070 tonnes

6.4 In quantitative terms it is considered that County Durham does not need to seek to make any additional provision for crushed rock over the period to 2035 and 2036 as there are sufficient reserves with planning permission to deliver supply over these periods.

xi Prior to the recession in 2008 it is understood that County Durham produced approximately 2 to 2.5 million tonnes of magnesian limestone aggregate, approximately 900,000 tonnes of carboniferous limestone and approximately 250,000 tonnes of dolerite every year. During 2018 and 2019, prior to the Coronavirus Pandemic crushed rock sales were commensurate with pre-recession sales.

6.5 County Durham needs to ensure a steady and adequate supply of aggregates to meet the needs of society. County Durham's quarries produce large quantities of differing types of crushed rock aggregate^(xii). A key recommendation of previous Joint LAAs has been that consideration needs to be given to how continued production of the differing types of crushed rock lying within County Durham can continue e.g. on a resource basis. This is addressed below.

Carboniferous Limestone

6.6 In recognition that without additional provision, that supplies of carboniferous limestone within County Durham would become depleted and largely exhausted over the period to 2035, the Council through the provisions of the County Durham Plan identified a need for an additional 14.1 million tonnes of carboniferous limestone. In order to meet this identified need the Council allocated a western extension to Heights Quarry (3.7 million tonnes) which has now received planning permission and an eastern extension to Hulands Quarry (8.2 million tonnes) upon which a planning application is expected during 2022.

6.7 On this basis, it was previously calculated by the previous Joint LAA that provision for a further 2,930,000 tonnes of carboniferous limestone would need to be made to meet the County Durham Plan target of 14.1 million tonnes. However, given that the need identified in the County Durham Plan was sufficient to meet needs to 2035 plus ten years supply of carboniferous limestone, and this forecast was calculated on this basis of 900,000 tonnes per annum, this shortfall in supply is only equivalent to just over 3 years supply post 2042 and it is now considered to be not actually needed to maintain a steady and adequate supply of carboniferous limestone over the period to 2035. It is considered that Hulands Quarry in combination with the County Durham Plan Preferred Area which lies to the east of Hulands Quarry, in combination with existing permissions at Heights Quarry (which now has planning permission to 31st September 2046) and Kilmond Wood Quarry (which has planning permission to 21 February 2042) should provide for a sufficient supply of carboniferous limestone. Furthermore, additional mineral may become available if mineral extraction were to resume at Broadwood Quarry (although the Joint LAA recognises that it is not certain that working will resume in Phase 3 and therefore the contribution to future supply is currently considered to be zero).

Magnesian Limestone

6.8 It is considered that a steady and adequate supply of magnesian limestone aggregate will be able to be maintained in the long term.

6.9 Previous Joint LAAs have reported that a number of County Durham's crushed rock quarries are currently inactive and some have not been worked for some years. However, the Council has been approached by the operators of a number of inactive quarries seeking to agree new schemes of working and restoration^(xiii). The Council is also considering a planning application to work two adjacent dormant magnesian limestone permissions at Tuthill Quarry, together with further quantities of magnesian limestone on adjoining land. Significantly, it should be noted that mineral extraction is expected to cease at Thrislington East Quarry which in addition to containing large quantities of high grade dolomite (also known as industrial dolomite) also contains a large quantity of permitted reserves suitable for aggregates use. This is because the permission at this quarry is restricted by legal

xii A large proportion (estimated at 78.9 million tonnes on 31 December 2020), 81% of all permitted reserves lying within County Durham's ten magnesian limestone quarries, with the majority of the resource lying within five quarries (Old Quarrington and Cold Knuckles Quarry, Thrislington Quarry East, Cornforth West Quarry, Cornforth East Quarry and Coxhoe Quarry) with the remainder lying within Thrislington West Quarry, Bishop Middleham Quarry, Crime Rigg Quarry, Witch Hill Quarry and Running Waters Quarry. 13% of all permitted reserves (estimated at 12.73 million tonnes on 31 December 2020) lying within the County's four carboniferous limestone sites, (Hulands Quarry, Heights Quarry, Broadwood Quarry and Kilmond Wood Quarry) and 6% (estimated at 5.8 million tonnes) of all permitted reserves lying within the County's one dolerite site (Force Garth Quarry). In addition it is also understood that further permitted reserves (which are not included within the landbank) also exist at a number of other dormant/Interim Development Order quarries which require a new schedule of working and restoration conditions to be issued by the Mineral Planning Authority before working could resume and permitted reserves would then be included within the landbank.

xiii At Witch Hill Quarry, Cornforth West Quarry, Cornforth East Quarry and also at Hawthorn Quarry.

agreement to the use of a proportion of the mineral for high grade purposes for which there is not a current demand from quarries in County Durham^(xiv). However, the Council is currently considering an application to allow the continued working of aggregates at Thrislington East Quarry in the very short term (until 2022/23) while the operator prepares a new scheme of working and restoration at Cornforth West Quarry and Cornforth East Quarry, thereby maintaining a continuity of supply from these quarries which are within one operators ownership.

6.10 Previous Joint LAAs have reported the current planning permission for mineral extraction at a number of the magnesian limestone quarries in County Durham have end dates before 2034. These are Thrislington West Quarry in 2030, Coxhoe Quarry in 2018 and Crime Rigg Quarry in 2022. However, it should be noted that in February 2018 members resolved to grant planning permission to extend the time period for the working of Coxhoe Quarry. In addition the County Durham Plan is permissive towards granting planning permission for an extension of time at existing sites where permitted reserves remain at the end date of the current planning permissions.

Dolerite

6.11 Previous Join LAAs have reported a degree of uncertainty over the future of County Durham's one dolerite quarry, (Force Garth Quarry). This is now largely resolved. While the periodic review of this site under the Environment Act is ongoing the Council has now concluded the Regulation 63 Review which had been underway for a number of years under the Conservation of the Habitats and Species Regulations 2010 (as amended). In addition the Council issued a discharge of condition notice application on this site in February 2020 which will allow extraction to continue in the long term beyond 2035.

Wider Supply Considerations

6.12 As a rural County located between both Tyne and Wear to the north and the Tees Valley to the south it is recognised that County Durham has traditionally had a role in supplying crushed rock aggregate into areas outside of County Durham where the resources are less abundant and where there is significant demand. In this respect it is recognised that on the basis of the extent of existing permitted reserves, recent sales and what is understood in relation to the productive capacity of existing sites in the County, County Durham's crushed rock sites will continue to make a significant contribution to meeting the needs of both surrounding sub-regions. However, it should also be recognised that if this were to occur, this would lead to a more rapid depletion of permitted reserves within County Durham, which may not be easily replaced in the longer term. On this basis it is also recommended that Council should continue to seek to ensure that adjoining sub-regions within the North East should seek to make additional provision through the review of their own development plans.

6.13 Similarly, where necessary Durham County Council also considers emerging development plans and Local Aggregate Assessments prepared by Councils outside of the North East. This is considered to be particularly important in relation to North Yorkshire County Council, due to the supply relationships with one another and with the Tees Valley. It is recommended that the Council should continue to liaise with other Councils outside of the North East where necessary to ensure that surrounding regions continue to seek to make sufficient provision through the review of their own development plans and maintain established supply relationships.

6.14 In order to ensure the long term potential for future provision within County Durham economically important crushed rock resources will need to be safeguarded through the County Durham Plan.

xiv Following the restructuring in the steel industry in the UK, the kilns at Thrislington West Quarry, operated by Lhoist closed in 2016. Current demand for high grade dolomite in the UK is currently met by Whitwell Quarry in Derbyshire. The permitted reserves at Thrislington East Quarry is the sole remaining permitted resource of this mineral and needs to be carefully husbanded and is considered as an important national resource.

Sand and gravel

6.15 County Durham provides a regionally important contribution to the provision of land-won sand and gravel from the North East AWP cluster of MPAs, producing around 35.99% of land-won sand and gravel from this cluster of MPAs over the period 2011 to 2020^(xv).

6.16 As at 31 December 2020, 5.247 million tonnes of permitted reserves remained to be worked in County Durham. Based on a recommended annual provision from County Durham of 438,000 tonnes, this equates to a landbank of permitted reserves of 12 years at 31 December 2020 (based upon the annual demand requirement in this Joint LAA).

6.17 A quantitative assessment of the balance between supply and demand is set out below. Demand has been calculated using the recommended provision and in quantitative terms it can be seen that County Durham does not now have sufficient permitted reserves to meet this identified demand over the period to 2036 (which is line with the standard sixteen year forecasting period) and the remaining fifteen years of the County Durham Plan.

Table 6.2 Assessment of the balance between supply and demand for sand and gravel from County Durham

	Forecast period 2021 to 2036 (16 years)	Forecast period 2021 to 2035 (15 years)
Permitted reserves at 31 December 2020	5,247,000 tonnes	5,247,000 tonnes
Ten year sales average (2011 to 2020)	325,900 tonnes	325,900 tonnes
Three year sales average (2017-2019)	437,667 tonnes	437,667 tonnes
Annual demand forecast in LAA	438,000 tonnes	438,000 tonnes
Demand forecast	7,008,000 tonnes	6,570,000 tonnes
Landbank based on LAA provision	11.98 years	11.98 years
Balance between supply and demand	-1,761,000 tonnes	-1,323,000 tonnes

6.18 In recent years the Council has observed a fall in reported permitted reserves and consequent fall in the County's sand and gravel landbank which is greater than that could have been reasonably anticipated from sales. The fall in permitted reserves has been greater than recorded sales due to the continuing downward revision of permitted reserves in specific sites by mineral operators (due to geological reasons) and the fall in the length of the landbank period has been because of this fall in permitted reserves in combination with a rising annual demand requirement as a result of increased sales. This material change in permitted reserve availability in combination with the increased annual demand requirement now means that in quantitative terms the prospects for maintaining supply over the period to 2036 and 2035 has changed from very good to only moderate. As indicated by the balance between supply and demand in the above table the Council will not be able to maintain a minimum seven year landbank after 2025, which is a key indicator that further provision is now necessary to be planned for.

6.19 As detailed below, looking at supply at a site specific level, sand and gravel working at three of the five sand and gravel sites in the County are due to end prior to 2035, with the remaining two sites having permission to 2042.

xv Prior to the recession in 2008 County Durham produced 183,000 tonnes of sand and gravel. During both 2019 prior to the Coronavirus Pandemic and in 2020, sand and gravel sales exceeded pre-recession sales and were higher than any sales over the last twenty years.

- Crime Rigg Quarry - It is considered unlikely that permitted reserves at this quarry will be exhausted by the end date for extraction specified by the existing planning permission e.g. 31/12/22. However, the County Durham Plan is permissive towards extensions of time where permitted reserves remain to be worked when planning permission expires. If planning permission for extraction was to be extended, taking into account existing permitted reserves and both recent and historic sales we forecast that this site could continue extraction until approximately 2029.
- Low Harperley Quarry - Should extraction continue in accordance with this sites planning permission we forecast that this site could continue extraction until approximately 2032.
- Thrislington West Quarry - Taking into information from the operator, remaining permitted reserves and both recent and historic sales we forecast that this site is likely to be exhausted by 2025.
- Old Quarrington and Cold Knuckles Quarry - Should extraction continue at existing sales levels we forecast that this site could continue until the end of 2035.
- Hummerbeck - On the basis that this site remains inactive and has done so for many years, unless circumstances materially change it is considered that the working of this site can not be relied upon to occur.

6.20 On the basis of the above analysis it is recommended that the Council now seeks to make additional provision to maintain supply and also to maintain an appropriate landbank over the long-term and that this should be achieved by the Council seeking to allocate land for longer term working in the Council's forthcoming Minerals and Waste Policies and Allocations Document. In addition, it is recommended that in doing so, that any future allocations and permissions seek to ensure that productive capacity is maintained and that permitted reserves do not become concentrated within a small number of sites as a result of the closure of existing sites.

6.21 In terms of the overall scale of additional provision that is required to be made, based on the current annual demand requirement set out in this Joint LAA and in order to maintain a seven year landbank at 2035 it is recommended that provision is made to enable a further 5,059,000 tonnes of sand and gravel to be extracted over the period to 2035^(xvi).

Wider Supply Considerations

6.22 As a rural County located between both Tyne and Wear to the north and the Tees Valley to the south it is recognised that County Durham has traditionally had a role in supplying sand and gravel into areas outside of County Durham where the resources are less abundant and where there is significant demand. In coming years based upon recent sales and individual site's productive capacities it is recognised that County Durham's sand and gravel quarries may be able to make a greater contribution than in the past to the supply of sand and gravel from existing permitted reserves into both surrounding sub-regions. It is also recognised that if this were to occur, this may ensure that the North East Region as a whole becomes more self sufficient and may in combination with some production of sand and gravel from the Tees Valley reduce the level of imports into North East England as a whole from surrounding regions. However, it should also be recognised that if this were to occur, this would lead to a more rapid depletion of permitted reserves within County Durham, which may not be easily replaced in the longer term. On this basis it is also recommended that Council should seek to ensure that adjoining sub-regions within the north east seek to make additional provision through the review of their own development plans.

6.23 No marine dredged sand and gravel is currently supplied into County Durham from ports in Durham. This is not expected to change given the established role of wharfs on the River Tyne and River Tees.

xvi This figures includes the balance between supply and demand (1,323,000 tonnes), sufficient reserves to maintain a seven year landbank at 2035 (3,066,000 tonnes) and discounting the existing permitted reserves at Hummerbeck (670,000 tonnes) .

6.24 In order to ensure the long term potential for future provision within County Durham economically important sand and gravel resources will need to be safeguarded through the Local Plan.

Land-won primary aggregates - Northumberland

6.25 This section includes the analysis of supply for both Northumberland County Council and Northumberland National Park Authority.

Crushed rock

6.26 Northumberland is an important source of igneous rock for aggregate use and this represents the most important crushed rock resource extracted in Northumberland. Sales of igneous rock make up about 90% of the annual sales of crushed rock from Northumberland for aggregate use. Within the Joint LAA area and the North East AWP cluster there is currently only one other active quarry extracting this resource (Force Garth Quarry in Teesdale, County Durham). Carboniferous limestone accounts for the remaining 10% of sales and, as a product of Northumberland's geology, a significant proportion of this extracted at quarries alongside igneous rock. One of the quarries (Harden Quarry) is located within the Northumberland National Park and extracts an igneous rock resource (an intrusion of mica-porphyrite), which is valued for its red colour and other physical characteristics.

6.27 As at 31 December 2020, 79.06 million tonnes of permitted reserves of crushed rock for aggregate use remained to be worked in Northumberland. Based on the calculated annual demand for crushed rock from Northumberland of 1.717 million tonnes, this equates to a landbank of permitted reserves of 46 years at 31 December 2020 (based upon the annual demand calculated in this Joint LAA).

6.28 A quantitative assessment of the balance between the quantum of permitted reserves and the calculated future demand is set out below.

Table 6.3 Assessment of the balance between supply and demand for crushed rock for aggregate use from Northumberland

	Forecast period 2021 to 2036 (16 years)
Permitted reserves at 31 December 2020	79,060,000 tonnes
Ten year sales average 2011 to 2020	1,489,000 tonnes
Annual demand forecast in LAA	1,717,000 tonnes
Demand forecast from 2021 to 2036	27,472,000 tonnes
Landbank based on LAA provision	46 years
Balance between supply and demand form 2021 to 2036	+51,588,000 tonnes

6.29 When considered in isolation, the reserve and landbank figures indicate that Northumberland does not need to seek to make any additional provision for crushed rock over the period to 2036 as the information indicates that are sufficient reserves with planning permission in Northumberland as a whole to deliver supply to meet the level of demand calculated.

6.30 However, it is also important to understand whether the sites in Northumberland have the capacity to meet the annual demand forecast over this period and whether there are site specific issues that could influence the ability of these to contribute to crushed rock supply. The issues that potentially impact on the future availability of reserves and the capacity of sites to meet supply that the information presented in this LAA highlight include:

- A large part of the permitted reserves of crushed rock in Northumberland (estimated to be in the region of 60%) are contained within one quarry;
- The current planning permissions for five of the quarries have end dates before 2036 but it is recognised that the remaining reserves within these sites may not be exhausted by the current end dates of the planning permissions for these sites;
- Within some of the individual quarries that are currently contributing to supply, the permitted reserves are projected to be exhausted before 2036 and this will impact on the overall operational capacity available to contribute to supply; and
- A significant proportion of the permitted reserves in Northumberland are contained in sites that are currently 'inactive' (estimated to be around 18% at 31 December 2018). These sites have not been operational for significant periods of time and there is some uncertainty about whether these will become operational in the coming years and be able to contribute to supply.

6.31 In terms of the capacity of sites to meet calculated annual demand, the analysis shows that the factors outlined above could potentially result in the capacity of the sites falling below the level required to meet the annual demand in the coming years.

6.32 The future planning policy strategy for Northumberland and decisions on individual planning applications will therefore need to ensure some flexibility in the provision for crushed rock is made to address these issues in order to maintain productive capacity and ensure a steady and adequate supply is maintained. This will also need to consider the split in permitted reserves between sites to ensure large reserves in very few sites do not stifle competition.

6.33 In respect of the Northumberland National Park, it is recommended that future provision for crushed rock supply should be made from outside the National Park where practical. However, it is recognised that the material extracted at Harden Quarry has special characteristics, is valued for its red colour and is not found elsewhere in Northumberland. While there is a large landbank for crushed rock in Northumberland as a whole, consideration should be given to whether the need for the material found at the site outweighs any potential adverse effects on the purposes and special qualities of the National Park. The current planning permission for the site allows for extraction until 2029 with an anticipated output of up to 150,000 tonnes per annum. Any future proposals for this site would need to consider the balance between the provision of the fairly unique material from this site, the need for the material and the availability of alternatives in less sensitive locations. To ensure that the crushed rock resource within the Northumberland National Park is not needlessly sterilised by non-mineral development and is protected over the long-term, this resource shall be safeguarded in the local plan. Co-operation with the other MPAs in the North East AWP cluster, particularly Northumberland County Council, will be required to ensure the provision can be made from areas outside the National Park.

Sand and gravel

6.34 Northumberland provides an important contribution to the provision of land-won sand and gravel from the both the Joint LAA area and the North East AWP cluster of MPAs. This contribution has fallen steadily over time; from 53% of sand and gravel sales in the region in 2011 to 29% in 2020. Current supply and permitted reserves are all contained in sites located outside of the Northumberland National Park.

6.35 The general pattern both regionally and nationally has been for sales of both crushed rock and sand and gravel to have increased from 2017-2019, followed by a fall in 2020 reflecting the exceptional circumstances of the pandemic. However in Northumberland, sales of sand and gravel have been falling since 2017. One of the reasons for this decrease is as a result of a reduced number of operational sites, with production from Hedgeley Quarry ceasing in the first quarter of 2018 having an impact on overall sales from Northumberland over the year. This issue is likely to be exacerbated in the short term, with Haughton Strother Quarry expected to have exhausted reserves in early 2021.

6.36 As at 31 December 2020, 4.6 million tonnes of permitted reserves remained to be worked in Northumberland. Based on the demand forecast and a recommended annual provision from Northumberland of 356,000 tonnes, this equates to a landbank of permitted reserves of 12.9 years at 31 December 2020 (based upon the annual demand requirement in this Joint LAA).

6.37 A quantitative assessment of the balance between the quantum of permitted reserves and the calculated demand is set out below.

Table 6.4 Assessment of the balance between supply and demand for sand and gravel for aggregate use from Northumberland

	Forecast period 2021 to 2036 (16 years)
Permitted reserves at 31 December 2020	4,594,000 tonnes
Ten year sales average 2011 to 2020	368,000 tonnes
Annual demand forecast in LAA	356,000 tonnes
Demand forecast from 2021 to 2036	5,696,000 tonnes
Landbank based on annual demand calculated in LAA	12.9 years
Balance between quantum of permitted reserves and demand	-1,102,000 tonnes

6.38 The reserve and landbank figures indicate that Northumberland will have a shortfall in sand and gravel supply over the period to 2036. It is also important to understand whether the sites in Northumberland have the capacity to meet the annual demand forecast over this period and whether there are site specific issues that could influence the ability of these to contribute to crushed rock supply. The issues that potentially impact on the future availability of reserves and the capacity of sites to meet supply that the information presented in this LAA highlight include:

- An analysis of productive capacity suggests that the remaining sand and gravel sites may struggle to meet recent levels of sales in the short and medium term, even if working at full capacity.
- Site specific issues around the quality of the sand and gravel resource at some sites have significantly limited production in recent years.

6.39 As a result of the identified shortfall in supply and accompanying site specific and capacity issues, it is recommended that additional provision for sand and gravel from Northumberland is made in the Northumberland Local Plan and appropriate weight given to the identified shortfall when determining individual proposals. There are known resources of sand and gravel within Northumberland that are suitable for aggregate use that could meet this demand, although the environmental acceptability of extracting these resources has yet to be tested both through the local plan and development management processes. Marine sand and gravel imported via the Port of Blyth will also make a contribution in the future.

6.40 In respect of the Northumberland National Park, provision of sand and gravel should be made outside of this area in line with the NPPF. There are currently no sand and gravel quarries in the Northumberland National Park and no sand and gravel for aggregate use is currently produced from this MPA area. To ensure that the sand and gravel resources within the Northumberland National Park are not needlessly sterilised by non-mineral development and are protected over the long-term, this resource shall be safeguarded in the Northumberland National Park Local Plan. Co-operation with the other MPAs in the North East AWP cluster, particularly Northumberland County Council, will be required to ensure the provision can be made from areas outside the National Park.

Land-won primary aggregates - Tyne and Wear

6.41 This section includes the analysis of supply for Gateshead, Newcastle, North Tyneside, South Tyneside and Sunderland.

Crushed rock

6.42 Crushed rock within the Tyne and Wear sub-region is supplied from both South Tyneside and Sunderland as this is where the resource is found. Both South Tyneside and Sunderland provide only a relatively small contribution to the provision of crushed rock aggregate from the Joint LAA area, producing on average around 8.1% of crushed rock aggregate from the Joint LAA area between 2011 to 2020.

6.43 As at 31 December 2020 it is estimated that approximately 5,496,000 tonnes^(xvii) of permitted reserves remained to be worked in Tyne and Wear. Based on a recommended annual provision from Tyne and Wear of 467,000 tonnes, this equates to a landbank of permitted reserves of 11.8 years at 31 December 2020 (based upon the annual demand requirement in this Joint LAA).

6.44 A quantitative assessment of the balance between supply and demand is set out below. Demand has been calculated using the recommended provision and in quantitative terms it can be seen that Tyne and Wear does not have sufficient permitted reserves of crushed rock to meet this identified demand over the period to 2036.

Table 6.5 Assessment of the balance between supply and demand for crushed rock from Tyne and Wear

	Forecast period 2021 to 2036 (16 years)
Permitted reserves at 31 December 2020	5,946,000 tonnes ⁽¹⁾
Ten year sales average 2011 to 2020	361,000 tonnes
Three year sales average 2017-2019	467,333 tonnes
Annual demand forecast in LAA	467,000 tonnes
Demand forecast	7,472,000 tonnes
Landbank based on LAA provision	11.8 years
Balance between supply and demand	-1,976,000 tonnes

1. Note: Crushed rock reserve and sales are based on Mineral Planning Authority estimates.

6.45 Supply from within Tyne and Wear is currently restricted to just two quarries, Eppleton Quarry in Sunderland and Marsden Quarry in South Tyneside.

6.46 In quantitative terms it is considered that Tyne and Wear does not have sufficient permitted reserves to maintain sales over the period to 2036. Taking into account the Council's best estimates of permitted reserves and sales it is forecast that these two quarries will have sufficient productive capacity to meet the the annual demand forecast recommended until approximately 2024/25. Within five years it is anticipated that the permitted reserves at Marsden Quarry will be exhausted and Eppleton Quarry, with an estimated productive capacity of 250,000 tonnes per annum, does not have the productive capacity to meet the provision recommended in this LAA. It is, therefore, recommended that Local Plans and in decisions on planning applications should, in principle, support additional

xvii The reserve figure for Tyne and Wear is based on Mineral Planning Authority estimates.

areas for extraction where environmentally acceptable. This is considered necessary in order to avoid a reliance on supply from a single site, avoiding limiting the future scale of production to that of Eppleton Quarry as well as helping to ensure that an appropriate contribution to local and wider needs is made. The scale of provision should be to a level of at least that in the LAA.

6.47 If new or extended quarries that are environmentally acceptable cannot be identified, future demand for crushed rock aggregate from Tyne and Wear will need to be met from alternative sources. Due to geography, this is likely to place additional pressure on resources in County Durham and Northumberland. It is important that consideration is given because as set out in Section 4 of the Joint LAA (Imports and Exports) markets in Tyne and Wear represent a major source of demand for these materials from quarries in both County Durham and Northumberland. Further provision will reduce pressure on permitted reserves in adjoining areas and would benefit the steady and adequate supply of crushed rock across the Joint LAA area.

6.48 In order to ensure the long-term potential for future provision within Tyne and Wear the economically important crushed rock resources shall be safeguarded in the relevant local plans and given appropriate policy protection.

Sand and gravel

6.49 Sand is currently only supplied from one quarry, Eppleton Quarry in Sunderland, within the Tyne and Wear sub-region. Nonetheless this provides a regionally important contribution to the provision of land-won sand and gravel from the Joint LAA area, producing approximately 23.38% of land-won sand and gravel from the Joint LAA area over the period 2011 to 2020.

6.50 As at 31 December 2020, 5,498,000 tonnes of permitted reserves are estimated to be remaining to be worked in Tyne and Wear. Based on a recommended annual provision from Tyne and Wear of 240,000 tonnes, this equates to a landbank of permitted reserves of 22.9 years at 31 December 2020 (based upon the annual demand requirement in this Joint LAA).

6.51 A quantitative assessment of the balance between supply and demand is set out below. Demand has been calculated using the recommended provision and in quantitative terms it can be seen that Tyne and Wear currently has sufficient permitted reserves of sand and gravel to meet this identified demand over the period to 2036.

Table 6.6 Assessment of the balance between supply and demand for sand and gravel from Tyne and Wear

	Forecast period 2021 to 2036 (16 years)
Permitted reserves at 31 December 2020	5,498,000 tonnes ⁽¹⁾
Ten year sales average 2011 to 2020	213,900 tonnes
Three year sales average 2017-2019	240,000 tonnes
Annual demand forecast in LAA	240,000 tonnes
Demand forecast 2021 to 2036	3,840,000 tonnes
Landbank based on LAA provision	22.9 years
Balance between supply and demand	+ 1,658,000 tonnes

1. Note: Sand and gravel reserve and sales figures are based on Mineral Planning Authority estimates.

6.52 While it is recognised that Eppleton Quarry has the productive capacity to meet the required annual provision, supply is nonetheless restricted to a single site in an area that is a major source of demand. It is, therefore, recommended that Local Plans and decisions on planning applications should, in principle, support additional areas for extraction where environmentally acceptable. This is considered necessary in order to avoid a reliance on supply from a single site, avoiding limiting the future scale of production to that of Eppleton Quarry or even the eventual cessation of the extraction of this resource from this area as well as helping to ensure that an appropriate contribution to local and wider needs is made.

6.53 If additional environmentally acceptable new or extended sand and gravel sites cannot be identified, future demand for sand and gravel from Tyne and Wear will need to be met by a combination of marine dredged aggregates and from sites quarries in adjoining areas such as County Durham and Northumberland, which already make a significant contribution to supply as set out in Section 4 of the Joint LAA (Imports and Exports). Until it can be demonstrated that there are no further environmentally acceptable sites remaining in Tyne and Wear further working must be given consideration. Further provision will reduce pressure on permitted reserves in adjoining areas and would benefit the steady and adequate supply of sand and gravel across the Joint LAA area.

6.54 In order to ensure the long-term potential for future provision from within Tyne and Wear, the relevant authorities will seek to safeguard economically important sand and gravel resources in their local plans.

Marine dredged sand and gravel

6.55 The closest areas licenced for the dredging of marine aggregates from North East England are in the Humber dredging area. Information provided by The Crown Estate shows that within the Humber dredging area 9.72 million tonnes of material is permitted for extraction each year under existing licences. The Crown Estate identify that during 2020 4.07 million tonnes of construction aggregate were dredged.^(xviii)

6.56 The existing wharf infrastructure in Joint LAA area is well established and these wharves have capacity to deal with the tonnages currently delivered there as well as any future increase in the tonnages of marine aggregates delivered. In 2020 marine sand and gravel was imported via the Port of Blyth (Battleship Wharf) in Northumberland and Jarrow Wharf on the River Tyne in South Tyneside. The wharves at Gateshead (inactive since 2011), Howdon (inactive since 2014) and Port of Sunderland were inactive in 2020. In addition, the LAA recognises that the port facilities at Berwick-upon-Tweed in Northumberland and Seaham in County Durham have the potential to land marine aggregates.

6.57 Supply of marine sand and gravel is therefore likely to be maintained and there is also the scope for it to increase. There is capacity at the wharf sites within the Joint LAA area and there is understood to be resource available in the Humber dredging area that could supply the Joint LAA area. These supplies are an important source of concreting sand, particular to main markets in Tyne and Wear where there is a reliance on imports to meet the level of demand.

6.58 Given the importance of marine dredged aggregates to the overall supply of sand and gravel in North East England the existing marine wharves shall be safeguarded in the relevant local plans to ensure there is long-term capability and capacity to import marine dredged sand and gravel into North East England.

Imports of crushed rock by sea

6.59 Imports of crushed rock via the wharves in the Joint LAA area make a small but still important contribution to supply (101,000 tonnes in 2020).

xviii See The Crown Estate. Marine Aggregate Extraction 2020: The area involved - 23rd annual report

6.60 The established wharf infrastructure in the Joint LAA is understood to have capacity to deal with the tonnages currently delivered. In 2020 crushed rock was landed on the River Tyne at Whitehill Point in North Tyneside. Rock has been imported via the Port of Blyth in Northumberland, the Port of Sunderland and at the Port of Tyne in previous years but not during 2020.

6.61 Supply of crushed rock is therefore likely to be maintained and there is also the scope for it to increase. There is capacity at the wharf sites within the Joint LAA area and no particular issues with the sources of supply have been noted.

6.62 Also given the contribution to the overall supply of crushed rock, particular the areas of higher demand, the existing wharves shall be safeguarded in the relevant local plans to ensure there is long-term capability and capacity to import crushed rock into North East England.

Recycled and secondary aggregates

6.63 Information provided by the Mineral Products Association at a national level estimates that recycled and secondary materials account for 28% of the aggregates market^(xix).

6.64 In the Joint LAA area, the main sources of recycled aggregate are from construction and demolition waste. A number of fixed sites that recycle such materials for aggregate uses are found in County Durham, Northumberland and Tyne and Wear (see Appendix B).

6.65 In Northumberland, ash from Lynemouth Power Station has been an important source of secondary aggregate but there has been no supply of material from this site since 2015. There are no known constraints on the supply of this material and the site has planning permission to allow the existing ash material stored on the site to be extracted and used as a secondary aggregate. The site therefore has the potential to supply this material for use as a secondary aggregate at rates at least equivalent to those in years previous to 2015.

6.66 Due to the uncertainties regarding the quantities of recycled materials used to produce aggregates as a result of data issues, it is not proposed to amend the demand forecast for the Joint LAA to reflect the contribution of these materials to overall supply. However it is assumed that recycled and secondary aggregate will continue to provide a proportion of overall supply from the Joint LAA area roughly equivalent to the contribution in previous years.

Imports

6.67 The most significant movements of primary aggregates within the Joint LAA area and to/from the Joint LAA have been identified as:

- Supply of crushed rock and sand and gravel from North Yorkshire northwards to the south of County Durham;
- Supply of primary aggregates from County Durham and Northumberland to Tyne and Wear; and
- Supply of primary aggregates from County Durham to the Tees Valley as well as West Yorkshire.

6.68 Other important and notable cross-boundary movements have also been identified:

- Supply of marine sand and gravel from wharf sites on the River Tyne;

xix Mineral Products Association (2020). *Profile of the UK Mineral Products Industry: 2020 Edition*. Available at: <https://www.mineralproducts.org/Facts-and-Figures/Profile-of-the-UK-Mineral-Products-Industry.aspx>

- Movements from Cumbria into the Joint LAA area; and
- Supply of crushed rock from a quarry in the Northumberland National Park to a range of destinations (although the tonnages are not significant in both sub-regional and regional terms).

6.69 The most significant imports of aggregates into the Joint LAA area is recorded as land-won sand and gravel and crushed rock from North Yorkshire to County Durham, reflecting the availability of good quality resources in the northern part of North Yorkshire that are in close proximity to the southern part of County Durham. Although in recent years it should be noted that there are also now recorded significant quantities of sand and gravel and of crushed rock from County Durham into the Yorkshire and Humber region. Previous and ongoing discussions and liaison with North Yorkshire County Council during the preparation of previous LAAs have indicated that this pattern of supply is expected to continue. It has also been highlighted that there has been a reduction in the tonnages supplied northwards from North Yorkshire over the last 10 years or so. A declining level of permitted reserves in the northern part of North Yorkshire may have an impact on supply in the medium to long-term and the implications of this will be kept under review through the LAA.

6.70 Imports of marine sand and gravel also make an important contribution to the supply of sand and gravel aggregate to the Joint LAA area. Wharves on the River Tyne and in Sunderland are important for the supply of aggregates to Tyne and Wear. They are also important in terms of supplying material further afield as well.

6.71 Within the Joint LAA it has been identified that there are significant movements between rural areas and the urban areas where a greater demand for these materials exists. As rural counties, County Durham and Northumberland have traditionally had a role of supplying crushed rock and sand and gravel for aggregate use to the Tyne and Wear conurbation where there is significant demand and suitable resources are less abundant. In addition, County Durham has had a role in supplying aggregates south to the Tees Valley sub-region for similar reasons. This pattern of supply is expected to continue but it is recognised that there may be more pressure in the future for the supply of aggregates from County Durham and Northumberland if permitted reserves are not replenished within Tyne and Wear and from County Durham if permitted reserves are not replenished and/or worked in the Tees Valley.

7 Conclusions and recommendations

Supply

Crushed rock supply

7.1 The analysis in this LAA has indicated that there are good overall prospects of crushed rock supply being maintained with significant permitted reserves in both County Durham and Northumberland. However, the ability to maintain supply to meet the recommended levels of provision is dependent on the capability of the quarries to maintain productive capacity. This will be dependent on some quarries gaining consent to extend the time period for extraction to enable all the permitted reserves to be recovered and/or releasing additional reserves through extensions to the working areas of existing quarries or new quarries where it could be demonstrated that this course of action is necessary to maintain an adequate overall productive capacity.

County Durham

7.2 In the County Durham sub-regional area, despite a large fall in permitted reserves between 2018 and 2020 which is largely due to a new scheme of working issued at one site in 2020, it is recognised that there are still significant permitted reserves of crushed rock which will be available to meet future supply requirements. This means that the prospects for maintaining supply over the period to 2035 and 2036 remain very good.

7.3 Of the fifteen crushed rock quarries in County Durham, with the exception of Force Garth Quarry, which works dolerite and is located in upper Teesdale all of these quarries are either magnesian limestone or carboniferous limestone quarries and are well related to the main market areas which County Durham supplies into including Tyne and Wear.

7.4 It has been previously recognised in the Joint LAA that some of the permitted reserves in County Durham are located in sites which are inactive and a number of sites have end dates for extraction before 2035 and 2036. However, it is considered normal in a County such as Durham where there are many quarries, for some quarries to be inactive at any point in time and for some sites to have end dates of extraction at varying times, as these dates were set at the time the original permissions were granted. These issues are now being addressed at many of these quarries through the normal development management processes and it is expected that working could resume at a number of inactive quarries within the next two to five years. In addition a number of quarries have recently had their end dates for extraction extended through new planning permissions and have also gained new permitted reserves. Furthermore, the Council expects that over the next one to two years, additional permitted reserves will become available at a number of sites therefore reinforcing permitted reserves and the County's ability to maintain supply in the long term.

7.5 It has previously been recognised in the Joint LAA that many of the quarries in County Durham, where permitted reserves remain have a significant productive capacity and this has been shown in recent years through how they have responded to increases in demand following the period of suppressed demand associated with the last economic downturn (between 2009 and 2013). Should further increases in demand occur it is considered that there is a very good prospect for the sites in County Durham to respond positively and meet any future unanticipated increases in demand.

7.6 For a number of years, the Joint LAA recommended that consideration should be given as to how the ongoing supply of magnesian limestone and carboniferous limestone can be maintained in the long term. These recommendations have now been considered and addressed through work to prepare the adopted County Durham Plan, which now also provides the flexibility for non-allocated sites and extensions to existing sites to come forward to meet identified needs. Similarly, for a number of years, the Joint LAA has also reported on the position at Force Garth Quarry, which is County Durham's only dolerite quarry. The position at this quarry has now been resolved.

Northumberland (Northumberland County and Northumberland National Park)

7.7 In the Northumberland sub-regional area, it is recognised that, while the landbank of permitted reserves is relatively large, there are issues that potentially impact on the availability of reserves and the capacity of these to meet the calculated demand. This is because a significant proportion of the reserves (around 60%) are contained within a single quarry, five of the current quarries have end dates before 2036 and the permitted reserves within a number of quarries are likely to be exhausted by 2036^(xx). The Northumberland Local Plan (covering the area outside of the Northumberland National Park) and decisions on planning applications will need to ensure provision is made to address these issues where this is environmentally acceptable in order to maintain productive capacity and ensure a steady and adequate supply is maintained. In the Northumberland National Park, Harden Quarry produces a crushed rock aggregate that is particularly valued for its red colour. The current planning permission will provide continuity of supply from this site until 2029. In the longer-term consideration needs to be given through the local plan process as to whether it would be appropriate to allow this site to continue when reserves are exhausted by means an extension to the site or an extension of time if the reserves are not exhausted by the current end date. A key consideration would be whether the need for the material outweighs the potential adverse effects on the purposes and special qualities of the Northumberland National Park.

Tyne and Wear (Gateshead, Newcastle, North Tyneside, South Tyneside and Sunderland)

7.8 In the Tyne and Wear sub-regional area supply is currently restricted to just two quarries, Eppleton Quarry in Sunderland and Marsden Quarry in South Tyneside. In the short-term it is understood that these two quarries will have sufficient productive capacity to meet the annual provision recommended. However, in the medium-term it is anticipated that the permitted reserves at Marsden Quarry will be exhausted and Eppleton Quarry, with an estimated productive capacity of 250,000 tonnes per annum, does not have the productive capacity to meet the provision recommended in this LAA. Therefore, the relevant Local Plans and decisions on planning applications should, in principle, support additional areas for extraction where environmentally acceptable to avoid a reliance on supply from a single site, avoiding limiting the future scale of production and to help ensure that an appropriate contribution to local and wider needs is made.

Sand and gravel supply

7.9 In general terms prospects for supply of land-won sand and gravel in this joint LAA area are good but this is dependent on additional permitted reserves being released to ensure supply over the long-term and capability of the quarries to maintain productive capacity.

County Durham

7.10 It is recognised that County Durham makes an important contribution to the supply of land-won sand and gravel in North East England. It is also recognised that there are sizeable permitted reserves of sand and gravel which will be available to meet future supply requirements. However, as outlined in chapter 6, it is now apparent that additional provision needs to be made to ensure that a steady and adequate supply of sand and gravel from County Durham can be maintained in the longer term and to maintain at least a minimum seven year landbank.

7.11 Previous versions of this LAA recommended that the Council seeks to make additional provision to maintain supply and in order to maintain an appropriate landbank over the long-term and that this should be achieved by the Council seeking to allocate land for longer term working in the Council's emerging Minerals and Waste Policies and Allocations Document. The Council has responded positively to this recommendation and two areas of land for further sand and gravel working have

xx This is in line with the end date of the emerging Northumberland Local Plan. The end date of the emerging Northumberland National Park Local Plan is 2037.

been identified within the draft Minerals and Waste Policies and Allocations document which was subject to consultation under Regulation 18 during Autumn 2021. Together these two allocations will provide for an additional 6.71 million tonnes of sand which could be worked at a rate of 340,000 to 440,000 tonnes per annum over at least twenty years. In addition, it should be noted that the adopted County Durham Plan also provides flexibility for non-allocated sites and extensions to existing sites to come forward to meet identified need if required.

7.12 It is also recognised that, on the basis of the extent of permitted reserves and the productive capacity of the quarries, County Durham may be able to make a greater contribution to the supply of land-won sand and gravel to the Tyne and Wear sub-region to the north and the Tees Valley sub-region to the south in addition to being increasingly self-sufficient. However, it should also be recognised that if this were to occur, this would lead to a more rapid depletion of permitted reserves, therefore on this basis it is also recommended that Council should continue to seek to ensure that adjoining sub-regions within the North East seek to make additional provision through the review of their own development plans.

Northumberland (Northumberland County and Northumberland National Park)

7.13 It is recognised that the Northumberland sub-region makes a significant contribution to the supply of land-won sand and gravel in North East England. The analysis has highlighted that the remaining permitted reserves and the productive capacity of the remaining sites will not be sufficient to maintain the supply required to meet the calculated demand. This is because the permitted reserves at a number of the quarries in Northumberland are expected to be worked out in the coming years and other have planning permissions with end dates prior to 2036^(xxi). The Northumberland Local Plan and decisions on planning applications (in the area outside of the Northumberland National Park) should, therefore, support in principle identifying and releasing additional reserves to maintain supply over the long-term where the proposals are environmentally acceptable. This will also be necessary to maintain an appropriate landbank of reserves within Northumberland over the long-term and ensure there is sufficient capacity to maintain annual supply. It is also recommended that, in line with national planning policy, additional provision should be sought outside of the Northumberland National Park unless there are exceptional circumstances.

Tyne and Wear (Gateshead, Newcastle, North Tyneside, South Tyneside and Sunderland)

7.14 In the Tyne and Wear sub-regional area, there is now only one site supplying sand following closure of the other sand and gravel quarries in Gateshead. While Eppleton Quarry has the productive capacity to meet the required annual provision, supply is restricted to a single site in an area. It is, therefore, recommended that Local Plans and decisions on planning applications should, in principle, support additional areas for extraction where environmentally acceptable. This is considered necessary in order to avoid a reliance on supply from a single site, avoiding limiting the future scale of production to that of Eppleton Quarry or even the eventual cessation of the extraction of this resource from this area as well as helping to ensure that an appropriate contribution to local and wider needs is made.

Marine aggregate supply

7.15 Marine dredged sand and gravel makes a significant contribution to the overall provision of sand and gravel in the Joint LAA area and in North East England, particularly in terms of provision to Tyne and Wear where there are active wharf sites on the River Tyne.

xxi This is in line with the end date of the emerging Northumberland Local Plan. The end date of the emerging Northumberland National Park Local Plan is 2037.

7.16 It is anticipated that supply from these wharves is likely to be maintained. These sites also have the capacity to increase supply in order to increase supply in the future, particularly if the currently mothballed sites are brought back into use. It is also recognised that there is expected to be an ongoing resource available from the Humber dredging areas.

7.17 Given the contribution of marine sand and gravel to the overall provision of sand and gravel for aggregate use in the Joint LAA area, it is important that the existing wharves, including those currently mothballed, continue to be safeguarded in line with national planning policy.

Recycled and secondary aggregate supply

7.18 Comprehensive information on the production and supply of recycled aggregates is not available to inform this LAA. It is assumed that the majority of material that is suitable for use as a recycled aggregate is put to beneficial use. Within the joint LAA area, the materials available for use as recycled aggregate are most commonly construction, demolition and excavation wastes and road planings. It is anticipated that the supply of both recycled and secondary aggregates is likely to continue at similar levels as in recent years, particularly in the short-term.

7.19 In terms of secondary aggregates, an important source of supply is ash from Lynemouth Power Station in Northumberland. The power station ceased burning coal in December 2015 to allow its conversion to use biomass as its principal fuel. It is, however, anticipated that ash material from the previous burning of coal stored on the site can be extracted and used as a secondary aggregate in the future and could therefore continue to contribute to supply over the next 15 years.

Imports of aggregates

7.20 Within the Joint LAA area there are significant movements between the rural areas and the urban areas where there is higher demand. As rural counties, Northumberland and County Durham have traditionally had a role of supplying crushed rock and sand and gravel for aggregate use to the Tyne and Wear conurbation where there is significant demand and suitable resources are less abundant. In addition, County Durham has had a role in supplying aggregates south to the Tees Valley sub-region for similar reasons. This pattern of supply is expected to continue recognising the availability of resources in County Durham and Northumberland. It is also recognised that there could be increased pressure for the supply of resources from County Durham and Northumberland if extracted reserves are not replaced with new permitted reserves within Tyne and Wear and the Tees Valley.

7.21 The most significant imports of aggregates into the Joint LAA are land-won sand and gravel and crushed rock from North Yorkshire, reflecting the availability of good quality resources in the northern part of North Yorkshire close to the southern part of the Joint LAA area. It is also recognised that sites in North Yorkshire are likely to also supply markets in County Durham, particularly in the south of the County which is assumed to be as a result of the proximity of the quarries in North Yorkshire to this part of County Durham, but not due to the lack of permitted reserves in County Durham.

7.22 In addition, it is recognised that imports of marine sand and gravel make an important contribution to the supply of sand and gravel aggregate to the Joint LAA area.

Key issues for local plan preparation

7.23 The key matters to arise from this Joint LAA are summarised below. These matters are relevant to the preparation and review of local plans by the MPAs with the joint LAA area. The key matters identified are as follows:

- The use of the ten year sales average is not seen as being the sole basis for calculating future supply requirements from the Joint LAA area. It is recommended that an alternative figure based upon the three year sales average is used for the period 2017 to 2019 reflecting that sales in 2020 were suppressed due to the impact of the Coronavirus Pandemic on demand and as a result were lower than they otherwise would have been. In this regard the implications of this requirement is set out in Table 5.6 and addressed by each sub-region in section 6 of this report.
- In general terms the prospects for the supply of land-won sand and gravel in this joint LAA area over the period to 2036 are positive but this is dependent on additional reserves being released to ensure supply over the long-term and capability of the quarries to maintain productive capacity. Where necessary local plans, therefore, need to consider releasing additional reserves to maintain a steady and adequate supply into the long-term and maintain landbanks of sand and gravel above the 7 year minimum specified by the NPPF.
- There are good prospects of crushed rock supply being maintained across this joint LAA area over the period to 2036. However, this will be dependent on some quarries gaining consent to extend the time period for extraction to enable all the permitted reserves to be recovered and/or releasing additional reserves through extensions to the working areas of existing quarries or new quarries where it could be demonstrated that this will help to maintain a continuous overall productive capacity and a steady and adequate supply of aggregates and landbanks of crushed rock over the ten year minimum specified by the NPPF. Local Plans, therefore, need to consider how to address this.
- MPAs should safeguard aggregate resources through their local plans to ensure these resources are not needlessly sterilised by non-mineral development. Mineral Safeguarding Areas should be identified in line with the NPPF.
- Marine sand and gravel supply is likely to be maintained and wharf capacity means there is potential for supply from this source to increase in future years.
- MPAs should safeguard wharf sites through their local plans to ensure their future availability as these sites are important for the supply of marine dredged sand and gravel. This issue is particularly relevant to Tyne and Wear.
- MPAs should safeguard infrastructure associated with the transport and processing of aggregate minerals, which are important to the supply of these materials to their markets and end users.
- Supply of recycled and secondary materials for aggregate uses is assumed to continue at similar levels to those previously experienced.

Cross boundary movements

7.24 Taking into account the results of the Collation of the 2019 National Aggregates Survey, this Joint LAA has identified a number of important cross-boundary movements in terms of aggregates supply both within the area covered by the joint LAA and to/from the Joint LAA area. These are the key cross boundary issues that the MPAs should give consideration to in the preparation of their Local Plans.

7.25 The most significant movements have been identified as:

- Supply of primary aggregates from County Durham and Northumberland to Tyne and Wear and, in respect of County Durham, the Tees Valley.

- Supply of primary aggregates from County Durham to North Yorkshire and West Yorkshire.
- Supply of primary aggregates from North Yorkshire to the south of County Durham (although there are also significant movements to the Tees Valley).

7.26 Other important cross-boundary movements that have been identified and need to be considered are:

- Supply of marine sand and gravel from the wharf sites on the River Tyne.
- Supply of crushed rock from a quarry in the Northumberland National Park to a range of destinations (although the tonnages are not significant in both sub-regional and regional terms).
- Movements of sand and gravel from Cumbria into the Joint LAA area.

Issues requiring further consideration or future review

7.27 A number of issues have also been identified that need to be monitored and reviewed in the future or which require further consideration. Some of these issues are ongoing. The issues include:

- The potential for an increase in demand for crushed rock and sand and gravel supply from County Durham and Northumberland in the medium to long term as a result of reserves not being replenished within Tyne and Wear.
- The potential for increased demand for aggregates should there be an increase in construction activity resulting from more favourable economic conditions or from any major infrastructure projects.
- Understanding the level of provision made through the ten years sales average approach and how this compares to level of sales from the North East AWP cluster of MPAs set out in the national and sub-national guidelines.

7.28 In terms of the data and information used to inform this LAA, a number of issues have been identified in respect of its availability and how comprehensive some of the information is. It is acknowledged that the MPAs will not realistically be able to address some of these issues. This includes some acceptance of the commercially confidential nature of some of the data on aggregate sales and reserves supplied and that accurate information on sales and reserves will not always be available for individual sites. The main issues identified include:

- A lack of comprehensive information on the production and supply of recycled aggregates, particularly concerning mobile plant.
- A lack of comprehensive information on the cross-boundary movements of aggregates at the level of the Mineral Planning Authorities. The availability of this information would be helpful in understanding more fully the cross boundary issues and the reasons for particular patterns of cross boundary movements.
- The national and regional guidelines for the provision of aggregate minerals were published in 2009 for the period 2005 to 2020 and have not been reviewed by Government to take account of more up-to-date survey information, information regarding the economy and construction activity and demands from infrastructure proposals.

Appendix - A Aggregate mineral sites

A.1 This appendix provides details of all active aggregate mineral sites in County Durham, Northumberland and Tyne & Wear. In addition this appendix also provides details of all aggregate mineral sites in County Durham, Northumberland and Tyne & Wear upon which new schemes of conditions for working and restoration are required under the Environment Act 1995 prior to the winning and working of aggregate minerals being resumed.

County Durham

Magnesian limestone

A.2 On 31 December 2020 there were ten^(xxii) quarries with planning permission to work magnesian limestone in County Durham (see Table A1). A number of these quarries have not been active in recent years. However, Old Quarrington and Cold Knuckles Quarry resumed production in 2016 and in 2019 two planning applications were submitted to consolidate the existing permissions (DM/19/01133/VOCMW and DM/19/01135/VOCMW) and are currently pending decision.

A.3 The Council has now been approached by several mineral operators who have begun to progress preparing new schemes of working at several inactive quarries including Witch Hill Quarry^(xxiii) and at both Cornforth West Quarry and Cornforth East Quarry^(xxiv)

A.4 On the 21 December 2018 planning permission was issued to extend the time period of working at Thrislington West Quarry to the 15 January 2030 (DM/15/00127/MIN).

A.5 On the 20 December 2018 an application was made for a temporary variation of the extant permission at Thrislington East Quarry (7/2006/0179CM (DCC Reference: CMA/7/55)) which was granted permission in July 2011. It was proposed to vary conditions to allow a change to the working method and working hours for Phase 2 and variation to the associated S106 agreement in terms of the percentage of High Grade Dolomite removed from the site. The original permission allowed the extraction of circa 30 million of high quality dolomitic limestone over seven phases to June 2045, providing raw materials for the adjacent Thrislington works which supplied refractory products to the UK Steel industry. The planning permission was granted subject to a section 106 agreement which required the operator to maximise the use of high grade dolomite for named industrial product end uses and requires at least 28% of total sales to be for high grade uses. The variation seek to vary the approved scheme and modify the section 106 agreement to enable the extraction of circa 2 million tonnes of aggregate grade stone which is presently exposed in the quarry. An interim restoration of the quarry is the proposed.

A.6 Within County Durham there are also a further five sites which are identified as dormant or which are Interim Development Orders (see Tables A2 and A3)^(xxv) Of these five sites, the Council has been approached to reactivate two sites, Hawthorn Quarry^(xxvi) and at Tuthill Quarry^(xxvii). Neither the ROMP at Hawthorn Quarry nor the planning application at Tuthill Quarry have yet been determined.

xxii Aycliffe Quarry East ceased mineral extraction 2014. (Please note for clarity that Thrislington Quarry will now be treated as two permissions, reflecting the two planning permissions west and east of the A1(M).

xxiii An Environment Act 1995 - Periodic Review of Mining Sites was submitted for Witch Hill Quarry in December 2015 (DM/15/03851/MIN). This application is still pending decision.

xxiv Two Environment Act 1995 - Periodic Review of Mining Sites were submitted for submitted for Cornforth West Quarry (DM/19/00026/MIN) and Cornforth East Quarry (DM/19/00025/MIN) was submitted on 21 December 2018. These applications are still pending decision.

xxv Tuthill Quarry, Coxhoe Quarry (Joint Stocks), John O'Tooles (Leasingthorn) Quarry, Hawthorn Quarry and Chilton Quarry.

xxvi In December 2017, Tarmac submitted an Environment Act 1995: Periodic Review application for Hawthorn Quarry (DM/17/04033/MIN). The planning application advised that it is likely that 10.5 million tonnes of mineral is likely to be extracted over the life of the quarry. In total it is understood that Hawthorn Quarry contains 12,659,000 of magnesian limestone of which 9,537,000 is claimed as high grade.

xxvii In February 2017, Owen Pugh submitted a planning application to extract 2.77 million m³ (approximately 5 million tonnes) of magnesian limestone at Tuthill Quarry with the restoration of the existing and proposed void through the importation of clays and soils (DM/17/00464/MIN).

It should be noted that the Council is not relying on any of these five sites to meet future need, two of which have been partially landfilled Coxhoe Quarry (Joint Stock) and John O'Tooles (Leasingthorn) Quarry with a third Tuthill Quarry partially infilled with colliery waste.

Table A.1 Quarries with planning permission for magnesian limestone extraction in County Durham

Quarry	Location and Grid Reference	Operator	Planning status on 31 December 2020	Expiry date for extraction	Designations
Bishop Middleham Quarry	Ferryhill NZ 328 326	W & M Thompson Quarries	Active	30/06/2029 ⁽¹⁾	SSSI
Cornforth East	West Cornforth NZ 325 344	Tarmac	Inactive	21/02/2042 ⁽²⁾	
Cornforth West	West Cornforth NZ 325 344	Tarmac	Inactive	21/02/2042 ⁽³⁾	
Coxhoe (Raisby) Quarry	Coxhoe NZ 347 352	Breedon	Active	01/09/2018 ⁽⁴⁾	SSSI
Crime Rigg Quarry	Sherburn NZ 346 416	Breedon	Active	31/12/2022	SSSI
Old Quarrington and Cold Knuckles Quarry	Bowburn NZ 330 380	Tarmac	Active	21/02/2042	
Running Waters Quarry	Bowburn NZ 334 403	Breedon	Inactive	21/02/2042	
Thrislington Quarry East	Cornforth NZ 317 322	Tarmac	Active	01/07/2045 ⁽⁵⁾	
Thrislington Quarry West	Cornforth NZ 317 322	Tarmac	Active	15/01/2030 ⁽⁶⁾	
Witch Hill Quarry	Sherburn NZ 345 397	Breedon	Inactive	21/02/2042 ⁽⁷⁾	

1. On 10 June 2015 the Council granted planning permission No. CMA/7/102 for the proposed western extension for the extraction of 5.5 million tonnes of magnesian limestone over a 14 year period with restoration to agriculture through tipping.
2. On 21 December 2018 Tarmac submitted an Environment Act 1995 - Periodic Review of Mining Sites application for Cornforth East Quarry. This is pending decision.
3. On 21 December 2018 Tarmac submitted an Environment Act 1995 - Periodic Review of Mining Sites application for Cornforth West Quarry. This is pending decision.
4. On 10 April 2017 Breedon submitted a new application in April 2017 to extend quarry operations until 2042 with restoration by 2044. At the meeting of the County Planning Committee on 6 February 2018 members resolved to grant planning permission for an extension of time to complete quarrying operations at Coxhoe (Raisby) Quarry until 2042 with restoration by 2044. This planning permission was issued on the 30 June 2020.
5. In December 2018 Tarmac submitted an application seeking to vary the existing permission (variation of Conditions 1 (Approved documents), 12 (Working hours in Phase 1) of Planning Permission No. 7/2006/0179CM (DCC Reference: CMA/7/55) to allow a change to the working method and working hours for Phase 2 and variation to the associated S106 agreement in terms of the percentage of High Grade Dolomite removed from the site). This application is pending decision.
6. Planning permission was issued on 21/12/18 to allow the continued extraction of the remaining limestone reserves and revised working area for the extraction of Basal Permian sand for 15 years until 2030, subject to a completion of a planning obligation under Section 106 of the Town and Country Planning Act 1990 (as amended).
7. In December 2015 Sherburn Stone submitted a periodic review of the mineral planning permissions at Witch Hill Quarry. The environmental statement which accompanied the ROMP advised that the quarry will work until 2042 and operations will commence in 5 years. It also advised that the 3.125 million tonnes of reserves within the site would be extracted at a rate of 150-200,000 tonnes per annum of which approximately 100,000 tonnes will comprise agricultural lime which will be exported to continental Europe via Seaham or Hartlepool docks. This application is pending decision.

Table A.2 Dormant Sites (Magnesian Limestone)

Site name	Location and Grid Reference	Designations
Tuthill Quarry ⁽¹⁾	Haswell 390442	SSSI
Coxhoe (Joint Stocks)	Coxhoe 325366 & 330364	
John O'Tooles (Leasingthorn) Quarry	Bishop Auckland	

1. In February 2017, Owen Pugh submitted a planning application to extract 2.77 million m³ (approximately 5 million tonnes) of magnesian limestone at Tuthill Quarry with the restoration of the existing and proposed void through the importation of clays and soils (DM/17/00464/MIN).

Table A.3 Interim Development Orders (Magnesian Limestone)

Site name	Location and Grid Reference	Designations
Hawthorn Quarry ⁽¹⁾	Seaham 438462	SSSI
Chilton Quarry	Ferryhill Station 298325	

1. In December 2017, Tarmac submitted an Environment Act 1995: Periodic Review application for Hawthorn Quarry (DM/17/04033/MIN)

Carboniferous limestone

A.7 There are only four quarries with planning permission to work carboniferous limestone (see Table A4). The two largest by virtue of permitted reserves remaining are Heights Quarry and Kilmond Wood Quarry have both had sizeable extensions permitted in the last few years. Only limited permitted reserves currently remain at Hulands Quarry but an allocation has now been made within the County Durham Plan which seeks to facilitate its extension. Both Heights Quarry and Hulands Quarry both have asphalt/coating plants. On 21 September 2021 the operators of Kilmond Wood Quarry submitted a planning application for the proposed installation and use of an asphalt plant. This is pending decision. In addition there are also eleven other carboniferous limestone quarry's where working could theoretically resume, subject to permitted reserves remaining and the agreement of new modern working and restoration conditions by the Council under provisions of the Environment Act 1995 (see Tables A5 and A6). In this respect, with the exception of Harrow Bank and Ashy Bank Quarry^(xxviii) there is no information currently available on the extent of remaining reserves in any of these sites and no known interest by any operator in progressing proposals to resume working.

Table A.4 Quarries with planning permission for Carboniferous limestone extraction in County Durham

Quarry	Location and Grid Reference	Operator	Planning status on 31 December 2020	Expiry Date for Extraction	Designations
Broadwood Quarry	Frosterley NZ 035 365	Breedon	Active	21/02/2042	AONB

xxviii In May 2007 Tarmac Northern Ltd (now known as Tarmac) submitted an Environmental Statement and a revised schedule of working and restoration conditions to the Council, proposing to work part of this site in order to extract 3,750,000 tonnes of carboniferous limestone from 30 ha of the 76.4 ha permission area over a 15 year period (8/MRA/3/4). No further progress has been made with the reopening of the quarry since this date.

Quarry	Location and Grid Reference	Operator	Planning status on 31 December 2020	Expiry Date for Extraction	Designations
Heights Quarry	Westgate NY 925 388	Aggregate Industries UK	Active	30/09/2046	AONB
Hulands Quarry	Bowes NZ 016 140	Aggregate Industries UK	Active	31/12/2026	
Kilmond Wood Quarry	Bowes NZ 024 134	Kearnton Farms	Active	21/02/2042	

Table A.5 Dormant Sites (Carboniferous Limestone)

Site name	Location and Grid Reference	Expiry date for extraction	Designations
Bollihope (Jopler Sykes)	Frosterley 988 352	21/02/2042	AONB, SPA, SAC, SSSI
Bollihope L20	Frosterley 987349	21/02/2042	AONB, SPA, SAC, SSSI
Bollihope L21	Frosterley 995355	21/02/2042	AONB, SPA, SAC, SSSI
Carriers Hill	Killhope 825435	21/02/2042	AONB
Greenfield	Lanehead 852421	21/02/2042	AONB
Parson Byers	Stanhope 005370	21/02/2042	AONB
Puddingthorn.	Lanehead 840425	21/02/2042	AONB
Scutterhill	Westgate 911389	21/02/2042	AONB
Side Head	Westgate 890389	21/02/2042	AONB
White Hills	Ireshopeburn 855389	21/02/2042	AONB

Table A.6 Interim Development Order Sites (Carboniferous Limestone)

Site Name	Location and Grid Reference	Expiry date for extraction	Designations
Harrowbank and Ashby Bank Quarry ⁽¹⁾			AONB, SSSI

1. Harrowbank and Ashby Bank Quarry is currently inactive and has not been worked for many years. However, in May 2007 Tarmac Northern Ltd submitted an Environmental Statement and a revised schedule of working and restoration conditions to the Council, proposing to work part of this site in order to extract 3,750,000 tonnes of carboniferous limestone from 30 ha of the 76.4 ha permission area over a 15 year period.

Dolerite (also known as Whinstone)

A.8 Currently there is only one quarry producing dolerite in the County, Force Garth Quarry in Teesdale, (see Table A7). This quarry is viewed as an important component of the County's aggregate supply network. The majority of the Force Garth permission is designated as part of the Moor House-Upper Teesdale Special Area of Conservation (SAC) and North Pennines Moors Special Protection Area (SPA) under the EU Habitats and EU Wild Birds Directive. The periodic review under the Environment Act 1995 has been submitted but has not yet been determined. This was due to the need to first undertake a separate assessment, as required by Regulation 63 of the Conservation of the Habitats and Species Regulations 2010 (as amended) and the EU Habitats Directive (Directive 92/43/EEC) as well as the need for further information in respect of the review permission itself. The County Council has now concluded the Regulation 63 Review and is of the view that the proposed working will have some affect but no likely significant effect on the integrity of European designated sites either alone or in combination with other mineral consents adverse effect, on the integrity of European Designated Sites in combination with other mineral consents. The Periodic Review submission made under the Environment Act 1995 has not yet been determined. This does not prevent the site from working. A Discharge of Condition application was submitted in December 2018 and was approved on 13 February 2020 (DRC/18/00471).

A.9 In addition there are also a number of small dormant dolerite quarries where working could theoretically resume, subject to permitted reserves remaining and the agreement of new modern working and restoration conditions by the Council under provisions of the Environment Act 1995. In this respect there is no information currently available on the extent of remaining reserves and no known interest by any operator in progressing proposals to resume working, (see Table A8).

Table A.7 Sites with planning permission for Dolerite extraction in County Durham

Quarry	Location and Grid Reference	Operator	Planning Status on 31 December 2020	Expiry Date for Extraction	Designations
Force Garth Quarry	Middleton-in- Teesdale NY 872 282	CEMEX	Active	21/02/2042	AONB, SPA, SCA, SSSI

Table A.8 Dormant Sites (Dolerite)

Quarry	Location and Grid Reference	Expiry date for extraction	Designations
Cockfield	Teesdale 130248	21/02/2042	
Crossthaite	Holwick 925253	21/02/2042	AONB
Greenfoot	Stanhope	21/02/2042	AONB
Middleton	Holwick 949245	21/02/2042	AONB
Park End	Holwick 921258	21/02/2042	AONB

Sand and gravel

A.10 Basal Permian Sand is currently worked at three quarries on the East Durham Limestone Plateau at Thrislington West Quarry, Old Quarrington and Cold Knuckles Quarry and at Crime Rigg Quarry. Generally, this sand is linked with the working of the economically important overlying magnesian limestone (see Table A9). While the deposit is a uniformly graded fine aggregate and has

traditionally been mainly worked as a source of building sand and asphaltting sand, it is understood that quarries in County Durham are also producing quantities of concreting sand from these deposits^(xxix).

A.11 Fluvial sand and gravel deposits are currently worked in County Durham at Low Harperley near Wolsingham (8/CMA/3/31). In addition in November 2011 a new scheme of working and restoration conditions were issued at a previously dormant site at Hummerbeck near West Auckland, enabling the recovery of 670,000 tonnes of sand and gravel over a 8 year period (8/MRA/6/9, (in addition planning permission for a concrete batching plant was also given). To date working has not commenced at Hummerbeck, (see Table A9).

A.12 In addition there are also a small number of dormant/Interim Development Order sand and gravel quarries where working could theoretically resume, subject to permitted reserves remaining and the agreement of new modern working and restoration conditions by the Council under provisions of the Environment Act 1995. In this respect there is no information currently available on the extent of remaining reserves and no known interest by any operator in progressing proposals to resume working at any of these sites, (see Table A10 and A11).

Table A.9 Quarries with planning permission for sand and gravel working in County Durham

Quarry	Location and Grid Reference	Operator	Planning status on 31 December 2020	Expiry date for extraction	Designations
Crime Rigg Quarry	Sherburn NZ 346 416	Breedon	Active	31/12/2022	SSSI
Hummerbeck Quarry	West Auckland NZ 187 254	Hall Construction	Inactive ⁽¹⁾	21/02/2042	
Low Harperley Quarry	Wolsingham NZ 112 356	Breedon	Active ⁽²⁾	08/08/2032	
Old Quarrington and Cold Knuckles Quarry	Bowburn NZ 330 380	Tarmac	Active	21/02/2042	
Thrislington Quarry	Ferryhill NZ 317 322	Tarmac	Active	15/01/2030	

- Hummerbeck Quarry - Yet to commence. Planning permission was issued on 25 November 2011. Period of working would be 8 years. However, the site actually has permission to 2042.
- Low Harperley Quarry - Development commenced in August 2016 following the grant of planning permission on 19 August 2013.

Table A.10 Dormant Sites (Sand and Gravel)

Quarry	Location and Grid Reference	Expiry Date for Extraction	Designations
Page Bank	Byers Green, Wear Valley	21/02/2042	
Roger Hill	Derwent Bridge Wear Valley	21/02/2042	
Wolsingham	Wear Valley	21/02/2042	

xxix At Thrislington Quarry some basal permian sand is blended with limestone fines to produce a Midas product which is similar to a concreting sand.

Table A.11 Interim Development Order Sites (Sand and Gravel)

Quarry	Location and Grid Reference	Expiry Date for Extraction	Designations
Gypsy Lane Quarry ⁽¹⁾	Nunstainton East 313295	21/02/2042	

1. Gypsy Lane - One extant planning permission exists at this quarry. This is an Interim Development Order (IDO) permission and no working of the site can take place until there has been a determination of new conditions by the Minerals Planning Authority under the requirements of the Planning and Compensation Act 1991.

Northumberland

Table A.12 Sites with planning permission for crushed rock extraction in Northumberland

Quarry	Location and grid reference	Mineral Planning Authority	Operator	Mineral	Planning status on 31 December 2020	Expiry date for extraction	Relevant environmental designations
Barrasford Quarry	Barrasford NY 913 743	Northumberland County Council	Tarmac	Igneous rock and Carboniferous limestone	Active	31/12/2038	
Belford (Easington) Quarry	Belford NU 130 343	Northumberland County Council	Tarmac	Igneous rock	Inactive	31/12/2031	
Cocklaw Quarry	Wall NZ 931 701	Northumberland County Council	Tynedale Roadstone	Carboniferous limestone	Inactive (yet to commence)	21/02/2042	
Cragmill Quarry	Belford NY 108 346	Northumberland County Council	CEMEX	Igneous rock	Active	22/08/2040	
Divethill Quarry	Great Bavington NY 978 795	Northumberland County Council	CEMEX	Igneous rock	Active	31/12/2021	
Harden Quarry	Biddlestone NY 959 086	Northumberland National Park Authority	Tarmac	Igneous rock	Active	31/10/2029	National Park
Howick Quarry	Longhoughton NU 238 169	Northumberland County Council	Tarmac	Igneous rock	Active	21/12/2020	
Keepersshield Quarry	Humshaugh NY 895 727	Northumberland County Council	Hanson	Igneous rock and Carboniferous limestone	Active	21/02/2042	SSSI
Longhoughton (Ratcheugh) Quarry	Longhoughton NU 232 153	Northumberland County Council	KW Purvis	Igneous rock	Active	21/02/2042	SSSI
Mootlaw Quarry	Matfen NZ 018 755	Northumberland County Council	North Tyne Roadstone	Carboniferous limestone	Inactive	31/12/2025	
Swinburne Quarry	Colwell NZ 021 791	Northumberland County Council	Hanson	Igneous rock	Inactive	31/12/2036	

Table A.13 'Dormant' quarries (as defined in the Environment Act 1995) for crushed rock extraction in Northumberland

Site	Location and grid reference	Mineral	Relevant environmental designations	Comments on potential future supply
Ayle Quarry	Alston NY 729 499	Carboniferous limestone	-	Not known
Barmoor Mill Quarry	Lowick NT 992 405	Carboniferous limestone	-	Not known
Burton Quarry	Bamburgh NU 179 327	Carboniferous limestone	-	Not known
Crindledykes Quarry	Bardon Mill NY 780 671	Carboniferous limestone	National Park, SSSI	Not known
Earle Quarry	Wooler NT 988 270	Igneous rock	-	Not known
Fell End Quarry	Slaggyford NY 666 516	Carboniferous limestone	AONB	Not known
Fontburn Quarry	Netherwitton NZ 047 941	Igneous rock	-	Not known
Kyloe Quarry	Lowick NU 042 406	Igneous rock	-	Not known
Holburn Quarry	Holburn NU 050 377	Igneous rock	-	Not known
Littlemill West Quarry	Howick NU 227 173	Carboniferous limestone	-	Not known
Wards Hill Quarry	Longframlington NZ 079 966	Igneous rock	-	Not known

Sand and gravel**Table A.14 Quarries with planning permission for sand and gravel extraction for aggregate uses in Northumberland**

Quarry	Location and grid reference	Mineral Planning Authority	Mineral	Operator	Planning status on 31 December 2020	Expiry date for extraction	Relevant environmental designations
Ebchester Quarry ⁽¹⁾	Ebchester NZ 098 547	Northumberland County Council	Sand and gravel	Tarmac	Inactive	31/12/2023	Green Belt
Haughton Strother Quarry	Humshaugh NY 978 795	Northumberland County Council	Sand and gravel	W & M Thompson (Quarries)	Active	31/08/2022	
Hedgeley Quarry	Powburn NZ 068 180	Northumberland County Council	Sand and gravel	North East Concrete	Closed. Reserves exhausted.	31/12/2018	

Quarry	Location and grid reference	Mineral Planning Authority	Mineral	Operator	Planning status on 31 December 2020	Expiry date for extraction	Relevant environmental designations
Hemscott Hill Beach	Widdrington NZ 931 703	Northumberland County Council	Sand	W Bell	Active	31/12/2020	SSSI
Lanton (Cheviot) Quarry	Milfield NT 954 311	Northumberland County Council	Sand and gravel	Tarmac	Active	31/12/2028	
Merryshields Quarry	Stocksfield NZ 063 617	Northumberland County Council	Sand and gravel	W & M Thompson (Quarries)	Inactive	21/02/2042	Green Belt
Wooperton Quarry	Wooperton NU 048 204	Northumberland County Council	Sand and gravel	North East Concrete	Active	31/12/2032	

1. Ebchester Quarry is a combination of two sites, Broadoak and Hollings Hill, which have separate planning permissions but have been operated as a single unit by the operator. Extraction at Hollings Hill was completed in 2013. The remaining reserves of sand and gravel are contained within the Broadoak part of the site.

Table A.15 'Dormant' quarries (as defined in the Environment Act 1995) for sand and gravel extraction in Northumberland

Site	Location and grid reference	Mineral	Designations	Comments on potential future supply
Blakemoor Burn Beach	Cresswell NZ 287 944	Sand	SSSI	Not known
Blakemoor Sand Pit	Cresswell NZ 228 940	Sand		Not known
Cresswell Sand Pit	Cresswell NZ 291 923	Sand		Not known
Hauxley Links	Low Hauxley NU 280 038	Sand		Not known
The Hermitage	Hexham NY 934 653	Sand and gravel		Not known
Mouldshaugh Farm	Felton NU 203 008	Sand and gravel		Not known
Red Barns Links	Bamburgh NU 193 347	Sand	AONB, SSSI, SPA/SAC	Not known
Scremerston Sand Pit	Scremerston NU 036 476	Sand and gravel	AONB, SSSI, SAC/SPA	Not known
Tyne Green	Hexham NZ 932 651	Sand and gravel		Not known
Yeaverling Quarry	Kirknewton NT 924 305	Sand and gravel		Not known

Tyne and Wear

Table A.16 Quarries with planning permission for crushed rock and sand and gravel extraction in Tyne & Wear

Mineral Planning Authority	Quarry	Location and grid reference	Operator	Planning Status in 2020	Expiry date for extraction ⁽¹⁾
Sunderland	Eppleton Quarry	Hetton-le-Hole NZ 260 482	Eppleton Quarry Products	Active	15/10/2040 ⁽¹⁾
South Tyneside	Marsden Quarry	Whitburn NZ 406 642	O'Brien Aggregate Marsden Ltd ⁽²⁾	Active	2027

1. On 20 October 2015 planning permission was granted to extend Eppleton Quarry. This permission allows the extraction of additional quantities of sand and limestone with the importation of soils for restoration.
2. O'Brien Aggregate Marsden Ltd acquired Marsden Quarry in October 2018.

A.13 Note: It is understood that permitted reserves were included in the North East Region Aggregates Working Party Annual Monitoring Report 2010 at Blaydon Quarry and at Crawcrook Quarry. However, more recent information provided by Gateshead Council in 2012 indicates that extraction at Blaydon Quarry has now finished. In terms of Crawcrook Quarry, sand and gravel extraction has been ongoing at Crawcrook Quarry since the 1940's when the site was given consent under the Interim Development Order Consents (IDO) in 1947. However this permission was not registered under the Planning and Compensation Act 1991 and has effectively lapsed. Planning permission as an extension to this IDO consent was granted in 1950 for sand and gravel extraction (ref : CA4551). The Council until recently took the view that the current sand and gravel extraction on the site was working under this consent. Following the Environment Act 1995 the Council took the view that it was not appropriate for the operators of Crawcrook Quarry to submit an application for the review of the old minerals planning conditions, as the operators were working outside of the application site boundary along the western edge of the site. The Council considered it was more appropriate to submit a consolidating application that would regularise the current operations and various temporary permissions that had been granted on the site for buildings and mineral processing plant. It was intended that this approach would result in everything being reviewed, updated and controlled under one single planning application/ planning permission.

A.14 A consolidating planning application (ref: 1133/97) was submitted in 1997 for mineral extraction, waste disposal and reclamation at Crawcrook Quarry. This planning application is still undetermined 15 years later due to several changes in ownership and insufficient information to assess the application. After several changes of ownership over the past decade SITA and Cemex are now on the site landfill and quarrying operators. These two companies submitted a joint re-edited environmental statement (ES) to Gateshead Council in March 2010. WA Fairhurst reviewed this updated ES on behalf of Gateshead Council. Fairhurst considered that some of the chapters of the ES are difficult to follow and do not fully accord with the EIA Regs. In addition some chapters lack sufficient details to allow Gateshead Council and statutory consultees to fully understand if there are significant effects as a result of the proposed development. In 2010 Gateshead received a legal opinion from a Barrister on the status of the planning permissions and planning applications at Crawcrook Quarry. This legal opinion advises that Cemex can no longer work the site / extract sand and gravel as the old 1950's planning permission has legally ceased to have effect except for the restoration and aftercare conditions.

Table A.17 'Dormant' quarries (as defined in the Environment Act 1995) for sand and gravel extraction in Tyne & Wear

Mineral Planning Authority	Quarry	Location and grid reference	Expiry date for extraction	Relevant environmental designations	Comments on potential future supply
Gateshead	Bog Wood	Blaydon NZ 16016 62217	21/02/2042		Not known
	Land west of Barlow Lane	Blaydon NZ 14894 61652	21/02/2042		Not known

A.15 Bog Wood lies to the south west of Blaydon Quarry on the southern side of Longridge Road. Bog Wood benefits from the following planning permissions for mineral extraction. CA 2633 (1950) CA6271 (1951) supersedes CA2633 (1950) CA 7073 (1952). Land West of Barlow Lane - This site lies adjacent to western boundary of Burnhills Quarry. This site benefits from the following planning permissions for mineral extraction: CA 2633 (1950) CA 6271 (1951) supersedes CA2633 (1950). At the time of the review, the sites were both in the ownership of Tilcon Ltd. It was indicated that reserves of sand and gravel still remained to be worked at both of these sites. Tilcon Ltd considered that both sites formed part of Burnhills Quarry a single "active" site. However after due consideration the MPA determined the two as separate dormant sites. In 2019 information provided by a landowner to the Inspector examining the Making Spaces for Growing Places Local Plan document indicated that the Land at Bog Wood site had already been partially extracted in 1974.

Appendix - B Secondary and recycled aggregate facilities

B.1 This appendix provides details of all permanent secondary and recycled aggregate facilities in County Durham, Northumberland and Tyne & Wear. In addition it should be noted that it is understood that within the North East mobile facilities make a significant potential to the production of recycled aggregates at brown field redevelopment sites.

County Durham

B.2 County Durham contains eight fixed recycled and secondary aggregate sites. Details of these sites are shown in Table B1. It is also understood that some recycled aggregates are also produced at other existing waste management sites.

Table B.1 Secondary and Recycled Aggregates Facilities in County Durham

Site Name	Location	Operator
Bishop Middleham Quarry	Bishop Middleham	W&M Thomson
Aycliffe Quarry	Aycliffe	Stonegrave Aggregates
Thrislington Quarry	Cornforth	Tarmac
Old Quarrington Quarry	Bowburn	Tarmac
Constantine Farm	Crook	W Marley
Old Brickworks	Tanfield	Ken Thomas
Heights Quarry	Westgate	Aggregate Industries
Hulands Quarry	Near Bowes	Aggregate Industries
Dean and Chapter Waste Recycling	Ferryhill	Bishop Middleham Plant and Recycling Ltd
Esh Construction Recycling	Durham	Esh Construction Ltd
Shaw Bank Waste Transfer Station	Barnard Castle	Francis & Richard Daniel Jackson
Westline Transfer Station	Birtley	Remondis

Northumberland

B.3 The known fixed recycled and secondary aggregate sites in Northumberland are shown in the table below. Materials that recycled aggregates are produced from include construction and demolition wastes, road planings and power station ash from Lynemouth Power Station. In addition it is understood that within Northumberland mobile facilities make a significant potential to the production of recycled aggregates at construction and demolition sites.

Table B.2 Secondary and recycled aggregates facilities in Northumberland

Site Name	Location	Operator
Barrington Industrial Estate	Bedlington	Remondis
Thornbrough Quarry	Corbridge	W & M Thompson

Site Name	Location	Operator
Clark Homes	Lynemouth	Clark Homes Ltd
Howford Lane	Acomb	Howford Recycling Ltd
West Sleekburn Industrial Estate	Bedlington	James Moscrop/ Moscrop Brothers
Coopies Lane	Morpeth	Clark Homes Ltd
Old Stone Road	Cramlington	East Cramlington Recycled Aggregates Ltd
Powburn Bridges Depot	Powburn	Northumberland County Council
Linton Industrial Estate	Linton	R Thornton and Co Ltd
Ennerdale Road	Blyth	S A Waste and Groundworks Ltd
Park View	Pegswood	Sanders Plant and Waste Management Ltd
Lynemouth Power Station	Lynemouth	Lynemouth Power
West Sleekburn Industrial Estate	Bedlington	HFF Civil Engineering
Linton Transfer Station	Linton	Thornton
Longhoughton (Ratcleugh) Quarry	Longhoughton	Purvis

Tyne and Wear

B.4 There are seven known fixed recycled and secondary aggregate sites in Tyne and Wear. Details of these sites are shown in Table B.3.

Table B.3 Recycled and secondary aggregate sites in Tyne and Wear

Site Name	Location	Operator
Eppleton Quarry	Hetton le Hole, Sunderland	Eppleton Quarry Products
5b Freezemore Road	Houghton le Spring, Sunderland	Grab and Deliver Ltd
Factory Road	Blaydon, Gateshead	Trojan Skips Ltd
Hadrian Yard Central	Wallsend, North Tyneside	Biffa Waste Services Ltd
Hetton Moor Farm Quarry	Hetton le Hole, Sunderland	Miss Janette Husband
Monument Park	Washington, Sunderland	Veolia ES (UK) Ltd
Sunderland Recycling Centre	Washington, Sunderland	Hanson Building Products
Thompson Waste	Hendon, Sunderland	Thompson Waste Ltd
Bells Close Industrial Estate	North Shields, North Tyneside	Trojan Skips Ltd
Unit 15, The Yard	North Shields, North Tyneside	N W H Waste Services Ltd
Hudson Dock	Sunderland	Northumbrian Roads

Site Name	Location	Operator
Marsden Quarry	Whitburn, South Tyneside	O'Brien Aggregates
Longshanks Lane	Birtley, Gateshead	North East Concrete
Newburn	Newburn, Newcastle upon Tyne	MGL Group
Springwell Quarry	Washington, Sunderland	W & M Thompson
Stephenson Street	Willington Quay, North Tyneside	G O'Brien

Appendix - C Mineral transport and processing infrastructure

C.1 This appendix provides details of aggregates transport and processing infrastructure in County Durham, Northumberland and Tyne and Wear.

County Durham

C.2 In County Durham there is one port at Seaham which is capable of handling the importation and exportation of aggregates. It is understood that while the Port of Seaham has been used in the past to export limited quantities of coal, no minerals including aggregates are either imported or exported.

C.3 Thrislington Quarry West is the only quarry in County Durham served by a railhead. In addition expired Policy M39 of the County Durham Minerals Local Plan (December 2000) sought to protect rail routes and alignments which were considered to have the potential to transport minerals by rail. An updated list of rail routes and alignments which could potentially be used to transport minerals by rail are listed in Table C1. These sites are now safeguarded by Policy 48 of the County Durham Plan.

Table C.1 Infrastructure associated with minerals transportation

Ports	Railheads	Rail Alignments (with potential to transport minerals)
<ul style="list-style-type: none"> Port of Seaham 	<ul style="list-style-type: none"> Thrislington Quarry Ferryhill Station 	<ul style="list-style-type: none"> Thrislington rail line connecting with East Coast Mainline Weardale Railway Line Ferryhill- Cornforth- Coxhoe Quarry Alignment Leamside Line

C.4 Details of all known mineral processing infrastructure relating to aggregate minerals and mineral extracted at aggregate quarries including sites for concrete batching and the manufacture of concrete products and coated materials are listed in Table C2 and C3.

Table C.2 Coating plants and kilns

Coating plant	Kiln for the production of calcined Material
<ul style="list-style-type: none"> Force Garth Quarry Heights Quarry Hulands Quarry Coxhoe Quarry 	<ul style="list-style-type: none"> Thrislington Quarry (inactive)

Table C.3 Concrete plants in County Durham

Site	Location	Operator
Consett Plant	Main Street, Crookhall, Consett, Durham, DH8 7NE	Cemex Readymix
Durham Plant	Littleburn Industrial Estate, Langley Moor, Durham, DH7 8HH	Cemex Readymix

Site	Location	Operator
Newton Aycliffe Plant	Behind BSC, Off Cumbie Way, Newton Aycliffe, Durham, DL6 6YA	Cemex Readymix
Ferryhill	Thrislington Quarry, West Cornforth, Ferry Hill, DL17 9EY	Tarmac Ready Mix Concrete
Crime Rigg Quarry	Durham Concrete Plant, Crime Rigg Quarry, Shadforth, Sherburn Hill, Durham	Breedon
Durham	Dragonville Industrial Estate, Rennys Lane, Durham, DH1 2RS	Breedon
Bishop Auckland	Romanway Industrial Estate, Tindale Crescent, Bishop Auckland	Breedon
Coxhoe	Coxhoe Quarry, off Station Road, Raisby Hill, Coxhoe	Breedon

Northumberland

Wharves for the importation of aggregate minerals

C.5 In Northumberland aggregate minerals are currently imported via the Port of Blyth. Sand and gravel is imported by Breedon to predominantly supply a concrete batching facility at Battleship Wharf and crushed rock is imported by Aggregate Industries (typically from the Glensanda 'super' quarry on the west coast of Scotland which is also operated by this company) to predominantly supply a concrete products manufacturing facility near West Sleekburn although this is more intermittent.

C.6 The Port of Blyth is used for the export of crushed rock aggregate from Harden Quarry in the Northumberland National Park and has also been used to transport crushed rock aggregate from Divethill Quarry to a wharf at Ipswich in Suffolk (although it is understood that these movements have not happened since 2012). The port at Berwick-upon-Tweed is also capable of handling the importation and exportation of aggregate minerals but this activity is not currently being carried out there.

Table C.4 Wharves for the importation of aggregate minerals in Northumberland

Site	Location and Grid Reference	Operator	Mineral	Status in 2018
Port of Blyth (Battleship Wharf)	Cambois, Blyth, NE24 1SD (NZ 309 827)	Aggregate Industries and Breedon	Crushed rock (Aggregate Industries) and sand and gravel (Breedon)	Active
Port of Berwick (Tweed Docks)	Dock Road, Tweedmouth, Berwick-upon-Tweed, TD15 2AB (NT 996 525)	-	-	Inactive (Not currently used for the shipment of aggregates)

Railheads for the transportation of aggregate minerals

C.7 Belford (Easington) Quarry is the only quarry in Northumberland served by a railhead. This quarry is currently inactive and the associated railhead, which is accessed from the East Coast Main Line, is not currently in use.

Table C.5 Railheads for the transportation of aggregate minerals in Northumberland

Site	Location and Grid Reference	Operator	Mineral	Status in 2018
Railhead at Belford (Easington) Quarry	Belford (NU 130 343)	Tarmac	Crushed rock	Inactive

Facilities for the manufacture of concrete and coated materials

C.8 Details of concrete making facilities and coated roadstone facilities in Northumberland are shown in the tables below. The current operational coating plants in Northumberland are located at quarry sites while the concrete facilities are typically located as standalone facilities on industrial estates or in locations that are accessible from the main transport network. All of the facilities listed are located outside of the Northumberland National Park.

Table C.6 Facilities for the manufacture of concrete in Northumberland

Site	Location and Grid Reference	Operator	Comments
Alnwick Plant	Old Gasworks, South Road, Alnwick, NE66 2PE (NU 196 124)	CEMEX	Stand alone facility
Barrington Road	Barrington Road, Bedlington, NE22 7AL (NZ 272 832)	Breedon	Stand alone facility within industrial area
Battleship Wharf	Battleship Wharf, Blyth, NE24 1SD (NZ 309 827)	Breedon	Stand alone facility within port area
Belford South Farm	South Farm, Belford, NE70 7DP (NU 114 332)	Gilbert Birdsall	Stand alone facility
Haltwhistle	Townfoot, Haltwhistle, NE49 0ND (NY 711 639)	Ritemix	Stand alone facility within industrial area
Howford Quarry	Acomb, Hexham, NE46 4RY (NY 919 663)	Hanson	Stand alone facility located within a former quarry
Lynemouth	Lynfield Park, Ashington, NE62 9YH (NZ 295 895)	H-Mix	Stand alone facility
Red Row	Red Row, Bedlington, NE22 7AL (NZ 272 833)	CEMEX	Stand alone facility within industrial area
West Sleekburn	Brock Lane, West Sleekburn, Bedlington NE22 7BY (NZ 285 841)	Aggregate Industries	Stand alone facility within industrial area

Table C.7 Facilities for the manufacture of coated materials in Northumberland

Site	Location	Operator	Comments
Barrasford Quarry	Barrasford, Hexham, NE48 4AP (NY 913 743)	Tarmac	Within boundary of an active quarry
Cragmill Quarry	Belford, NE70 7EZ (NU 108 346)	CEMEX	Within boundary of an active quarry

Site	Location	Operator	Comments
Divethill Quarry	Great Bavington, NE19 2BG (NY 978 795)	CEMEX	Within boundary of an active quarry
Howick Quarry	Littlehoughton, Alnwick, NE66 3JY (NU 238 169)	Tarmac	Within boundary of an active quarry
Keepersfield Quarry	Humshaugh, Hexham, NE46 4BB (NY 895 727)	Hanson	Within boundary of an active quarry
Swinburne Quarry	Barrasford, Hexham, NE48 4DN (NZ 021 791)	Hanson	Within boundary of an inactive quarry

Table C.8 Sites for the manufacture of concrete products in Northumberland

Site	Location	Operator	Comments
Lynx Precast	Lynefield Park, Ashington, NE63 9YH (NZ 294 897)	Lynx Precast	Stand alone facility within industrial area
Littlehoughton	Littlehoughton, Alnwick, NE66 3JX (NU 233 169)	FP McCann	Adjacent to Howick Quarry
West Sleekburn	Brock Lane, West Sleekburn, Bedlington, NE22 7BY (NZ 285 841)	Aggregate Industries	Stand alone facility within industrial area

Tyne and Wear

C.9 Within Tyne and Wear there are no active rail heads or rail links that are used for the transport of aggregate minerals. Potential exists for the use of the former Wardley Colliery Disposal Point in South Tyneside for the use as a railhead including the distribution by rail of minerals. In August 2012 a planning application was made by Harworth Estates Ltd for the change of use of the former Wardley Colliery Disposal Point (Follingsby Lane, West Boldon) including the demolition of mechanised rail loading bunker and associated structures, retention of rail loading head alteration/extension of rail loading pad to allow use of the site as a rail head for transportation and storage of coal, minerals and other products. South Tyneside Council are minded to approve this planning application subject to the completion of a legal agreement.

C.10 Within Tyne and Wear there are currently six identified wharf sites. Five of these sites are located on the River Tyne with the sixth at the Port of Sunderland.

Table C.9 Wharves for the importation of aggregate minerals in Tyne and Wear

Mineral Planning Authority	Site	Location and Grid Reference	Operator	Mineral	Planning Status in 2020
Gateshead	Gateshead Wharf	Gateshead NZ 306 609	Tarmac	Sand and gravel	Inactive
North Tyneside	Hayhole Road Wharf	North Shields NZ 344 661	Northumbrian Roads / Stema Shipping	Sand and gravel	Active

Mineral Planning Authority	Site	Location and Grid Reference	Operator	Mineral	Planning Status in 2020
	Howdon Wharf	North Shields NZ 360 482	Tarmac	Sand and gravel	Inactive
South Tyneside	Jarrow Wharf	South Shields NZ 335 657	CEMEX	Sand and gravel	Active
	Port of Tyne	South Shields NZ 350 655	Aggregate Industries	Crushed rock	Active
Sunderland	Port of Sunderland (Greenwells Quay Wharf)	Sunderland NZ 409 579	Northumbrian Roads	Sand and gravel and crushed rock	Inactive

C.11 Details of the concrete batching and coating plants in Tyne and Wear are provided in Table C.9 below.

Table C.10 Concrete batching (CB) and coating plants (CP) in Tyne and Wear

Mineral Planning Authority	Site	Location	Operator
Gateshead	Crawcrook ^(CB)	Crawcrook Lane, Ryton, NE40 3UL	CEMEX
	Derwenthaugh ^(CB)	Derwenthaugh Industrial Estate, Swalwell, NE16 3BJ	Marshalls
	Hawks Road ^(CB)	Hawks Road, Gateshead, NE8 3BN	Hanson
	Longshanks Road ^(CB,CP)	Longshanks Road, Birtley, DH3 1QZ	North East Concrete
	Nest Road ^(CB)	Nest Road, Felling, Gateshead, NE10 0EY	Aggregate Industries
	South Shore Road ^(CB)	South Shore Road, Gateshead, NE8 3AE	Tarmac
Newcastle	Brunswick Plant (CEMEX) ^(CB)	Brunswick Industrial Estate, Brunswick, Newcastle-upon-Tyne, NE13 7BA	CEMEX
	Brunswick Plant (Tarmac) ^(CB)	Brunswick Industrial Estate, Brunswick, Newcastle-upon-Tyne, NE13 7BA	Tarmac

Mineral Planning Authority	Site	Location	Operator
	Newburn ^(CB)	High Street, Newburn, Newcastle upon Tyne, NE15 8LN	North East Concrete
	Newburn Haugh ^(CP)	Riverside Court, Newburn Haugh Industrial Estate, Newcastle upon Tyne, NE15 8SG	Tynedale Roadstone
	Paradise Works ^(CP)	Paradise Works, Scotswood Road, Newcastle upon Tyne, NE15 6BZ	Jobling Purser
	Newcastle Plant (Pottery Lane) ^(CB)	Pottery Lane, Newcastle upon Tyne, NE1 3SQ	CEMEX
	Scotswood Plant ^(CB)	Low Yard, Scotswood Road, Newcastle upon Tyne, NE15 6XA	Breedon
North Tyneside	Howdon ^(CB)	Willington Quay, Wallsend, NE28 6UR	Breedon
South Tyneside	South Shields Plant ^(CB)	Wilson's Yard, Jarrow Road, South Shields, NE34 9PL	CEMEX
	Tyne Dock ^(CB)	Tyne Dock, South Shields, NE34 9PL	Breedon
Sunderland	Sunderland ^(CB)	Trimdon Street, Sunderland, SR4 6DW	Tarmac
	Houghton le Spring ^(CB)	Market Place Industrial Estate, Market Place, Houghton le Spring, DH5 8AN	Breedon
	Wilden Road ^(CB)	Wilden Road, Washington, NE38 8QB	Hanson
	Low Southwick ^(CB)	Pottery Road, Low Southwick, Sunderland, SR5 2BP	CEMEX
	Springwell Quarry ^(CB)	Springwell Road, Gateshead, NE9 7SQ	Tyneside Minimix

Appendix - D Local Plans

D.1 This appendix provides details of existing and emerging Local Plans which contain allocations for aggregate mineral working.

County Durham

D.2 The County Durham Plan (CDP) (October 2020) allocates two sites for the extraction of primary aggregates to help meet identified need to 2035. These allocations are summarised in the table below.

Table D.1 Summary of sites allocated for aggregates extraction in the County Durham Plan (October 2020)

Allocation	Mineral Resource	Estimated Reserve	Status and Comments on future supply
Heights Quarry (Western Extension)	Carboniferous Limestone	3.7 million tonnes	Planning permission granted 6 June 2019. Extension now being worked.
Hulands Quarry (Eastern Extension)	Carboniferous Limestone	8.2 million tonnes	Planning application under preparation.

D.3 The County Council commenced work to prepare its Minerals and Waste Policies and Allocations document (M&WDPD) in January 2021 and a call for new minerals and waste sites was conducted between January and February 2021. Through the preparation of the M&WDPD allocations for further mineral working could be made.

D.4 Consultation on the Draft Minerals and Waste Policies and Allocations document under Regulation 18 commenced in September 2021. In addition the Council also published a detailed site assessment report setting out details of industry proposals for new or extended minerals and waste sites including a number which related to further aggregate working. Details of the intended timetable for the M&WDPD will be set out in a revised Local Development Scheme in early 2022.

Northumberland

D.5 The Northumberland Minerals Local Plan (March 2000) identified a number of allocations for the extraction of primary aggregates to meet the need identified in the period to 2006. Three areas were allocated for crushed rock provision under Policy A6 and five areas were allocated for sand and gravel provision under Policy A4. Both Policy A4 and Policy A6 are 'saved' policies. These allocations are summarised in the table below.

Table D.2 Summary of sites allocated for aggregates extraction in the Northumberland Minerals Local Plan (adopted March 2000)

Allocation	Mineral resource	Estimated reserve	Status and comments on potential future supply
Cragmill (extension)	Igneous rock	8 to 10 million tonnes	Planning permission granted on 1 December 2015 for the extraction of 6.3 million tonnes with an average annual output of 150,000 tonnes per annum (maximum 200,000 tonnes per annum and low of 75,000 tonnes per annum).

Allocation	Mineral resource	Estimated reserve	Status and comments on potential future supply
Divethill (extension)	Igneous rock	1.6 million tonnes	Site has planning permission and is included in the current landbank.
Swinburne (extension)	Igneous rock	5 million tonnes	Not developed. No planning application received.
Marley Knowe	Sand and gravel	2.75 million tonnes	Not developed. No planning application received.
Farnley Haugh (extension)	Sand and gravel	400,000 tonnes	Planning application granted. Extraction now complete and site restored.
Houghton Strother	Sand and gravel	1.9 million tonnes	Planning application granted. Site is active.
Merryshields	Sand and gravel	500,000 tonnes	Not developed. No planning application received.
Plenmeller (extension)	Sand and gravel	1.5 million tonnes	Not developed. No planning application received.

Emerging Northumberland Local Plan

D.6 The Northumberland Local Plan was submitted to the Secretary of State for Housing, Communities and Local Government in May 2019 and is currently undergoing examination. Once adopted the Northumberland Local Plan will replace the saved policies of the Northumberland Minerals Local Plan (2000) as well as all of the previous District and County Council Local Plan and Core Strategy documents.

D.7 The emerging plan proposes site allocations for both crushed rock and sand and gravel to ensure supply is maintained over the plan period to 2036 and also to ensure landbanks are maintained at the end of the plan period.

Tyne & Wear

D.8 There are no saved allocations for aggregate mineral working in any of the existing Development Plan documents of the Tyne and Wear authorities.

Emerging Local Plans

D.9 There are no allocations for aggregate mineral working in any of the emerging Development Plan documents of the Tyne and Wear authorities.