County Durham Local Aggregate Assessment (2022 Sales & Reserves Data)

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Durham County Council, December 2023.

Contents

Executive Summary

ES1 A Local Aggregate Assessment (LAA) is an annual assessment of the demand for and supply of aggregates in a mineral planning authority's area. This LAA for the 2022 calendar year has been prepared by Durham County Council. It is an update of the LAA for the 2021 calendar year which was finalised in April 2023.

ES2 The LAA monitors the provision of aggregates and likely future demands and provides evidence for both the implementation of the County Durham Plan and preparation of the Council's Minerals and Waste Policies and Allocations document. It contains forecasts for future working over the remaining thirteen year period of the County Durham Plan (to 2035) and the standard 16 year LAA forecasting period (to 2038). 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 LAA area

ES3 The geology of the County gives rise to the following aggregate resources:

- Carboniferous limestone – Found in the west of the County along the sides of Weardale and to the south of Barnard Castle along the alignment of the A66.
- Permian magnesian limestone – This resource underlies the majority of the east of County Durham.
- Igneous rock – This resource outcrops in Upper Teesdale.
- Sand and gravel (superficial deposits) – Fluvial, glacial and beach and blown sand deposits are found across the County, including in the major river valleys of the River Wear and River Tees.
- Sand (bedrock deposits) – Basal Permian sand outcrops intermittently along the magnesian limestone escarpment and lies below the Permian magnesian limestone where is it accessible following working of the overlying limestone.

ES4 No marine aggregates are landed within the County. However, marine dredged sand and gravel landed within the North East are consumed within County Durham. Quantities of recycled aggregates also arise in the County.

Demand indicators

ES5 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. Consideration has also been had to the published National and Regional Aggregate Supply Guidelines which were published in June 2009 which the Council considers is now in urgent need for review.

ES6 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 effect of the coronavirus pandemic on sales in 2020 has also been a consideration and is discussed.

Balance between supply and demand

ES7 A quantitative assessment of the balance between reserves and the calculated demand is set out below. Demand has been calculated using the provision set out in this LAA (Annual Provision Rate) and this annual figure has been extrapolated forward from the beginning of 2023 for a period of 13 years to align with the end of the County Durham Plan period (which runs to the end of 2035) and the standard 16 year forecasting period (to 2038) which has also been used in previous LAAs. Further details are set out in chapter 6 and 7 for sand and gravel and crushed rock respectively.

Table ES1 Balance between supply and demand (thousand tonnes)

Resource	Reserves 2022	Annual Provision Rate	Demand 2023 to 2035 (13 years) (based on annual provision rate)	Balance Between Demand and Supply 2023 to 2035	Demand 2023 to 2038 (16 years) (based on annual provision rate)	Balance Between Demand and Supply 2023 to 2038
Crushed Rock	87,615	3,180	41,340	+46,275	50,880	+36,735
Sand and Gravel	4,063	548	7,124	-3,061	8,768	-4,705

ES8 The table above shows that in quantitative terms County Durham has sufficient reserves of crushed rock to meet future need from quarries in the long term. Crushed Rock reserves are extensive and as detailed in table ES2 below the County's crushed rock landbank stands at 27.6 years at the end of 2022. Crushed rock reserves are also distributed across a number of quarry's which are well related to the market areas in the North East and have been replenished by a number of new permissions in recent years. Notwithstanding this quantitative position, previous consideration of the composition of the crushed rock landbank by resource type 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 and the second upon which a planning application is pending consideration.

ES9 County Durham's crushed rock quarry's contain significant unrealised productive capacity. This has been demonstrated in the years following the recession, caused by the financial crises of 2008, when the County's crushed rock quarries have been able to successfully respond to increases in demand by increasing sales. Furthermore, the potential for a number of inactive and dormant quarry's to recommence working in future years is good with a number of planning applications

pending consideration. However, this potential will need to be closely monitored as the steady and adequate supply of crushed rock will be dependent upon the continued availability and the working of existing reserves.

ES10 The table above shows that County Durham does not have sufficient reserves of sand and gravel to meet future need in the long term. Sand and Gravel reserves have fallen in recent years and as detailed in table ES2 below the County's sand and gravel landbank stands at 7.4 years at the end of 2022. In accordance with the recommendations set out in previous iterations of the Council's LAA the Council is seeking to allocate further reserves of sand and gravel to meet longer term need through work to prepare its emerging Minerals and Waste Policies and Allocations Document which is now in examination. Two allocations have been made within the Publication Draft Minerals and Waste Policies and Allocations Document which should provide an additional 6,710,000 tonnes of reserves of sand and gravel. Although it is acknowledged that despite these two allocations, further reserves will also be required to maintain productive capacity and sales at either current or similar levels towards the end of the Plan Period. The County Durham Plan together with the Minerals and Waste Policies and Allocations Document (once adopted) will form the development plan for the determination of future planning applications for aggregates working. In particular, CDP Policy 51 (Meeting Future Aggregate Requirement) contains criterion to enable the consideration of non-allocated sites. Specifically, criterion 2a which requires that the need for the proposed additional mineral working can be adequately demonstrated taking into account the council's most up to date published Local Aggregate Assessment.

ES11 Several crushed rock quarries and one sand and gravel quarry in County Durham have been inactive for a number of years, and two crushed rock and three sand and gravel quarries all have end dates before 2038. 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 reserves still remain at the quarry end date of working, are considered positively.

Inter mineral planning authority issues

ES12 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 in 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 LAA area have been identified as:

- Supply of crushed rock and sand and gravel from quarries in County Durham 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.

Dashboard

Table ES2 Dashboard for County Durham (all figures in tonnes)

	Sales in 2021	Sales 2022	Change in sales from the previous year	Ten Year sales average	Three Year Sales average 2019, 2021 and 2022	Annual Provision Rate	Reserves 2022	Landbank (Years)
Sand and Gravel	553,131	554,362	↔	391,000	548,000	548,000	4,063.000	7.4
Crushed Rock	3,220,000	3,063,268	↓	2,890,900	3,180,000	3,180,000	87,615	27.6
Recycled and Secondary Aggregates	111,000	262,000	↑	n/a	n/a	n/a	n/a	n/a
Marine sand and gravel and rock imports landed by sea.	0	0		0	0	n/a	n/a	n/a

ES13 As shown in the table ES2 above, County Durham continues to make a very good contribution to the steady and adequate supply of aggregates in the North East of England.

ES14 Sales of sand and gravel from County Durham are at the highest level in the last ten years and are significantly in excess of that achieved prior to the financial crises of 2008. In particular, sales of sand and gravel have increased since 2018 due to four of the County's five sites being in production and as a result of constraints or lack of production elsewhere in other parts of the North East. This has led to the three year sales average being higher than the ten year sales average. Permitted reserves of sand and gravel have also fallen to a ten year low equivalent to a 7.4 year landbank.

ES15 Sales of crushed rock are at the fourth highest in the last ten years and are now broadly similar to that achieved prior to the financial crises. This has contributed to the three year sales average being higher than the ten year sales average. Significant permitted reserves of crushed rock remain available in both active and inactive sites equivalent to a 27.6 year landbank.

ES16 Sales of recycled and secondary aggregates have significantly increased in 2022.

ES17 No marine sand and gravel has been landed as County Durham does not contain any dedicated wharf sites.

1 Introduction

1.1 To plan for a steady and adequate supply of aggregates the National Planning Policy Framework (NPPF) (September 2023) 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 only and incorporates sales and reserve information for the 2022 calendar year. It is an updated version of the Council's previous LAA which was finalised in April 2023 and which incorporated sales and reserve information for the 2021 calendar year.

2 Background/context

2.1 This section provides background information on the purpose of the LAA, the Managed Aggregates Supply System (MASS) 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 North East Marine Plan was adopted in June 2021[1]; 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:

[1] https://www.gov.uk/government/publications/the-north-east-marine-plans-documents

- 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 potential throughput's from wharves. This analysis should be informed by planning information, the aggregate industry and other bodies; 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 the LAA will provide the evidence base on which decisions could be taken on the scale, and geographical distribution of future aggregates production.

Approach to the Local Aggregate Assessment

2.7 Previous iterations of the LAA have been prepared jointly 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 During 2022, for the first time the 2021 LAAs for Northumberland, County Durham and Tyne and Wear were prepared as separate sub-regional LAAs. Following further discussion it is now intended to continue to prepare separate LAAs for County Durham, Northumberland and Tyne and Wear.

Timescale for the Local Aggregate Assessment

2.8 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. In terms of forecasting periods two time periods have been adopted. A thirteen year period has been used to align with the remaining time periods of the County Durham Plan time period which runs to 2035. In addition, a sixteen year time period is also used, from 2023 to the end of 2038 in line with the time horizon that the national and sub national guidelines for aggregates has covered in the past.

Overview of the data used

2.9 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 reserves of aggregate minerals normally undertaken every four years[2];
- North East Aggregates Working Party (AWP) Annual Aggregates Monitoring Reports and survey results[3];
- Relevant information from planning application documentation;
- Information on 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;
- 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.
- Local Aggregate Assessments prepared by County Council's adjoining County Durham i.e. North Yorkshire, Cumbria and Northumberland and sub-regional LAAs prepared by Council's in Tyne and Wear and the Tees Valley.

Managed Aggregates Supply System

2.10 The 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.

2.11 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.

2.12 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). However, given that the time

[2] 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.
[3] North East Aggregates Working Party Annual Monitoring Reports can be downloaded here: http://www.northumberland.gov.uk/Planning/Planning-policy/Reports.aspx#mineralswastestudies

period of these guidelines has now expired, it is considered that they are now out of date and in urgent need for review.

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

Region	Guidelines for land-won production Sand and Gravel	Guidelines for land-won production Crushed Rock	Assumptions Marine Sand and Gravel	Assumptions Alternative Material	Assumptions 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 and 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.

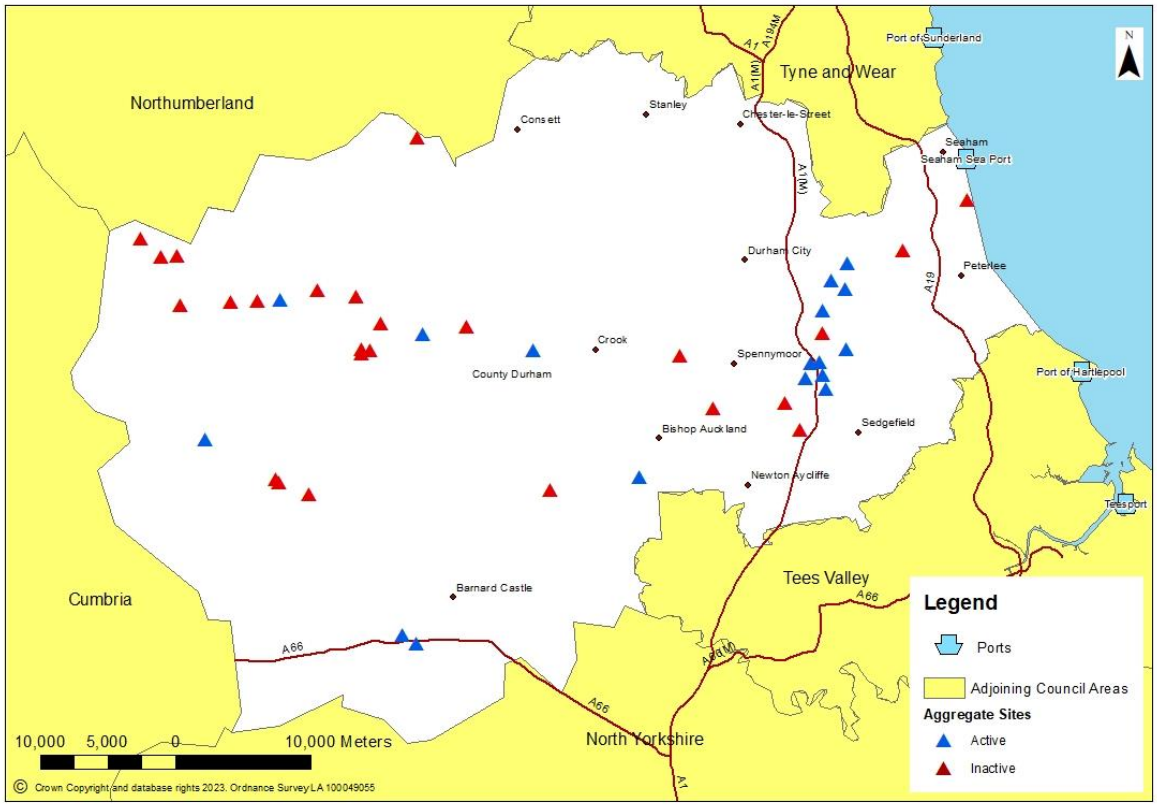
3 Aggregate resources in County Durham

3.1 This section identifies the range and distribution of aggregate resources in County Durham. 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).

3.2 The spatial distribution of mineral resources within County Durham and the location of both active and dormant mineral sites in County Durham (as listed in Appendix A) are shown on Map 1 below.

Map 1 Spatial distribution of mineral sites in County Durham.



Map Note: Active and dormant mineral sites are shown in more detail on the County Durham Plan Policies Map: https://maps.durham.gov.uk/localplan/default.aspxThe geology of County Durham can also be seen on the Mineral Resource Map for County Durham and the Tees Valley which was produced by the British Geological Survey which can be downloaded here: https://www2.bgs.ac.uk/mineralsuk/download/england/durhamMap.pdf

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.

35 Magnesian limestone underlies the majority of east Durham and at its eastern edge forms a bold escarpment running in a north-south direction between Pittington and Ferryhill and then south-westwards, with the escarpment gradually disappearing to the south of Shildon. To the north of Pittington, 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 Pittington 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 Survey (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 distance. 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.

4 Supply and Demand Pressures

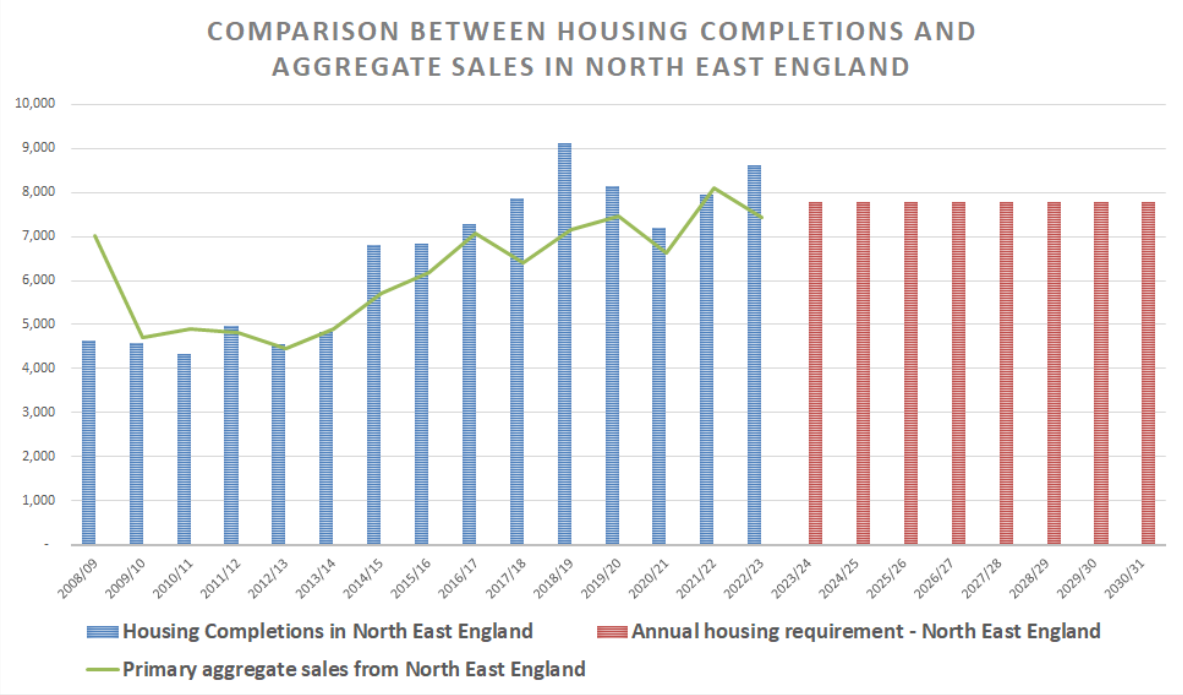
4.1 The NPPF states that mineral planning authorities should plan for a steady and adequate supply of aggregates by preparing an LAA based on a rolling average of 10 years sales data plus other relevant local information. This relevant information can include demand from future housebuilding rates as well as 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.

4.2 This section sets out an analysis of the information that could influence demand and whether housing numbers and large infrastructure projects are consistent with past trends. It is considered that the regional level is most appropriate for consideration of these projects. This section also looks at external factors that may have constricted supply in previous years. It also considers the impact of the Coronavirus Pandemic on sales in 2020 and also considers resource availability in adjoining Council areas.

House building

4.3 A comparison between housing completions in North-East England and sales of primary aggregates from quarries and wharves is shown in Figure 1. The strong correlation illustrates the linear relationship between housing completions and primary aggregate sales in the region.

Figure 1 Comparison Between Housing Completions In North-East England And Sales Of Primary Aggregates From Quarries And Wharves



4.4 It should be recognised that aggregate sales reflect wider demands than house building alone as it is estimated that the construction of new housing makes up around 25% of construction output by value[4]. However it is considered that house building does provide a useful proxy of overall demand and potential changes in demand. This is partly due to the fact house building will impact on demand for associated infrastructure and can provide an indication of wider growth.

4.5 Table 4.1 below provides a summary of figures on estimated future house building requirements in adopted and emerging Local Plans. Net completions in 2022/23 across the North East were 8,600 which reflects a rise on net completions in 2020/21 and 2021/22 both of which were likely effected by the Covid Pandemic and its after effects. Net completions in both of these years being lower than before the Covid Pandemic when net completions were 8,148 in 2019/20 and 9,120 in 2018/19 which had the highest level of net completions since before the financial crises when 8,030 dwellings were completed in 2007/08. At this stage, it is assumed that housing completions will be broadly similar to that achieved in 2018/19 and 2019/20. Should this assumption turn out to be incorrect then the LAA process and conclusions will be reviewed.

Table 4.1 Comparison between local assessment of housing need and housing completions 2020/21 to 2022/23.

Sub region	Local Planning Authority	Current local assessment of housing need in Adopted and emerging Local Plans	Net Annual Completions 2020/21	Net Annual Completions 2021/22	Net Annual Completions 2022/23
Durham	Durham County Council(1)	1,308	1,328	1,670	1,480
Northumberland	Northumberland County Council(2)	885	1,350	1,500	1,550
Tyne and Wear	Newcastle(3)	1,500	1,130	1,150	1,110
	Gateshead(4)	Combined with Newcastle	310	380	320
	Sunderland(5)	745	610	730	900
	South Tyneside(6)	321	170	190	200
	North Tyneside(7)	790	370	520	640
Total - Tyne and Wear		3,356	2,590	2,970	3,170
Tees Valley	Hartlepool(8)	410	160	340	460
	Middlesbrough(9)	410	350	490	600
	Stockton on Tees(10)	655	590	580	490
	Darlington(11)	492	490	410	460

[4] Office for National Statistics.

	Redcar and Cleveland[12]	234	350	380	390
Total - Tees Valley		2,201	1,940	2,200	2,400
Total for the North East		7,750	7,208	7,960	8,600

1.County Durham Plan (Adopted October 2020) 2. Northumberland Local Plan (Adopted March 2022) 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 Consultation Draft Local Plan (June 2022). 7.North Tyneside Local Plan (Adopted 2017) 8. Hartlepool Borough Local Plan (Adopted 2018). Source of net completions data Live tables on housing supply: indicators of new supply – Table 253: permanent dwellings started and completed, by tenure and district.

Major Infrastructure/Construction Projects

4.6 Appendix E provides details of past major infrastructure and construction projects, both within the LAA area and in adjoining areas as well as future planned projects.

4.7 Information on the aggregates required for many of these projects is not readily available which means that resulting demand for aggregate minerals cannot be clearly quantified. Those projects that have taken place in recent years have contributed to overall sales of aggregate minerals from quarries and wharves from County Durham and adjoining areas of the North East. It is considered that any additional demand for aggregates from the future projects identified are unlikely to create significant additional demand for aggregate minerals over and above the levels captured in 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. However it is considered that there could be local implications from major infrastructure projects, such as converting the A1 to dual carriageway in Northumberland which could place additional demand on sites in the north of the county, or the upgrading of the A66 in North Yorkshire, County Durham and Cumbria For example, the upgrading of the A66 could place demands on carboniferous limestone quarries along the A66 in County Durham and in neighbouring areas of North Yorkshire. However, as stated it is expected such demand from this project will be similar to that which has occurred in the recent past through the upgrading of the A1(M) in North Yorkshire over the period 2014 to 2018[5].

Impact of the Coronavirus pandemic

4.8 As a consequence of the restrictions to control 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 aggregates were also temporarily closed during this time. Sales levels of both crushed rock and sand and gravel fell by

[5] Table 0-19: Key Materials estimates ((A66 Northern Trans-Pennine Project TR010062 3.2 Environmental Statement Chapter 11 Material Assets and Waste). The implications for the two schemes (Bowes Bypass and Cross Lanes to Rokeby) in County Durham do not appear to be significant.

between 10% and 16% across nearly all local authorities in the North East during this period, likely as a result of these restrictions.

4.9 Coronavirus restrictions continued sporadically throughout 2021, however these became progressively less restrictive on both aggregate producers and the construction industry. Sales levels of crushed rock and sand and gravel are higher in 2022 than in 2020 across all local authorities and have generally returned to levels that are consistent with years prior to the pandemic.

4.10 In this context, it is considered that 2020 is not representative of demand for aggregates which would have otherwise occurred and therefore should not be included in calculations for forecasting future demand. The effect of coronavirus restrictions on sales figures for 2021 is not considered as profound, therefore it is appropriate to include figures for this year in future predictions.

Resource Availability and Supply Constraints in other parts of the North East of England and adjoining areas

4.11 There is a clear need to consider resource availability and other supply options in considering the relevant level of provision. Consideration has therefore been given to both published LAAs for 2021 and where available emerging LAAs for 2022 in those areas which surround County Durham, see paragraphs 4.12 to 4.45 below.

4.12 County Durham along with Northumberland have both been for many years major suppliers of both crushed rock aggregate and sand and gravel aggregate in the North East region. As can be seen through consideration of information within this LAA, in 2022 quarries in County Durham supplied approximately 50.8% of all land won sand and gravel and approximately 58% of all crushed rock aggregate (excluding that which was landed in wharfs in the North East of England). Sales of both crushed rock and sand gravel from County Durham have increased from a ten year low in 2012 to a ten year high in 2022.

Tyne and Wear Local Aggregate Assessment 2022 Data

4.13 Consideration has been given to the contents of the Tyne and Wear LAA 2021 which is a major centre of demand in the North East along with the Tees Valley conurbation.

4.14 In terms of sand and gravel, paragraph 5.18 of the LAA reports that. ‘Sand is currently only supplied from one quarry within Tyne and Wear (Eppleton Quarry in Sunderland). As at 31 December 2022, it is estimated that 4,930,000 tonnes of reserves remain. Based on a recommended annual provision from Tyne and Wear of 228,000 tonnes, this equates to a landbank of reserves of 21.6 years at 31 December 2022’. Paragraph 5.19 of the LAA provides a quantitative assessment of the balance between supply and demand and explains that by extrapolating the annual provision calculating in the LAA (228,000 tonnes per annum based upon a ten year sales average) over the 15-year period that Tyne and Wear has sufficient reserves of sand and gravel to meet this identified demand over the period to 2037 in overall quantitative terms.

4.15 Paragraph 5.20 of the LAA states that ‘While it is recognised that Eppleton Quarry has the productive capacity to meet the required annual provision and has

planning permission to extract mineral until 2040, 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'. Paragraph 5.21 of the LAA states, '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 in adjoining areas such as County Durham and Northumberland, which already make a significant contribution to supply. 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 reserves in adjoining areas and would benefit the steady and adequate supply of sand and gravel across the Joint LAA area.'

4.16 In addition it is noted that within Tyne and Wear there are a number of wharves where marine dredged sand and gravel is landed and sold for aggregate uses. In 2021, material was landed at Port of Tyne and Jarrow Wharf both in South Tyneside. In 2021 over 350,000 tonnes of marine dredged sand and gravel was landed. Paragraph 5.22 also states, 'In order to ensure the long-term potential for future provision from within Tyne and Wear, the relevant authorities should seek to safeguard economically important sand and gravel resources in their local plans. Furthermore, given the important role that marine dredged sand and gravel plays in supply, existing wharves where material is landed should be safeguarded.'

4.17 In terms of crushed rock, it is clear that quarries within Tyne and Wear may not be able to maintain sales of crushed rock at existing levels throughout the forecasting period of the LAA. Paragraph 6.17 of the LAA indicates that, "As at 31 December 2022 it is estimated that approximately 4,710,000 tonnes of reserves remained to be worked in Tyne and Wear. Based on an annual provision rate in this LAA for Tyne and Wear of 418,000 tonnes, this equates to a landbank of reserves of 11.3 years at 31 December 2022".

4.18 Paragraph 6.19 of the LAA reports that, 'Supply of crushed rock from Tyne and Wear is currently restricted to just two quarries; Eppleton Quarry in Sunderland and Marsden Quarry in South Tyneside. The planning permission for Marsden Quarry in South Tyneside requires extraction to cease by the end of 2027 and it is anticipated that the reserves at this site will be exhausted this date. After this date there will not be sufficient productive capacity to meet the LAA annual provision. This would mean after 2027 Eppleton Quarry would be the only quarry producing crushed rock for aggregate uses within Tyne and Wear. It has an estimated productive capacity of 250,000 tonnes per annum and has planning permission until 2040.' Paragraph 6.20 of the LAA reports that, 'The adopted and emerging Local Plans for the five authorities in Tyne and Wear do not contain any site allocations that would

provide for further provision of crushed rock for aggregate uses to meet this identified shortfall. There are also no relevant planning applications pending that could contribute to meeting this shortfall.'. Paragraph 6.21 of the LAA reports that. 'It is, therefore, recommended that Local Plans and in decisions on planning applications in Tyne and Wear should, in principle, support additional areas for extraction where environmentally acceptable. This is considered necessary to address the shortfall as well as avoiding 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'. In addition it is noted that within Tyne and Wear there are a number of wharves where crushed rock is landed sold for aggregate uses. This includes Whitehill Point Wharf (North Tyneside) and Port of Tyne (South Tyneside) on the River Tyne and the Port of Sunderland. Sales in 2022 were estimated to be approximately 130,000 tonnes. Over the period 2012 to 2022 imports of crushed rock by sea have risen form 73,000 tonnes to approximately 130,000 tonnes with peak imports of 246,000 tonnes in 2016.Paragraph 6.22 states that, 'Imports of crushed rock by sea also has the potential to contribute to meeting demands from Tyne and Wear'.

4.19 Unlike previous years when the LAA was prepared jointly with Northumberland and Durham, this LAA has adopted a methodology of calculating future demand based on ten year sales averages instead of three year sales averages. For sand and gravel a three year average calculation (excluding 2020) would lead to an annual provision rate of 246,700 tonnes per annum whereas a ten year sales average has resulted in an annual provision rate of 228,000 tonnes per annum. For crushed rock a three year average calculation (excluding 2020) would lead to an annual provision rate of 502,300 tonnes per annum whereas a ten year sales average would lead to an annual provision rate of 417,900 tonnes per annum. Given that Tyne and Wear is a major area of demand in the North East these changes in how future demand are calculated will be monitored.

Northumberland Local Aggregate Assessment 2022 Data

4.20 Consideration has been given to the contents of the Northumberland LAA 2021 which is along with County Durham is a major producer of aggregates and supplier into adjoining areas of the North East, specifically into Tyne and Wear.

4.21 Total sales of land won sand and gravel in Northumberland were 271,671 tonnes in 2022, which was the lowest level of sales in the last twenty years and a ten year low compared with sales of 436,000 tonnes in 2016. The Northumberland LAA recognises at paragraph 5.3. that , 'When sales from Northumberland are compared with those from all of North East England (Figure 3), the decrease in sales from Northumberland from 2016 onwards is not consistent with the pattern of sales elsewhere which have been generally increasing over the ten-year period (disregarding 2020 sales which were influenced by the coronavirus pandemic).' Reflecting on the fall of sales at paragraph 5.4 the LAA states, 'It seems unlikely that the decrease in sales in Northumberland is a result of a decrease in the overall demand of sand and gravel for aggregate uses. It is more likely that this reduction in sales is due to a decrease in the number of operational sites and production capacity in Northumberland in recent years, as a number of sites have exhausted their

reserves. For example, extraction ceased at Hedgeley Quarry in early 2018, at Haughton Strother Quarry in early 2021 and at Merryshields Quarry in 2021. Whilst there are remaining reserves in Northumberland at other sites, roughly 50-60% are estimated to be within a site that has been inactive since 2015. Analysis of the remaining active sites operating in Northumberland suggests they are operating at, or near their productive capacity. It is therefore concluded that the steady decrease in sales observed is a result of supply factors rather than a reduction in demand.'

4.22 In terms of the approach to calculating demand for sand and gravel the LAA reports at paragraph 5.14 that, 'In previous iterations of the LAA, it has been considered appropriate to use a three-year sales average to calculate future demand. This is because the ten-year period included a period of depressed sales between 2009 and 2014 as a result of the economic downturn which in turn meant there were lower levels of construction activity in Northumberland and North East England. In comparison, the three-year average was considered to better reflect more recent trends in demand and those likely to be experienced in future years.' Paragraph 5.15 explains that 'recent trends in sales of sand and gravel in Northumberland have not been reflective of general trends in the region nor when extended to look at the national picture and that this is considered to be as a result of restrictions to supply - with all active sites currently working at, or near productive capacity - as opposed to any changes in demand'. 'As a result, the three-year sales average is currently below the ten-year sales average and is not considered to be appropriate for calculating future demand for sand and gravel in Northumberland.'

4.23 Paragraph 5.17 states, 'At 31 December 2022, Northumberland had reserves of sand and gravel for aggregate uses of 3.7 million tonnes. Based on the annual provision rate figure of 346,000 tonnes, this equates to a landbank of reserves of 10.8 years'. Table 12 of the LAA then reports a shortfall in reserves of 1,455,500 tonnes between 2023 and 2037 based upon the annual provision rate of 346,000 tonnes. Paragraph 5.19 then explains that 'While a shortfall in the reserves of sand and gravel in Northumberland to meet the LAA annual provision rate is identified, it is recognised that the Northumberland Local Plan (adopted March 2022) includes three site-specific allocations (see Appendix 7) that would provide additional reserves (6.8 million tonnes) and would provide production capacity to meet the annual provision rate. At the end of 2022 a planning application one of the allocated sites in the Local Plan, which would add 5.8 million tonnes to the landbank if granted planning permission.' Northumberland's LAA for 2021 at paragraph 6.23 also reported that the "remaining two allocations would provide 3.2 million tonnes of reserves but are yet to come forward with planning applications".

4.24 Last year's County Durham LAA reported that on 1 November 2022, Northumberland's Strategic Planning Committee resolved to grant planning permission subject to a legal agreement to a planning application for the extraction of 5.8 million tonnes of allocated sand and gravel at Anick Grange Haugh. The Planning Committee Report explained that this site would be worked over a 25 year period and that approximately 200,000 to 300,000 tonnes of mineral would be extracted from the site each year. It is also understood that the operator of Ebchester Quarry is intending to submit a planning application to extend the duration of working

at this Quarry and that the current reserves (2.3 million tonnes) whose planning permission expires on 31 December 2022 should eventually be available to contribute to the landbank beyond this date at a rate of approximately 150,000 tonnes of mineral each year.

4.25 It is considered that should working commence at Anick Grange Haugh and recommence at Ebchester Quarry, in conjunction with existing active sites in Northumberland (Wooperton Quarry with an anticipated extraction rate of 100,000 tonnes per annum to 2030 in combination with Wooperton Quarry Extension (1 million tonnes) post 2030) and Langton Quarry whose planning permission ends on 31 December 2028 that sand and gravel sales from Northumberland should be able to increase substantially from 2022 levels, thereby ensuring that Northumberland can maintain a steady and adequate supply and contribute to the demand for sand and gravel across the North East. Accordingly, while it is expected that in the short term, sites within County Durham will continue to make a substantial contribution to regional sales of sand and gravel, that sales from County Durham may begin to decrease as additional quarries commence or recommence production in Northumberland. We will monitor our expectations of what should occur in Northumberland through the LAA process and discuss as necessary with Northumberland County Council.

4.26 In terms of land won crushed rock, sales in 2022 were 1.8 million tonnes which represents a decrease in sales when compared to 2021 sales (2,217,000 tonnes) which were a ten year high. In terms of calculating demand for crushed rock the LAA paragraph 6.13 reports that the recommended annual provision rate for crushed rock from Northumberland, based on the three-year sales average (2019, 2021 and 2022). This would provide an annual provision rate of 1,920,000 tonnes per annum.

4.27 Paragraph 6.4 of the Northumberland LAA explains that ‘As at 31 December 2022, reserves were 79.3 million tonnes.’ It also explained that ‘This increase compared to 2021 was due to a planning permission for an extension to Divethill Quarry being granted planning permission and a re-assessment of reserves at some sites. There has been a steady decrease in reserves since 2015 as sales have been higher than the replenishment rate from new planning permissions’. Based on the demand forecast and the recommended annual provision rate for Northumberland this equates to a landbank of reserves of 41.3 years at 31 December 2022.’ Paragraph 6.17 of the Northumberland LAA explains that the Northumberland Local Plan includes five site-specific allocations that would provide for the extraction of additional rock reserves (20.35 million tonnes) and provide further production capacity. On this basis it is clear that through a combination of existing permission and Local Plan allocations that that there are good overall prospects of crushed rock supply being maintained from Northumberland.

Tees Valley Local Aggregate Assessment 2018

4.28 Prior to 2022, the last Tees Valley LAA was published in April 2018 and covered the 2017 calendar year. An updated LAA for 2021 was submitted to the North East Aggregates Working Party containing data for 2021 and this LAA has

been drawn upon in preparing this section. However, to date the updated LAA does not appear to be publicly available.

4.29 No sand and gravel was extracted from quarries in the Tees Valley in 2021. It is also understood that no sales occurred in 2022. This is because there are no longer any reserves. Beach extraction at North Gare ceased in 2012 and planning permission at Stockton Quarry expired in July 2015. Planning permission to extend the operations at Stockton Quarry had previously been sought. The draft updated LAA for the Tees Valley reports that in April 2017, Cemex submitted a Scoping Opinion request for the proposed extraction of 1.78 million tonnes of sand and gravel. However, there have been no further progress since, and it is understood that the applicant is awaiting the outcome of the testing/feasibility work. It also reports that a proposed new site for sand and gravel containing 4.6 million tonnes, located at High Conniscliffe in Darlington Borough, was put forward for consideration as a site allocation, when the Tees Valley Minerals and Waste DPDs were being prepared. It advises that Hanson still has an interest in the site, and there is a significant potential reserve of sand and gravel but no planning application has come forward for this site. It also advises that the possibility that a planning application and/or further representations for inclusion in future Tees Valley Minerals and Waste DPDs cannot be dismissed.

4.30 It is also understood that marine sand and gravel continues to be landed on wharfs on the River Tees. It is understood that nearly 431,000[6] tonnes was landed in 2021, approximately 291,000[(5)] tonnes was landed in 2020 and 355,000 tonnes was landed in 2019[7]. In 2019 this equated to 63.7% of all marine sand and gravel landed in the North East in 2019. Marine sand and gravel landed in the Tees Valley in 2021 is also supplemented by land won sand and gravel from North Yorkshire and County Durham. It is also understood that this pattern of supply has been the business as usual position for many years. In 2019 231,000[8] tonnes of land won sand and gravel was imported into the Tees Valley. Reported consumption of sand and gravel in the Tees Valley in 2019 was 497,000[9] tonnes.

4.31 On this basis it is clear that with no land won sand and gravel sites or sales that the Tees Valley remains dependent on a combination of marine sand and gravel and imports from adjoining areas. Given that this has been the position for many years, it is not considered necessary for this LAA to make additional provision to compensate for a lack of land won production in the Tees Valley. However, if a successful planning application was submitted for one or both of the identified potential sand and gravel sites at Stockton Quarry or at High Conniscliffe (see

[6] Data on landings of marine sand and gravel provided by The Crown Estate used as a proxy for sales data as publishing the actual sales figures provided to the annual survey would disclose commercially sensitive information.
7 Collation of the AM2019 Survey. Table 9i Sales of primary aggregates by MPA and principal destination sub-region in 2019: North East
8 Collation of the AM2019 Survey. Table 10 Imports of primary aggregates by sub-region in 2019.
9 Collation of the AM2019 Survey. Table 11 Consumption of primary aggregates by sub-region in 2019.

paragraph 4.27) that the Tees Valley's dependence on surrounding Counties for land won sales would be reduced.

4.32 It is understood that no crushed rock was extracted or sold in 2021 or 2022. For many years there has only been one crushed rock site within the Tees Valley (Hart Quarry in Hartlepool). However, it is understood that this quarry was not operational in 2021 or 2022. The draft updated LAA for the Tees Valley estimated that 75,000 tonnes of crushed rock was extracted in 2020. Whilst the Tees Valley is a major centre of demand within the North East, with a reported consumption of 803,000[10] tonnes of crushed rock, for many years it has remained heavily on imports from other parts of the North East and North Yorkshire. This reliance was recognised by the Tees Valley LAA 2017.

4.33 Given the very limited scale of previous sales of crushed rock from Hart Quarry and the existing reliance on surrounding areas of the North East and North Yorkshire, accordingly, it is not considered necessary for the County Durham LAA to make additional provision to compensate for a lack of land won production in the Tees Valley at this time.

Local Aggregate Assessment for the North Yorkshire Sub-Region 2022 (Seventh Review 2022)

4.34 Consideration has been given to crushed rock supply and sand and gravel supply from North Yorkshire which is a major producer of aggregates in the Yorkshire and Humber region and also supplies quantities of both crushed rock into the North East region and in particularly the Tees Valley. The latest North Yorkshire LAA (seventh review) included information up to 2021. Consideration has also been given to the North Yorkshire Minerals and Waste Plan Joint Plan was adopted by North Yorkshire County Council in February 2022.

4.35 It is understood that 1.5 million tonnes of sand and gravel and 3.3 million tonnes of crushed rock were sold from quarries in North Yorkshire outside of the Yorkshire Dales National Park in 2021, with a further 2.1 million tonnes of crushed rock sold from quarries in the Yorkshire Dales National Park in 2021. It is understood that sales in 2021 reflected a slight increase from 2020, when 1.5 million tonnes of sand and gravel and 3.2 million tonnes of crushed rock were sold from North Yorkshire and a slight rise in crushed rock sales from the Yorkshire Dales National Park with 2.0 million tonnes being sold in 2020. The seventh review also report sales of sand and gravel by distribution area[11]. Sales in the northwards distribution area were 0.4 million tonnes in 2021 and reflected a slight fall since 2020 when 0.52 million tonnes were sold. The seventh review reports that sales in the northern distribution area have fluctuated in recent years and have fallen by nearly 50% since

10 Collation of the AM2019 Survey. Table 11 Consumption of primary aggregates by sub-region in 2019.

[11] For the purposes of reporting sand and gravel reserves and landbanks data (but not sales data) in previous YHAWP surveys, concreting sand and gravel from the NYCC area has been subdivided into two main production areas (a northwards distribution area and a southwards distribution area) reflecting the fact that, typically, quarries in the northern part of the County (mainly in the valley of the River Swale in the Catterick/Scorton area) tend to supply most of their production northwards into the Tees Valley/Durham areas whereas sites elsewhere in North Yorkshire (principally the Ure Valley and the Vale of Pickering) supply most of their sales into the NY sub-region or to markets in West and South Yorkshire and the Humber area.

2018 when 0.78 million tonnes were sold. Inter-regional sales figures have also been historically been provided by the National Aggregates Survey, the latest of which reported that in total in 2019, 212,000 tonnes of land won sand and gravel and 381,000 tonnes of crushed rock were imported into the North East from North Yorkshire[12]. Correspondingly, in 2019 337,000 tonnes of sand and gravel including 30,000 tonnes of marine sand and gravel and 184,000 of crushed rock were imported into North Yorkshire from the North East[13].

4.36 The seventh review reported that reserves of sand and gravel were 26.2 million tonnes (a 16.4 year landbank) (including 14.4 million tonnes in a northwards distribution area), that reserves of crushed rock were 152.4 million tonnes in total including 72.2 million tonnes in North Yorkshire outside of both National Parks (equivalent to a 22.5 year landbank) and 80.2 million tonnes in the Yorkshire Dales National Park (equivalent to a 21.7 year landbank). In terms of break down by resource type, three crushed rock reserves consisted of 125.2 million tonnes of carboniferous limestone (including 76.12 million tonnes in the Yorkshire Dales National Park), 15.4 million tonnes of magnesian limestone and 6.5 million tonnes of Jurassic limestone. The seventh review also reported that substantial reserves of Carboniferous Limestone are thought to exist in dormant sites in the Leyburn area in Richmondshire District which adjoins County Durham (estimated to be in excess of 30 million tonnes) and working schemes are currently being brought forward by operators in this area to enable access to these.

4.37 In terms of future supply capability the seventh review reports:

- Crushed Rock - There is good potential to maintain the overall supply of limestone crushed rock from within the sub-region over the period to 2030 at levels similar to those sustained in recent years and in line with the indicative requirements identified in this LAA. This would be dependent on continuing supply of reserves from within the Yorkshire Dales National Park and from within AONBs in NYCC. However, unless new permissions are granted, there is potential for reserves of Magnesian Limestone in particular to be significantly reduced in the mid-term. In the longer term, maintenance of an adequate overall supply of crushed rock is likely to be dependent on the granting of permissions for an extension of the time period for completion of development at some quarry sites. Extensions to working areas (where possible) may also be beneficial at some sites in order to help maintain production capacity, unless output at other remaining sites could be increased. It is also likely that resources in dormant sites would be able to make a significant contribution to crushed rock supply in the mid-term and beyond.
- Sand and Gravel – Future supply of sand and gravel from the sub-region is dependent on the availability of supply from the NYCC area, for geological reasons. In the absence of new reserves being brought forward, current reserves would become exhausted in the long term. This would have a substantial impact

12 Collation of the AM2019 Survey. Table 5i Consumption of primary aggregates by region in 2019: North East.
13 Collation of the AM2019 Survey. Table 5h Consumption of primary aggregates by region in 2019: Yorkshire and the Humber.

on supply into the adjacent NE Region and elsewhere in the Yorkshire and Humber Region. he outcome of a number of current planning applications for sand and gravel working in NYCC will be important in determining the future scale of any additional provision that may be required over the period to 2030. Maintenance of supply will also be influenced by the continued availability of reserves at a number of sites subject to temporary permissions and where the current expiry date is likely to pre-date exhaustion of current reserves.

4.38 Through the provisions of the North Yorkshire Minerals and Waste Plan Joint Plan, the Joint Plan authorities have sought to make provision for the continued supply of both crushed rock and sand and gravel including provision for both a northwards facing and southwards facing sand and gravel landbank and allocations to maintain a steady and adequate supply over the plan period to 2030 and maintain respective landbank of at least 7 years for sand and gravel and at least 10 years for crushed rock throughout the Plan period.

Joint Local Aggregates Assessment 2023 (incorporating figures for 2022) – Cumberland Council, Westmorland and Furness Council, Lake District National Park Authority

4.39 Consideration was also given to crushed rock supply and sand and gravel supply from Cumbria taking into account information within the Joint Local Aggregates Assessment 2023 – Cumberland Council, Westmorland and Furness Council, Lake District National Park Authority (CJLAA) and the National Aggregates Survey 2019.

4.40 The CJLAA reports that the majority of sales have been within Cumbria itself, with exports primarily within the North West region or the neighbouring North East. The exception to this is the High/Very High Specification Aggregates (HSA/VHSA), which have a national market. For sand and gravel, it indicated 74% sales within Cumbria; 11% in the North West and 14% elsewhere. For crushed rock it indicated 40% sales within Cumbria; 40% in the North West and 12% elsewhere.

4.41 Information within the National Aggregates Survey 2019 does not show a strong supply relationship between the North East and the North West regions as a whole. It is considered that this is a result of geography with the North Pennines lying between the North West and North East and the distance between quarries and centres of demand for aggregates within both the North West and North East. In 2019, 162,000 tonnes of aggregate (consisting of 80,000 tonnes of land won sand and gravel, 44,000 tonnes of limestone/dolomite and 38,000 tonnes of igneous rock) were imported into the North East from the North West. Similarly, in 2019 only 93,000 tonnes of aggregate (consisting of 9,000 tonnes of sand and gravel, 56,000 tonnes of limestone/dolomite and 28,000 tonnes of igneous rock) were imported into the North West from the North East. No sub-regional information is available detailing either origin or destination within either the North East or North West. The 93,000 tonnes of aggregates imported into the North West from the North East in 2019 should be seen in the context of overall consumption of aggregates in the North West in 2019 which was 14,796,000 tonnes. Similarly, the 162,000 of aggregates imported into the North East from Cumbria from the North West in 2019

should be seen in the context of overall aggregate consumption in the North East in 2019 which was 7,499,000 tonnes.

4.42 The CJLAA advises that current reserves of all crushed rock for aggregate use (111.09 million tonnes) are more than sufficient to maintain the required landbank of at least 10 years throughout the Cumbria Minerals and Waste Local Plan (CMWLP) Plan Period and provide a landbank of 40.1 years for all rock types. It also provides separate calculations for sandstone and igneous rock (with and without high specification (HSA) and very high specification aggregates (VHSA) and advises that current reserves of HSA and VHSA for use as roadstone are 15.10 million tonnes which is sufficient to maintain the required minimum 10 year landbank throughout the Plan periods and provide a landbank of 57.9 years. It advises that due to the substantial landbanks available, which should extend well beyond the Plan period, it is not considered necessary to consider any further scenarios for sandstone and igneous rock (excluding higher specification aggregates) or for the provision of crushed rock generally.

4.43 In terms of sand and gravel the CJLAA advises that current reserves of land-won sand and gravel for aggregate use (4.72 million tonnes) are not sufficient to maintain the required landbank of at least 7 years throughout the CMWLP Plan Period (2015 to 2030).Based on 3-year average sales figures (0.8Mt) the available landbank would run out in 2028. This means at present Cumbria cannot demonstrate a minimum 7 year landbank of reserves for sand and gravel based on 3-year average sales. It indicates that a minimum of 7.28 Mt additional of sand and gravel reserve is required to maintain a landbank of at least 7 years throughout the CMWLP period. It advises that site Allocations have been made in the adopted CMWLP for Areas of Search/Preferred Areas for sand and gravel. If progressed, these site allocations could be roughly estimated as containing 14Mt of resources so there is potential for any required shortfall to be met, providing a minimum 7 year landbank until the end of the Plan period. The CJLAA also provides an update upon current scoping opinions and planning applications during 2022 and 2023 the potential for marine-dredged sand and gravel to make a greater contribution. It reports that there is potential for marine-dredged sand and gravel to make a greater contribution to the reserve figures in Cumbria. There is plentiful supply of good quality resource but industry is facing a number of issues around the logistics of getting the product to market which means it is currently not as economically viable as land-won sand and gravel.

4.44 Given the evidence within the Aggregates Monitoring Survey for England and Wales 2019[14] (AM2019) detailing the lack of a strong supply relationship and the limited flows of aggregates between the North West and North East as a whole, the reserve position for crushed rock and the site allocations within the CMWLP for sand and gravel it is not considered necessary for this LAA to consider provision within Cumbria further.

[14] Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales, British Geological Survey, 2021.

Other Local Aggregate Assessments

4.45 Aggregates are bulky and heavy commodity, the majority of sales of aggregates from County Durham are consumed within County Durham, adjoining sub-regions within the North East and in the Yorkshire and Humber. Key supply relationships (sales of aggregates and aggregate minerals by region in 2019) are reported upon within tables 4a to 4k of the AM2019 and provide the basis for informing the Council upon which Local Aggregate Assessments it is necessary to monitor. The principal LAAs the Council monitors are set out above. In addition the Council also considers and responds to consultations upon LAAs prepared by Councils which do not adjoin County Durham which has included Councils in the North West including Lancashire and Cheshire East and Cheshire West and Chester Councils.

5.Secondary and recycled aggregates

5.1 Recycled aggregates play a role in the total supply of aggregates in County Durham with various types of recycled materials suitable for aggregate use produced. The use of these types of 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. The last estimate of the national construction and demolition (C&D) inert waste recovery rate, was made for 2020. Defra's "UK Statistics on Waste" published in June 2023 identified that 59.1 million tonnes of non-hazardous construction and demolition waste was generated in the UK in 2020, that of this waste 54.8 million tonnes was recovered providing a recovery rate of 92.6% in 2020. The 2020 recovery rate being the third highest over the ten year period for which data is available for (2010 to 2020) and a 0.7% fall since the highest recorded recovery rate in 2019. Information provided by the Mineral Products Association at a national level estimates that over the last ten years recycled and secondary materials account for 29% of the aggregates market reaching an estimated 74 million tonnes in 2022[15].

5.2 Recycled aggregates are derived from construction, demolition and excavation work that have been reprocessed to provide materials or a product suitable for aggregate uses. They include materials such as stone, concrete, brick or asphalt for re-use. A significant amount of recycled aggregates are produced on development and construction sites involving mobile plant, whilst others are processed at dedicated freestanding sites or facilities located within existing minerals and waste sites. Within County Durham recycled aggregates are produced principally from construction and demolition projects whilst materials derived from spent railway ballast and recovered asphalt planning also make a contribution to supply.

Sales of recycled aggregates

5.4 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. However, it is possible to estimate the sales of recycled aggregates across County Durham using the data provided by the Government's Waste Data Interrogator. This method progressively filters out types of waste that 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 either removed from the site or whose fate is not recorded as 'recovery' is not subtracted to avoid double-counting.

5.5 Table 5.1 shows the sales of recycled aggregates in the LAA area between 2019 and 2022; due to the data available it is not possible to calculate these figures for years prior to this period. There were no sales of secondary aggregates recorded for County Durham between 2019 and 2022.

[15] Mineral Products Association (2023). Profile of the UK Mineral Products Industry: 2023 Edition. Available at: https://www.mineralproducts.org/Facts-and-Figures/Profile-of-the-UK-Mineral-Products-Industry.aspx

5.6 Overall sales of recycled aggregates were 262,000 tonnes in County Durham in 2022. This represents a significant rise (more than doubling) since 2020. This information should be treated with a degree of a caution, as this method does not take into account mobile crushers and screens which are known to make an important contribution to overall supply. However the data available does suggest that recycled aggregates will continue to make a worthwhile contribution to the supply of aggregates in the LAA area and the general trend of sales is upwards over the last four years.

Table 5.1 Sales of secondary and recycled aggregates in County Durham, 2019-2021 (thousand tonnes)

	2019	**2020**	**2021**	**2022**
County Durham	67.0	135.0	111.0	262.0

Source: Waste Data Interrogator. Table note all sales 2019 to 2022 are from recycled aggregates.

6 Sand and gravel

6.1 This section sets out information about sales of sand and gravel in the LAA area. It also looks at issues around imports and exports of sand and gravel.

6.2 After consideration of these issues, this section also will forecast future demand to be planned for. Finally, the implications of this level of demand will be analysed with regard to current reserves.

Land-won sand and gravel

6.3 Information on sales of land won sand and gravel for aggregate use from quarries in County Durham is provided below in Table 6.1. Total sales in 2022 were 554,000 tonnes which represents a similar level to 2021, but a significant rise on sales from 2020, however, as stated in Chapter 4, figures from 2020 are likely to have been heavily influenced by the Coronavirus pandemic and are not representative of overall trends. Sales of sand and gravel from County Durham in 2022 were at their highest level in the last ten years and are in excess of that achieved prior the financial crises of 2008.

Table 6.1 Sales of land won sand and gravel from County Durham, 2013 to 2022 (thousand tonnes)

Year	County Durham	North East Total	County Durham sales as percentage of North East total
2013	218	716	30.45%
2014	276	873	31.62%
2015	256	917	27.92%
2016	322	972	33.13%
2017	330	955	34.55%
2018	446	1047	42.60%
2019	537*	1099	48.86%
2020	419*	946	44.29%
2021	553*	1097	50.4%
2022	554*	1091	50.77%
Ten year sales average 2013-2022	391	984.9	n/a
Three year sales average 2019-2022 (excluding 2020)	548	1,060.8	n/a

Notes: *Sales figure differs from North East Aggregates Working Party Annual Monitoring Report figure for 2019, 2020 and 2021 due to 1) adjustment to reflect the limestone fines component of sand sales at one quarry in County Durham and 2) use of sales figures from DCC Annual Aggregates Survey.

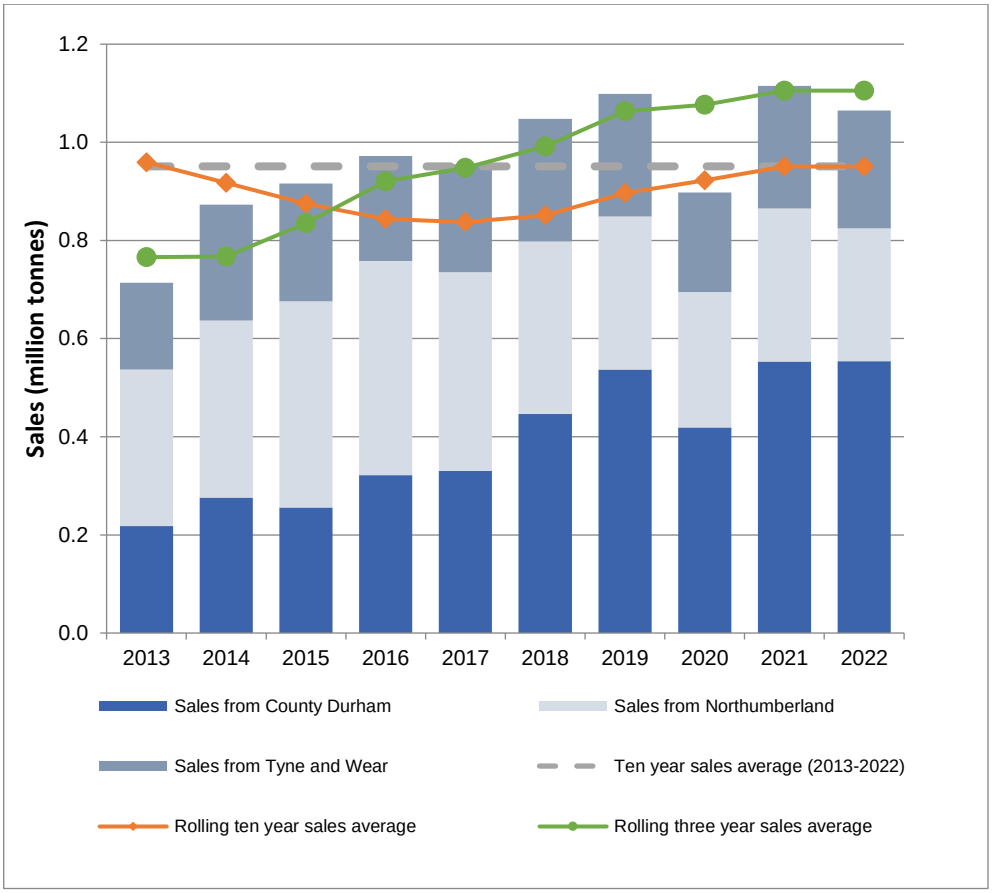
6.4 Figure 2 shows trends in the rolling averages for both ten years of sales and three years of sales. The ten years sales average fell steadily between 2013 and 2016, reflecting the period of depressed sales as a result of the financial crises of 2008 and economic downturn post 2008. Since 2017 this figure has risen steadily. In contrast, the three year sales average has risen steadily since 2014 and has been consistently higher than the ten year sales average for the last seven years.

6.5 A number of trends are visible when looking at the data. Sales in County Durham have risen significantly since 2018. This is as a result of substantive mineral

working commencing at Low Harperley in 2018[16] and a significant increase in sales from Old Quarrington and Cold Knuckle Quarry since 2018[17].

6.6 Looking at the data at the regional level, it is clear that the increase in sales from County Durham is representative of a wider trend across the North East region which has seen overall sales increase virtually every year since 2012 (disregarding 2020 sales data). The level of overall percentage of sales provided by County Durham has risen significantly since 2012; rising from 28% in 2012 and 30.45% in 2013 to nearly 51% of all land won sales in the North East in 2022. The rise in sales from County Durham has also coincided with a fall in sales from Northumberland, which has been due to site closing as reserves being exhausted or sites being mothballed, as discussed in Chapter 4. Unless demand falls as a result of a change in economic conditions, the Council's expectation is that sand and gravel sales from County Durham will continue at levels similar to that in recent years, at least in the short term, but sales should then fall as reserves at some sites become exhausted and as other sources of supply within the North East commence or recommence working.

Figure 2 Comparison of land won sand and gravel sales and Ten and Three Year Sales averages



[16] Working commenced at Low Harperley in 2017. In 2017 only a very small quantity of sand and gravel was worked and sold from this quarry.

[17] Prior to 2016, Old Quarrington and Cold Knuckle Quarry had been inactive Sales from the quarry recommenced in 2016,with sales in 2018 increasing by nearly 400% from 2016 levels.

Marine sand and gravel

6.7 There are currently no areas licenced for the dredging of marine aggregates off the coast of North East England, with the closest area being the Humber dredging areas off the coast of Yorkshire and Lincolnshire. During 2022 3.69 million tonnes of construction aggregate were dredged from a licensed tonnage of 6.875 million tonnes in the Humber region. The Crown Estate's Marine Aggregates Capacity and Portfolio document 2022, explains that there were 40.57 million tonnes of primary marine aggregate reserves in the Humber dredging region which would provide a reserve life of 16 years. No marine dredged sand and gravel is landed in County Durham. Within the North East 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 and wharves on the River Tees.

6.8 The sales figures for marine sand and gravel are shown in Table 6.2 are for North East England and include sales from all wharves in the North East. Table 6.2 shows that sales have risen significantly since 2020. This is due to a large rise in sales from wharves in the Tees Valley. During 2022, 553,842 tonnes of marine dredged sand and gravel was landed at wharves on the Tees, the comparable figure for 2020 being 291,416 tonnes. Information from the 2019 Aggregates Survey indicated that 77,000 of landed marine dredged sand and gravel was imported into County Durham. Comparable information from the 2014 Aggregates Survey indicated that 248,000 tonnes was imported in 2014.

Table 6.2 Sales of marine sand and gravel from wharves in North East England, 2012 to 2022 (thousand tonnes)

Year	Sales
2013	451
2014	537
2015	595
2016	499
2017	535
2018	525
2019	633
2020	582
2021	798
2022	996
Ten-year sales average 2013 to 2022	615
Three-year sales average 2019 to 2022 (excluding 2020)	792

Source: The Crown Estate. Marine Aggregates: Summary of Statistics.

Imports and Exports

6.9 The most up-to-date information on imports and exports of primary aggregate minerals is from 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 6.3 shows the import and export data for land won and marine sand and gravel combined for the entire North East. This highlights that in 2019, the region exported slightly more sand and gravel than was imported. As a percentage of overall consumption, the amount imported was 17%. Given the low proportion of overall consumption made up by imported sand

and gravel, it is not thought that this demonstrates any issues with supply in the region.

Table 6.3 Imports, exports and consumption of sand and gravel in North East England 2019 (thousand tonnes)

Region	Imports	Exports	Total consumption
North East	292	384	1,729

Source: Table 3 Summary of exports and imports of primary aggregates in 2019. Table 11 Consumption of primary aggregates by sub-region in 2019. 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.

6.10 Table 6.4 shows consumption for County Durham. It also shows that County Durham is a net exporter of sand and gravel. Despite being a net exporter in total 170,000 tonnes of land won sand and gravel and 77,000 tonnes of marine sand and gravel were imported demonstrating the complex flows of material between local authority areas. Table 6.5 explores some of the inter-regional movements in more detail.

Table 6.4 Sales information for sand and gravel for County Durham (thousand tonnes)

North East Sub-region	Sales	Imports	Exports	Total consumption
County Durham	625*	247	485	388

Source: Table 9i Sales of primary aggregates by MPA and principal destination sub-region in 2019: North East. Table 10 Imports of primary aggregates by sub-region in 2019. Table 11 Consumption of primary aggregates by sub-region in 2019 - Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales. Note * The sales figure in Table 6.4 differs from that in Table 6.1 as 2019 sales have been amended to reflect the limestone fines component of sand sales at one quarry in County Durham.

Exports

6.11 Table 6.5 shows the sales of sand and gravel from quarries in County Durham and the principal destinations of these sales. A significant proportion of sales were outside County Durham and the North East and it is understood that the principal destinations for these sales are to the Yorkshire and Humber region.

Table 6.5 Sales of sand and gravel from County Durham in 2019 and principal destination (thousand tonnes)

Destination	Land won sand and gravel	Percentage
County Durham	141	22%
North East	246	39%
Elsewhere	239	38%
	625*	100%

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. Note * The sales figure in Table 6.5 differs from that in Table 6.1 as 2019 sales have been amended to reflect the limestone fines component of sand sales at one quarry in County Durham.

Imports

6.12 Consumption of sand and gravel for aggregate uses for County Durham in 2019 is shown in Table 6.6. The table categorizes the percentage of overall consumption that is received from source MPAs. A significant quantity of sand and gravel consumed within County Durham was sourced from quarries in County Durham but sand and gravel aggregate was also consumed from adjoining sub-regions and regions, showing complex flows which are a product of the aggregate supply and construction industry. Given the extent of sales previously shown these imports were not due to supply constraints in County Durham but a function of the market.

Table 6.6 Consumption of sand and gravel for aggregate use in 2019 identifying for County Durham the principal supplying MPAs.

Source MPA	County Durham
Durham County Council	30-40%
Northumberland County Council	1-10%
South Tyneside Council	10-20%
Sunderland City Council	10-20%
North Yorkshire County Council	20-30%
Cumbria County Council	<1%
Staffordshire County Council	<1%
Total consumption (thousand tonnes)	388,000

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.

Calculation of Annual Provision Rate

6.13 The 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. The local situation has been discussed in previous chapters and the calculation of the future annual provision rate for sand and gravel is based on the following assumptions:

- Levels of housebuilding is expected to be broadly consistent with past rates across the region, as discussed in Chapter 4;
- Demand for aggregates from large infrastructure projects will be broadly similar to previous projects, or at least not significantly higher as discussed in Chapter 4;
- Sales figures from 2020 are not representative due to the impact of the pandemic as discussed in Chapter 4 and should not be included in calculation of sales averages;
- Recycled aggregates will continue to make a contribution to overall supply as discussed in Chapter 5;
- Marine sand and gravel will also continue to make a similar contribution to overall supply as in previous years, as discussed in Chapter 6; and
- Levels of imports and exports of sand and gravel will remain broadly consistent with data recorded in 2019.

6.14 Table 6.1 provides a summary of sales of sand and gravel within County Durham for the period 2013 to 2022, respectively. The tables also provide a summary of the following:

- 10-year sales average (2013 to 2022) - To understand past supply and provide the basis of forecasting future annual provision in line with the NPPF.
- 3-year sales average (2019 to 2022, excluding 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.

6.15 As discussed before, sales in 2020 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). Sales in 2020 were markedly lower than both 2019 and 2021. 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 sales average as this covers a longer period and therefore conditions which are unrepresentative make 2020 sales less of an impact to this calculation.

6.16 For a number of years the Council's LAAs has calculated the annual provision rate based upon the three-year sale average. This method of calculation was used consistently across the three North East sub-regions of County Durham, Northumberland and Tyne and Wear and reflected a joint approach to maintaining a steady and adequate supply of aggregates. Such an approach was considered by the Council to be a positive response to the NPPF requirement to look at average sales over the last 3 years and the general trend of demand as part of the consideration of whether it might be appropriate to increase supply. It was also considered that such an approach was consistent with the NPPF requirement to maintain a steady and adequate supply of aggregates, as an approach based on the ten-year sales average would have meant that future demand was in part based upon a period of depressed sales as a result of the last economic downturn. It is considered that once the impact of the depressed sales of the last economic downturn (2019 to 2014) largely falls out of the 10-year sales average there may be merit in calculating the annual provision rate based upon the ten-year sales average. However, it should be noted that such an approach at this time would result in a substantially lower future annual provision rate for County Durham which would not be consistent with a steady and adequate supply of aggregates. It is considered prudent to review this position within next year's LAA taking into account the regional position in terms of both supply and demand. Accordingly, for this LAA, the recommended annual provision rate for sand and gravel remains to be based on the three-year sales average (2019, 2021 and 2022).

6.17 Table 6.7 sets out the recommended annual provision rate for sand and gravel. 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, allocations and planning permissions across the North East as a whole and changes to demand based on the local factors identified such as planned house building and major infrastructure and construction projects.

Table 6.7 Proposed annual provision rate for land-won sand and gravel based upon the three year sales average (tonnes)

North East Sub-Region	Annual Provision Rate
County Durham	548,000 tonnes

Reserves/Landbanks

6.18 The general pattern both regionally and nationally has been for sales of both sand and gravel to have increased from 2017-2022 with a fall in 2020 reflecting the exceptional circumstances of the pandemic.

6.19 As at 31 December 2022, 4.063 million tonnes of reserves remained to be worked in County Durham. These reserves are contained in five sites, four of which were active in 2022. All four active sites are expected to remain active over the short term, although all of the sites may cease working, if reserves are not replenished, due to an exhaustion of reserves prior to or around circa 2030 to 2032.

6.20 Based on the annual provision rate from County Durham of 548,000 tonnes, this equates to a landbank of reserves of 7.4 years at 31 December 2022 (based upon the annual provision rate in this LAA).

6.21 Table 6.8 below provides an overview of sand and gravel reserves across the North East over the ten year LAA reporting period. At the end of 2022 County Durham's sand and gravel quarry's contained approximately 32% of all North East sand and gravel reserves. As set out above in Table 6.1 County Durham's sand and gravel quarry's accounted for nearly 58% of all land won sales in the North East in 2022 and as such shows the current reliance of the North East on sand and gravel sales from County Durham quarry's. It also shows the current imbalance of sales across the North East which should change as other sources of supply within the North East commence or recommence working.

Table 6.8 Sand Gravel Reserves in County Durham, Northumberland, Tyne & Wear and the Tees Valley and the North East 2013 to 2022 (thousand tonnes)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
County Durham	8,924	8,651	8,354	7,610	7,113	6,474	5,600	5,247	4,636	4,063*
Northumberland	7,728	7,414	7,337	6,045	5,410	5,104	5,585	4,594	4,107	3,735
Tyne & Wear and Tees Valley (combined)	3,568	2,133	7,880	7,660	7,433	7,174	5,645	5,420	5,420	4,930
North East England	20,220	18,198	23,571	21,315	19,956	18,752	16,830	15,261	13,913	12,727

Source: North East England Aggregates Working Party Annual Report 2021 Published [Draft – November 2022]. * 2022 reserves figures from DCC Annual Aggregates Survey.

6.22 A quantitative assessment of the balance between the quantum of reserves and the demand is set out below. Two forecasting periods are provided one from 2023 to 2035 to align with the County Durham Plan period with runs to 2035 and the standard 16 year forecasting period which has also been used previously, which now runs to 2038. As sales are market led it is assumed that the current pattern of sales will continue at least in the short term. As shown in table 6.5 above in 2019 77% of sales of sand and gravel were recorded to be outside County Durham. Similarly, as

shown in table 6.6 consumption of sand and gravel in County Durham significantly lower than land won sales.

Table 6.9 Calculation of the balance between supply and demand for sand and gravel for aggregate use from County Durham

	County Durham Plan Forecast period 2023 to 2035 (13 years)	Standard 16 Year Forecast period 2023 to 2038 (16 years)
Reserves at 31 December 2022	4,063,000	4,063,000
Ten year sales average 2013-2022	391,000	391,000
Three year sales average 2019 to 2022 (excluding 2020)	548,000	548,000
Annual provision rate in LAA	548,000	548,000
Demand forecast	7,124,000	8,768,000
Landbank based on annual provision rate calculated in LAA	7.4 years	7.4 years
Balance between quantum of reserves and demand	**-3,061,000**	**-4,705,000**

6.23 In recent years the Council has observed a sustained increase in sales and fall in reserves and a consequent fall in the County's sand and gravel landbank. The fall in reserves has been greater than recorded sales due to the downward revision of reserves in specific sites by mineral operators (due to geological reasons). The fall in the length of the landbank period has been because of this fall in reserves combined with a rising annual provision rate as a result of increased sales. This material change in reserves in combination with the increased annual provision rate now means that in quantitative terms the prospects for maintaining supply over the period to 2035 and 2038 has changed from very good since 2016 to only moderate in 2023. 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 2023, which is a key indicator that further provision is now necessary to be planned for.

6.24 Both the reserve and landbank figures indicate that County Durham will have a shortfall in sand and gravel supply over the period to both 2035 and to 2038. However, through work to prepare the Council's emerging Minerals and Waste Policies and Allocations Document which reached its Publication Draft stage of consultation in November 2022 and examination in September 2023, the Council is seeking to allocate two sites to enable further sand working at Thrislington West Quarry (5,800,000 tonnes to be worked at an estimated rate of between 200,000 and 300,000 tonnes per annum) and an extension to Crime Rigg Quarry to enable the a northern extension (910,000 tonnes to be worked at an estimated rate of 40,000 tonnes per annum). Together both allocated sites, should the allocations be agreed by the Local Plan Inspectors and subsequently granted planning permission, will in quantitative terms largely address the forecast deficit in supply identified in Table 6.9 (over the period to 2035) and make major contribution to maintaining a seven year landbank at 2035.

6.25 It is also important to understand whether the sites in County Durham have the capacity to meet the demand forecast over this period and whether there are site specific issues that could influence the ability of these to contribute to sand and

gravel supply. Durham County Council has sought to understand the extent of reserves within sites and the potential capacity of sites to supply into the future. 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. The results of this work are set out in Table 6.10 below. This work gives an indication that a considerable proportion of the sand and gravel reserves in County Durham are not simply found in a limited number of 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.

6.26 Table 6.10 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. Previous LAAs have advised 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. This fact has been confirmed through an increase in sales over the last five years. It should be noted that the productive capacity figures in the table below 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.

Table 6.10 Distribution of reserves of sand and gravel in 2022 and Council estimates of supply/production capacity (figures in tonnes).

Quarry	Estimate of reserves at 31 December 2022 (tonnes)	Estimate of maximum productive capacity
Thrislington Quarry West (Active)	772,000*	200,000 to 300,000 tonnes per annum. Tarmac has also proposed an allocation for 5.8 million tonnes through the emerging County Durham Minerals and Waste Policies and Allocations Document which has been identified for allocation in the Publication Draft.
Crime Rigg Quarry (Active)	288,804*	30,000 to 40,000 tonnes per annum. Breedon has also proposed an allocation for 910,000 tonnes through the emerging County Durham Minerals and Waste Policies and Allocations Document which has been identified for allocation in the Publication Draft.
Old Quarrington and Cold Knuckles Quarry (Active)	818,000*	140,000 to 200,000 tonnes per annum.
Hummerbeck (Inactive)	670,000+	84,000 tonnes per annum.
Low Harperley (Active)	1,514,921*	160,000 tonnes per annum.

Notes * Figures provided in response to Council annual survey of mineral operators for 2022 + Planning Committee Report.

6.27 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:

Crime Rigg Quarry

- Existing reserves at this quarry will not be exhausted by the end date for extraction specified by the existing planning permission (31 December 2022). However, the County Durham Plan is permissive towards extensions of time where reserves remain to be worked when planning permission expires.
- A planning application (Planning application Ref No. DM/22/03467/VOCMW) was submitted on 18 November 2022 to permit an extension of time for mineral extraction until 2030 with restoration to be completed by 2032. This planning application is pending consideration. If planning permission for the extension of the time period for the extraction of existing reserves was to be granted planning permission, taking into account existing reserves and both recent and historic sales we forecast that this site could continue extraction until 2030.
- As stated above the Council is also seeking to allocate land to enable a northern extension to Crime Rigg Quarry (910,000 tonnes to be worked at an estimated rate of 40,000 tonnes per annum). It is anticipated that the allocation could provide reserves sufficient to maintain sales for between 18 and 20 years depending upon annual sales meaning that the resulting end date would be around 2043 to 2045.

Thrislington Quarry West

- Existing reserves at this quarry will be exhausted prior to the end date of the existing planning permission (15 January 2030). Taking Into account information from the operator, remaining reserves and both recent and historic sales, we now forecast that this site is likely to be exhausted by 2025.
- A planning application (Planning application Ref No.DM/22/03731/MIN) for the extraction of 1.4 million tonnes of limestone reserves until 2045, 6.7 million tonnes of Basal Permian Sand until 2045, retention of aggregate recycling facility and concrete batching plant until 2045, provision to allow the importation of up to 0.2 million tonnes per annum of limestone from Cornforth Quarry until 2045; and a scheme for the progressive and final restoration at Thrislington Quarry West was submitted 14/12/2022. The application was considered invalid upon receipt. The resubmission of this application is expected within the next six months.
- As stated above the Council is seeking to allocate land to enable further sand working at Thrislington West Quarry (5,800,000 tonnes to be worked at an estimated rate of between 200,000 and 300,000 tonnes per annum). 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.

Low Harperley Quarry

- Should extraction continue in accordance with this site's planning permission, we forecast that this site could continue extraction until approximately 2032 at a rate of up to 160,000 tonnes per annum.

Old Quarrington and Cold Knuckles Quarry

- For many year sales of sand from this quarry have been limited, with no sales in a number of the last ten years, and as a result the Council expected reserves at this quarry to remain available throughout the plan period to 2035. However, since 2018 the Council understands that sales have increased substantially and as a result reserves have started to also fall significantly. The operator of the quarry now expects to work through the remaining reserves at a rate of up to 200,000 tonnes per annum. They have advised that sales from the quarry has increased steadily since its reopening from an initial forecast 100,000 tonnes per year, and that they consider that reserves of sand will now be exhausted by 2027. Accordingly, given this information the Council recognises that without further reserves being made available at this quarry, it will not be able to contribute to a steady and adequate supply of sand beyond the short term. Tarmac have previously advised the Council that they intend to submit a planning application which would seek planning permission for further reserves in around 2023/2024.

Hummerbeck

- On the basis that this permission remains inactive and has done so since new conditions were issued in 2011, unless circumstances change it is considered that the working of this permission cannot be relied upon to occur. However, should working commence in line with the 2011 planning permission, then the 670,000 tonnes of reserves at this permission could be worked over an 8 year period at a rate of approximately 83,750 tonnes per annum.

Forecast Scale of Future Provision

6.28 In terms of the overall scale of additional provision that is required to be made, based on the current annual provision rate set out in this LAA and in order to maintain a minimum seven year landbank at 2035 it is recommended that provision is made to enable a further 7,567,000 tonnes of sand and gravel to be extracted over the period to 2035[18]. Should planning permission be granted to the allocations within the Council's emerging Minerals and Waste Policies and Allocations Document and in order to prevent sales being restricted to just two sites following the exhaustion of existing reserves at Old Quarrington and Cold Knuckle Quarry and at Low Harperley Quarry, it is recognised that further permissions will be required to reinforce supply towards the end of the plan period. This will be necessary to ensure a steady and adequate supply of sand and gravel and to maintain productive capacity. This further provision should be sufficient to meet at least the difference that the allocations can provide i.e. 6.7 million tonnes and the recommended provision figure i.e. 7,567,000 tonnes i.e. a further 867,000 tonnes.

[18] Over the County Durham Plan Forecast period 2023 to 2035 (13 years) this figure is based upon the figures set out in Table 6.9. It also includes sufficient mineral to maintain at least a minimum seven year landbank at 2035 (3,836,000 tonnes) based upon the annual provision rate in this LAA (548,000 tonnes) and an allowance which assumes that the reserves at Hummerbeck may not be worked (670,000 tonnes).

Wider Supply Considerations

6.29 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. Based upon recent sales and individual site's productive capacities and remaining reserves, it is recognised that in coming years, County Durham's sand and gravel quarries will make a significant contribution to the supply of land won sand and gravel. However, if this were to continue to occur, this would lead to a more rapid depletion of reserves within County Durham, which may not be easily replaced in the longer term. As discussed in section 4 beyond the short term it is expected that sales from Durham should begin to decrease as additional quarries commence or recommence production in Northumberland. In relation to the Tees Valley, it is recognised that if a successful planning application was submitted for one or both of the potential sites identified in the Tees Valley Joint LAA i.e. Stockton Quarry or a new site at High Conniscliffe within the Tees Valley that the Tees Valley's dependence on surrounding Counties for land won sales would be reduced.

6.30 In order to ensure a steady and adequate supply of gravel from the entire North East Region as a whole, it is considered that the Council should seek to ensure that adjoining sub-regions within the North East seek continue to make provision for land won sand and gravel, seek to continue to safeguard land won sand and gravel and continue to safeguard existing active marine wharfs which are important for the landing of marine dredged sand and gravel which supplements land won sources of supply.

6.31 Where necessary Durham County Council also considers emerging development plans and Local Aggregate Assessments prepared by Council's 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.

6.32 Where necessary the Council will liaise and discuss matters relating to sand and gravel supply with Council's both within and outside of the North East. The Council will seek to ensure that surrounding sub-regions and regions continue to seek to safeguard sand and gravel resources, marine wharfs and make sufficient provision to the ensure a steady and adequate provision of sand and gravel through the preparation and review of their LAAs and their own development plans and also to have regard to the importance of the maintenance of established supply relationships.

7 Crushed Rock

7.1 This section sets out known information about sales and reserves of crushed rock in County Durham. It also looks at issues around imports and exports of crushed rock.

7.2 After consideration of these issues, this section also will forecast future demand and consider the implications of these forecasts with regard to current reserves.

Land-won crushed rock

7.3 Information on sales of land won crushed rock for aggregate use from quarries in County Durham is provided below in Table 7.1. Sales figures over the ten year period from 2013 to 2022 are provided. Total sales in 2022 were 3.063 million tonnes, which were the fourth highest in the last ten years. Although not uniform, sales have generally been rising steadily since 2011.

Table 7.1 Sales of Crushed Rock 2013 to 2023 (thousand tonnes)

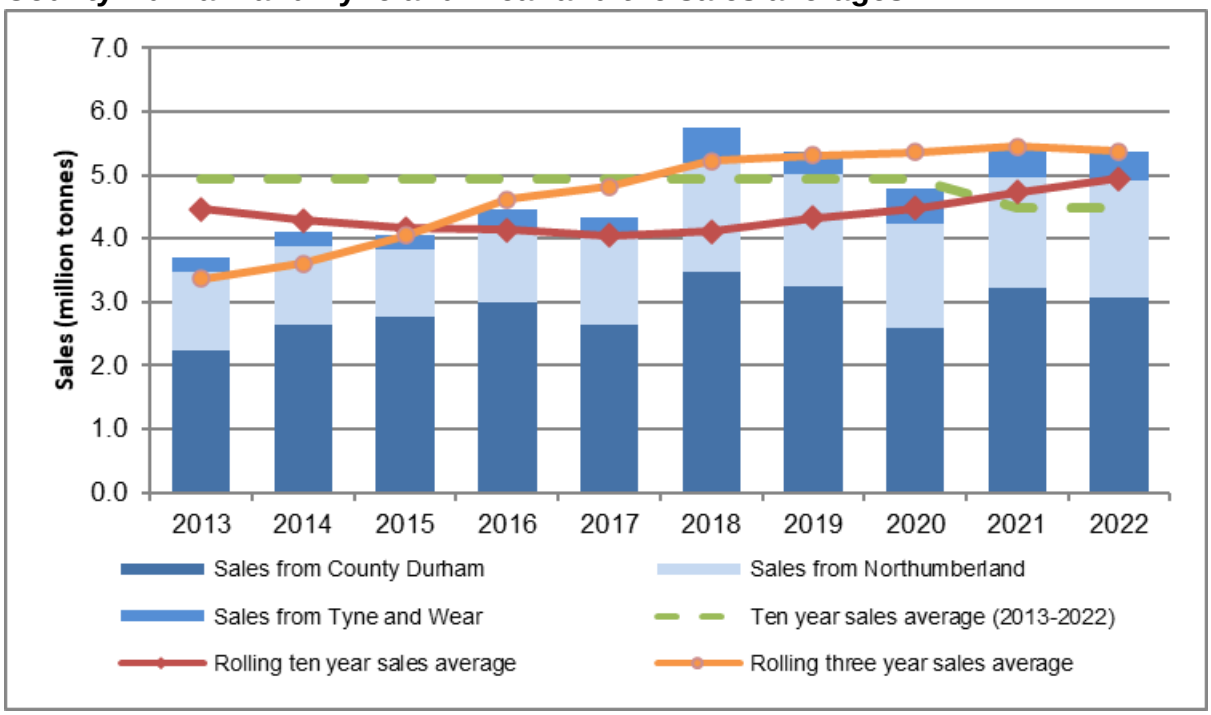
Year	County Durham	North East Total	County Durham Sales as percentage of North East Sales
2013	2,245	3,569	62.9%
2014	2,654	4,162	63.8%
2015	2,770	4,533	61.1%
2016	2,990	5,356	55.8%
2017	2,636	4,808	61.2%
2018	3,484	5,735	60.7%
2019	3,256*	5,556	58.6%
2020	2,591*	5,010	51.8%
2021	3,220*	5,925	54,34%
2022	3,063*	5,274	58%
Ten year sales average (2013 to 2023)	2,890	4,978	n/a
Three year sales average 2019 to 2022 (excluding 2020)	3,180	5,384	n/a

Table Note: DCC Figures on sales informed by DCC Annual Aggregates Survey. *Figures may differ from AWP Survey Results due to 1) adjustment to reflect the limestone fines component of sand sales at one quarry in County Durham.

7.4 In order to examine wider trends, Figure 3 shows trends in the rolling averages for both ten years of sales and three years of sales from County Durham as well as Northumberland and Tyne and Wear. For these sub-regions of the North East the ten years sales average fell steadily between 2012 and 2017, reflecting the

period of depressed sales as a result of the financial crises of 2008 and the economic downturn post 2008. Since 2017 this figure has risen steadily. In contrast, the three year sales average has risen steadily since 2012 and has been consistently higher than the ten year sales average for the last seven years.

Figure 3: Comparison of land won crushed rock sales from Northumberland, County Durham and Tyne and Wear and the sales averages



Imports and exports

7.56 No crushed rock was landed in County Durham at the County's only port at Seaham. Although it is understood that in 2022 130,000 tonnes of crushed rock was imported into the North East by sea.

7.6 The 2019 national aggregate minerals survey undertaken by British Geological Survey provides information on the movements of crushed rock. Table 7.2 shows the import and export data for crushed rock as well as material landed at wharves, combined for the entire North East. This highlights that in 2019, the region imported roughly twice as much material as was exported. However, given the very low proportion of overall consumption made up of imported crushed rock compared to that from quarries in the North East, it is not considered that any supply issues in the region are demonstrated.

Table 7.2 Imports, exports and consumption of crushed rock in North East England 2019 (thousand tonnes)

	Imports	Exports	Total consumption
North East	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.

7.7 Table 7.3 shows consumption in County Durham and demonstrates that County Durham is a net exporter of crushed rock. Tables 7.4 and 7.5 explore some of the inter-regional movements in more detail.

Table 7.3 Sales information for crushed rock in North East England in 2019 (thousand tonnes)

	Sales	Imports	Exports	Total consumption
Crushed rock	3,168	275	967	2,476

Source: Table 9i Sales of primary aggregates by MPA and principal destination sub-region in 2019: North East. Table 10 Imports of primary aggregates by sub-region in 2019. Table 11 Consumption of primary aggregates by sub-region in 2019. Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales.

Exports

7.8 Table 7.4 shows the sales of crushed rock from quarries in County Durham and the principal destinations of these sales. County Durham recorded roughly 30% of sales outside the county, with the majority of these remaining within the North East. Crushed rock sales from County Durham also represented 58% of the North East total.

Table 7.4 Sales of crushed rock and principal destination sub-region, 2019 (thousand tonnes)

Destination	Land won crushed rock	MPA %
Durham	2,201	69%
North East	701	22%
Elsewhere	266	8%
	3,168	

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

7.9 The consumption of crushed rock in County Durham is shown in Table 7.5. 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. In addition of all of the crushed rock aggregate consumed in 2019 in the North East it is worth noting that 600,000 tonnes were 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 7.5 Consumption of crushed rock for aggregate use in 2019 identifying the principal supplying MPAs.

Source MPA	Destination sub-region
Durham County Council	80-90%
Northumberland County Council	1-10 %
Northumberland National Park Authority	<1%
Sunderland City Council	<1%
North Yorkshire County Council	1-10%
Yorkshire Dales National Park	<1%
Cumbria County Council	1-10%
Derbyshire County Council	<1%
Leicestershire County Council	<1%
Neath Port Talbot	<1%
Outside England and Wales	1-10%
Total consumption (thousand tonnes)	2,476

Calculation of annual provision rate

7.10 As previously discussed, a number of assumptions have been made when considering the future demand for crushed rock, namely:

- Levels of housebuilding will be broadly consistent with past rates as discussed in Chapter 4;
- Demand for aggregates from large infrastructure projects will be broadly similar to previous projects, or at least not significantly higher as discussed in Chapter 4;
- Sales figures from 2020 are not representative due to the impact of the pandemic as discussed in Chapter 4 and should not be included in calculation of sales averages;
- Recycled aggregates will continue to make an important contribution to overall supply as discussed in Chapter 5;
- There will continue to be no material landed at wharves in the North East that will contribute to overall supply as discussed in Chapter 7; and
- Levels of imports and exports of crushed rock will remain broadly consistent with data recorded in 2019.

7.11 Table 7.1 (above) provides a summary of sales of crushed rock within County Durham and the North East for the period 2013 to 2022, respectively. The table also provides the:

- 10-year sales average (2013 to 2022) - To understand past supply and provide the basis of forecasting future demand in line with the NPPF.

- 3-year sales average (2019 to 2022, excluding 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.
- County Durham Sales as percentage of North East Sales.

7.12 As discussed in Chapter 6, sales in 2020 were affected by the impact of the pandemic both through restrictions affecting production at sites (supply) and restrictions affecting constructions sites using aggregates (demand). Sales in 2020 were the second lowest over the ten-year period 2013 to 2022 and markedly lower than the two years preceding (2018 and 2019) and in both 2021 and 2022. 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 year averages as these cover a longer period and therefore conditions which are unrepresentative make less of an impact to this calculation.

7.13 For a number of years the Council's LAAs has calculated the annual provision rate based upon the three-year sale average. This method of calculation was used consistently across the three North East sub-regions of County Durham, Northumberland and Tyne and Wear and reflected a joint approach to maintaining a steady and adequate supply of aggregates. Such an approach was considered by the Council to be a positive response to the NPPF requirement to look at average sales over the last 3 years and the general trend of demand as part of the consideration of whether it might be appropriate to increase supply. It was also considered that such an approach was consistent with the NPPF requirement to maintain a steady and adequate supply of aggregates, as an approach based on the ten-year sales average would have meant that future demand was in part based upon a period of depressed sales as a result of the last economic downturn. It is considered that once the impact of the depressed sales of the last economic downturn (2009 to 2014) largely falls out of the 10-year sales there may be merit in calculating the annual provision rate based upon the ten-year sales average. Based upon current sales figures this alternative approach of basing the annual provision rate on the ten-year sales average would result in a slightly lower future annual provision rate for County Durham. It is considered prudent to review this position within next year's LAA taking into account the regional position in terms of both supply and demand. However, for this LAA the recommended annual provision rate for crushed rock remains to be based on the three-year sales average (2019, 2021 and 2022).

7.14 Table 7.6 sets out the recommended annual provision rate for crushed rock calculated by this LAA. 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, allocations and planning permissions across the North East as a whole and changes to demand based on the local factors identified such as planned house building and major infrastructure and construction projects.

Table 7.6 Proposed annual provision rate for land-won crushed rock based upon the three-year sales average (Tonnes)

	Crushed Rock
County Durham Annual Provision Rate	3,180,000

Reserves/Landbank

7.15 As at 31 December 2022, 87.615 million tonnes of reserves remained to be worked in County Durham. Based on the recommended annual provision rate for County Durham of 3,180,000 tonnes, this equates to a landbank of reserves of 27.6 years at 31 December 2022.

7.16 In terms of potential reserves. Two sites are allocated in the County Durham Plan for crushed rock working. One of these sites (an extension to Heights Quarry) was granted planning permission in June 2019 and has provided an additional 3.7 million tonnes of reserves into the landbank. The other allocation (an extension to Hulands Quarry) is at the planning application stage and has the potential to provide add an additional 8.2 million tonnes into the landbank (see Appendix D). A further allocation for mineral working at land to the north of Crime Rigg Quarry in the emerging Minerals and Waste Policies and Allocations Document has the potential to provide a further 1.775 million tonnes of magnesian limestone and a second allocation in the emerging Minerals and Waste Policies and Allocations Document has the potential to provide a further 1 million tonnes of magnesian limestone through its sale rather than its reuse in site restoration (see Appendix D).

7.17 Table 7.7 below provides an overview of crushed rock reserves across the North East over the ten year LAA reporting period. For County Durham this overview shows a 38% fall in reserves over the ten year period. A large proportion of this fall, approximately 28.9 million tonnes can be accounted for by sales. In addition there have also been other factors at play. Since 2013 reserves have fallen at a number of quarries as operators have revised their figures because of geological reasons including the reallocation of aggregates reserves to non-aggregate. However, it should be noted that over the same time period some 14.2 million tonnes of new aggregate reserves have been granted planning permission, although this has replenished the reserves lost as a result of sales this has not helped maintain the reserves and landbank at 2013 levels. Nonetheless, at the end of 2022 County Durham's crushed rock quarry's contained approximately 50.6% of all crushed rock reserves in the North East . As set out above in Table 7.1 County Durham's crushed rock quarry's accounted for 58% of all land won sales in the North East in 2022 and as such shows the current reliance of the North East on County Durham quarry's.

Table 7.7 Crushed Rock Reserves in County Durham, Northumberland, Tyne & Wear and the Tees Valley and the North East 2013 to 2022 (thousand tonnes)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
County Durham	140,732	138,346	138,326	131,390	130,745	122,259	111,060	109,671	93,924	87,615
Northumberland	76,643	77,972	83,991	82,917	81,016	78,520	80,070	78,681	76,086	79,359
Tyne & Wear and Tees Valley (combined)	2,998	2,799	8,633	8,175	8,907	8,445	6,903	6,996	6,764	6,223*
North East England	220,373	219,117	230,950	222,482	220,668	209,224	198,033	195,348	176,424	173,197

Source: County Durham LAA and North East England Aggregates Working Party Annual Report 2022 [Revised Draft – December 2023]. *Combined figure for Tyne and Wear and Tees Valley from respective LAAs.

7.18 A quantitative assessment of the balance between the quantum of reserves and the calculated demand forecast based on the annual provision rate to 2025 and 2038 is set out below. As sales are market led it is assumed that the current pattern of sales will continue at least in the short term. As shown in table 7.4 above in 2019 69% of sales of crushed rock were recorded to be within County Durham, with the remainder to other parts of the North East or elsewhere.

Table 7.8 Calculation of the balance between supply and demand for crushed rock aggregate use from County Durham (Tonnes)

	County Durham Plan Forecast period 2023 to 2035 (13 years)	Standard 16 Year Forecast period 2023 to 2038 (16 years)
Reserves at 31 December 2022	87,615,000	87,615,000
Ten year sales average 2013 to 2022	2,890,900	2,890,900
Three year sales average 2019 to 2022 (excluding 2020)	3,180,000	3,180,000
Annual Provision Rate in LAA	3,180,000	3,180,000
Demand forecast	41,340,000	50,880,000
Landbank based on annual provision rate calculated in LAA	27.6 years	27.6 years
Balance between quantum of reserves and demand based on annual provision rate	**46,275,000**	**36,735,000**

7.19 Durham County Council has sought to understand the extent of reserves within each of County Durham's crushed rock quarries, the spatial distribution of reserves and the split of reserves by mineral 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 7.9, Table 7.10 and Table 7.11. This work gives an indication that in 2022 the majority of crushed rock reserves in County Durham were magnesian limestone. In 2022 it was estimated that approximately 81.47% of reserves were magnesian limestone, 12.87% carboniferous limestone and 5.6% were dolerite.

7.20 These tables also show 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 7.9 Estimate of Reserves, Potential Productive Capacity on 31 December 2022 – Carboniferous Limestone (Tonnes)

Quarry Name	Estimate of reserves 31.12.22 (tonnes)	Estimate of productive capacity (tonnes per annum)	Comments on potential future supply
Heights Quarry	5,6340,000*	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	1,020,000*	300,000	Future extraction anticipated to be at a rate of up to 300,000 tonnes per annum (based on operator proposed rate of working submitted in response to County Durham Plan call for sites). Future working beyond the short term dependent on new planning permission as current permission for extraction ends in 2024. An 8.2 million tonne extension allocated in County Durham Plan (October 2020). Subject to a future planning application being granted planning permission the site would be able to supply until approximately 2051. An additional eastern allocation of 6 million tonnes was submitted by a landowner in response to the call for sites for the County Durham Minerals and Waste Policies and Allocations Document. This additional area has not been identified for allocation in the Publication Draft document.
Kilmond Wood Quarry	4,280,000*	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.

Table Notes: * Figures provided in response to Council annual survey of mineral operators for 2022.

Table 7.10 Estimate of Reserves, Potential Productive Capacity on 31 December 2022 – Magnesian Limestone (Tonnes)

Quarry Name	Estimate of reserves 31.12.22 (tonnes)	Estimate of productive capacity (tonnes per annum)	Comments on potential future supply
Witch Hill Quarry	1,500,000[&]	50,000 to 150,000	Site understood to contain 1.5 million tonnes suitable for non-aggregate uses. 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 currently considered to be zero. However, it is assumed that reserves will be worked in the longer term but prior to 2042. Operator has also proposed a 5 million tonnes easter extension to site through the emerging County Durham Minerals and Waste Policies and Allocations Document but the site has not been allocated.
Running Waters Quarry	420,000*	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 reserves for new reserves at Witch Hill Quarry.
Crime Rigg Quarry	880,055*	100,000	Site has permission for working until 2022. Extraction anticipated to be around 100,000 tonnes per annum with unworked reserves remaining at 2022. Planning application submitted to extend duration of working to 2030. Operator has also proposed an extension to site containing 1.775 million tonnes through the emerging County Durham Minerals and Waste Policies and Allocations Document which has been identified for allocation in the Publication Draft document.
Bishop Middleham Quarry	3,798,000*	450,000	Site understood to contain 1.2 million tonnes suitable for non-aggregate uses. 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 Knuckle Quarry	9,347,000*	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. Reserves at this site will be sufficient to contribute to supply over the long term to at least 2042.The majority of reserves in the site lie within an area which requires new conditions prior to working commencing. A planning application is expected in the next one to two years for these reserves in combination with new reserves of sand and gravel.
Thrislington Quarry West	748,000*	200,000	Site has permission for working until 2030. Extraction anticipated to be at approximately 100,000 to 200,000 tonnes per annum.
Thrislington Quarry East	7,360,000&	600,000	Site has permission until 2045. Operator submitted a planning application in December 2018 seeking a variation to the existing planning permission which proposed that this site would be worked only for aggregate purposes till 2022/2023. It sought permission to extract circa 2 million tonnes at a rate of circa 600,000 tonnes over approximately 3.5 years. It is now expected that the remaining component of this 2 million tonnes will be worked until the end of 2023 or beginning of 2024. 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 dependent on demand for high grade dolomite and availability of reserves elsewhere in the UK.
Cornforth West Quarry	10,500,000^	600,000	Site currently inactive. Periodic Review Submission awaiting determination. Production forecast to now commence in. 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^	To follow on from Cornforth West Quarry	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 to work reserves beyond 2042. Subject to planning permission being granted reserves will be sufficient for 30+ years sales at a rate of 600,000 tonnes per annum.

Coxhoe Quarry (formerly Raisby Quarry)	16,909,000[&]	850,000	Site contains extensive reserve suitable for aggregate working and additional reserves suitable for agricultural lime production. Future extraction anticipated to be approximately 850,000 tonnes per annum, although this could be higher. Operator has also proposed a 37 million tonnes eastern extension to site through the emerging County Durham Minerals and Waste Policies and Allocations Document but the site has not been allocated. Operator currently in discussion with National Grid in relation to the relocation of pylons which cross the eastern extent of the existing permission which will need to be moved to facilitate extraction. Without the relocation of the pylons sterilisation of reserves could occur. The Council sought an update from National Grid in September 2023 but an update has not yet been forthcoming. Previously the Council was advised that National Grid would make a determination by the end of 2023.

Table Notes: *Figures provided in response to Council annual survey of mineral operators for 2022. [&]Durham County Council Annual Aggregates Survey for 2022/best estimate for split between mineral suitable for aggregate and non-aggregate purposes. ^Best Estimate.

Table 7.11 Estimate of Reserves and Potential Productive Capacity on 31 December 2022 – Dolerite (Tonnes)

Quarry Name	Estimate of reserves 31.12.22 (tonnes)	Estimate of productive capacity (tonnes per annum)	Comments on potential future supply
Force Garth Quarry	4,955,582*	290,000	Extraction anticipated to be up to 290,000 tonnes per annum when in full production.

Table Notes: *Figures provided in response to Council annual survey of mineral operators for 2022.

Forecast Scale of Future Provision

7.21 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 2038 as there are sufficient reserves with planning permission to deliver supply over these periods. However, crushed rock specifications vary according to the rock type being worked. This is explained in more detail below.

7.22 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. A key recommendation of previous 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

7.23 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 (CDP) Policy 49 (Primary Aggregates Provision) has identified a need for an additional 14.3 million tonnes of carboniferous limestone. Through the CDP and in order to meet this identified need the Council has allocated via the provisions of Policy 58 (Preferred Areas for Future Carboniferous Limestone Extraction) an eastern extension to Hulands Quarry (8.2 million tonnes) and a western extension to Heights Quarry (3.7 million tonnes), which has now received planning permission.

7.24 The additional need identified by CDP Policy 49 was sufficient to meet need to 2035 plus ten years supply of carboniferous limestone and was based upon a figure of 900,000 tonnes per annum. While it is acknowledged that there is a theoretical shortfall of approximately 2.4 million tonnes, between the reserves that the two CDP site allocations identified under CDP Policy 58 could provide and the 14.3 million tonnes figure specified in CDP Policy 49, this 2.4 million tonnes shortfall is only equivalent to approximately 3 years supply, based on current sales, and is now considered to not actually to be needed to maintain a steady and adequate supply of carboniferous limestone over the period to 2035. This has been confirmed through monitoring of sales which has allowed the Council calculates that in the first five years of the CDP period (2017 to 2022) total sales of carboniferous limestone were approximately 1.3 million tonnes lower than that would have been achieved if sales had achieved the 900,000 tonnes per annum figure upon which the CDP forecast was based had been met.

7.25 It is considered that the CDP Preferred Area at 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 over the Plan period to 2035. Furthermore, additional mineral may become available if mineral extraction were to resume at Broadwood Quarry (although the 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

7.26 It is considered that a steady and adequate supply of magnesian limestone aggregate will be maintained in the long term. However, it is considered that this is kept under annual review as the steady and adequate supply of crushed rock will be dependent upon the availability and the working of existing reserves including those contained within sites which are either inactive and/or require new schemes of working and restoration through their periodic review.

7.27 Previous 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 several inactive

quarries seeking to agree new schemes of working and restoration[19]. The Council is also considering a planning application to work two adjacent dormant magnesian limestone permissions at Tuthill Quarry[20], together with further quantities of magnesian limestone on adjoining land. Significantly, it should be noted that mineral extraction is expected to cease at Thrislington Quarry East which in addition to containing large quantities of high-grade dolomite (also known as industrial dolomite) also contains a large quantity of reserves suitable for aggregates use. This is because the permission at this quarry is restricted by legal agreement to the use of a proportion of the mineral to high grade purposes for which there is not a current demand from quarries in County Durham[21]. However, the Council is currently considering an application to allow the continued working of aggregates at Thrislington Quarry East in the very short term while the operator prepares a new scheme of working and restoration at Cornforth West and Cornforth East Quarry's, thereby maintaining a continuity of supply from these quarries which are within one operator's ownership. It should also be noted that an uncertainty currently remains in relation to the availability of reserves at Raisby Quarry. The operator is currently in discussion with National Grid in relation to the relocation of pylons which cross the eastern extent of the existing permission which will need to be moved to facilitate extraction. Without the relocation of the pylons sterilisation of reserves may occur. The Council sought an update from National Grid in September 2023 but this has not yet been forthcoming. Previously, the Council was advised that National Grid would make a determination by the end of 2023.

7.28 Previous LAAs have reported the current planning permission for mineral extraction at several of the magnesian limestone quarries in County Durham have end dates before 2035. 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, County Durham Plan Policy 51 (Meeting Future Aggregate Requirements) is supportive towards granting planning permission for an extension of time at existing sites where reserves remain at the end date of the current planning permissions.

Dolerite

7.29 Following issue of consent for the discharge of condition application in February 2020 reserves of dolerite have fallen at Force Garth Quarry, the County's one active dolerite quarry. However, it is considered that should this site be worked in accordance with its approved scheme that sufficient reserves will remain available until approximately 2042.

[19] At Witch Hill Quarry, Cornforth West Quarry, Cornforth East Quarry and also at Hawthorn Quarry.

[20] Tuthill Quarry is located near Haswell County Durham. The planning application (DM/17/00464/MIN) proposes the extraction of 2.77million m^3 of limestone and magnesian limestone and the restoration of existing and proposed void including importing 1.6million m cubed of clay and soils.

[21] 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 reserves at Thrislington East Quarry is the sole remaining reserve of this mineral and needs to be carefully husbanded and is considered as an important national resource.

Wider Supply Considerations

7.30 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 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 continue to occur, this would lead to a more rapid depletion of reserves within County Durham, which may not be easily replaced in the longer term.

7.31 In addition to considering emerging development plans and LAA within the North East, the Council also considers emerging development plans and Local Aggregate Assessments prepared by Council's 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.

7.32 Where necessary the Council will liaise and discuss matters relating to crushed rock supply with Council's both within and outside of the North East. The Council will seek to ensure that surrounding sub-regions and regions continue to seek to safeguard crushed rock resources and make sufficient provision to the ensure a steady and adequate provision of crushed rock through the preparation and review of LAAs and their own development plans and also maintain established supply relationships.

Appendix A - Aggregate mineral sites

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

Magnesian limestone

A.2 On 31 December 2022 there were ten[22] 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). Both applications were approved subject to a section 106 agreement in November 2022. A further planning application at this quarry was submitted in December 2022 (DM/22/03780/VOCMW) to facilitate a change to the working and restoration of the site and this is pending consideration. In recent years, 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, at both Cornforth West Quarry (DM/19/00026/MIN) and Cornforth East Quarry (DM/19/00025/MIN) and at Hawthorn Quarry (DM/17/04033/MIN). These applications are all pending consideration.

A.3 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).

A4. 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 approximately 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 maximize 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 approximately 2 million tonnes of aggregate grade stone which is presently exposed in the quarry. The interim restoration of the quarry is proposed. This application is pending consideration.

[22] 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).

A.5 Within County Durham there are also a further four sites which further working could occur. These are identified as either, dormant, Interim Development Orders or inactive Active Phase 1 sites which never completed the initial process of agreeing new planning conditions (see Tables A2, A3 and A4). It should be noted that the Council is not relying on any of these sites to meet future need. Two of these sites have been partially landfilled, Coxhoe Quarry (Joint Stocks Quarry Landfill), John O'Tooles (Leasingthorn) Quarry and 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 2022	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	09/09/2042 (4)	SSSI (Geological)
Crime Rigg Quarry	Sherburn NZ 346 416	Breedon	Active	31/12/2022	SSSI (Geological)
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(4))	
Thrislington Quarry West	Cornforth NZ 317 322	Tarmac	Active	15/01/2030 (5)	
Witch Hill Quarry	Sherburn NZ 345 397	Breedon	Inactive	21/02/2042 (6)	

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 application is pending consideration.
3. On 21 December 2018 Tarmac submitted an Environment Act 1995 - Periodic Review of Mining Sites application for Cornforth West Quarry. This application is pending consideration.
4. 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 consideration.

5. Planning permission was issued on 21 December 20918 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).
6. 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 consideration.

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 and 330364	
John O'Tooles (Leasingthorne) Quarry	Bishop Auckland	

1. In February 2017, Owen Pugh submitted a planning application to extract 2.77 million m^3 (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). This application is pending consideration.

Table A.3 Interim Development Orders (Magnesian Limestone)

Site Name	Location and Grid Reference	Designations
Chilton Quarry	Ferryhill Station 298325	

Table A.4 Inactive Active Phase 1 Sites requiring new conditions

Site Name	Location and Grid Reference	Designations
Hawthorn Quarry(1)	Seaham 438462	SSSI

1. 8/MRA/5/1 - Environment Act 1995: Periodic Review of Mining Sites. Application for the determination of new planning conditions for working and restoration relating to Planning Permission Nos CA25968, CA42376, CA45928, CA47394 and 5/81/274CM. This application was received on 16 December 1997. Subsequent to this submission an Environmental Statement was submitted in May 2000 and the application was then put on hold pending receipt of further information. Further information was requested from Tarmac in April 2009 and a Scoping Opinion was provided. A further Scoping Report was then submitted in July 2015 which resulted in a submission of an Environmental Statement in 2017. 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. This application is pending consideration.

Carboniferous limestone

A.6 There are only five quarries with planning permission to work carboniferous limestone (see Table A5). The two largest by virtue of reserves remaining are Heights Quarry and Kilmond Wood Quarry have both had sizeable extensions granted planning permission in the last few years. Only limited reserves currently remain at Hulands Quarry; however an allocation was made within the County Durham Plan which seeks to facilitate an eastwards extension and in May 2023, a revised planning application was submitted to the for the

working of 9.79 million tonnes of carboniferous limestone. This application is pending consideration. 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 consideration.

Table A.5 Quarries with planning permission for Carboniferous limestone extraction in County Durham

Quarry	Location and Grid Reference	Operator	Planning status on 31 December 2022	Expiry Date for Extraction	Designations
Broadwood Quarry	Frosterley NZ 035 365	Breedon	Active	21/02/2042	AONB
Heights Quarry[1]	Westgate NY 925 388	Aggregate Industries UK	Active	30/09/2046	AONB
Hulands Quarry[2]	Bowes NZ 016 140	Aggregate Industries UK	Active	31/12/2026	
Kilmond Wood Quarry[3]	Bowes NZ 024 134	Kearton Farms	Active	21/02/2042	

1. Planning permission was granted in June 2019 for a north western extension to Heights Quarry which provided an additional 3.7 million tonnes of reserve (DM/18/02483/MIN). 2. In May 2023, a revised planning application was submitted to the for the working of 9.79 million tonnes of carboniferous limestone (DM/23/01451/MIN). 3. Planning permission was granted for a 5 million tonne eastern extension to Kilmond Wood Quarry in December 2016 (DM/16/01937/MN).

A.7 There are also eleven other carboniferous limestone quarry's where working could theoretically resume, subject to reserves remaining and the agreement of new modern working and restoration conditions by the Council under provisions of the Environment Act 1995 (see Tables A6 and A7). Harrow Bank and Ashy Bank Quarry is an Active Phase 1 Site which requires new conditions to be agreed by the Council and the application stalled in 2007 (see Table A7). Given the lack of progress with this application, it is not considered reasonable to place any reliance on this site for future mineral supply and the reserves within this site are not included within the reserves or landbank figures in this LAA. With the exception of Harrow Bank and Ashy Bank Quarry, 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.6 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 A7 Inactive Active Phase 1 Sites requiring new conditions

Quarry	Location and Grid Reference	Operator	Planning status on 31 December 2022	Expiry Date for Extraction	Designations
Harrow Bank & Ashby Bank Quarry	Eastgate	Tarmac	Inactive (Active Phase 1 site)	21/02/2042[1)]	AONB

1. In 1998 Tilcon (North) Ltd submitted an application for the determination of conditions for this site under the provisions of the Environment Act 1995. Determination of the submission was suspended in December 1998 until such time that an Environmental Statement and other documents required were submitted to the Council. 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.

Dolerite (also known as Whinstone)

A.9 Currently there is only one quarry producing dolerite in the County, Force Garth Quarry in Teesdale, (see Table A8). 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.10 In addition there are also a number of small dormant dolerite quarries where working could theoretically resume, subject to 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 A9).

Table A.8 Sites with planning permission for Dolerite extraction in County Durham

Quarry	Location and Grid Reference	Operator	Planning Status on 31 December 2022	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.9 Dormant Sites (Dolerite)

Quarry	Location and Grid Reference	Expiry date for extraction	Designations
Cockfield	Teesdale 130248	21/02/2042	
Crossthwaite	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.11 Basal Permian Sand is currently worked at three quarries on the East Durham Limestone Plateau at Thrislington West Quarry, OId Quarrington and Cold Knuckle Quarry and at Crime Rigg Quarry (see Table A10). Generally, this sand is linked with the working of the economically important overlying magnesian limestone. While the deposit is a uniformly graded fine aggregate and has traditionally been mainly worked as a source of building sand and asphalting sand, it is understood that quarries in County Durham are also producing quantities of concreting sand from these deposit[23].

A.12 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 an 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.

A.13 In addition there are also a small number of dormant/Interim Development Order sand and gravel quarries where working could theoretically resume, subject to 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 A11 and A12).

Table A.10 Quarries with planning permission for sand and gravel working in County Durham

Quarry	Location and Grid Reference	Operator	Planning status on 31 December 2022	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 West Quarry	Ferryhill NZ 317 322	Tarmac	Active	15/01/2030	

[23] At Thrislington Quarry some basal Permian sand is blended with limestone fines to produce concreting sand.

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

Table A.11 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	

Table A.12 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.

Appendix B - Secondary and recycled aggregate facilities

B.1 This appendix provides details of all permanent secondary and recycled aggregate facilities in County Durham. 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.

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	Material	Status	Planning Permission End Date
Bishop Middleham Quarry	Bishop Middleham	W&M Thomson	Construction, demolition and excavation wastes	Active	11/06/2052
Aycliffe Quarry	Aycliffe	Stonegrave Aggregates	Construction, demolition and excavation wastes	Active	21/2/2042
Thrislington Quarry	Cornforth	Tarmac	Construction, demolition and excavation wastes	Active	15/01/2030
Old Quarrington Quarry	Bowburn	Tarmac	Construction, demolition and excavation wastes	Active	21/02/2042
Constantine Farm	Crook	W Marley	Construction, demolition and excavation wastes	Active	No end date.
Old Brickworks	Tanfield	Ken Thomas	Construction, demolition and excavation wastes	Active	No end date.
Heights Quarry	Westgate	Aggregate Industries	Construction, demolition and excavation wastes	Active	30/09/2046
Hulands Quarry	Near Bowes	Aggregate Industries	Construction, demolition and excavation wastes	Active	31/12/2026
Dean and Chapter Waste Recycling	Ferryhill	Bishop Middleham Plant and Recycling Ltd	Construction, demolition and excavation wastes	Active	No end date.
Esh Construction Recycling	Durham	Esh Construction Ltd	Construction, demolition and excavation wastes	Active	No end date.
Shaw Bank Waste Transfer Station	Barnard Castle	Francis & Richard Daniel Jackson	Construction, demolition and excavation wastes	Active	No end date.
Westline Transfer Station	Birtley	Remondis	Construction, demolition and excavation wastes	Active	No end date.

Appendix C - Mineral transport and processing infrastructure

C.1 This appendix provides details of aggregates transport and processing infrastructure.

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, 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)
Port of Seaham	• Thrislington Quarry • Ferryhill Station	• 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 plan	Kiln for the production of calcined Material
• Force Garth Quarry • Heights Quarry • Hulands Quarry • Coxhoe Quarry	• 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
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

Appendix D - Local Plans

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

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 for 9.79 million tonnes submitted in May 2023. Pending consideration.

D.3 The County Council commenced work to prepare its Minerals and Waste Policies and Allocations document (M&WDPD) in January 2021. Consultation under Regulation 18 of the Town and Country Planning (Local Planning) (England) Regulations 2012 was undertaken between Friday 15th January 2021 and Friday 26th 2021 when the Council consulted for six weeks on its Regulation 18 Statement - Notice of Intention to Prepare a Local Plan Document and at the same time conducted a call for new minerals and waste sites.

D.4 Consultation on the Draft Minerals and Waste Policies and Allocations document under Regulation 18 of the Town and Country Planning (Local Planning) (England) Regulations 2012 was undertaken between Friday 24th September and Friday 5th November 2021 when the Council consulted for six weeks on the County Durham Minerals and Waste Policies and Allocations Document Draft Plan (September 2021).

D5 Consultation on the Publication Draft Minerals and Waste Policies and Allocations document under Regulation 19 of the Town and Country Planning (Local Planning) (England) Regulations 2012 commended on 28 November 2022 and ran until 13 January 2023. The Publication Draft Minerals and Waste Policies and Allocations document was submitted for examination on July 2023 and examination hearings were conducted in September 2023. Consultation on Main Modifications is anticipated in January 2024 with adoption in June or July 2024. Details of the intended timetable for the M&WDPD is set out in a revised County Durham Local Development Scheme which was published in November 2022.

Table D.2 Summary of sites identified for allocation for aggregates working in the emerging Publication Draft Minerals and Waste Policies and Allocations document (November 2022)

Allocation	Mineral Resource	Estimated Reserve	Status and Comments on future supply
Thrislington West Quarry	Basal Permian Sand	5,800,000 tonnes	Allocation subject to decision of appointed Inspectors
Crime Rigg Quarry Northern Extension	Magnesian Limestone and Basal Permian Sand	1,775,000 tonnes of limestone and 910,000 tonnes of sand	Allocation subject to decision of appointed Inspectors

Appendix E - Major Infrastructure Projects

Table E.1 Major development projects of note in County Durham and surrounding areas – projects completed in recent years or projects currently being constructed.

Project	Location	Details	Timeframe	Demand for aggregates
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 and North Yorkshire 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 the North East.
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 4,785m^3 of concrete, 11,042m^3 of sub-base, 1,454m^3 and 10,838 m3 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 Summer 2017. Construction commenced in 2019 and completion is expected by 2022.	Graded aggregates 140,000 m3, asphalt 40,000 m3, concrete (in situ) 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 to commence 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	83ha mixed use development including industrial, storage and distribution uses, retail, housing, leisure and community facilities.	Planning permission granted February 2017. Phase 1 now completed.	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. The majority of existing projects which have been under construction are expected to be completed in 2023.	Not known.
Potash Harbour Facilities	Redcar and Cleveland	Consent granted. Construction commenced in 2019.		Not known.

Table E.2 Major development projects of note County Durham and surrounding areas - Potential future projects or projects yet to commence.

Project	Location	Details	Timeframe	Demand for aggregates
A1 dualling in Northumberland	Northumberland	Upgrade thirteen 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 eighteen 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 and North Yorkshire, 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.
Teesside Cluster Carbon Capture and Usage Project	Redcar and Cleveland	Combined cycle gas turbine electricity generating station with output of up to 2,000MW.	Development Consent Order application submitted 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	235ha electric car battery manufacturing site.	Received planning permission July 2021. Start date to be confirmed.	Not known.