



CUMBRIA AND THE LAKE DISTRICT NATIONAL PARK
JOINT ANNUAL LOCAL AGGREGATES ASSESSMENT 2021
(incorporating figures for 2019 and 2020)

FINAL V3
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1 Executive Summary

- 1.1 This Local Aggregates Assessment (LAA) is prepared jointly by Cumbria County Council (CCC) and the Lake District National Park Authority (LDNPA). It forms part of the evidence base for monitoring and review of their local plans. The Cumbria Minerals and Waste Local Plan (CMWLP) 2015 -2030 was adopted by CCC in September 2017. The LDNPA has reviewed its local plan (which includes minerals policies) and the Lake District Local Plan (2020-2035) was adopted in May 2021.
- 1.2 This LAA reports on two years of data (2019 and 2020). The sales, reserves and landbank provision figures for all aggregates in Cumbria (excluding sites within the Yorkshire Dales National Park boundary) are summarised in the table at the end of this chapter. A table summarising the 2019 data is also included for comparison. With the exception of sandstone and igneous (excluding the high specification roadstone) all other aggregates saw an increase in sales during 2019 compared to the previous year, and then a drop in sales during 2020 compared to 2019, with some sales figures dropping below the 2018 sales. This was anticipated due to the impact of the Covid-19 pandemic during 2020, with a national lockdown commencing in March 2020 and ongoing restrictions on the economy. In spite of this, however, sales of high specification roadstone and of sand and gravel remained higher than their 2018 figures. Sales of sandstone and igneous (excluding high specification roadstone) did drop a little in 2019 but stayed the same in 2020, with the overall effect that sales of all sandstone and igneous combined maintained the 2018 sales level.
- 1.3 With the exception of sand and gravel sales which dropped in 2018, and sandstone and igneous (excluding high specification roadstone), aggregate sales over the past 3 years (2018 – 2020) have been higher than the sales recorded for 2017. This has the effect of making the 3 year average sales figures for all crushed rock (and specifically limestone and high specification roadstone) noticeably higher than that calculated in the previous 2019 LAA. However, the 10 year average sales figures are lower than those calculated in previous LAAs as the much higher sales figures from 2009 and 2010 are no longer captured in the 10 year average calculations. The pattern of sales, reserve and landbank calculations over the past 3 years are shown in summary tables by aggregate type at the end of this chapter.

Sand and Gravel

- 1.4 Current permitted reserves of land-won sand and gravel for aggregate use (6.03Mt) are not sufficient to maintain the required landbank of at least 7 years throughout the Plan periods (2030 and 2035). **The LAA provision will continue to be based on 3-year average sales figures (currently 0.74Mt) giving a landbank of 8.15 years which would run out in 2029.** In order to ensure permitted reserves remain above the “at least” 7 years landbank required by the NPPF, new reserves need to come on stream no later than 2022.
- 1.5 An additional 6.55Mt of sand and gravel reserve is required to maintain a landbank of at least 7 years throughout the CMWLP period (to 2030) based on 3-year average sales figures. This would increase to 6.80Mt in the event of no further extraction taking place at Brocklewath and Roosecote.

- 1.6 Due to a high proportion of the sales and reserves figures for sand and gravel quarries being estimates for both the 2019 and 2020 surveys, in the absence of confirmed sales and reserve figures from operators, predictions on the end date of the landbank for sand and gravel should be treated with some caution, and the precise point at which the landbank falls below the minimum requirement could fluctuate. However, it is predicted that new reserves will be required within the current CMWLP period (i.e. before 2030).

Crushed Rock

- 1.7 Current permitted reserves of all crushed rock for aggregate use (116.35Mt) are more than sufficient to maintain the required landbank of at least 10 years throughout the Plan periods. **The LAA provision will continue to be based on 10-year average sales (2.80Mt) giving a land bank of 41.6 years.** In order to ensure permitted reserves for all crushed rock remain above the minimum 10 years required by the NPPF, new reserves will need to come on stream no later than 2052.
- 1.8 **The LAA provision for sandstone and igneous (excluding high specification aggregates) will now be based on 10-year average sales (0.35Mt) giving a land bank of 57.37 years.** This reflects the fluctuating sales figures over recent years and is higher than the current 3 year average sales figure of 0.29Mt. In order to ensure permitted reserves for sandstone and igneous remain above the minimum 10 years required by the NPPF, new reserves will need to come on stream no later than 2068.
- 1.9 **The LAA provision for limestone alone (also excluding high specification aggregates) will continue to be based on 10-year average sales (1.95Mt) giving a land bank of 41.08 years.** This is comparable to the last LAA 10-year average sales figure of 2.0Mt. This will be kept under review. Increased sales and firmer timescales on some of the major infrastructure projects planned for the county would be factors in deciding whether departure from the 10-year average sales figure could be justified in future LAAs. Based on current 10-year average sales, in order to ensure permitted reserves for limestone remain above the minimum 10 years required by the NPPF, new reserves will need to come on stream no later than 2052.

High specification aggregates

- 1.10 Current permitted reserves of high specification (HSA) and very high specification aggregates (VHSA) for use as roadstone is 16.15Mt. This is sufficient to maintain the required minimum 10 year landbank throughout the Plan periods. **The LAA provision will continue to be based on 10-year average sales (0.48Mt) giving a landbank of 33.64 years.** This is a further drop from 0.57 Mt in 2017, 0.54Mt in 2018 and 0.52Mt in the 2019 LAA (all based on 10-year average sales) and is below the current 3 year average sales of 0.51Mt as a result of increased sales over the past 3 years. Given the scarcity of this resource it is important to manage release of the available reserve to ensure it is done in respect of actual demand rather than perceived demand.
- 1.11 This provision rate gives a landbank of 33.64 years which should last until 2054. To maintain a landbank of at least 10 years for these high specification aggregates throughout the CMWLP period new reserves would need to come on stream by no later than 2044. If the higher provision rate of 0.51Mt was applied there would still be sufficient reserve to

maintain the required landbank throughout the CMWLP period with new reserves needed by 2042.

- 1.12 Ghyll Scaur is the only operating quarry in England to produce the VHSA roadstone. This is a nationally significant resource and therefore demand is likely to increase as a result of planned growth in housing and infrastructure across the UK, not just within Cumbria. Any reduced production from quarries producing this aggregate in the Yorkshire Dales National Park will also place increased demand on the high specification roadstone quarries within Cumbria.

Alternative aggregates

- 1.13 Recorded sales of secondary and recycled aggregates on the 2020 operator returns is 0.54Mt; 0.32Mt excluding slate waste. This shows a trend of increased sales/ use of recycled aggregate from inert waste over the past 3 years.
- 1.14 Trends in sustainable construction methods and the Government's commitment to EU targets for recycling of construction and demolition waste (70% by 2020) mean that recycled aggregates should continue to be readily available and increasingly used in development projects.

Managing supply and demand

- 1.15 Cumbria has traditionally supplied far more aggregate than is needed for its own use and this trend continues.
- 1.16 Many of the planned infrastructure requirements within Cumbria (see *Appendix 1 – Other Local Information*) are not expected to reach construction stage until 5- 10 years' time. Significant developments currently anticipated to commence within the next 5 years or so are the Carlisle Southern Link Road and the A66 dualling, as well as some initial phases of the St. Cuthbert's Garden Village (subject to the granting of planning permission). Construction of the CSLR and the A66 dualling programme (including sections outside of Cumbria) is likely to impact on demand for aggregates, in particular the high specification roadstones. Other road building/improvement programmes currently planned or underway across the UK will also impact on this demand.
- 1.17 Planned infrastructure requirements outside of Cumbria have also been taken into account when preparing this LAA. Some major non-highways projects are currently expected to commence within the next 5 years. This will need to be kept under review as the cumulative impact of projects coming on line within the current Plan period could have an impact on the landbank position.
- 1.18 There are a number of highways schemes, mainly in the North East region, that are scheduled for construction within the next 5 years so there is a strong likelihood that demand will increase for imports of HSA and VHSA roadstone from Cumbria as a result.
- 1.19 As a nationally significant resource, the supply of HSA and VHSA roadstone will be affected by major infrastructure requirements from across the UK and not just within

Cumbria. Additional monitoring of this reserve is required, particularly as Cumbria contains the only operating quarry in England to produce the VHSA roadstone at Ghyll Scaur. Demand is likely to increase with various national infrastructure projects coming forward such as investment in new roads, airport expansion projects and new nuclear plant facilities. It is likely these projects could reach construction stage in 5 – 10 years' time so supply will be affected within the Plan periods and landbanks will need to be monitored accordingly.

- 1.20 Site Allocations have been made in the CMWLP that would provide sufficient reserve to maintain the landbank required for sand and gravel, however there is no guarantee that applications will be forthcoming. There is potential for marine-dredged sand and gravel to make a greater contribution towards the supply although landing figures are unpredictable and zero landings have been recorded since 2018. The Crown Estate has confirmed there is sufficient vessel capacity and licenced material in the region to re-establish supply if market conditions provide sufficient economic demand. The use of secondary and recycled aggregates should also continue to be encouraged as an alternative.
- 1.21 Site Allocations have been made in the CMWLP for safeguarding the reserve of high specification roadstone but no provision is made for very high specification roadstone. There is an area with potential for VHSA close to Ghyll Scaur however this lies within the Lake District National Park.
- 1.22 There are no concerns at this stage regarding supply and demand of crushed rock generally. Where any planning permissions for crushed rock extraction are due to expire within the Cumbria Minerals and Waste Local Plan period (2015 -2030), the relevant planning policies within the Plan would support both extension of time and lateral extension in principle to ensure continued access to the remaining resource where there is a need for that aggregate.
- 1.23 As required by the NPPF, in addition to the specific Site Allocations mentioned in this LAA, both the CMWLP and the LDNPA Local Plan have designated Minerals Safeguarding Areas to ensure that known minerals resources - including existing, planned and potential infrastructure and plant - are not sterilised by other non-minerals developments. Railheads and wharves are also safeguarded under separate Local Plan policy.

Table 1A: Executive summary table for 2021 LAA (based on 2020 data)

Aggregate sales, reserve & landbank 2020	Reserves Mt	2020 Sales Mt	Trend ¹	10 yr avg sales	3 yr avg sales	LAA provision ²	Landbank (years) ³	Landbank end date	Reserve & Landbank years remaining at end of 2030	Additional tonnage required to maintain landbank ⁴
Crushed Rock										
Limestone	80.1	1.89	↓	1.95	1.97	1.95	41.08	2062	41.12 Mt (+31.09 years)	-
Igneous + sandstone exc. V/HSA	20.08	0.25	↓	0.35	0.28	0.35	57.37	2078	13.08Mt (+47.37 years)	-
V/HSA igneous + sandstone	16.15	0.45	↓	0.48	0.51	0.48	33.64	2054	6.55 Mt (+23.64 years)	-
TOTAL igneous + sandstone.	36.23	0.7	↓	0.83	0.79	0.83	43.65	2064	19.63Mt (+33.65 years)	-
TOTAL ALL crushed rock	116.35	2.59	↓	2.80	2.80	2.80	41.55	2062	60.35 Mt (+31.55 years)	-
Sand and Gravel										
Land-won sand and Gravel	6.03	0.75	↓	0.66	0.74	0.74	8.15	2029		
Marine- ⁵ dredged	0.0	0.0	↔	-	-	-	-	-		-
TOTAL sand and gravel	6.03	0.75	↓	0.66	0.74	0.74	8.15	2029	-6.55 Mt (deficit) -1.85 yrs (deficit)	6.55Mt
Secondary/Recycled aggregates										
Recycled Aggregate	-	0.321	↑	-	-	-	-	-		
Secondary aggregate (Slate waste)	-	0.220	↔	-	-	-	-	-		
TOTAL Recycled and secondary	-	0.541 (0.54 Mt)	↑	-	-	-	- ⁶	-		-

¹ Compared to previous year's sales (2019)

² 10 -year average sales is the starting point but the LAA should also take into account recent trends (3-year average sales) and Other Relevant Local Information when establishing what sales figures to use when calculating landbank provision

³ Calculated from LAA provision figure *this table is based on the figures set in the 2021 LAA from 2019 and 2020 data)*

⁴ Only required where there is a deficit. Calculated to maintain landbank requirement until end of Plan period (2030) i.e. to last until 2037 or 2040 .This is based on the LAA provision figure.

⁵ Refers to recorded landings at Barrow, not to a permitted reserve

⁶ Landbank not required for secondary aggregates

Table 1B: Summary table of sales, reserve and landbank trends based on 2019 data

Aggregate sales, reserve & landbank 2019	Reserves Mt	2019 Sales Mt	Trend ⁷	10 yr avg sales	3 yr avg sales	LAA provision ⁸	Landbank (years) ⁹	Landbank end date	Reserve & Landbank years remaining at end of 2030	Additional tonnage required to maintain landbank ¹⁰
Crushed Rock										
Limestone	77.08	2.16	↑	2.02	1.17	2.02	38.16	Early 2058	34.66 Mt (+27.16 years)	-
Igneous + sandstone exc. V/HSA	22.93	0.28	↓	0.37	0.33	0.33 ¹¹	69.45	Mid 2089	15.99Mt (+58.48 years)	-
V/HSA igneous + sandstone	15.5	0.57	↑	0.5	0.51	0.5	31.02	Late 2050	5.0 Mt (+20.0 years)	-
TOTAL igneous + sandstone	38.43	0.85	↑	0.86	0.84	0.86	44.68	Late 2064	20.37Mt (+33.68 years)	-
TOTAL ALL crushed rock	115.51	3.01	↑	2.9	2.81	2.9	39.83	Late 2059	54.6 Mt (+28.83 years)	-
Sand and Gravel										
Land-won sand and Gravel	6.63	0.77	↑	0.64	0.76	0.76 ¹²	8.7	Late 2028		
Marine- ¹³ dredged	0.0	0.0	↔	-	-	-	-	-		-
TOTAL sand and gravel	6.63	0.77	↑	0.64	0.76	0.76	8.7	Late 2028	-7.05 Mt (deficit) -2.27 yrs (deficit)	7.05Mt
Secondary/Recycled aggregates										
Recycled Aggregate	-	0.235	↑	-	-	-	-	-		
Secondary aggregate (Slate waste)	-	0.220	↔	-	-	-	-	-		
TOTAL Recycled and secondary	-	0.456 (0.5M t)	↑	-	-	-	- ¹⁴	-		-

⁷ Compared to previous year's sales (2018)

⁸ 10 -year average sales is the starting point but the LAA should also take into account recent trends (3-year average sales) and Other Relevant Local Information when establishing what sales figures to use when calculating landbank provision

⁹ Calculated from LAA provision figure (*this table is based on the 2019 LAA provision figures from 2018 data as no 2020 LAA produced*)

¹⁰ Only required where there is a deficit. Calculated to maintain landbank requirement until end of Plan period (2030) i.e. to last until 2037 or 2040 .This is based on the LAA provision figure.

¹¹ Based on 3-year average sales

¹² Based on 3-year average sales

¹³ Refers to recorded landings at Barrow, not to a permitted reserve

¹⁴ Landbank not required for secondary aggregates

Table 1C: 3-year summary of sales and reserves for Sand and Gravel

Summary of Sales and Reserves data SAND AND GRAVEL	2020	2019	2018
Year end sales figures (million tonnes)	0.75	0.77	0.71
10-year average sales (million tonnes)	0.66	0.64	0.62
3-year average sales (million tonnes)	0.74	0.76	0.77
Permitted reserves of sand & gravel (million tonnes)	6.03	6.63	7.26
Landbank based on 10-year average sales (years)	9.14	10.36	11.72
Landbank based on 3-year average sales (years)	8.15	8.73	9.43
LAA provision	0.74	0.76	0.77
Landbank end date – based on LAA provision	Early 2029	Late 2028	Mid 2028
Reserve and Landbank remaining at end of Plan period (2030) – based on LAA provision	-6.55 Mt (deficit) - 1.85 yrs	-7.05 Mt (deficit) -2.27 yrs	-7.36 Mt (deficit) - 2.57 yrs
Additional tonnage required to maintain landbank – based on LAA provision	6.55 Mt	7.05 Mt	7.37 Mt

Table 1D: 3-year summary of sales and reserves for Crushed Rock

Summary of Sales and Reserves data ALL CRUSHED ROCK	2020	2019	2018
Year end sales figures (million tonnes)	2.59	3.01	2.82
10-year average sales (million tonnes)	2.80	2.9	2.89
3-year average sales (million tonnes)	2.80	2.81	2.77
Permitted reserves (million tonnes)	116.35	115.51	120.88
Landbank based on 10-year average sales (years)	41.55	39.83	41.83
Landbank based on 3-year average sales (years)	41.55	41.11	43.64
LAA provision	2.80	2.9	2.89
Landbank end date – based on LAA provision	Mid 2062	Late 2059	Late 2060
Reserve and Landbank remaining at end of Plan period (2030) – based on LAA provision	60.35 Mt (surplus) + 31.55 yrs	54.6 Mt (surplus) + 28 yrs	57.30 Mt (surplus) +29.83 yrs
Additional tonnage required to maintain landbank – based on LAA provision	-	-	-

Table 1E: 3-year summary of sales and reserves for Limestone

Summary of Sales and Reserves data LIMESTONE	2020	2019	2018
Year end sales figures (million tonnes)	1.89	2.16	1.99
10-year average sales (million tonnes)	1.95	2.02	2.00
3-year average sales (million tonnes)	1.97	1.97	1.89
Permitted reserves (million tonnes)	80.12	77.08	81.94
Landbank based on 10-year average sales (years)	41.08	38.16	40.97
Landbank based on 3-year average sales (years)	40.67	39.13	43.35
LAA provision	1.95	2.02	2.00
Landbank end date – based on LAA provision	Early 2062	Early 2058	Late 2059
Reserve and Landbank remaining at end of Plan period (2030) – based on LAA provision	41.12 Mt (surplus) +31.09 yrs	34.66 Mt (surplus) +27.16 yrs	37.94 Mt (surplus) +28.97 yrs
Additional tonnage required to maintain landbank – based on LAA provision	-	-	-

Table 1F: 3-year summary of sales and reserves for High specification roadstone

Summary of Sales and Reserves data HIGH SPECIFICATION ROADSTONE (HSA & VHSA)	2020	2019	2018
Year end sales figures (million tonnes)	0.45	0.57	0.52
10-year average sales (million tonnes)	0.48	0.50	0.52
3-year average sales (million tonnes)	0.51	0.51	0.47
Permitted reserves (million tonnes)	16.15	15.50	16.11
Landbank based on 10-year average sales (years)	33.64	31.00	30.98
Landbank based on 3-year average sales (years)	31.66	30.39	34.28
LAA provision	0.48	0.50	0.52
Landbank end date – based on LAA provision	Mid 2054	Start 2051	Late 2049
Reserve and Landbank remaining at end of Plan period (2030) – based on LAA provision	6.55 Mt (surplus) + 23.64 yrs	5.0 Mt (surplus) +20 yrs	4.67 Mt (surplus) +18.98 yrs
Additional tonnage required to maintain landbank – based on LAA provision	-	-	-

2 Introduction

Purpose of this Local Aggregates Assessment

- 2.1 Mineral planning authorities should plan for a steady and adequate supply of aggregates. It is a requirement of the National Planning Policy Framework (NPPF) to produce an annual Local Aggregates Assessment (LAA), the purpose of which is the annual assessment of the demand for, and supply of, aggregates in a mineral planning authority's area¹⁵.
- 2.2 This Cumbria LAA is prepared jointly by Cumbria County Council (CCC) and the Lake District National Park Authority (LDNPA) in respect of the areas for which they have responsibility as minerals planning authority. Following the National Park boundary extensions in 2016, two of Cumbria's limestone quarries (Pickering and Rooks) now come under the responsibility of the Yorkshire Dales National Park Authority (YDNPA) as minerals planning authority and these reserves are no longer reported in the Cumbria LAA. This has not had any significant impact on permitted reserve figures as these sites produced very little for aggregate use.
- 2.3 Although usually produced annually, this LAA covers a two-year period of data for 2019 and 2020. This is primarily because 2019 survey data from operators was collated nationally by the British Geological Society (BGS) as part of the government's 4-yearly national survey of aggregates. Coupled with the fact that due to the Covid-19 outbreak (in particular the national lockdown commencing in March 2020) many sites either ceased operating temporarily or were operating at a much reduced scale, it was considered more appropriate to wait for the results of the BGS survey to be made available rather than run a duplicate survey that year. It was also envisaged that reporting over a 2 year period would allow for a more accurate reflection on the impact of the pandemic on the aggregates industry by including periods before, during and after some of the Covid-19 restrictions that had been in place since March 2020 and gradually lifted towards the end of 2020 for the construction industry in particular.
- 2.4 This document – which includes all the supporting information- and the shorter Executive Summary can be found on the council website at: http://www.cumbria.gov.uk/planning-environment/policy/minerals_waste/MWLP/LAA.asp and also on the Lake District National Park Authority website at: <http://www.lakedistrict.gov.uk/planning/planningpolicies/ldfresearchevidence>.
- 2.5 The LAA is used to inform the preparation, monitoring and review of each authority's minerals planning policies. The Cumbria Minerals and Waste Local Plan (CMWLP) was adopted by Cumbria County Council (CCC) in September 2017 and covers a Plan period of 2015 – 2030. The LDNPA has reviewed its local plan (which includes minerals policies) and the Lake District Local Plan (2020-2035) was adopted in May 2021.

¹⁵ NPPF paragraph 213, MHCLG (last updated May 2021)

2.6 As set out in Planning Practice Guidance (PPG), it contains three elements as summarised below¹⁶:

- a forecast of the demand for aggregates (based on average annual sales figures and other relevant information);
- an analysis of all aggregate supply options (based on permitted reserves);
- an assessment of the balance between demand and supply.

What are aggregates?

2.7 Aggregates are the basic raw materials used by the construction industry. Without them, houses, schools, hospitals, factories, offices and roads could not be built or maintained. They can be split into two main groups:-

- **Primary aggregates.** These are crushed rock and sand and gravel, which are extracted directly from the ground at quarries (**land-won** aggregates) or dredged from the sea (**marine-dredged** aggregates). Depending on their geological source, primary aggregates can have different properties or characteristics that can be important for their end-use. Important examples in Cumbria are the two types of crushed rock that are used for surfacing motorways and main roads, referred to as High Specification Aggregates (HSA) and Very High Specification Aggregates (VHSA) because of their high or very high skid resistance properties.
- **Alternative aggregates.** These are alternatives to primary aggregates and are regarded as more sustainable. They can be split into two sub-groups:-
 - **secondary aggregates** are a by-product of mining or quarrying operations or of other industrial processes; they can include colliery spoil, china clay waste, incinerator ash and pulverised fuel ash from power stations, industrial glass waste, ceramic waste, old tyres, slate waste, spent foundry sand and old blast furnace slag banks.
 - **recycled aggregates** are produced by recycling construction, demolition, excavation and other wastes. They can include crushed concrete, bricks and glass, old railway track ballast and the surface layers removed from roads during roadworks (road planings).

Aggregates in Cumbria

2.8 Cumbria is self-sufficient in aggregates and also supplies other markets, especially in the North West and the North East. Just under a third of Cumbrian quarries supply national markets, including Wales and Scotland. Three of Cumbria's crushed rock quarries are able to supply high specification aggregates (HSA) that are essential for high skid resistance roadstone used for highway surfacing; in addition one quarry produces the very high specification aggregate (VHSA) and is the only quarry in England to produce VHSA.

¹⁶ PPG, chapter 27 Planning for Aggregate Minerals, paragraph 062 (ID: 27-062-20140306)

This is a regionally and nationally significant reserve within Cumbria, located outside of the National Park.

- 2.9 In 2020 there were 10 operating sand and gravel quarries within Cumbria, all outside of the Lake District National Park (LDNP) and 17 operating hard rock quarries, providing limestone, igneous and sandstone rock (including the 3 producing high specification aggregates). Two of the hard rock quarries, Shap Beck and Shap Blue are partly within the LDNP; a third, Shap Pink, is wholly within the LDNP. In addition to producing aggregates, four of the limestone quarries supply industrial markets, mostly for burnt lime.
- 2.10 There were around 20 operating building stone and slate quarries within Cumbria: 2 (both limestone) are now reported by the YDNP as the minerals planning authority for that area so are no longer reported in this LAA; 7 are in the LDNP (all slate and 2 of these produce slate waste as secondary aggregate); 11 are located outside the LDNP (6 of these are known to produce some aggregate from off-cuts and 1 from slate waste).
- 2.11 Production of secondary and recycled aggregates in the county makes a valuable contribution to resource efficiency and the protection of the environment from unnecessary primary extraction. Appendix 6 lists the main processing plants in Cumbria producing alternative aggregates from quarry waste, recycled or reused materials. Some of these are located on quarry sites which also import inert waste for recycling, others are located elsewhere, including near industrial sites or landfill facilities.
- 2.12 Additional sand and gravel reserve is potentially available in Cumbria from marine dredged aggregates that are landed at Barrow Port, with small amounts also arising as a result of channel maintenance activities at some Cumbrian harbours. Whilst landings have dropped significantly and zero landings have been recorded since 2018, the Crown Estate has confirmed that there is vessel capacity and licenced material in the region to re-establish supply if market conditions provide sufficient economic demand.

The Managed Aggregates Supply System

- 2.13 Since the 1970s, there has been a national Managed Aggregates Supply System (MASS) set up to ensure a steady and adequate supply of aggregates, taking into account the significant geographical imbalances in the availability of suitable aggregates and the areas where they are most needed. It requires mineral planning authorities that have adequate resources of aggregates to make an appropriate contribution to national as well as local supply, while making due allowance for the need to control any environmental damage to an acceptable level. The North West, as a whole, meets only around half of its aggregate's consumption from within the region. Cumbria helps to meet the needs of other parts of the region but much of the shortfall is met from other regions - for example, quarries in Derbyshire and north Wales supply Greater Manchester due to their proximity.
- 2.14 Originally, the MASS was based on national estimates of need for aggregates projected forward for 15 years, which were then apportioned to regions. The NPPF (2012) brought in the requirement for mineral planning authorities to produce their own Local Aggregates

Assessment each year. However, they still need to take into account the published national and regional guidelines for aggregates provision.

- 2.15 The MASS is undertaken through national, sub-national and local partners working together to deliver a steady and adequate supply of aggregates:
- at the local level, mineral planning authorities must prepare Local Aggregate Assessments to assess the demand for and supply of aggregates in their area;
 - at the sub-national level, mineral planning authorities belong to and are supported by Aggregate Working Parties who produce fit-for-purpose and comprehensive data on aggregates covering specific geographical areas;
 - at the national level, the National Aggregate Co-ordinating Group should monitor the overall provision of aggregates in England.

Sub-Regional Apportionment

- 2.16 The Government sets national and regional apportionment figures for a 15 year period. The current figures are set in the National and Sub-National Guidelines for Aggregates Provision in England (2005- 2020) which was last updated in 2009. From this the regional Aggregate Working Party must set a sub-regional apportionment figure for each of the mineral planning authorities in that region.
- 2.17 Cumbria, including the area administered by the Lake District National Park Authority, is a member of the North West Aggregates Working Party (NWAWP) and constitutes one of the four sub-regions in the North West. In 2011 the NWAWP agreed the sub-regional apportionment figures. For Cumbria this was set at 4.1Mt for crushed rock and 0.7Mt for sand and gravel.

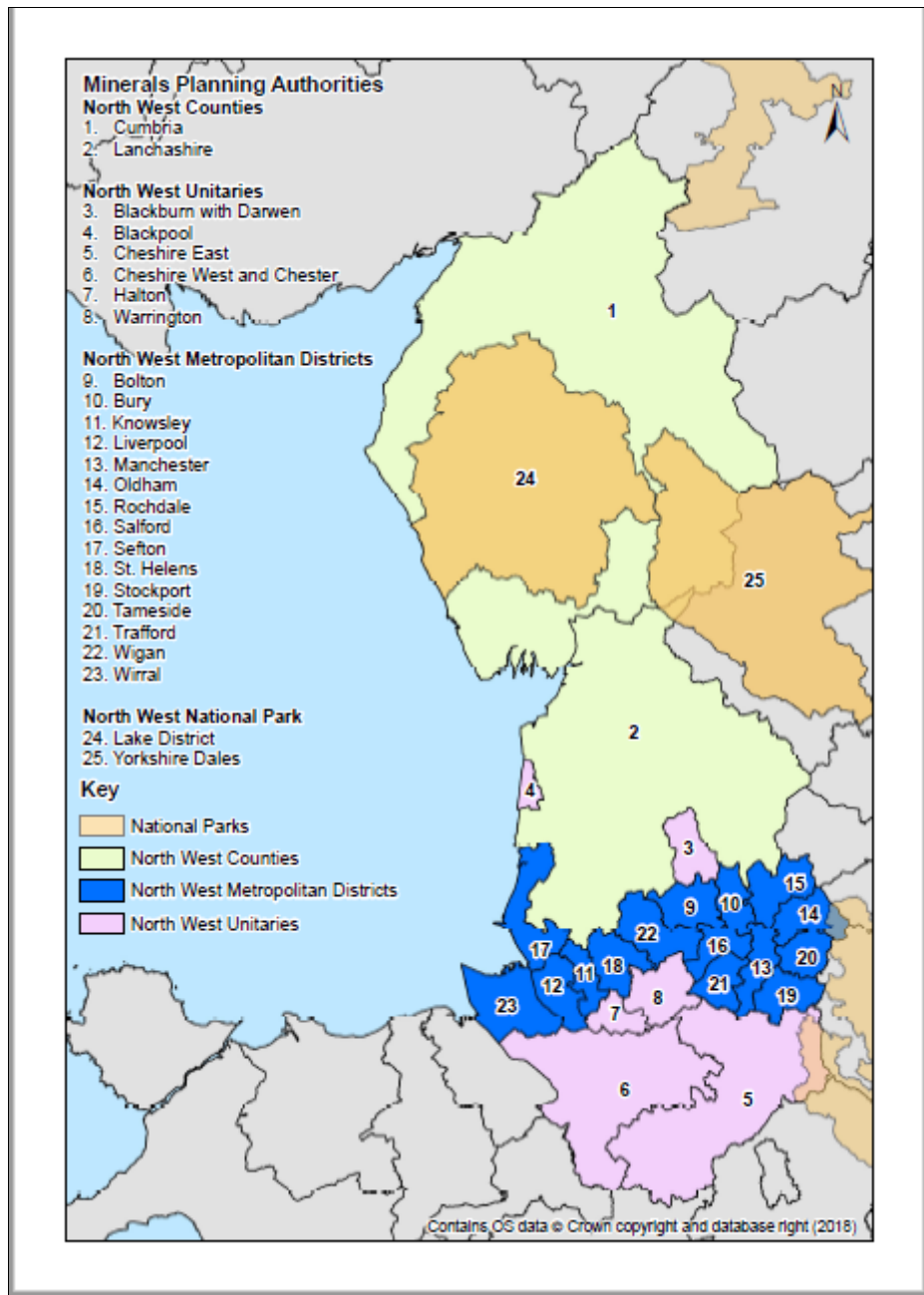


Figure 1 – Map of NW AWP area

Landbanks

- 2.18 A key additional tool that underpins the working of the MASS is the aggregate landbank. This is principally a monitoring tool and is a key part of the evidence base that mineral planning authorities take into account when considering whether any change to existing policy approach is required during review of their Local Plan. Calculating the landbank is an integral part of the reporting requirements for producing the Local Aggregates Assessment.
- 2.19 Separate landbanks are required for crushed rock (at least 10 years) and sand and gravel (at least 7 years). The difference in time periods is to some extent because these two

types of aggregate serve different markets and have different site infrastructure requirements. For example, quarries producing crushed rock will need a longer security of reserves to justify capital investment in crushing equipment.

- 2.20 Calculation of landbanks should be undertaken annually. The length of a landbank is typically calculated from the sum in tonnes of all permitted reserves for which valid planning permissions are extant, divided by the annual rate of future demand (typically the average annual sales figure over 10 years) based on the latest annual Local Aggregate Assessment. Other relevant information (such as planned infrastructure requirements) may also be taken into account when considering whether a different annual sales figure should be used to calculate the landbank going forward. Permitted reserves include currently non-working sites, but exclude those sites where mineral working cannot take place until there has been a review of the planning conditions attached to their planning permission. A table showing all the figures used for calculating landbanks is included in *Appendix 8*. This is also used to estimate when additional tonnage will be needed to maintain the required landbank right to the end of the Plan period 2030 (i.e. so the reserves will last until 2037 for sand and gravel, and 2040 for crushed rock).
- 2.21 The NPPF¹⁷ recommends that, as far as is practical, landbanks for non-energy minerals should be maintained from outside of designated areas such as National Parks and Areas of Outstanding Natural Beauty (AONBs). Cumbria contains, in whole or in part, two National Parks (Lake District; Yorkshire Dales) and three AONBs (Solway Coast; Arnside and Silverdale; North Pennines). There is also a World Heritage Site (Frontiers of the Roman Empire: Hadrian's Wall) across the north of the county, around 580 Scheduled Monuments and just under 100 Conservation Areas, all outside of the Lake District National Park. The Lake District National Park itself is now a World Heritage Site.
- 2.22 The landbanks that have been calculated for this LAA, do include reserves located in the Lake District National Park - for crushed rock used as aggregate from Shap Beck and Shap Blue quarries, both on the very edge of the Park. Rooks Quarry in the Yorkshire Dales National Park is now incorporated in to their own LAA work. It provides limestone off cuts for building stone so does not impact on Cumbria's landbank position. There are also landbank reserves located in two of the AONBs – at Sandside (Arnside and Silverdale AONB), Hartley and Helbeck quarries (North Pennines AONB).
- 2.23 Another requirement of the NPPF is that mineral planning authorities should ensure that competition is not stifled by large landbanks of permitted reserves bound up in very few sites; by inference, this means landbanks held by few mineral companies. In Cumbria, the control of reserves is not limited to a very few sites or very few operators. This is not, therefore, a pressing concern, but the situation will be kept under review.

LAA Provision figures

- 2.24 Having regard to the latest sales figures and other relevant local information, minerals planning authorities must set a provision rate each year in their LAA on which to calculate their landbank going forward and determine whether there will be sufficient aggregate reserve throughout the relevant local plan period. This is known as the LAA provision figure. It is likely to change from year to year depending on local circumstances.

¹⁷ NPPF (July 2021) Section 17 Facilitating the sustainable use of Minerals – para.. 203

Information used to produce the Cumbria LAA

- 2.25 The LAA should be based on a rolling average of 10 years sales data as a starting point but other relevant local information must also be taken into account. This could include planned infrastructure projects, levels of projected housing growth, and assessment of the 3 year average sales figures to identify any recent trends in demand. The most significant information used to prepare this LAA is set out below:-
- the Annual Monitoring Survey forms - sent to all mineral operators in Cumbria for primary land won aggregates and for secondary/recycled aggregates; this survey collects sales data for each type of aggregate for the previous calendar year and also indicates the permitted reserves at year end;¹⁸
 - data and information on marine dredged aggregates, held by the Crown Estate;
 - local information, which includes, but is not restricted to:
 - data provided in planning applications
 - liaison with minerals operators
 - levels of planned construction and house building in Cumbria
 - the economic strategy of the Local Enterprise Partnership
 - the NAWWP annual report
 - the four-yearly aggregate minerals survey carried out by the British Geological Survey for MHCLG – AM2019.
- 2.26 This LAA incorporates data gathered from the MHCLG AM2019 survey and the Annual Monitoring Survey forms for 2020. On sending out the Annual Monitoring Survey forms we gave operators the opportunity to provide data for the previous year 2019 also if they had not already done so as part of AM2019. This was particularly relevant for the secondary aggregate producers. Some primary aggregate operators sent in returns for 2019 which differed slightly from the figures they had provided for the MHCLG AM 2019 survey. In the case of these minor discrepancies we have used the MHCLG survey figures in this LAA to ensure consistency with the 4-yearly AM2019 reporting.
- 2.27 A number of operators have not provided any returns and here we have calculated their sales and reserves figure based on previous returns. Where it is considered that use of estimated figures could be impacting on the accuracy of the LAA provision and landbank calculations this is highlighted within the relevant section of the report.
- 2.28 It has also been necessary to take account of the high specification roadstone quarries in the Yorkshire Dales National Park as any reduced production from within the National Park could have an impact on the high specification roadstone quarries within neighbouring Cumbria.

¹⁸ The data gathered on the survey forms is confidential and an officer is nominated to receive the data provided by the operators. Itemised sales and reserves figures are not reported – they are collated so that individual figures and quarries cannot be identified

- 2.29 The assessment of demand and supply is discussed for each aggregate type in the following chapters, with an Executive Summary setting out the overall position at the end of 2020. Further details on relevant local information such as planned infrastructure projects and growth forecasts are included in the Appendices, along with historic data on aggregate sales and import/export trends.
- 2.30 This published version of the LAA has been prepared taking into account comments received following consultation with NAWWP members on the initial draft report.

3 Sand and gravel

Demand for sand and gravel

- 3.1 Sales of land-won sand and gravel was 0.77Mt in 2019, rising from 0.71Mt in 2018. Sales in 2020 was 0.75Mt, still an increase on the 2018 figure despite there presumably having been some reduced activity during this period due to the Covid-19 pandemic.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sand and Gravel Sales (Mt)													
Land-won	0.77	0.52	0.53	0.46	0.46	0.48	0.68	0.71	0.81	0.79	0.71	0.77	0.75
Marine dredged	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.006	0.01	0.008	0.00	0.00	0.00
Total sales	0.79	0.54	0.55	0.47	0.47	0.49	0.7	0.716	0.82	0.80	0.71	0.77	0.75

Table 2 – Historic sand and gravel sales

- 3.2 In 2019, the 10 year average of sales of land-won sand and gravel was 0.64Mt and the 3 year average was 0.76Mt. In 2020, the 10-year average was 0.66Mt and the 3 year average 0.74Mt.
- 3.3 Sales of sand and gravel aggregates from Cumbrian quarries appear to have recovered from the recorded drop in 2018, in spite of assumed reduced activity during 2020 as a result of the pandemic. The 10 year average remains higher than the previous LAA (based on 2018 data). The 3 year average is lower despite an increase sales in 2019 and will no doubt have been impacted by reduced activity in the pandemic.
- 3.4 Both the 2019 and 2020 sales figures are in line with (higher than) the sub-regional apportionment for Cumbria of 0.7Mt.
- 3.5 However, it should be noted that the majority of sales figures for sand and gravel are estimates due to the high number of surveys returns not being provided over previous years. For the national survey conducted by the BGS for operating year 2019 , 5 out of the 12 operators did not submit a survey. For the following year's AWP survey collated by Cumbria County Council as minerals planning authority for the operating year 2020, 7 out of the 12 operators did not submit a survey. Many of these operators have consistently failed to submit the annual AWP surveys over a number of previous years. Reported trends in sales figures should therefore be treated with some caution, and this will also impact on the accuracy of landbank calculations reported for sand and gravel.
- 3.6 *Appendix 1 – Other Relevant Local Information* provides details of planned major infrastructure projects, including housebuilding, that are planned in Cumbria over the next few years. Significant developments currently anticipated to commence within the next 5

years or so are the Carlisle Southern Link Road and the A66 dualling, as well as some initial phases of the St. Cuthbert's Garden Village (subject to the granting of planning permission). Construction of the CSLR and the A66 dualling programme (including sections outside of Cumbria) is likely to impact on demand for aggregates, in particular the high specification roadstones.

- 3.7 Nationally, the Minerals Products Association (MPA)¹⁹ reported that, whilst total aggregate sales have been depressed since the onset of the recession in 2008, they have started to recover since mid-2013. During 2018 sales of land-won sand and gravel were recorded as 48.9Mt, slightly higher than the 48.6Mt reported for 2016.

Supply of sand and gravel

- 3.8 Permitted reserves of all land-won sand and gravel at the end of the 2020 were 6.19 million tonnes (Mt). Of this amount, 0.16Mt was allocated by operators for non-aggregate use (including agricultural or leisure purposes), leaving **6.03Mt available for aggregate use**. All of the sand and gravel sites within Cumbria are located outside of the Lake District National Park. Permitted reserve figures are not held for marine-dredged aggregate but the amount landed at Barrow Port is included in the table below to show the contribution made to available supply. There have been no marine landings since 2017.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sand and Gravel Aggregate Reserves (Mt)													
Land-won aggregate sand and gravel	13.47	13.95	11.48	11.1	10.59	9.89	9.2	8.77	7.77	7.38	7.26	6.63	6.03
Marine – dredged aggregate²⁰	-	0.02	0.02	0.01	0.01	0.01	0.004	0.006	0.01	0.008	0.00	0.00	0.00
Total Aggregate sand and gravel	13.47	13.97	11.5	11.1	10.6	9.9	9.2	8.78	7.78	7.39	7.26	6.63	6.03

Table 3 – Historic sand and gravel reserves

- 3.9 All but two of the sand and gravel quarry permissions will expire before the end of the CMWLP Plan period in 2030 - these are **Bonnie Mount** (2035) and **Low Plains** (2033). Details of all the active sand and gravel quarries in Cumbria and their end dates can be found in *Appendix 2*.

- 3.10 Planning permission was granted in November 2019 at **Low Gelt** for a time extension until 2026, with 460,000 tonnes reserve remaining for extraction at the time of the application.

¹⁹ Profile of the UK Mineral Products Industry – 2020 Edition (Mineral Products Association) – reporting mainly on 2018 data

²⁰ Figures show the amount landed at Barrow Port

- 3.11 In 2020 planning applications were submitted at **Kirkhouse Quarry** to extend operations until November 2032 (currently permission will expire in July 2023), with an estimated reserve of 525,000 tonnes remaining at the time of the application..
- 3.12 **Brocklewath** has a small reserve remaining (0.04Mt) but is currently inactive and has not been operated since it changed ownership in 2013. The owner has now confirmed they do not intend to carry out further mineral extraction on this site and permission has since been granted for a revised restoration scheme.
- 3.13 There is also the potential for an issue to arise at **Roosecote** quarry. Although the site has planning permission to 2029, the owner of the land and the mineral rights has only granted a 10-year licence to continue quarrying at the site, in case the land is required for their own operational purposes with regard to the adjacent gas terminals. If that were to happen, the reserves (estimated to be 0.3Mt based on the last return received for the end 2017) would be lost. Furthermore, consolidation of gas processing at the terminal closest to the quarry is likely to increase health and safety risks, which could also impact on the feasibility of future extraction at the quarry.

Managing supply and demand – LAA provision figures

- 3.14 Based on 2020 sales, the 10-year annual average sales figure of 0.66 Mt gives a **landbank of 9.14 years** that would last until the start of 2030. If the estimated reserve of 0.25Mt remaining in Brocklewath and Roosecote were deducted, this would reduce the land bank to 8.75 years, lasting until 2029.
- 3.15 As well as the 10-year sales average, additional scenarios have been considered, looking at 3-year average sales; stabilising at 2020 sales, achieving pre-recession sales based on 2007 sales figures, and now taking into account the highest sales figure over the past 1 years. The table below illustrates how the landbank would perform under these scenarios. It also shows the additional reserve required (over and above those currently permitted) to maintain a minimum 7-year land bank at the end of the Plan period in 2030, i.e. to 2037.

Scenario	Sales level (Mt)	Landbank (years)	Landbank end date	Tonnage required to maintain minimum 7-year landbank (Mt)
End of 2020 reserve – 6.03Mt				
1: 10-year rolling average	0.66	9.14	2030	5.19
2: 3 – year rolling average	0.74	8.15	2029	6.55
3: stabilise at 2020 sales	0.75	8.05	2029	6.69
4: pre-recession sales (2007)	0.87	6.93	2027	8.76
5: Highest sales in previous 10 years	0.81	7.45	2028	7.74

Table 4: Sand and gravel – outcomes of potential sales scenarios

- 3.16 In each scenario, based on current permitted reserves the required landbank of at least 7 years would run out before the end of the Plan (2030). The 3 year average sales figure is now 0.74Mt (a drop from 0.77 in 2018 and 0.76 in 2019) which is 0.04 higher than the sub-regional apportionment figure of 0.7Mt. The 10 year average sales figure is now 0.66Mt which is 0.04 lower than the sub-regional apportionment figure. However, as mentioned in para 3.5 above, it should be noted that the majority of sales and reserves figures for sand and gravel are estimates due to the high number of operator surveys not being returned over previous years.
- 3.17 Whilst there are uncertainties around predicting future supply and demand - in particular the high level of estimated sales and reserve figures due to a low percentage of survey returns from operators- it is considered that a forward-looking approach to sand and gravel demand based on planned housing delivery provides a more reliable forecasting approach than looking back at past sales trends. This is because , through the Housing Delivery Test, there is a mechanism in place to ensure that local authorities do deliver the number of houses they plan for. Housing delivery is closely monitored and re-assessed every 5 years.
- 3.18 **The 2021 LAA will continue to base the provision rate on the 3-year average- currently 0.74Mt. This is slightly higher than the regional apportionment figure of 0.7Mt but acknowledges the potential impact of planned housing delivery within Cumbria over the next 15 years** Using this provision figure, the existing landbank would run out in 2029, with the reserve starting to fall below the required minimum 7 years' supply in 2023. To maintain a landbank of at least 7 years, as required by the NPPF, throughout the CMWLP period under this scenario would require an additional 6.55Mt of sand and gravel reserve to be released, with new reserve starting to come on stream by the beginning of 2022. In the event of no further extraction taking place at Brocklewath and Roosecote, this requirement would increase to 6.80Mt with new reserves needing to come on stream by late- 2021.
- 3.19 In the absence of confirmed sales and reserve figures from operators, predictions on the end date of the landbank for sand and gravel should be treated with some caution, and the precise point at which the landbank falls below the minimum requirement could fluctuate. However, it is predicted that new reserves will be required within the current CMWLP period (i.e. before 2030). It should be noted that the issue of relying on estimates due to low operator survey returns is common for most other MPAs in the North West region as well.
- 3.20 Another factor when considering supply and demand for sand and gravel is the level of activity amongst operators in seeking to extend their current permissions or extract additional reserves. Due to the low level of survey returns from operators and the absence of enquiries to release additional reserve, it is assumed that the industry does not currently anticipate a problem being able to meet anticipated demand over the foreseeable future based on permitted reserves. Operators are applying to extend the time periods on some existing permissions and in their application submissions are noting a slower rate of sales than when the original permissions were granted.
- 3.21 The use of planned housing delivery figures is considered to be a reliable basis on which to predict future demand. However, more certainty over the amount of aggregate required

per dwelling would make this approach more robust. This approach will therefore be developed further for future LAAs. This will inform future provision rates for sand and gravel and the amount of additional land-won sand and gravel that needs to be planned for in any review of the Cumbria Minerals and Waste Local Plan.

- 3.22 The site allocations for sand and gravel Areas of Search that are identified in the adopted CMWLP, could be roughly estimated as containing 14 Mt of resources so there is potential for any required shortfall to be met. However, the mineral resource in these areas has not been fully evaluated or deemed commercially viable, so no specific amount of reserve has been confirmed. It is by no means certain that planning applications would be submitted, or approved, on the Areas of Search, or that time extensions will be sought on all of the current permissions due to expire within the Plan period.
- 3.23 If all these applications were submitted and granted, it is likely that there would be sufficient reserves to satisfy pre-recession sales levels and provide a minimum 7-year landbank at the end of the Plan period.
- 3.24 The CMWLP identifies the following Site Allocations for sand and gravel–
- Land between Overby and High House Quarries – M6 Area of Search
 - Cardewmires Quarry – M8 Area of Search
 - Land near Roosecote Quarry – M12 Area of Search
 - Peel Place Quarry – M15 Area of Search
 - Roosecote Quarry -M27 Preferred Area
 - Kirkhouse Quarry – M11 Areas of Search
- 3.25 All of these allocations – with the exception of Kirkhouse Quarry - are within the west and south of the county where there is a particular shortage of sand and gravel aggregate supply compared to the rest of the county.
- 3.26 In addition, there were some other sand and gravel site allocations proposed that were not included in the adopted CMWLP. The allocations currently in the adopted plan are potentially capable of providing sufficient additional reserve to maintain the landbank within the Plan period. However, if these do not come forward then it would be possible to revisit those alternative allocations.

Marine dredged aggregates (sand and gravel)

- 3.27 Marine dredged aggregates are also considered to be primary aggregates. They account for around 20% of the total supply of sand and gravel in England and Wales. There are no land banks required for marine dredged aggregates.
- 3.28 In Cumbria, marine-dredged aggregates are landed at Barrow, principally taken from the large licensed area in Morecambe Bay, approximately twenty miles off the coast. Since

2004, around 4,000 to 25,000 tonnes/year of sand from this area have been landed at Barrow docks. This is supplemented by the amounts provided by channel maintenance activities at harbours, such as Workington and Maryport; these aggregates are often used very locally, as they are landed by a local operator.

3.29 Landings of marine dredged sand and gravel at Barrow dropped from 10,226 tonnes in 2016 to 8,327 tonnes during 2017. It had looked as though the general decline in landings at Barrow (from 23,111 tonnes in 2009, down to 9,831 tonnes in 2012) had halted in 2013 and that trends were reversing, but with another dip in 2014 and then rises in 2015 and 2016. The Crown Estate confirmed zero tonnes were landed at Barrow since 2017.

YEAR	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Tonnes	23,111	15,592	12,333	9,831	11,805	3,790	5,905	10,226	8,327	0	0	0

Table 5 – Marine Landings at Barrow (source: The Crown Estate 2021)

3.30 The Mineral Products Association (MPA) reports 13.7Mt nationally for marine aggregate sales during 2018, accounting for 22% of the total construction needs for sand and gravel in Great Britain.²¹ The quantities of marine dredged aggregates that are landed in the North West have generally been falling over several years and have always been less than the authorised extraction rates. In 2020, the total permitted extraction for marine aggregates in the North West region was 1.3Mt. The total landings recorded was 153,555 tonnes, significantly lower than the figure of 281,839 tonnes recorded for 2018.²²

3.31 One of the key issues relating to supply is the economic viability of the marine resource compared to land-won. However, with the pressures on land resources, there is the potential that marine aggregates will play an increasingly important role. There was a renewal of licences for a 15 year period the start of 2014 off the Hilbre Swash (off North Wales) licences at the start of 2014. Tarmac used to have a licence around the Isle of Man but this was handed back around 10 years ago due to perceived lack of demand. Hanson Aggregates Marine Ltd currently have an Option and Exploration Agreement (Area 518) relating to fine sand in the Garston area which has not yet progressed but has approximately 2 years left to run.

3.32 Recent discussions with industry indicate that there is a plentiful supply of good quality marine aggregate in the North West, including local to Cumbria, that could meet future demand for sand and gravel. However, the issue is logistics of getting it to market. This is influenced by a number of factors including – the cost of chartering a vessel without sufficient demand for the product; the cost of renting land/infrastructure at ports; availability of land-based infrastructure such as wharves/landing points and, in particular, sufficient rail capacity to get the product to market. Once road transportation is the only option, this significantly increases costs. Failure to safeguard key sites has also led to the loss of infrastructure in some areas.

²¹ Profile of the UK Mineral Products Industry – 2020 Edition (Mineral Products Association)

²² Marine Aggregates- Crown Estate Licences – Summary of Statistics 2020

- 3.33 As with other minerals planning authorities in the North West, Cumbria does not currently have enough permitted reserve of land-won sand and gravel to maintain sufficient supply throughout the CMWLP period. Noting the potential for marine aggregates to contribute to this shortfall, CMWLP Policy SP10 states that planning permission will be granted for developments at appropriate locations that would enable increased use of marine dredged aggregates (subject to being environmentally acceptable). Policy SAP5 also safeguards a number of existing and potential railheads and wharves.

Summary – sand and gravel

Current permitted reserves of land-won sand and gravel for aggregate use (6.03Mt) are not sufficient to maintain the required at least 7 year landbank throughout the CMWLP period (2015-2030). Based on 3-year average sales figures (0.74Mt) the available landbank would run out in 2029, starting to fall below the required 7 years' supply in 2022.

An additional 6.55Mt of sand and gravel reserve is required to maintain a landbank of at least 7 years throughout the CMWLP period. This would increase to 6.80Mt in the event no further extraction takes place at Brocklewath and Roosecote.

Applications have recently been approved/submitted for time extensions on existing permissions for sand and gravel extraction that were due to expire within the next 2-3 years. A number of other permissions are due to expire before the end of the CMWLP plan period and there is uncertainty over the duration of the operational licence for Roosecote Quarry, despite the planning permission running until 2029.

Due to the high proportion of estimated sales and reserves figures for sand and gravel quarries in Cumbria, calculations on landbanks and required reserve must be treated with caution. However, it is predicted that new reserves will be needed before the end of the Plan period in order to maintain a landbank of at least 7 years.

Site Allocations have been made in the adopted CMWLP for Areas of Search/Preferred Area for sand and gravel. If progressed, these could provide sufficient reserve to satisfy pre-recession sales levels and provide an at least 7 year land bank at the end of the Plan period.

There is potential for marine-dredged sand and gravel to make a greater contribution to the permitted 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 mean it is currently not as economically viable as land-won sand and gravel.

4 Crushed rock

Demand for crushed rock

- 4.1 Sales of crushed rock for aggregate use (excluding slate, building stone and other non-aggregate sales) were 3.01Mt in 2019, increasing from 2.82Mt in 2018, then 2.59Mt in 2020. As with 2018, this appears to be primarily due to a sustained increase in the sale of High Specification Aggregates up to and including 2019.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Crushed Rock Sales for aggregate use (Mt)														
Limestone	2.7	1.91	2.46	1.84	2.03	1.62	1.9	2.52	1.92	1.78	1.99	2.16	1.89	
Sandstone and igneous rock (excl. HSA)	0.4	0.38	0.41	0.37	0.37	0.37	0.3	0.36	0.49	0.41	0.31	0.28	0.25	
High Specification Aggregate (HSA)	0.72	0.78	0.59	0.6	0.55	0.41	0.38	0.42	0.48	0.43	0.52	0.57	0.45	
Total sales	3.58	3.07	3.46	2.81	2.95	2.4	2.58	3.3	2.89	2.61 ²³	2.82	3.01	2.59	

Table 6 – Historic crushed rock sales

- 4.2 In 2019, the 10 year average sales for all crushed rock was 2.90Mt and the 3 year average increased to 2.81Mt. In 2020, the 10 year average and the 3 year average were both 2.80Mt. Sales figures for crushed rock have consistently been below the sub-regional apportionment set for Cumbria of 4.1Mt.
- 4.3 Sales figures for crushed rock have fluctuated over the past 10 years and this is more pronounced when reviewing Limestone sales. The collated sales figures for limestone also exclude non-aggregate uses; however, if sales of limestone used for non-aggregate purposes fluctuate in response to market changes, this could have an effect on the rate of decrease in aggregate reserves. Reported non-aggregate use limestone sales in 2019 were 1.2% - compared to 5.7% in 2018, and in 2020 were up to 7.2%. Reserves allocated by operators for non-aggregate uses were 10.4% in 2019 and 6.8% in 2020 of all limestone crushed rock reserves. The sales of limestone for industrial purposes has fallen since calendar year 2014, when it constituted 27% of the total limestone crushed rock sales. The percentage of reserves reported by operators to be allocated for non-aggregate purposes has stayed largely the same, although there appear to be some discrepancies in the non-aggregate reserves reported for the MCHLG survey for 2019 and the figures provided in the local authority operators returns for 2020. For example, one operator reported 40% non-aggregate in 2019 and 0% non-aggregate for 2020.
- 4.4 *Appendix 1 – Other Relevant Local Information* provides details of planned major infrastructure projects, including housebuilding, that are planned in Cumbria over the next few years. Significant developments currently anticipated to commence within the next 5

²³ Figures in this table are rounded up to Mt: Limestone 1,777,521; sandstone & igneous 405,573; V/HSA 426,214; Total sales = 2,609,308 (2017 data)

years or so are the CSLR and the A66 dualling, as well as some initial phases of the St. Cuthbert's Garden Village (subject to the granting of planning permission). Construction of the CSLR and the A66 dualling programme (including sections outside of Cumbria) is likely to impact on demand for aggregates, in particular the high specification roadstones. Other road building/improvement programmes currently planned or underway across the UK will also impact on this demand.

- 4.5 Nationally, the Minerals Products Association (MPA)²⁴ reported that primary aggregate sales continue to increase towards 2007 sales figures (prior to the recession). During 2018 sales of crushed rock were 117.3Mt, higher than the previously reported figure of 113.9Mt.

Supply of crushed rock

- 4.6 Permitted reserves of all crushed rock at the end of 2020 were 124.93Mt Mt (excluding slate). Of this amount, 8.57Mt (6.8%) was allocated by operators for non-aggregate use, leaving **116.35Mt for aggregate use**. This compares to 13.41Mt (10.4%) of the total permitted reserve (128.92Mt) being reserved for non-aggregate use in 2019.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Crushed Rock Reserves for aggregate use												
Limestone	110.05	103.9	109.8	103.8	99.56	99.17	96.26	97.9	84.26	81.78	81.94	77.1
Sandstone and igneous rock (exc HSA)	47.75	47.81	47.36	24.81	23.41	10.33	29.82	29.5	29.00	29.01	22.84	20.2
High Specification Aggregate (HSA)	18.2	17.26	13.16	13.81	13.77	11.53	10.98	17.22	16.74	16.56	16.11	15.6
Total reserves ²⁵	186.7	168.9	170.3	142.4	136.7	121.03	137.06	144.63	130.00	127.35	120.88 ²⁶	112.9

Table 7 – Historic crushed rock reserves

- 4.7 The increase in Limestone reserves recorded in 2018 follows confirmation that the Holme Park Quarry reserve is 12.1Mt (higher than recorded the previous year) with 3.6Mt currently constrained beneath processing plant but that would be worked when the processing plant is removed. There is a further 3.02Mt increase in limestone reserve showing from 2019 – 2020. There has been some additional reserve permitted (0.6Mt) at Silvertop Quarry in February 2021 but this should not count towards the permitted reserve at the end of 2020. The reported increase appears to be a result of changes in reporting figures between the MCHLG survey for 2019 and the local authority operator returns received for 2021, partly in the reporting of percentages of reserve allocated for non-aggregate use. Whilst further clarification on these figures would be helpful it is not considered critical given the current landbank situation of over 50 years.

²⁴ Profile of the UK Mineral Products Industry – 2020 Edition (Mineral Products Association)

²⁵ Excluding slate and those classified by operator as non-aggregate use.

²⁶ Rounding up: Limestone 81,936,734; Sandstone & Igneous 22,835,000; HSA 16,111,000 (2018 data)

²⁷ Rounding up: Limestone 80,122,895; Sandstone & Igneous 20,080,895; HSA 16,149,082 (2020 data)

- 4.8 Details of all active crushed rock quarries in Cumbria and their end dates can be found in *Appendix 3*. Five crushed rock quarry permissions will expire before 2030. **Moota** did secure permission for a time extension (to 2024) and physical extension in early 2015, which has resulted in the working of further reserves. In 2016, **Holme Park** submitted an application for an extension of time to 2043, which was granted permission in July 2017, subject to a Section 106 agreement (decision notice issued in April 2021); in 2017 **Sandside** submitted an application for an extension of time to 2029 which was granted permission in July 2018 subject to a Section 106 Agreement (decision notice issued September 2019); **Shapfell** submitted an application for a time extension and to deepen the quarry over ten years ago. This application has now been withdrawn so permission on this site is expired. There is only a relatively small reserve remaining (estimated less than 0.1Mt). **Tendley** is working steadily in accordance with its phasing. **Snowhill no.1 Quarry**, which was previously only considered for building stone, was granted permission in 2014 to increase its aggregate production five-fold for a three year trial period; in mid-2017, the quarry was granted a time extension to 2022. Since 2015 no operator returns have been received for either Snowhill 1 (limestone) or Snowhill 2 (sandstone) and they are currently recorded as inactive.
- 4.9 The planning application for **Holme Park**, does not entail any deepening or lateral extension of the quarry, as it is located in a very sensitive area. A National Nature Reserve and SSSI lie in the centre of the quarry, and there are several surrounding Limestone Pavement Orders. **Sandside** Quarry is also situated in a constrained site, within the Arnside & Silverdale AONB, and it is unlikely that a lateral extension could be accommodated.
- 4.10 There may be issues with two other crushed rock quarries, which have the potential to impact on the landbank. Firstly, **Eskett and Rowrah** quarries; that part of the quarry known as Eskett is almost worked out and the operator intends to move into that part known as Rowrah, in order to extract the reserves located there. However, there is a substantial amount of water in the Rowrah area and, if an environmentally acceptable solution for its dewatering is not found, the reserves could be lost. Secondly, **Kendal Fell** Quarry has been the subject of a master-planning exercise and the development would potentially sterilise the resource, which remains in a Mineral Safeguarding Area. Prior extraction could be considered if development of the site was likely to result in an unacceptable loss of the available limestone resource within the county. Planning permission has recently been granted for a secondary aggregate production facility on this site.

Managing supply and demand – LAA provision figures

- 4.11 Based on 2020 sales and remaining reserves, the 10-year annual average sales figure of 2.80Mt for **all crushed rock** gives a **landbank of 41.6 years** which would last until Late-2062. To maintain a landbank of at least 10 years, as required by the NPPF, for crushed rock new reserves would need to come on stream by no later than 2052.
- 4.12 **Provision for all crushed rock will continue to be based on the 10-year average sales level (2.80Mt)** to allow for some growth but recognising sales have fluctuated. Sales have increased in 2019, then dropped in 2020 (presumably due to reduced demand during the restrictions placed on the economy during the Covid-19 pandemic). The 3-year average is also 2.80Mt. Noting that the current landbank is substantial it is considered reasonable

to maintain provision based on the 10 year average and keep this under review to see how sales figures change over the next couple of years moving out of the restrictions imposed as a result of the pandemic. Within this timescale there should also be more certainty over the start dates for planned major projects such as St Cuthbert's Garden Village and the CSLR, as well as the A66 dualling programme. This information would be taken into account when considering whether departing from the 10-year average sales figure could be justified in the future.

- 4.13 **Provision for all sandstone and igneous will continue to be based on the 10-year average sales level (0.83Mt).** Sales have been consistent over the past few years from 2017 - 2020 (0.83Mt each year, except 0.85Mt in 2019). This would give a landbank of 43.65 years which would last until 2064. To maintain a landbank of at least 10 years, as required by the NPPF, for sandstone and igneous new reserves would need to come on stream by no later than 2054.
- 4.14 **Provision for sandstone and igneous (without HSA) will be based on the 10-year average sales level (0.35Mt).** The previous LAA opted for 3-year average sales which at the time (0.4Mt compared to the then 10-year average of 0.38Mt) was considered more supportive of a trend for increasing sales. However, sales have dropped since 2017 making the 3-year average currently 0.28Mt. The NPPF advises 10 year average sales as a starting point. This gives a **landbank of 57.37 years** which should last until 2078. To maintain a landbank of at least 10 years, as required by the NPPF, new reserves would need to come on stream by no later than 2068.
- 4.15 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 (excluding high specification aggregates) or for the provision of crushed rock generally. Historic sales data and landbank years based on 10-year average sales for all aggregates is provided in the table at *Appendix 7* for reference.
- 4.16 Assessment of **high specification aggregates**, including the LAA provision figure, is reported separately in the following chapter.
- 4.17 Looking at **limestone alone**, used only for general aggregate use and not as high specification roadstone, based on 2020 sales and remaining reserves (80.10Mt), the 10-year average sales figure (1.95Mt) gives a **landbank of 41.08 years** which would last until 2062. These figures also exclude limestone reserves for non-aggregate use, which are generally the high purity limestone that is used for industrial purposes. To maintain a landbank of at least 10 years, as required by the NPPF, for limestone new reserves would need to come on stream by no later than 2052.
- 4.18 The following scenarios have been considered for managing the supply of limestone. The table below illustrates how the landbank would perform under each scenario.

Scenario End of 2020 reserve – 80.1Mt	Sales level (Mt)	Landbank (years)	Landbank end date	Tonnage required to maintain 10-yr landbank (Mt)
1: 10-year rolling average	1.95	41.08	2062	-
2: 3-year rolling average	1.97	40.67	2061	-
3: stabilise 2020 sales	1.89	42.41	2063	-
4: pre-recession sales (2007)	2.8	28.61	2049	-
5: Highest sales in previous 10 years	2.52	31.79	2052	-

Table 8: Limestone – outcomes of potential sales scenarios

4.19 Even in the scenario using the highest pre-recession sales level there would be no additional reserves required (over and above those currently permitted) to maintain a minimum 10-year landbank at the end of the CMWLP period in 2030, i.e. to 2040. However, with the planning permissions on a number of limestone quarries due to expire before or shortly after the CMWLP period, consideration will be given to the location and production capacity of these sites, and therefore distribution of this aggregate across the county, when determining applications for further extraction. Policies within the Plan would support both extension of time and lateral extension in principle to ensure continued access to the remaining resource where there is a need for that aggregate.

4.20 **Provision for limestone will continue to be based on the 10-year average sales level (1.95Mt).** This is comparable to the previous LAA figure of 10-year average sales at 2.0Mt. Sales have increased again in 2019, then dropped in 2020 (presumably due to reduced demand during the restrictions placed on the economy during the Covid-19 pandemic). The 3-year average of 1.97Mt is slightly higher. However, noting that the current landbank is substantial it is considered reasonable to maintain provision based on the 10 year average and keep this under review to see how sales figures change over the next couple of years moving out of the restrictions imposed as a result of the pandemic. Within this timescale there should also be more certainty over the start dates for planned major projects such as St Cuthbert’s Garden Village and the A66 dualling programme. This information would be taken into account when considering whether departing from the 10-year average sales figure could be justified in the future.

4.21 The CMWLP identifies the following Site Allocations for Limestone–

- Silvertop Quarry – M10 Area of Search

This allocation relates to a possible small extension to the existing quarry. It is not to identify further reserves but to establish whether an alternative area for quarrying is available that would have less impact on the setting of the North Pennines Area of Outstanding Natural Beauty, which overlooks the quarry, compared to part of the land within the current planning permission.

The recent planning permission for an extension to Silvertop Quarry (granted in February 2021) was not on this site allocation but an alternative location to the north of the quarry. Following site investigations, the operator has established that there is no winnable limestone reserve within site allocation M10.

Summary – crushed rock

Current permitted reserves of all crushed rock for aggregate use (116.35Mt) are more than sufficient to maintain the required landbank of at least 10 years throughout the CMWLP period (2015-2030). Based on 10-year average sales (2.8Mt) there is a landbank of 41.55 years. To maintain a landbank of at least 10 years for all crushed rock throughout the CMWLP period new reserves would need to come on stream by no later than 2052.

The 10-year average sales (0.35Mt) for sandstone and igneous (excluding high specification aggregates) gives a landbank of 57.37 years. Applying the 10-year average sales figure of 0.35Mt maintains a landbank of 64.82 years. Using this provision figure, to maintain a landbank of at least 10 years throughout the CMWLP period new reserves would need to come on stream by no later than 2068.

Looking at reserves for limestone alone (also excluding high specification aggregates) the 10 year average sales (1.95Mt) gives a landbank of 41.08 years. To maintain a landbank of at least 10 years for limestone throughout the CWMLP period new reserves would need to come on stream by no later than 2052.

A Site Allocation has been made in the adopted CMWLP for limestone. This is not to identify further reserves but to establish whether an alternative area for quarrying is available that would have less impact on the setting of the North Pennines Area of Outstanding Natural Beauty than part of the area currently permitted. The operator has since established there is no winnable limestone reserve within Site Allocation M10 at Silvertop Quarry. Permission has been granted for a small extension to the north of the quarry that will generate an additional 0.6Mt of limestone.

There are no concerns at this stage regarding supply and demand of crushed rock generally. Where planning permissions do expire within or shortly after the CMWLP period, relevant policies would support both extension of time and lateral extension in principle to ensure continued access to the remaining resource where there is a need for that aggregate across the county.

As Cumbria has three quarries producing high specification and very high specification aggregates for use as roadstones, and this is a nationally significant resource, these aggregates are assessed separately.

5. High specification aggregates

- 5.1 The High and Very High Specification Aggregates (HSA and VHSA) produced in Cumbria are essential for the building and maintenance of roads, especially motorways, because of their high or very high skid-resistance properties. They have a national and regional market and are a nationally significant resource. Skid resistance properties are measured using a number of factors, including their Polished Stone Value (PSV). A distinction is made between high specification aggregates (HSA) with a PSV of 58+ and very high specification aggregates (VHSA) with a PSV of 68+ which are geologically rare.
- 5.2 Collection of separate data on this material commenced in 2005, in order to ensure ongoing supplies distinct from general crushed rock use for aggregates. It is now possible to derive annual average sales for these roadstones over a ten year period. Demand has risen over the past 5 years, and there are limited sources of the material in the UK and as yet no suitable alternatives.

Demand for high specification aggregates

- 5.3 Sales of high specification aggregates (HSAs) and very high specification aggregates (VHSAs) were 0.57Mt in 2019, a continued increase from 0.52Mt in 2018, then dropped to 0.45Mt in 2020, presumably due to restrictions on the economy during that year as a result of the Covid-19 pandemic.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
HSA Sales (Mt)													
High and Very High Specification Aggregate (V/HSA)	0.72	0.78	0.59	0.6	0.55	0.41	0.38	0.42	0.48	0.43	0.52	0.57	0.45

Table 9 – Historic sales for high specification aggregates

- 5.4 Sales of HSA and VHSA have fluctuated over the past 10 years, with a steady increase over the past 5 years, but have not regained their pre-recession levels of over 0.7Mt. The recent increase in sales is likely due to construction projects requiring this high specification product for the road construction.
- 5.5 *Appendix 1 – Other Relevant Local Information* provides details of planned major infrastructure projects that are planned in Cumbria over the next few years. Significant developments currently anticipated to commence within the next 5 years or so are the Carlisle Southern Link Road and the A66 dualling, as well as some initial phases of the St. Cuthbert's Garden Village (subject to the granting of planning permission). Construction of the CSLR and the A66 dualling programme (including sections outside of Cumbria) is likely to impact on demand for aggregates, in particular the high specification

roadstones. Other road building/improvement programmes currently planned or underway across the UK will also impact on this demand.

- 5.6 As a nationally significant resource, demand for HSA and VHSA will be influenced by growth in infrastructure and housing from across the UK and not just within Cumbria or the North West. The Government published its first Road Investment Strategy in December 2014 and this committed £15billion (i.e. a tripling of expenditure) to upgrade existing roads and build new roads over the next 5 years (i.e. to 2020). The 2nd Road Investment Strategy for 2020-2025 (published March 2020) confirms details of various road programmes across England that are currently under construction or committed to delivery over this next 5 year period (to 2025). This is likely to substantially increase demand for VHSA and HSA from current levels. In addition to these planned new road schemes there will be continued requirements for ongoing maintenance and repair of the existing national highway network. There is also likely to be increased demand for VHSA and HSA resulting from airport expansion projects and the development of new nuclear power plant facilities across the UK. Thus, there would seem to be clear indications that the demand for HSA and VHSA will continue to rise over the next 5 to 10 years.

Supply of high specification aggregates

- 5.7 Permitted reserves of HSAs/VHSAs at the end of 2020 were 16.15Mt, all of which is for aggregate use. There appears to be some discrepancy in the permitted reserve figure with the remaining reserve having increased rather than decreased yet no new reserves permitted by the minerals planning authority during that period. For both 2019 and 2020 returns have been received by the operators for the 3 main sites, so these figures have not been estimated by the minerals planning authority. It is thought that change of ownership of one of the sites during this period could have led to some inconsistency in reporting.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
HSA Reserves													
High and Very High Specification Aggregate (V/HSA)	18.2	17.26	13.16	13.81	13.77	11.53	10.98	17.22	16.74	16.56	16.11	15.50	16.15

Table 10 – Historic reserves of high specification aggregates

- 5.8 There are three established quarries within Cumbria which provide high and very high specification roadstone aggregate, with additional reserves permitted at Roan Edge Landfill and Recycling site (adjacent to and in separate ownership from the quarry). Details of these quarries and their end dates can be found in *Appendix 4*. The expiry date of all these permitted reserves extends beyond the CMWLP period.
- 5.9 **Holmescales** quarry has an expiry date of February 2042 but is currently mothballed with an estimated reserve of just 18,000 tonnes remaining. It has been identified as an Area of Search in the CMWLP. Extraction is currently limited to 100,000 tonne per annum on road movements due to capacity constraints of the local road network for access. An appeal

against refusal of planning permission for an increase in HGV movements was dismissed on these grounds.

- 5.10 **Ghyll Scaur** provides the highest quality VHSA roadstone and has an estimated reserve of 6.63Mt remaining at the end of 2020. It is the only operating quarry in England that produces roadstone to this standard.
- 5.11 The adopted CMWLP establishes that a policy approach for security of HSA supplies is required as the need to supply HSA from Cumbria may increase if the supply of HSA from within the Yorkshire Dales National Park were to be restricted in the future, as implied by NPPF paragraphs 204 and 172, or if policies for European Wildlife sites led to closures of existing quarries in or adjacent to such sites.
- 5.12 In the neighbouring Yorkshire Dales National Park, 4 out of the 5 working quarries produce High PSV gritstone. According to the Yorkshire Dales Local Plan (December 2016) at the end of 2012 there was a landbank of 10 years available for PSV gritstone. However, the planning permissions for 3 of the high PSV quarries were due to expire in 2015, 2018 and 2021. Only 1 high PSV producing quarry (Horton) would continue throughout the Plan period, expiring in 2042.
- 5.13 Some of these permissions have since been extended (Arcow from 2015 to 2029 and Ingleton from 2018 to 2020). Planning permission was granted in June 2020 for a time extension at Ingleton Quarry with operations to cease permanently by December 2025. It is understood that would give sufficient time to extract all remaining permitted reserve of high psv gritstone from that site. An application was submitted in March 2020 to extend the operating period at Dry Rigg Quarry (currently expiring 31 December 2021) until December 2034, and also for a lateral extension that would generate additional reserve of high psv gritstone, with an assumed production rate of 400,000 tpa. This application is now approved (subject to completion of a S106 Agreement) and will produce an additional 4.4Mt of reserve. Horton Quarry has permission until 2042 and is known to have significant additional resources which could be subject of further applications for planning permission. The Yorkshire Dales Local Plan does include safeguarding areas for sandstone which will protect the remaining reserves of high PSV gritstone from sterilisation. There is no stone of the very high specification within the Yorkshire Dales National Park.
- 5.14 If demand for this aggregate increases, then, unless further permissions are granted, there is potential for the reserves of high PSV aggregate in the Yorkshire Dales National Park to be significantly reduced towards the end of our Plan periods. This would put more pressure on the reserve available in Cumbria

Managing supply and demand – LAA provision figures

- 5.15 Based on 2020 sales and remaining reserves, the 10-year annual average sales figure of 0.48Mt for all **high specification aggregates** gives a **landbank of 33.64 years** which should last until mid 2054.
- 5.16 However, given the importance of these resources for the UK and regional economy, additional scenarios are included in this LAA. The table below illustrates how the landbank would perform under each of these scenarios. It also shows the additional reserve

required (over and above those currently permitted) to maintain a minimum 10-year landbank at the end of the Plan period in 2030, i.e. to 2040.

Scenario End of 2020 reserve 16.15Mt	Sales level (Mt)	Landbank (years)	Landbank end date	Tonnage required to maintain minimum 10-yr landbank (Mt)
1: 10-year rolling average	0.48	33.64	Mid 2054	-
2: 3-year rolling average	0.51	31.66	Mid 2052	-
3: stabilise at 2020 sales	0.45	35.8	Late 2056	-
4: pre-recession sales (2007)	0.7	23.07	Early 2044	-
5: Highest sales in previous 10 years	0.6	26.91	Late 2047	-

Table 11: HSA/VHSA – outcomes of potential sales scenarios

5.17 Under each of these scenarios there is sufficient reserve remaining at the end of 2020 to maintain a landbank of at least 10 years at the end of the CMWLP period. If we consider sales scenarios solely in relation to the VHSA reserve (because this is the scarcer resource), applying the sales figures for all HSA and VHSA would be disproportionate. Based on recent returns we estimate that VHSA accounts for approximately two-thirds of total sales. The table below repeats the sales scenarios from Table 11, applied just to VHSA reserve and with the sales figures reduced by one-third.

Scenario (based on 6.63Mt VHSA igneous only)	Sales level (Mt)	Landbank (years)	Landbank end date	Tonnage required to maintain minimum 10-yr landbank (Mt)
1: 10-year rolling average	0.32	20.71	Mid 2041	-
2: 3 year rolling average for VHSA igneous only	0.34	19.49	Mid 2040	0.17
3: stabilise at 2020 sales for VHSA igneous only	0.3	22.04	Early 2043	-
4: Pre-recession sales (2007)	0.47	14.2	Early 2035	2.71
5: Highest sales in previous 10 years	0.4	16.6	Mid 2037	1.37

Table 12: VHSA only – outcomes of potential sales scenarios

- 5.18 This shows that, potentially, if 2020 sales are exceeded there would not be sufficient reserve remaining at the end of the Plan period in 2030 to provide a minimum 10-year landbank for VHSA alone. This is reflected in the 3 year average sales scenario.
- 5.19 Based on 10 year average sales, there should be sufficient reserve of VHSA to maintain a landbank of at least 10 years through to the end of the current CWMLP period but additional reserves would be required shortly afterwards to maintain the landbank going forward. If sales were to increase more sharply, it may not be possible to maintain a landbank of at least 10 years' supply right to the end of the CMWLP period unless additional reserves can be provided. Given the scarcity of this igneous VHSA, significant infrastructure projects outside of the county are likely to impact on demand for the available reserve in Cumbria.
- 5.20 It is acknowledged that these high specification aggregates are of national significance and the current supply within Cumbria will come under pressure from demand well outside the county for major highways and other infrastructure projects. This pressure will be compounded if reserves currently available within the Yorkshire Dales National Park cease to be available. Sales, reserves and future demand for VHSA will continue to be monitored closely in future LAAs, having regard to any further studies that may be carried out on these high specification aggregates nationally. However, without such evidence being currently available, the current position in respect of VHSA and HSA combined is that there is sufficient reserve to maintain a landbank of at least 10 years right to the end of the CMWLP period under each of the scenarios outlined above.
- 5.21 In the absence of any up-to-date national data to indicate otherwise, **provision for HSA/VHSA will continue to be based on the 10-year rolling average sales level (0.48 Mt)**. This is a further drop from 0.57 Mt in 2017, 0.54Mt in 2018 and 0.52Mt in the 2019 LAA (all based on 10-year average sales) and is below the current 3 year average sales of 0.51Mt. Given the scarcity of this resource it is important to manage release of the available reserve to ensure it is done in respect of actual demand rather than perceived demand.
- 5.22 This provision rate gives a landbank of 33.64 years which should last until 2054. To maintain a landbank of at least 10 years for these high specification aggregates throughout the CMWLP period new reserves would need to come on stream by no later than 2044. If the higher provision rate of 0.51Mt was applied there would still be sufficient reserve to maintain the required landbank throughout the CMWLP period with new reserves needed by 2042.
- 5.23 None of the currently permitted reserves are located in the Lake District National Park. Restrictions on quarrying within the Lake District National Park, where there is potentially an alternative supply of VHSA, will further impact on landbank provision. There is no permitted reserve for VHSA/HSA identified by the other mineral planning authorities in the NWAAP.

5.24 The CMWLP identifies the following Site Allocations for high specification roadstones only; there is no provision for VHSA –

- Holmescales Quarry – M16 Area of Search
- Roan Edge Quarry – M30 Area of Search

Summary – high specification aggregates

Current permitted reserves of high specification and very high specification aggregates for use as roadstone is 16.15Mt. This is sufficient to maintain the required at least 10 year land-bank throughout the Plan period (2015-2030). Based on current 10-year average sales (0.48Mt) there is a landbank of 33.64 years. To maintain a landbank of at least 10 years for all high specification aggregates throughout the CMWLP period new reserves would need to come on stream by no later than 2044.

If sales increase significantly, the need for additional reserve to maintain the 10-year landbank could occur sooner, around the start of the next Plan period (after 2030).

There are four high specification quarries in the neighbouring Yorkshire Dales National Park with some permissions due to expire within the next four years. If these permissions are not extended there will be additional pressure on the supply in Cumbria.

Ghyll Scaur is the only operating quarry in England to produce the very high specification roadstone. This is a nationally significant resource and therefore demand is likely to increase as a result of planned growth in housing and infrastructure across the UK, not just within Cumbria.

If we apply the current 10-year average sales proportionately to VHSA alone (this typically equates to about two-thirds of all sales), there would be sufficient reserve to maintain a 10 year supply of VHSA just to the end of the CMWLP period but new reserves would need to come on stream moving into 2031. The situation with VHSA will be closely monitored.

Site Allocations in the adopted CMWLP are made for two Areas of Search for high specification aggregate. There is potential for an Area of Search for very high specification aggregate to be made within the Lake District National Park but currently their policies would not permit extraction.

6. Building stone and slate

- 6.1 There are around 20 building stone and slate quarries currently operating within Cumbria as a number of permissions have expired and not been renewed: 2 (both limestone) are now within the YDNP so are no longer reported in this LAA; 7 are in the LDNP (all slate and 2 of these produce slate waste as secondary aggregate); 11 are located outside the LDNP (6 of these are known to produce some aggregate from off-cuts and 1 from slate waste). Details of all the active building stone and slate quarries in Cumbria (excluding the YDNP) and their end dates can be found in *Appendix 5*. Those identified as producing some aggregate are considered in this LAA.
- 6.2 Of the building stone quarries that do provide some aggregate there are five located outside the National Park, whose permission will expire in or before 2030. **Flinty Fell** had permission for an extension granted in 2010 for an estimated output of 6,500 – 10,000 tonnes per annum; this permission will expire in December 2024 in line with the consent for the original quarry. **West Brownrigg** was reported as Inactive in 2019 and permission expires in 2021.; **Snowhill No.1** has been granted permission to increase its annual production rate and produce aggregate and in 2017 was granted permission for a time extension until 2022; **Snowhill No.2** was granted a physical and time extension to 2020 in 2015 which has now expired. Both these quarries are currently recorded as Inactive. In late 2015, **Scratchmill Scar** was granted a time extension to 2031.
- 6.3 With the exception of **Kirkby**, the remaining slate quarries are all within the Lake District National Park and the majority are not producing aggregates. **Honister**, **Elterwater** and **Kirkby** all produce slate waste for aggregate use which is recorded as a secondary aggregate in this LAA. **High Fell** produces green slate used in flooring and worktops. **Brathay** and **Peatfield** expired in 2018 and a time extension to 2026 has been granted at Peatfield; **Petts** was due to expire in 2020 but these are all non-aggregate.
- 6.4 There have been a number of variation of condition applications submitted recently within the Lake District National Park from developers requesting use of imported slate as an alternative due to perceived concerns over the availability of local slate. However, it is understood that local operators are continuing to invest in their quarries to secure long term supplies.
- 6.5 The Lake District National Park Local Plan was adopted in May 2021 and Policy 27 (Mineral extraction) supports the extension of an existing site or reopening of an old site where the mineral extraction would meet a local need for building stone and slate.
- 6.6 The Yorkshire Dales National Park Local Plan (December 2016) also supports the quarrying of building stone or roofing slate, including by re-opening of existing quarries, in order to increase supplies of locally sourced materials for use in new developments and the repair and maintenance of traditional buildings.
- 6.7 Due to the conservation value and sustainability benefits of allowing this local resource to be quarried within the two National Parks, the potential for aggregate provision from these quarries to contribute to the supply of aggregates within Cumbria is likely to remain throughout the Plan period.

7. Alternative aggregates

- 7.1 The term alternative aggregates is used to describe both secondary and recycled aggregates. Secondary aggregates are by-products of other mining or quarrying operations (including stone off-cuts and slate waste), or of other industrial processes; recycled aggregates are produced by recycling construction, demolition, excavation and other wastes. There are no landbanks required for secondary or recycled aggregates.
- 7.2 In Cumbria, examples of secondary aggregates are slate waste and old blast furnace slag banks. Important examples of recycled aggregates include railway track ballast.
- 7.3 As well as those quarries already identified as producing aggregates from quarry waste, there are around 20 main processing plants in Cumbria producing alternative aggregates from recycled or reused materials (see *Appendix 6*). They are situated in a variety of locations: aggregate quarries, building stone quarries, on industrial estates, railway land or at landfill sites. Few of the slate quarries, which are predominantly situated in the National Park, provide significant quantities of waste material that can be used for secondary aggregates.

Demand for alternative aggregates

- 7.4 It can be difficult to obtain reliable information on the amounts of alternative aggregates that are produced as not all operators provide returns. Sales figures provided on the returns received for the last few years have ranged from around 180,000 to 450,000 tonnes/year, with a further increase in 2020 to 540,000 tonnes..This includes an estimated figure for sales/production of slate waste.

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Secondary/recycled aggregate sales – including slate- (Mt)										
	0.294	0.212	0.202	0.306	0.183	0.450	0.308	0.396	0.456	0.541

Table 13 – Historic sales of alternative aggregates

- 7.5 Excluding the figure for slate waste this shows a trend of increased use of recycled aggregates over the past 3 years – 175,800 tonnes (0.18Mt) in 2018; 235,247 tonnes (0.24Mt) in 2019; 320,096 tonnes (0.32Mt) in 2020. This is also shown in table 14 below.
- 7.6 The production and use of alternative aggregates, as a sustainable option to augment primary aggregates, will continue to be an important element in the growth of Cumbria.
- 7.7 According to the Mineral Products Association (MPA) recycled and secondary aggregates accounted for 29% of the total aggregates supply in 2017 with an estimated 72 Mt

supplied.²⁸ With increased focus on sustainable construction methods it is anticipated that demand for secondary and recycled aggregates will increase as housing growth is delivered. The MPA also point out that the declining reserve of primary sand and gravel will put growing pressure on other sources of supply, including recycled aggregates.

- 7.8 The NPPF makes it clear that planning policy should take into account the contribution that secondary/recycled materials and minerals waste can make to the supply of materials before considering extraction of primary materials.

Supply of alternative aggregates

- 7.9 No realistic figures can be provided about reserves of alternative aggregates because they will only arise as the waste feedstock material becomes available. Data on tonnages produced each year is, at present, sketchy, dependent upon figures held in the Environment Agency’s Waste Data Interrogator and Environmental Permits or gleaned from the monitoring of planning permissions.
- 7.10 It is understood that around 220,330 tonnes of slate waste is sold/produced each year. The operator survey returns show a pattern of increased sales/production of recycled aggregate from processing inert waste. It is also understood that around 100,000 tonnes of railway ballast is processed each year for secondary aggregate but there are no recorded figures available to monitor this.

	2018	2019	2020
<i>Secondary aggregate</i>			
Quarry waste slate	220,300	220,300	220,300
<i>Recycled aggregates</i>			
Inert waste	175,800	235,247	320,096

Table 14 – sales of alternative aggregates by source type (tonnes)

- 7.11 *Appendix 6* lists the main processing facilities for alternative aggregates. Some of these are located on quarry sites which also import inert waste for recycling, others are located elsewhere, including near industrial sites or landfill facilities. Some are permanent and run under an Environmental permit issued and monitored by the Environment Agency. Others are run under the conditions set out in their planning permissions, and some are tied to the life of other operations carried out at the site; for example, quarrying or landfill.
- 7.12 Five out of the eight sites that have an end date in their planning permissions will expire before the end of the CMWLP period. Of these, an application was approved in 2019 for **Silvertop** to continue producing alternative aggregates for the lifetime of the quarry (2042). In 2016 planning permission was granted for continued production of alternative aggregates at High Greenscoe Quarry by **Harry Barker Properties Ltd** – this is due to expire in 2024.. In 2017 planning permission was granted for an extension of time on operations at **Roan Edge Recycling and Landfill** for an additional 15 years up to 2031 (5/16/9018).

²⁸ The Contribution of Recycled & Secondary Materials to Total Aggregates Supply in Great Britain - Mineral Products Industry (2019)

- 7.13 Planning permission was granted in August 2018 for **Overby Quarry** to import up to 75,000 tonnes of inert waste for processing into recycled aggregate. This permission will expire in 2026.
- 7.14 Applications have been received at new locations for processing inert waste as recycled aggregate. Permission was granted at **Stoneraise Quarry** in April 2019 and an application at **Esk Quarry** was submitted in 2020, with a decision still pending.
- 7.15 **Derwent Howe** slag bank ceased operating for slag extraction and recycling of wastes in 2016. It is understood that a further licence would not be issued for this site due to concerns about coastal erosion.
- 7.16 The permission for the recycling of construction waste materials at **Roosecote** expired in 2016. This was tied to the end date of the permission to extract sand and gravel from the quarry, granted in 2011. Since that time, the quarry itself secured an extension of time until 2029, but an application to extend the time period for the aggregates producing facility was not submitted. This facility has ceased operations, and the quarry operator has formed a partnership with the recycled aggregates producer at **Goldmire**.
- 7.17 **Kingmoor** marshalling yards on the rail sidings at Carlisle is also a major source of recycled aggregates as Network Rail Infrastructure import large quantities of old rail ballast here to process and then export around the UK. There are currently no recorded figures available to confirm the amount of aggregate produced in this way. It is understood there is capacity to produce around 100,000 tonnes per annum.
- 7.18 As well as the sites identified in *Appendix 6*, there are a number of operators with mobile plant who travel to demolition sites to process waste. This suits the dispersed settlement pattern in Cumbria and incidentally cuts down 'waste miles' as well as 'minerals miles'.
- 7.19 Many of the planned infrastructure projects set out in *Appendix 1 - Other Relevant Local Information* - may generate large amounts of inert waste that could be recycled and re-used for aggregate purposes.
- 7.20 There is likely to be an increase in supply of recycled aggregate over the next few years due to recycling targets in the EU Waste Directive which the government has agreed to commit to even post-Brexit. This requires 70% of construction and demolition waste to be recycled by 2020. However, actual supply will likely be linked to the amount of development and redevelopment taking place.

Managing supply and demand

- 7.21 Both Cumbria County Council and the Lake District National Park Authority seek to record and monitor alternative aggregate arisings in the county and are considering if, in the future, it may be possible to provide targets. One option could be to place a condition on CD&E waste arising from demolition of buildings, roads, etc., but both authorities receive only one or two applications of this type each year. Recycling rates of this waste stream in Cumbria can be monitored through work on the Waste Needs Assessment with

reference to the Environment Agency's Waste Data Interrogator. This will help to assess the amount of recycled aggregate entering the supply chain in future LAAs.

- 7.22 As noted above, trends in sustainable construction methods and the government's commitment to EU targets for recycling of construction and demolition waste should mean that secondary aggregates will continue to make a significant contribution to the supply of aggregates.
- 7.23 Policy 06 (Design and Development) in the adopted Lake District National Park Local Plan Review includes a requirement that developers should use construction methods that allow disassembly rather than demolition and facilitate the re-use of materials. It is also intended to encourage provision of on-site facilities to create recycled aggregates from materials that cannot be re-used.
- 7.24 The previous Cumbria Minerals and Waste Development Framework Core Strategy required sites to be identified to ensure that at least a quarter of aggregate needs can be met by alternative aggregates. That policy has not continued in the adopted CMWLP as it was considered too inflexible. Firstly, in relation to alternative aggregate production at existing quarries or landfills, although the location is appropriate whilst the quarry is operating, it is much less likely to be appropriate once the quarry or landfill is closed and restored. Secondly, the establishment of businesses that produce alternative aggregates is market-led and they will often use mobile plant, allowing them to move to where the feedstock arises. However, the production of alternative aggregates is still encouraged in the adopted CMWLP, and policy DC9 (Criteria for waste management facilities) proposes that suitable industrial estates are appropriate locations for such facilities, plus aggregate quarries and non-inert landfills if the facility permission is tied to the active life of the site
- 7.25 Derwent Howe slag bank at Workington is identified as a Mineral Safeguarding Area (MSA) - reference M24 in the CMWLP - as it is an important resource of secondary aggregates. However, it is now established for recreational use, including part of the English Coastal Path, and also hosts a significant colony of the small blue butterfly. Further extraction from this site therefore may not be supported. In previous drafts of the Plan it was suggested that both Millom and Barrow slag banks, which are owned by the County Council, could be similarly safeguarded. At present, neither resource is likely to be accessible: Millom is now a Local Nature Reserve that also falls within the Duddon Estuary Special Protection Area and Ramsar, whilst Barrow is located adjacent to the same SPA and Ramsar, as well as the Morecambe Bay Special Area of Conservation. There are no such slag resources located in the Lake District National Park.
- 7.26 There is an MSA identified for slate in the CMWLP. This is a fairly localised MSA, of the Wray Castle formation, which encompasses Kirkby Slate Quarry, a producer of secondary aggregate. The Lake District Local Plan also has an MSA for slate, which encompasses both Elterwater and Honister quarries, the other slate waste producers.

Summary – alternative aggregates

Secondary and recycled aggregates will continue to have an important role in the provision of aggregate supply. There is no landbank requirement for secondary aggregates and reserve figures cannot be provided as they only arise when the waste material becomes available.

Recorded sales of recycled aggregates from inert waste in 2020 is 0.32Mt, showing a steady increase over the past 3 years. Sales will continue to be monitored as we hope to identify a pattern of increased use of alternative aggregates during the Plan periods.

Trends in sustainable construction methods and the government's commitment to targets for recycling of construction and demolition waste (70% by 2020) mean that alternative aggregates should continue to be available and increasingly used in development projects. Actual supply is likely to be linked to the amount of development taking place.

Mineral Safeguarding Areas are identified in the CMWLP for Derwent Howe slag bank as an important resource of secondary aggregates and for slate at Kirkby Quarry. The LDNPA Local Plan also has a Mineral Safeguarding Area for slate at Elterwater and Honister

8. Infrastructure for Aggregates and Minerals Safeguarding

8.1 The NPPF also states that planning authorities should safeguard existing, planned and potential rail heads and wharfrage in their Local Plans. In the adopted CMWLP site allocations policy SAP5 identifies the following existing and potential rail head/sidings for safeguarding for aggregates use:

- AL18 Port of Workington and railhead
- AL32 Siddick potential rail sidings
- AL39 Silloth Port
- BA26 Barrow Port and rail sidings, Barrow
- M34 Kingmoor rail sidings, Carlisle
- M35 Shap Beck Quarry rail sidings, Shap
- M36 Shapfell Quarry rail sidings, Shap
- M37 Shap Blue Quarry rail sidings, Shap
- M38 Kirkby Thore gypsum works rail sidings, Kirkby Thore

8.2 The potential site, AL32 at Siddick, near Workington, was put forward originally as a rail head for a conveyor link to a coal extraction site. Although the coal extraction site is not an allocation, the rail head could still be used for other economically viable mineral or waste operations in the area.

8.3 The Lake District National Park does not contain any rail heads, but two within the county serve quarries whose extraction area lies within the Park and these need to be safeguarded; these are M35 Shap Beck Quarry and M37 Shap Blue Quarry in the CMWLP. Shapfell Quarry is in the same area, but lies wholly outside the Park; it also has rail sidings that are safeguarded in policy SAP5, as site M36. Kingmoor sidings near Carlisle are also identified (site M34), as Network Rail Infrastructure import large quantities of old rail ballast here, process it and then export the recycled aggregate around the UK.

8.4 In addition to these safeguarded facilities, planning permission was granted in January 2018 to Burlington Aggregates for a rail loading facility at Cavendish Dock, Barrow (6/17/90100). This has been successfully operated on several occasions fulfilling aggregate orders by rail to the north of the county to support a major infrastructure project.

8.5 There are no wharves in the Lake District National Park, as there is only a very small coastal section on their boundary. Two working ports and their rail sidings have been identified in the CMWLP: BA26 Barrow Port and AL18 Workington Port. Barrow in particular, handles limestone, sand, aggregates (including marine landings) and granite. Workington is situated on the river Derwent, and the channel is regularly dredged to maintain its access to deeper drafted ships. Silloth Port no longer has rail connection, but is identified for safeguarding as a working port with potential to support sustainable transport of waste and minerals.

8.6 Both Cumbria County Council and the Lake District National Park Authority have minerals safeguarding areas identified in their adopted Local Plans and policies for assessment of proposals for non-minerals development within these areas to consider whether prior

extraction of the mineral should be carried out prior to the proposed development takes place. The county council has provided their minerals safeguarding GIS layers to each of the six district councils and , as the minerals planning authority, is regularly consulted by the district councils on planning applications they receive for non-minerals development that could potentially affect the winning and working of minerals.

- 8.7 During 2019 a total of 204 minerals safeguarding consultations were received; and over 160 during 2020. None of the consultations received raised any concerns regarding the need for prior extraction. The county council also advises the district councils of mineral safeguarding issues when assessing Site Allocations for non-minerals development in their Local Plans.

9. Imports and Exports

Supply patterns

- 9.1 The location and size of Cumbria, its dispersed settlement pattern and the layout of road and rail networks, have implications for how it meets its needs for minerals. Not only does the county as a whole tend to be self-sufficient, but there are also recognisable areas within the county, which have traditionally met their own needs from local sources.
- 9.2 As the maps in the Appendices show, the locations of Cumbria's quarries are not dispersed uniformly around the county because of geology. There are very few hard rock quarries in the north of the county and only two operating sand and gravel quarries in the south west.
- 9.3 To some extent the old, traditional supply patterns of minerals within the county still exist. This pattern mainly arises from the small operators, often with a local niche market, but the rising cost of transport of minerals is also a contributory factor. It is more usual for the national, conglomerate or international companies to operate across a wider area, often sending their minerals to their own processing/production plants around the UK.
- 9.4 Of the three crushed rock quarries that have specialised national and regional markets, Ghyll Scaur is the only operating quarry in England that produces very high skid resistance roadstones; Roan Edge and Holmescales produce high skid resistance ones. Because of geology other parts of the North West and also other parts of the UK rely on supplies of aggregates from Cumbria. The county has traditionally supplied far more crushed rock than it needs for its own use.

How much aggregate does Cumbria need?

- 9.5 The latest DCLG-BGS aggregates survey (AM2019) collates national data for primary aggregates for 2019 in England and Wales. This shows a 'consumption'²⁹ of 50.35Mt of sand and gravel (lower than the 53.3Mt recorded in AM2014) and 99.49Mt of crushed rock (higher than the 84.10Mt recorded in AM2014). Based on ONS population figures for England and Wales in 2019³⁰, this would equate to 0.85 tonnes/person of sand and gravel and 1.67 tonnes/person of crushed rock.
- 9.6 On the basis of the AM2019 survey consumption figures for England and Wales, Cumbria, with a population of around half a million people in 2020³¹, would currently need an estimated 424,813tonnes/year (0.42Mt) of sand and gravel and 834,634 tonnes/year (0.83Mt) of crushed rock., higher than the population-based requirements reported in the previous 2019 LAA, which were based on ONS population figures from 2014 and 2015. In 2020, Cumbria's quarries sold 0.74Mt of sand and gravel and 2.74 Mt of crushed rock,

²⁹ 'consumption' includes use of aggregates imported from outside England and Wales, in addition to sales

³⁰ 59,439,840 at mid-2019: [Population estimates for the UK, England and Wales, Scotland and Northern Ireland - Office for National Statistics \(ons.gov.uk\)](#)

³¹ 499,781 at mid-2020 (Cumbria Intelligence Observatory - [Cumbria Observatory – Population](#))

which equates to around 1 ½ times as much sand and gravel and more than three times as much crushed rock as is needed within the county.

- 9.7 For the North West region, the AM2019 survey shows consumption of 2.56Mt for sand and gravel, and 12.24Mt for crushed rock. Using the same formula based on ONS mid-2019 population figures for the North West region (7,341,196) this gives a consumption rate for the North West of 0.35 tonnes/person for sand and gravel and 1.67 tonnes/person for crushed rock. So whilst crushed rock consumption per person is the same, sand and gravel consumption is less than half of that calculated for the whole of England and Wales.
- 9.8 Looking ahead, the council's current population growth estimates remain fairly steady throughout the Plan period, at around 500,000 in 2025 and 2030, then dropping to around 498,000 by 2035. The table below shows the estimated requirements for sand and gravel and for crushed rock (based on the national consumption per head calculations) at these intervals in the Plan period (CWMLP ending 2030; Lake District National Park Local Plan ending 2035), and how this compares to recent sales trends. The LAA provision figures set for sand and gravel and crushed rock in this LAA will therefore continue to provide for well in excess of the amount of aggregate required within Cumbria based on population growth alone.

	Estimated population	Sand and Gravel Mt (0.85 tonnes per person)	Crushed Rock Mt (@ 1.67 tonnes per person)
Estimated consumption within Cumbria (Mt) (2020)	499,781	0.42	0.83
Sales 2018		0.71	2.82
Sales 2019		0.77	3.01
Sales 2020		0.75	2.59
Predicted consumption by 2025	500,625	0.425	0.836
Predicted consumption by 2030	500,028	0.425	0.835
Predicted consumption by 2035	498,804	0.423	0.833

Table 15 – estimated future aggregate consumption in Cumbria (based on ONS population data mid-2020)

- 9.9 Cumbria population growth figures have also been modelled to reflect the scenario of all the district council housing targets being met. Under this scenario, the LAA provision figures currently set would still provide for well in excess of the amount required by Cumbria. The calculations based on population growth are included in *Appendix 9*.
- 9.10 *Appendix 1 – Other Relevant Local Information* provides details of major infrastructure projects, including housebuilding, that are planned in Cumbria over the next few years. Significant developments currently anticipated to commence within the next 5 years or so

are the CSLR and the A66 dualling, as well as some initial phases of the St. Cuthbert's Garden Village (subject to the granting of planning permission).

- 9.11 The CSLR and the A66 projects are likely to impact on demand for HSA and VHSA roadstone. As a nationally significant resource, the supply of HSA and VHSA roadstone will be affected by major infrastructure requirements from across the UK and not just within Cumbria.

Movement of primary aggregates by sub-region

- 9.12 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.
- 9.13 The national survey AM2019³² collated by British Geological Survey shows that Cumbria does help to meet the mineral needs of other parts of the region. 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. However, much of the North West region's shortfall is met from other regions - for example, quarries in Derbyshire and North Wales supply Greater Manchester due to their proximity, whilst half of Cumbrian quarries serve other regions, especially the North East. Just under one third of Cumbrian quarries also supply national markets, including Wales and Scotland.
- 9.14 The table below shows the tonnage sold in Cumbria and exported to other regions, as reported in the AM2019 survey. This shows a slight drop in figures compared to the 2014 survey. In particular, the figure for crushed rock sold in Cumbria has dropped from 1.31Mt previously recorded to 0.84Mt, although there is now 0.16Mt crushed rock sales marked as unallocated.

Aggregate Type	Total Sales (tonnes)	Sold within Cumbria	Sales to North West	Sales Elsewhere	Unallocated
Sand and gravel	634,000 (0.64Mt)	470,000 (0.47Mt)	73,000 (0.07Mt)	95,000 (0.09Mt)	-
Crushed Rock	2,091,000 (2.1Mt)	841,000 (0.84Mt)	836,000 (0.84Mt)	254,000 (0.25Mt)	160,000 (0.16Mt)

Table 15 – Tonnage of exports from Cumbria to other regions (source: BGS, AM2019 – Table 9g)

- 9.15 According to the survey (AM 2019 -Table 10), in 2019 Cumbria imported 3,000 tonnes of sand and gravel (compared to between 250,000 and 350,000 tonnes for other identified MPAs in the North West) and 196,000 tonnes of crushed rock (compared to between 1,800,000 and 4,300,000 tonnes for other identified MPAs in the North West, with the Greater Manchester authorities importing much higher amounts than those recorded for Cheshire and Lancashire authorities). Cumbria's imports account for less than 2% of the total primary aggregates imported into the North West (10,579,000 tonnes – 10.58Mt).

³² Aggregate Mineral Survey England and Wales 2019, British Geological Survey, 2021

- 9.16 Currently, the BGS survey is the most up-to-date comprehensive assessment of aggregates sales destinations. Information provided by operators on the 2019 and 2020 annual survey returns for this LAA confirms that sand and gravel sales include exports outside of Cumbria and the North West to the North East (Durham, Northumberland, Tyne and Wear) and to Scotland. Crushed rock sales outside the region include to Yorkshire and Humberside), the North East and to Scotland (typically for asphalt sites). Sales of secondary aggregates are predominantly local within Cumbria, with some small amounts recorded as going to Scotland, Lancashire and North Yorkshire. Some slate sales are more regional and there is a national market for decorative slate.
- 9.17 Exports of the HSA/VHSA roadstone include sales further afield. The 2019 returns record sales to areas beyond the North West and neighbouring North East including Scotland, Lincolnshire, Derbyshire, Staffordshire and Nottinghamshire. As a national resource, such exports are likely to rise as demand increases with various national infrastructure projects coming forward such as investment in new roads, airport expansion projects and new nuclear plant facilities.

Future demand from outside Cumbria

- 9.18 Information on planned infrastructure requirements within other NW authorities - and also those outside the region identified as importing materials from Cumbria - can be found in their LAAs and this information needs to be taken into account when predicting future demand. Growth in housebuilding generally is common across all authorities. Details of other key projects are outlined below and summarised in Table 17, with anticipated timescales where known.
- 9.19 The 2019 LAA for Greater Manchester, Merseyside and Halton, and Warrington identifies a number of major infrastructure projects, including - in Merseyside large regeneration projects at Liverpool Waters and Wirral Waters; as well as significant commercial/research construction in the Knowledge Quarter at Liverpool University. It is unclear at this stage whether significant imports from Cumbria would be required; the need for reusing and recycling construction waste on site is encouraged to minimise aggregate requirements wherever possible.
- 9.20 In Greater Manchester, major projects include upgrade works to the M60 and M62 as well as continuing developments at Media City and Port Salford; no estimates on aggregate requirements are currently available. Work on the previous Greater Manchester Spatial Framework has been superseded by a work on a new joint plan Places for Everyone, which will now plan for significant growth to meet requirements up to 2037 but historically material has been supplied to this area from outside of the North West. Final growth and housing figures are still being confirmed.
- 9.21 In Warrington a new strategic relief road, the Warrington Western Link with construction currently anticipated to commence in 2023, as well as the Omega employment site.
- 9.22 The Lancashire 2021 LAA refers to significant investment in the transport network through the Lancashire City Deal (Preston Western Distributor, Fylde Heyhouses/M55 Link and the East-West Link Road) which will in turn unlock sites for delivery of housing and commercial

developments. Other sites coming forward through the City Deal and Lancashire Enterprise Partnership growth agenda will also increase demand for aggregates, such as the Cuerden strategic site and a large number of housing development proposals. Details on the amount of aggregate required and likely duration of the works are uncertain at this stage.

- 9.23 The 2021 LAA for Cheshire West & Chester (CWaC) identifies a number of planned infrastructure projects, including construction of a new Chester Park and Ride site, and various highway improvement schemes. These together with proposed Site Allocations for employment use and housing will demand provision of primary aggregates.
- 9.24 Longer term, creation of the HS2 route will have significant aggregate requirements. This passes through the east of the Borough. Neighbouring Cheshire East will also anticipate increased demand for aggregates from the HS2 project and associated infrastructure, including the proposed hub station at Crewe and growth plans under the Constellation Partnership – formed from Local Enterprise Partnerships and local authorities, including CEC, within Staffordshire and Cheshire to maximise the growth and investment opportunities of HS2- to deliver 100,000 new homes and 120,000 new jobs by 2040. Government support has also been announced for a new bypass for Middlewich.
- 9.25 Significant projects in Cheshire are potentially more likely to impact on reserves in Cumbria as the Cheshire MPAs do not have their own reserves of crushed rock. However, the CEC LAA states that the main suppliers of crushed rock are Flintshire, Derbyshire and Leicestershire, with Cumbria providing between 1-10% of their crushed rock and less than 1% of their sand and gravel consumption. Cumbria's 2020 operator returns identify 53,559 tonnes of crushed rock being exported to Cheshire, almost half of which was high specification roadstone.
- 9.26 Looking at planned infrastructure requirements outside of the North West region, the latest Joint LAAs for Durham, Northumberland, Tyne and Wear identify a number of major road widening proposals including works to the A1 and A19 and significant manufacturing facilities, as well as major redevelopment proposals in the city of Durham, and energy related developments within the Redcar and Cleveland area. Many of these proposals are currently underway or due to start within the next 3 – 5 years.
- 9.27 These could all potentially require supply of HSA and VHSA from Cumbria within the next 5 years although precise quantities and likely sources are generally not known at this stage.
- 9.28 The North Yorkshire Sub-Region LAA (5th Review - 2019) does not identify any specific planned infrastructure projects. The document does note the issue of continued supply of HSA as one that needs monitoring, in liaison with Cumbria County Council.

Region	MPA	Projects	Timescale
North West	Merseyside	Liverpool/Wirral Waters regeneration	Commencing 2018
North West	CWaC/CEC	HS2 Phase 2	2027-2033
North West	CEC	Constellation Partnership (100,000 homes)	2030- 2040
North West	CEC	Poynton Relief Road;	Expected completion Autumn 2022
North West	CEC	Congleton Relief Road	Completed Summer 2021
North West	CEC	Middlewich Eastern Bypass	2022-2024
North West	CEC	North West Crewe Package	2021- 2023/24
North West	Lancashire	Preston Western Distributor; Broughton Bypass; East-West Link Road	Unknown
North West	Greater Manchester	Upgrading M60 and M62; continuing developments at Media City	Ongoing
North West	Greater Manchester	Places for Everyone – joint development plan for jobs, new homes and sustainable growth.	Work commencing on this new joint plan to cover the period 2020 - 2037
North West	Warrington	Warrington Relief Road	2023 – 2026
North East	Northumberland	A1 dualling Northumberland	DCO examination ended July 2021; decision expected January 2022. Construction could start soon after this.
North East	Newcastle, Tyne and Wear	Widening A1 between Brunton and Scotswood.	Commenced 2020; completion expected 2023.
North East	Gateshead, Tyne and Wear	Widening A1 Birtley to Coal House roundabout, including replacement railway bridge	Commenced 2020; completion expected 2022 – 2023.
North East	South Tyneside, Tyne and Wear	A19 flyover (Testos to Downhill Junction)	2019 – 2022.
North East	Stockton on Tees, Tees Valley	A19 Norton to Wynyard widening	2020-2022
North East	South Tyneside, Sunderland, Tyne and Wear	Manufacturing site near Nissan plant, A19	Phase 1 now underway.

North East	County Durham	Jade Enterprise Zone ,20ha business park including A19 junction improvements and new energy infrastructure.	Phase 1 of site now completed.
North East	County Durham	Integra 61 – 83ha mixed use development including industrial, retail, housing and leisure	Phase 1 now complete.
North East	County Durham	New business district on current site of County Hall- with range other city developments including new county hall and further expansion of the university	A number of projects currently underway. Potential future projects yet to commence.
North East/North West/ Yorks & Humberside	NYCC; County Durham; Cumbria	Upgrade to A66 dual carriageway between A1(M) and M6	Preferred route consultation 2021. DCO submission expected 2022. Work to commence 2024-2025.
North East	Durham	Durham Western Relief Road	Unknown.
North East	Durham	Durham Northern Relief Road	Unknown.
North East	Redcar and Cleveland	Construction of gas fired power station with output of 1,700 MWe	DCO granted 2019. Construction expected to take 3 years once commenced.
North East	Redcar and Cleveland	York Potash Harbour facilities – wharf facilities to handle polyhalite from planned potash mine in North York Moors.	Consent granted; construction commenced.
North East	Redcar and Cleveland	Teeside Cluster Carbon Capture and Useag project – combined cycle gas turbine electricity generating station with output of up to 2,000 MW	DCO submitted 2020.
North East	County Durham	Forest Park – 55ha expansion of business park including new	Start date to be confirmed

		road and energy infrastructure	
North East	Northumberland	British Volt Gigafactory – 235ha electric car battery manufacturing site	Planning permission granted July 2021 – start date to be confirmed.

Table 16 – Potential future aggregate demand from outside Cumbria

- 9.29 Planned infrastructure projects outside the county could lead to increased demand for exports from Cumbria. Some of the non-highways schemes outlined above are currently anticipated to commence within the next 5 years. Cumbria currently has a 39 year landbank of crushed rock and many of the major infrastructure projects proposed within Cumbria are also anticipated to start within 5-10 years' time. The situation regarding timescales for these strategic non-highways projects will need to be kept under review in forthcoming LAAs, including liaison with the relevant MPA and AWP to assess whether additional aggregate will be required from Cumbria. It may be necessary to adjust provision figures in future Cumbria LAAs if more certainty can be provided on the timescale of works and amount of imported aggregate that will be required.
- 9.30 Table 16 identifies a number of highways schemes, mainly in the North East region, that are expected to commence within the next 5 years. As Cumbria is an important supplier of HSA and VHSA roadstone there is a strong likelihood that demand for this particular aggregate will increase in the near future as a result. The need to monitor the situation regarding supply and demand of VHSA in particular is already addressed in Chapter 4 this LAA. Cumbria will liaise with the relevant MPAs to establish whether additional imports from Cumbria are anticipated in order to deliver these highways schemes. Durham County Council have indicated within their LAA that the A66 dualling would create extra demand from quarries to the south of the county, particularly along the A66 corridor. Cumbria County Council have asked Highways England to provide details of the type and amount of aggregates required for the proposed works in the documents they submit for a DCO.

Mode of transport

- 9.31 The BGS survey (AM2019 – Table 8) provides some data on the principal transport method for primary aggregates sales by region. For the North West there is a record of 9,089,000 tonnes (9.09Mt) of aggregate being transported by road with 199,000 tonnes of crushed rock being transported by rail (around 2% of all aggregate movements). There is no other record of aggregates being moved by rail or water.
- 9.32 Within Cumbria, there are a number of rail sidings and wharves that are used for transportation of aggregates. The ports at Workington, Maryport and Barrow provide opportunity for transportation of minerals to some destinations outside of the county by water but not necessarily for the main export destinations identified for Cumbria in the North East, Yorkshire and Humberside. Aggregate Industries bring aggregate by sea into Barrow Port from their quarry at Glensanda, near Oban on the West Coast of Scotland.

9.33 Increased use of rail and, if appropriate, water is to be encouraged. The 2019 and 2020 annual survey forms used for this LAA did include a request for information on transportation methods used. The majority of responses confirmed that transportation is 100% by road with no reference made to any use of rail or water. However, as noted in Chapter 8, there are existing established rail facilities within the county and the recently approved rail loading facility at Cavendish Dock, Barrow has been used for some transportation of aggregates. At Kingmoor Marshalling Yards the materials being processed for recycled aggregate are brought in and exported out by rail.

APPENDICES

OTHER RELEVANT LOCAL INFORMATION

Planned Infrastructure Projects

- A1.1 The National Infrastructure Delivery Plan 2016-2021³³, reflects a new approach to long-term infrastructure planning, with the creation of the Infrastructure and Projects Authority and an independent National Infrastructure Commission. The accompanying National Infrastructure Pipeline identifies just over 80 projects in the North West.
- A1.2 In Cumbria, the majority of infrastructure projects listed concern the nuclear industry, including the potential new nuclear power station at Moorside and over 30 replacement or refurbished facilities at the Sellafield complex. The proposals at Moorside have now stalled with Toshiba withdrawing from the project in December 2018. As a consequence, the associated National Grid North West Coastal Connections project is no longer progressing.
- A1.3 At Budget 2016, the Government announced that flood defence and resilience funding will be increased and additional capital schemes will be delivered – including schemes in Carlisle and wider Cumbria. In addition to this, the Government will fund much of the repair to transport infrastructure damaged by Storms Desmond and Eva. This has seen a significant programme of work, including road and bridge repairs, carried out across the county over the past year with some works still ongoing.
- A1.4 As part of their 5-year Management Plan cycle, United Utilities identified a large project to connect West Cumbria with the regional water network via a major new pipeline from Thirlmere. This will involve the building of a new water treatment works, pumping stations and underground reservoirs. Not only will the project require significant volumes of aggregates, there is also likely to be a significant volume of excavation waste arising, although 70% is likely to be reused, whilst 30% has been earmarked for restoration projects. Construction has now commenced on this project, with many sections complete and the project still expected to be finished in operation by 2022.
- A1.5 Studies in the 1980s revealed that the Solway Firth and Morecambe Bay came second and third among UK estuaries ranked for their tidal potential. Tidal Lagoon Power are considering plans for a full-scale tidal lagoon on the coast north of Workington. A number of stakeholder events have taken place but the project has not progressed to date. The company is currently focussing on project elsewhere in the UK (Swansea Bay and Cardiff) but maintain their interest in development a project in West Cumbria in the future. North Tidal Power Gateways Board are driving forward plans for a tidal barrage including a road link across Morecambe Bay from Heysham to Furness in South Cumbria, then across the Duddon Estuary to improve road access to the Cumbrian West coast. The project has been in the pipeline for a number of years but a presentation of the latest project details was held in June 2019. If either project comes to fruition, a large amount of aggregates will be needed.

³³ National Infrastructure Delivery Plan 2016-2021, Infrastructure and Projects Authority, March 2016, <https://www.gov.uk/government/latest?departments%5B%5D=infrastructure-and-projects-authority>

- A1.6 In 2016, the Cumbria LEP published the Cumbria Strategic Infrastructure Plan³⁴, which identifies key infrastructure priorities that can maximise the economic growth potential of Cumbria and the UK. The Infrastructure Plan developed a 'long list' of infrastructure projects, which will then be prioritised, shortlisted and promoted to Government via the development of outline business cases. This county-wide Plan must deliver against Cumbria LEP and Government objectives to maximise positive impacts for the county over the next five years.
- A1.7 Development proposals set out in Cumbria Strategic Infrastructure Plan include regeneration schemes at Barrow Waterfront (Enterprise Zone) and Whitehaven Town Centre; new facilities and the refurbishment of existing infrastructure, in preparation for the construction of a successor to the Vanguard class submarines at BAE Barrow; improvements to transport links and hubs; revival of the house building market; employment site improvements; and proposals for improved flood defence works.
- A1.8 One project already approved is the development of the Port of Workington; construction will include a new road bridge, a new rail crossing point link and refurbishment of the lock gates. This is identified as a short term priority which, along with other road improvement schemes and flood resilience works, should take place within 5 years (i.e. by 2021). The replacement road and foot bridge has now been constructed ; the rail improvements may be more long-term.
- A1.9 Other major proposals set out as medium/long term priorities include major road schemes (Carlisle Southern Link Road, A590 and A66 road enhancements, Ulverston Bypass and Whitehaven relief route). Some of these are now anticipated to commence within the next 5 years, . Planning permission for the CSLR was granted in October 2020 with work anticipated to start in 2022.
- A1.10 The CSLR is being developed to enable the strategic growth to the south of Carlisle. An urban extension – St Cuthbert's Garden Village – is proposed which could accommodate up to 10,000 new homes along with new schools and community facilities. Work is progressing with the Masterplan published October 2020 and the Design DPD adopted in April 2021. The Draft St.Cuthbert's Local Plan went to consultation in November 2020.. Construction of the first Garden Village sites is expected to commence within the next 5 years; delivery of the full scheme would extend beyond 2030.
- A1.11 Proposals for the A66 dualling are at the pre-planning stage with preferred routes consultation taking place in 2021, DCO submission expected in 2023, and work expected to commence in 2024/2025. The developer has been asked to include estimates of the amount of different aggregates required within the final DCO submission. This work is expected start within the next 5 years.
- A1.12 The Draft Cumbria Transport Infrastructure Plan (2022 – 2037) has recently been out to consultation (September 2021).³⁵ This sets out a range of ambitions for transport which, alongside measures to decarbonise the transport networks, include a number of road and rail network improvements across the county. Some of these schemes are already

³⁴ Cumbria Strategic Infrastructure Plan, Cumbria LEP, July 2016 [Cumbria-Strategic-Investment-Plan.pdf](#)

³⁵ [Draft Cumbria Transport Infrastructure Plan](#)

referenced above; others include the potential Kendal Northern Access Route and also reference to HS2 rail improvements around Carlisle.

- A1.13 Some information has been provided on a national level regarding aggregate requirements for the HS2 high-speed rail programme. This indicates around 111,195 tonnes of track ballast aggregate required for Network Rail in the North West. There will also be an aggregate requirement associated with the concrete sleepers. Cumbria is likely to provide some of the required supply for work both within and outside of the county.
- A1.14 In 2019 Cumbria County Council resolved to grant planning permission for construction of a new underground metallurgical coal mine to the south west of Whitehaven (Woodhouse Colliery, to be operated by West Cumbria Mining). However, a formal decision has not yet been issued as the application was referred to the Secretary of State for determination, and Hearing by the Planning Inspectorate took place during September 2021. At the time of writing, the final decision is still unknown. Much of the aggregate resource is expected to be met by using materials extracted from the site, however some additional aggregates could be required for any ground levelling works and setting of foundations for the buildings.
- A1.15 Looking further ahead, the nuclear and green energy industry will feature in Cumbria's plans for future growth. Decommissioning of Sellafield has commenced. Whilst proposals for a new nuclear power station at nearby Moorside were stalled, that site is now one of five locations shortlisted for siting the proposed demonstration fusion reactor. Ambitions to develop the 'Energy Coast' (between Silloth and Barrow-in-Furness) transforming the economy of West Cumbria to support the energy sector will potentially see significant new development and associated infrastructure requirements both on and off-shore in the future.

Summary

- A1.16 There are a number of a significant infrastructure projects planned for Cumbria which are scheduled to take place during the Plan periods. Significant developments currently anticipated to commence within the next 5 years or so are the Carlisle Southern Link Road and the A66 dualling, as well as some initial phases of the St. Cuthbert's Garden Village (subject to the granting of planning permission). Construction of the CSLR and the A66 dualling programme is likely to impact on demand for aggregates, in particular the high specification roadstones. It is not anticipated there will be any substantial impact from other projects in the short term.
- A1.17 The timescale for the projects identified to take place in the medium/long term are such that there should be sufficient lead-in time to plan for the required aggregates provision. Regular liaison with the county council Infrastructure Planning Team as part of annual monitoring will ensure this LAA keeps up to date with project timings.

Planned Housing Growth

- A1.18 The six district councils currently have commitments to deliver over 30,000 new homes through their Local Plans, with an annual provision target of 1,663 across the county. Details of individual council requirements are set out in the table below. Information on

housing delivery (obtained from the district's annual housing completion figures, where available) is also included. This shows that, to date, the planned housing delivery targets are being met.

LPA	Adopted/Emerging Policy	Housing figures	Annual provision	Plan period for supply	Housing completions 2020/21 ³⁶
Allerdale	Allerdale Local Plan Part 1 Adopted (July 2014) Policy S3 Part 2 Site Allocations Adopted July 2020	5,471	304	2029	220
Barrow	Barrow Borough Local Plan 2016 – 2031 Adopted June 2019	1,785	119	2031	50
Carlisle	Carlisle District Local Plan 2015 – 2030 Adopted (November 2016) Policy SP2 St.Cuthbert's Garden Village Local Plan in preparation	9,606	478 (2013-2020) 626 (2020 – 2030)	3356 by 2020; 6260 by 2030	500
Copeland	Adopted (December 2013) Policy SS2 <i>Copeland Local Plan – 2021 – 2038 Publication Draft Jan -March 2022</i>	4,150 <i>Target - 2482 Plan for – 3,400</i>	230 (5 yrs) 300 (10 yrs) ³⁷ <i>Target- 146 pa Plan for 200 pa</i>	2028 2038	120
Eden	Eden Local Plan 2014 – 2032 Adopted (October 2018) Policy LS2	4,356	242	2032	210
South Lakeland	Local Plan Allocations – adopted December 2013 Currently working on Local Plan review (end date 2040)	5,264	290	2036 ³⁸ (2040)	180
Lake District NPA	Lake District Local Plan (2020-2035) Adopted May 2021	1200	80 pa	2035	<i>(inc. in above by district)</i>
Total housing provision	-	32,102 (31,352 with Copeland's revised figures)	1,961 (1,861 with Copeland's revised figures)	End of latest Plan period = 2035³⁹	1280

³⁶ Source: [Live tables on housing supply: indicators of new supply - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

³⁷ Annual provision with 'market uplift' anticipating housing requirements associated with the Moorside development

³⁸ SLDC adopted Local Plan period ends 2025; the current suite of LP documents will be combined to form single Local Plan 2016 – 2036 due to be adopted 2021; SHMA covers new LP period 2016 - 2036

³⁹ As above, SLDC adopted Plan date only 2025 but work to revised annual housing provision figures

Table 18: District Council Local Plan housing supply figures (as at Jan 2022)

A1.19 The Cumbria Strategic Infrastructure Plan identifies a number of strategic housing sites from these plans, including St Cuthbert's Garden Village, as well as sites in Ulverston, Barrow, Workington and Penrith. In total these sites could accommodate around 12,350 homes.

Planning constraints in neighbouring Mineral Planning Authorities

A1.20 As mentioned in the main report, the Yorkshire Dales National Park contains four high specification roadstone quarries, some of which have planning permissions that will expire shortly and well before the end of the Plan periods. At this stage it is considered likely that applications for time extensions to continue extracting the permitted reserve would be permitted. If applications are not forthcoming there will be additional pressure on the reserve in Cumbria.

A1.21 The Lake District National Park has been asked to consider designating an Area of Search for very high specification roadstone on land near to Ghyll Scaur. This has not been taken forward in their Revised Local Plan. However, their current and proposed policies would not permit extraction at this time.

A1.22 Force Garth dolerite quarry in County Durham provides an exceptionally hard and durable roadstone aggregate but the majority of the permission is within the Moor-House Upper Teesdale SAC and North Pennine Moors SPA. A ROMP application (8/IDO/6/1/2) was submitted in 2011 and still remains undecided. There has been some concern that it may not be able to continue operating to its original capacity due to revisions required to avoid any adverse effect on qualifying features of the designated areas. Again, any reduction in capacity would impact on demand for the reserve within Cumbria.

Market Commentary

A1.23 The Mineral Products Association (MPA) state in their latest sales figures⁴⁰ that aggregate sales have been depressed since the onset of the recession in 2008, reflecting the significant decline in construction markets, but have started to recover since mid-2013. It does not comment specifically on overall aggregate sales for 2018 and 2019 but suggests there is significant scope for further improvements in the mineral products and construction market. Of note is the fact that in 2018, marine aggregates satisfied 22% of the total construction needs for sand and gravel in Great Britain.

A1.24 Cement sales have improved since 2012 but sales in 2018 remain lower than in 2007. Sales of asphalt (used for road construction and maintenance) rose 20% between 2013 and 2019 but remain 9% below the pre-recession sales.

⁴⁰ Profile of the UK Mineral Products Industry – 2020 Edition (Mineral Products Association) – reporting mainly on 2018 data

- A1.25 The AM2019 survey reports that almost all regions showed an increase in total primary aggregate sales between 2014 and 2019. The overall increase in total primary aggregate sales was largely as a result of increased sales of crushed rock. Crushed rock sales in England increased by 18% between 2014 (70.5Mt) and 2019 (83.0Mt). Sand and gravel sales in England decreased by 4% between 2014 (52.4Mt) and 2019 (50.5Mt).
- A1.26 The sales trends in Cumbria are broadly consistent with the national picture, with most aggregate sales being slightly below the peak figures achieved in 2016 but otherwise continuing the steady rise from post-recession. 2019 and 2020 sales show that crushed rock has performed well with 2019 sales higher than those in 2016. This largely due to increased sales of high specification roadstones, with 2020 sales also higher than 2016. Limestone sales in 2020 are also comparable with 2016. Sand and gravel sales had dropped in 2018 but increased in 2019, dropping slightly again in 2020.
- A1.27 Drops in sales are likely attributed to the impact of the Covid-19 pandemic during 2020, with a national lockdown commencing in March 2020 and ongoing restrictions on the economy. Despite this, with the exception of sand and gravel sales which dropped slightly in 2018, and sandstone and igneous (excluding high specification roadstone), aggregate sales over the past 3 years (2018 – 2020) have been higher than the sales recorded for 2017. Cumbria has also seen a steady increase in recorded sales of recycled aggregates in line with national trends.
- A1.28 Cumbria continues to produce more aggregates than it requires and exports mainly to elsewhere in the North West, but also to other regions including the North East, Yorkshire & Humberside and Scotland.
- A1.29 Cumbria has the only quarry in England which produces very high specification roadstone (Ghyll Scaur) and consequently there is a national market for this resource which will be affected by major infrastructure developments across the UK and not just within Cumbria.

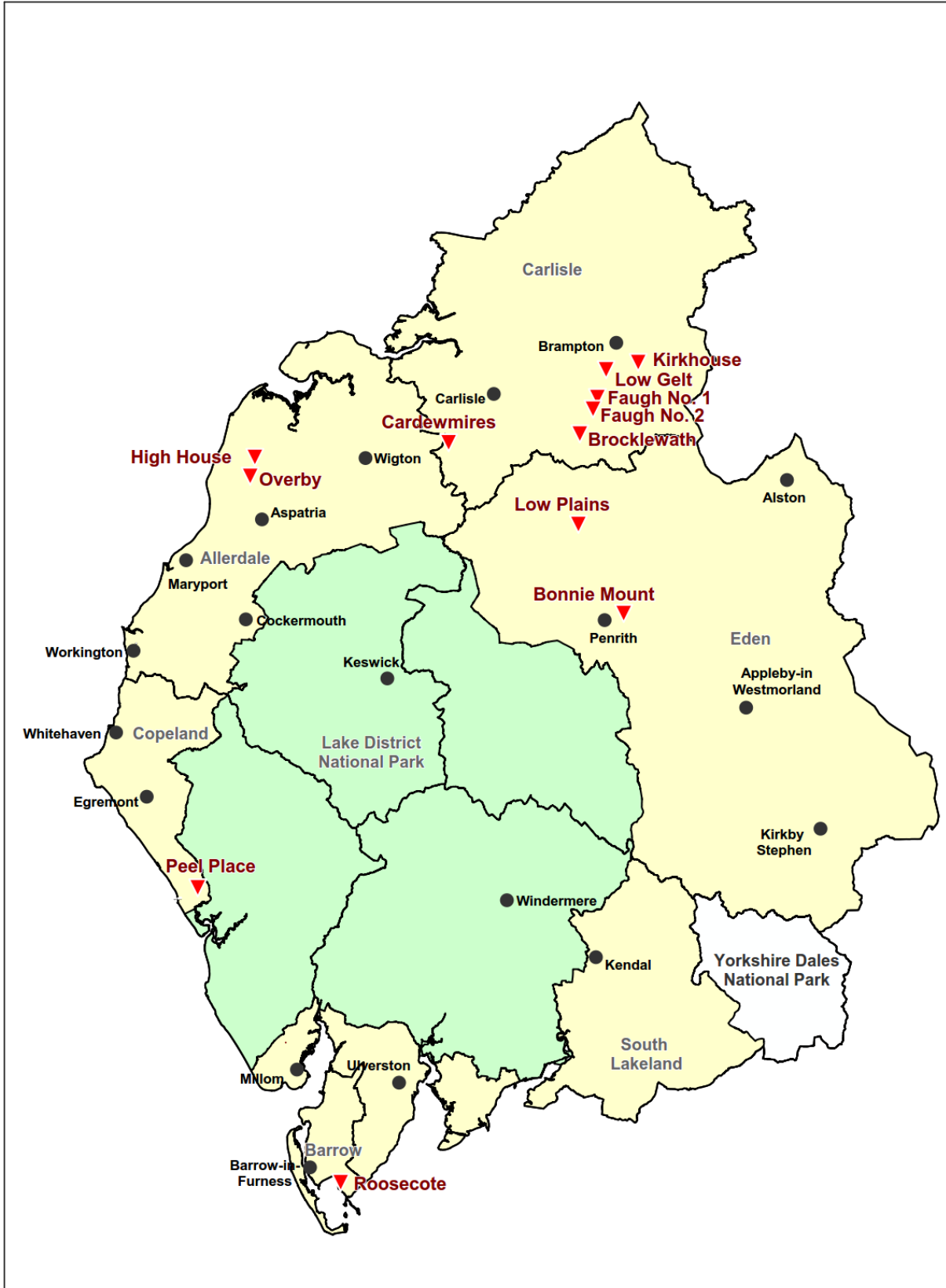
APPENDIX 2
SAND AND GRAVEL QUARRIES IN CUMBRIA
(see Map 1)

Location	Expiry date*	Notes
Bonnie Mount	2035 31 December	also recycling of inert building waste
Brocklewath	2021 31 August	no mineral extraction since change of owner in November 2013. Now confirmed no further extraction planned.
Cardewmires	2025 1 December	identified for an Area of Search in CMWLP
Faugh No.1	2024 30 June	currently mothballed
Faugh No.2	2022 31 December	
High House**	2036 31 December	Planning application for physical and time extension (to 2036) submitted in 2018 (approved 2019)
Kirkhouse	2023 28 July	identified for two Areas of Search in MWLP. Planning applications for time extension to 2032 submitted in 2020
Low Gelt	2026 31 December	Planning application for time extension to 2026 granted in November 2019.
Low Plains	2033 30 September	
Overby No.2**	2026 31 December	Additional 0.27Mt reserve permitted in 2017
Peel Place	2025 26 April	Area of Search identified in CMWLP
Roosecote	2029 28 May	- quarry extension identified as a Preferred Area in CMWLP - adjacent greenfield quarry identified as an Area of Search in CMWLP

* expiry dates as at November 2021

** an Area of Search between High House and Overby Quarries is identified in the CMWLP

Map 1 – Sand and gravel quarries



1:550000 at A4 size OS Grid Ref: NY3727 Scale 0 4 8 12 km Drawing Ref: Plan Created on: © Crown Copyright and Database Right September 2014. Ordnance Survey Licence Number 100019596.

APPENDIX 3

CRUSHED ROCK QUARRIES IN CUMBRIA

(see Map 2)

Location	Geology	Expiry date*	Notes
Eskett and Rowrah	Limestone	2034 30 September	two parts of quarry now combined into one planning permission; options for working 'hard to access' reserves being considered
Flusco (Silverfields)	Limestone	2032 31 December	also construction waste recycling to 31 Dec 2031 Quarry closed- March 2017
Goldmire	Limestone	2042 21 February	also construction waste recycling to 2041
Hartley	Limestone	2042 21 February	- ROMP conditions agreed in December 2013 - limited operations at site
Helbeck	Limestone	2042 21 February	ROMP and lateral extension applications approved in 2016. 0.23Mt reserve permitted in lateral extension.
Holme Park	Limestone	2023 31 December	application for time extension to 2043 submitted August 2016. Approved subject to S106 Agreement.
Kendal Fell	Limestone	2042 21 February	reserves sterilised, very small chance of limited prior extraction. Some limited aggregate production. Planning permission granted in 2018 for importation and processing of waste to provide secondary aggregate.
Moota	Limestone & sandstone	2024 31 December	time and physical extension approved May 2015
Sandside	Limestone	2029 30 June	Planning permission granted subject to S106 Agreement in July 2018 to extend quarry operations until 2029 (decision issued September 2019 following completion of S106)
Shap Beck #	Limestone	2042 21 February	
Shap Blue #	Igneous (Sandstone & limestone)	2042 21 February	also deposit of mining waste on land east of the A6 to 31 December 2034
Shap Pink	Igneous	2042 21 February	wholly within the Lake District National Park
Shap Fell (aka Hardendale)	Limestone	2018 31 December	Planning permission expired. Operations ceased with limited reserve remaining (0.01Mt aggregate; 0.09Mt industrial).
Silvertop	Limestone	2042 21 February	also construction waste recycling to 16 Dec 2018 (now extended for lifetime of quarry) . Extension to quarry for additional 0.6Mt limestone approved February 2021 (for a 3 year operating period only).
Stainton	Limestone	2042 21 February	planning permission for operating a deeper part of the quarry (for industrial limestones) granted a time extension to 31 March 2025
Tendley	Limestone & Sandstone	2029 31 December	

* expiry dates as at November 2021

the extraction areas for these two quarries are within the Lake District National Park

Map 2 – Crushed rock quarries



1:550000 at A4 size OS Grid Ref: NY3826 Scale 0 4 8 12 km Drawing Ref: Plan Created on: © Crown Copyright and Database Right September 2014. Ordnance Survey Licence Number 100019596.

APPENDIX 4

HIGH AND VERY HIGH SPECIFICATION ROADSTONE QUARRIES IN CUMBRIA (see Map 3)

Location	Geology	Expiry date	Notes
Ghyll Scour	igneous	2045 31 December	- Very High Specification Aggregate
Roan Edge	sandstone	2038 31 December	identified for an Area of Search in MWLP
Holmescales	sandstone	2042 21 February	- mothballed - identified for an Area of Search in MWLP
Roan Edge Landfill and Recycling Site	sandstone	1 November 2031	new permission for extraction of 0.3Mt granted in 2017

Map 3 – High and very high specification roadstone quarries



1:550000 at A4 size OS Grid Ref: NY3726 Scale 0 4 8 12 km Drawing Ref: Plan Created on: © Crown Copyright and Database Right September 2014. Ordnance Survey Licence Number 100019596.

APPENDIX 5
BUILDING STONE AND SLATE QUARRIES
 (see Map 4)

QUARRIES IN THE LAKE DISTRICT NATIONAL PARK			
Location	Geology	Expiry date*	Notes
Brathay	Slate	2018 31 March	no aggregate production
Petts (aka Pets)	Slate	2020 31 December	- no aggregate production
Broughton Moor	Slate	2042 21 February	no aggregate production
Bursting Stone (aka Coniston)	Slate	2030 31 December	no aggregate production
Elterwater (aka Lords)	Slate	2042 21 February	aggregate production
Low Brandy Crag (aka Brandy Crag)	Slate	2026 30 November	no aggregate production
Peatfield (aka Hodge Close)	Slate	2026 31 December	no aggregate production Planning permission for time extension granted in 2018
High Fell (aka High Fellside or High Tilberthwaite)	Slate	2024 31 March	no aggregate production
Honister	Slate	2042 21 February	by products including aggregates

* expiry dates as at November 2021

QUARRIES OUTSIDE THE NATIONAL PARK			
Location	Geology	Expiry date*	Notes
Bank End	sandstone	2042 22 February	- inactive, to be restored
Baycliff Haggs	limestone	2042 21 February	- off cuts used as primary aggregate
Birkhams	sandstone	2030 31 July	- no aggregate production
Blaze Fell	sandstone	2011 29 September	- awaiting restoration
Bowscar	sandstone	2042 21 February	- no aggregate production - physical extension granted Jan 2016
Crag Nook	sandstone	2042 21 February	- no aggregate production
Flinty Fell	sandstone	2024 31 December	- waste used as aggregate
Grange	sandstone	2028 29 January	- no aggregate production
Kirkby Slate	Slate	2042 21 February	- application to amend extraction area and time extension permitted 2016 - waste used as secondary aggregate
Lambhill	sandstone	2021 30 January	- no aggregate production
Larchwood	sandstone	2007 30 September	- awaiting restoration
Leipsic	sandstone	2022 20 December	- no aggregate production
Mousegill	sandstone	2016 30 June	- no aggregate production
Red Rock Canyon	sandstone	2025 10 December	- no aggregate production
Scratchmill Scar	sandstone	2031 30 January	- off cuts used as primary aggregate
Snowhill no.1	limestone	2022 31 May	- no longer primarily building stone - time extension approved in 2017
Snowhill no.2	sandstone	2020 31 May	- primarily building stone - very limited aggregate production
Talkin Fell	sandstone	2011 3 February	- inactive
West Brownrigg	sandstone	2021 31 July	- off cuts used as primary aggregate

* expiry dates as at November 2021

Map 4 - Building stone and slate quarries



1:550000 at A4 size OS Grid Ref: NY3828 Scale 0 4 8 12 km Drawing Ref: Plan Created on: © Crown Copyright and Database Right September 2014. Ordnance Survey Licence Number 100019596.

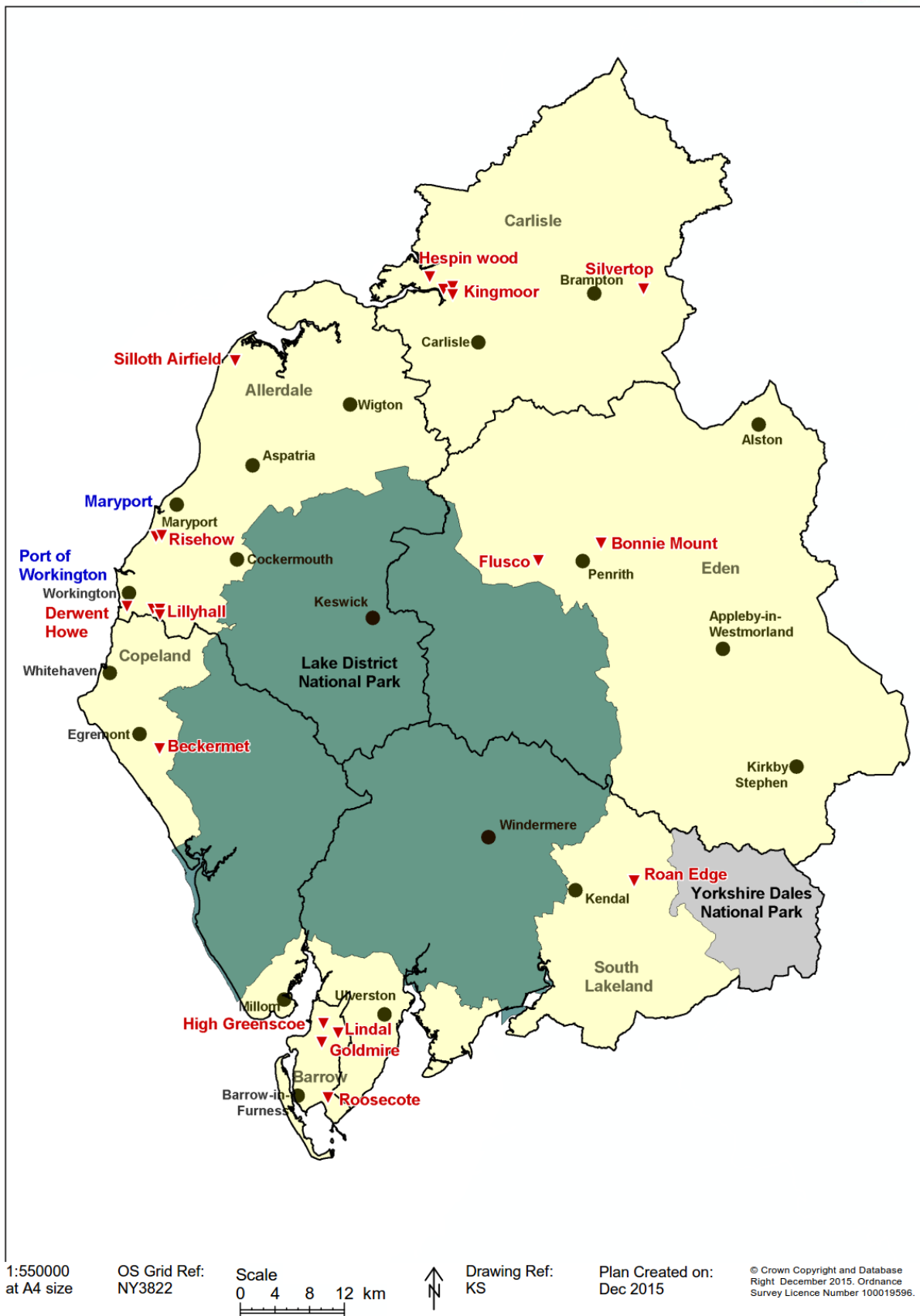
APPENDIX 6
ALTERNATIVE AGGREGATES: MAIN PROCESSING FACILITIES
(see Map 5)

Facility	Material	Notes
Silvertop Quarry	inert construction waste	Permission approved in November 2019 to continue operations for lifetime of the quarry (2042)
Sandside Quarry	Inert construction waste	Permission approved in June 2020 for continued processing of road planings for recycled aggregate
Flusco Quarry	household, commercial, industrial and construction waste	EA permit permission to 31 Dec 2031 (tied to cessation of adjacent landfill)
Roosecote Quarry	construction materials	- permission to 31 Aug 2016 - now ceased operations
Goldmire Quarry	construction and demolition waste	EA permit permission to 31 Dec 2041
Bonnie Mount Quarry	inert building waste	permission to 7 Oct 2035
Roan Edge landfill	inert wastes	- permission to 1 Nov 2031
Hespin Wood landfill	secondary aggregates	EA permit – permanent
Derwent Howe slag bank	slag extraction and recycling of wastes	- permission to 31 Oct 2016 - now under restoration
McKay Plant & Skip Hire, Lillyhall	construction and demolition waste	EA permit - permanent Lillyhall Industrial Estate
Phillip Carruthers Ltd, Lillyhall	concrete, rubble and bricks	EA permit - permanent Lillyhall Industrial Estate
Ashcroft Demolition (Cumbria) Ltd, Flimby, Maryport	construction waste	EA permit - permanent Risehow Industrial Estate
Thompson's Plant Hire Ltd, Flimby, Maryport	construction waste	EA permit - permanent Risehow Industrial Estate
NW Recycling, Kingmoor, Carlisle	construction and demolition waste	EA permit - permanent Rockcliffe Estate
Cubby Construction Ltd, Kingmoor, Carlisle	construction waste, road planings	EA permit - permanent Rockcliffe Estate
Tony Brown Aggregates Ltd, Diamond Yard, Lindal-in-Furness	stone, brick, etc.	EA permit – permanent
Lawson's Recycling Centre, Beckermest	construction waste	EA permit – permanent
D A Harrison, Silloth Airfield	Inert	EA permit – permanent
Harry Barker Properties Ltd, High Greenscoe	construction waste	EA permit permission to 1 Nov 2024

Kingmoor Marshalling yards	concrete rail sleepers and spent ballast	EA permit – permanent
Overby Sand Quarry	Inert waste	permission to 31 Dec 2026

* expiry dates as at November 2021

Map 5 – Alternative aggregates sites and marine dredged landing points



HISTORIC AGGREGATE SALES FROM CUMBRIA (million tonnes)

Survey year	Limestone	Sandstone and igneous (excluding HSA)	High spec roadstone (HSA)	All crushed rock	Sand and gravel	Marine dredged	Secondary and recycled aggregates*
2001	3.0	1.1		4.1	0.7	0.03	-
2002	2.9	1.1		4.0	0.9	0.04	-
2003	2.6	1.1		3.7	1.0	0.04	-
2004	2.8	1.1		3.9	0.8	0.02	-
2005	2.6	0.36	0.74	3.70	0.70	0.020	-
2006	2.7	0.27	0.69	3.66	0.79	0.020	-
2007	2.8	0.53	0.70	4.03	0.87	0.010	-
2008	2.7	0.40	0.75	3.85	0.77	0.020	-
2009	1.91	0.38	0.78	3.07	0.52	0.020	-
2010	2.46	0.41	0.59	3.46	0.53	0.020	-
start of the period for 10-year averages							
2011	1.84	0.37	0.60	2.81	0.46	0.012	0.294
2012	2.03	0.37	0.55	2.95	0.46	0.010	0.212
2013	1.62	0.37	0.41	2.40	0.48	0.012	0.202
2014	1.90-	0.30	0.38	2.58	0.68	0.022	0.306
2015	2.52	0.36	0.42	3.30	0.71	0.006	0.183
2016	1.92	0.49	0.48	2.89	0.81	0.010	0.450
2017	1.78	0.41	0.43	2.61	0.79	0.012	0.309
2018	1.99	0.31	0.52	2.82	0.71	0.00	0.396
2019	2.02	0.28	0.57	3.01	0.77	0.00	0.456
2020	1.89	0.25	0.45	2.59	0.75	0.00	0.541
3-year average	1.97	0.28	0.51	2.80	0.74	0.004	0.464
10-year average	1.95	0.35	0.48	2.80	0.66	0.08	0.335
Landbank (years) based on 10 yr avg sales	41.08	57.37	33.64	41.55	9.14	-	-

* including slate waste

Appendix 8– 2021 LAA Landbank and Tonnage Calculations (based on 2019 and 2020 returns data)

	Sand and Gravel	All Crushed Rock	Limestone	Ig & Sa exc VHSA	VHSA/HS	All Ig & Sa	VHSA only
1 <i>LAA 2021 provision rates - 10 yr av except for S&G@ 3yr avg</i>							
2 Reserves at 31 December 2020	6,031,033	116,352,872	80,122,895	20,080,895	16,149,082	36,229,977	6,628,082
3 Annual demand forecast in LAA (LAA provision figure)	740,000	2,800,000	1,950,000	350,000	480,000	830,000	320,000
4 Demand from 2020 to 2030 (10 x LAA figure)	7,400,000	28,000,000	19,500,000	3,500,000	4,800,000	8,300,000	3,200,000
5 Landbank (reserve/annual demand)	8.150044595	41.55459714	41.0886641	57.37398571	33.64392083	43.6505747	20.71275625
6 Balance (Reserve minus demand)	-1,368,967	88,352,872	60,622,895	16,580,895	11,349,082	27,929,977	3,428,082
7 Required Landbank (7 or 10 yrs x LAA fig)	5180000	28,000,000	19,500,000	3,500,000	4,800,000	8,300,000	3,200,000
8 Outstanding balance (balance minus required landbank)	-6,548,967	60,352,872	41,122,895	13,080,895	6,549,082	19,629,977	228,082
9 Tonnage to maintain landbank (if Outstanding Balance is -ve)	6,548,967	-60,352,872	-41,122,895	-13,080,895	-6,549,082	-19,629,977	-228,082
10 <i>Required Tonnage in Mt</i>	6.55	-60.35	-41.12	-13.08	-6.55	-19.63	-0.23
11 Landbank years remaining after 2030 (if outstanding balance is +ve)	-1.85	31.55	31.09	47.37	23.64	33.65	10.71
12							
13 Landbank End date (add/subtract number of years remaining to 2030)	2028.15	2061.55	2061.09	2077.37	2053.64	2063.65	2040.71
14							
15 Year additional reserves needed as landbank falls (end date - 7 or 10)	2021.15	2051.55	2051.09	2067.37	2043.64	2053.65	2030.71
16							

Appendix 9 – Population Growth Forecasts for Cumbria (ONS data)

Forecast Annual Aggregates Consumption	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total population (latest ONS data)		498,793	497,982	497,468	497,050	496,687	496,290	495,834	495,323	494,777	494,179	493,519	492,823	492,093	491,321	490,496
Sand & gravel consumption @ 0.85te per head		423,974	423,285	422,848	422,493	422,184	421,847	421,459	421,025	420,560	420,052	419,491	418,900	418,279	417,623	416,922
Convert to Mt		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Annual provision @ 10 yr avg sales		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Surplus/deficit (Provision less consumption)		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
2021 LAA provision rate - 3yr avg sales		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Surplus/deficit (Provision less consumption)		0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
Crushed rock consumption @ 1.67te per head		832,984	831,630	830,772	830,074	829,467	828,804	828,043	827,189	826,278	825,279	824,177	823,014	821,795	820,506	819,128
Convert to Mt		0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.82	0.82	0.82	0.82	0.82
Annual provision @ 10yr avg sales		2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Surplus/deficit (Provision less consumption)		1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98
2021 LAA provision rate - 10 yr average sales		2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Surplus/deficit (Provision less consumption)		1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98
Forecast Annual Aggregates Consumption	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total population (latest ONS data) Housing Targets Met		498,793	498,375	501,643	504,638	508,084	511,145	514,203	517,322	520,306	523,511	526,528	529,553	532,697	535,829	539,047
Sand & gravel consumption @ 0.85te per head		423,974	423,619	426,397	428,942	431,871	434,473	437,073	439,724	442,260	444,984	447,549	450,120	452,792	455,455	458,190
Convert to Mt		0.42	0.42	0.43	0.43	0.43	0.43	0.44	0.44	0.44	0.44	0.45	0.45	0.45	0.46	0.46
Annual provision @ 10 yr avg sales		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Surplus/deficit (Provision less consumption)		0.24	0.24	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.20	0.20
2021 LAA provision rate - 3 yr avg sales		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Surplus/deficit (Provision less consumption)		0.32	0.32	0.31	0.31	0.31	0.31	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.28	0.28
Crushed rock consumption @ 1.67te per head		832,984	832,286	837,744	842,745	848,500	853,612	858,719	863,928	868,911	874,263	879,302	884,354	889,604	894,834	900,208
Convert to Mt		0.83	0.83	0.84	0.84	0.85	0.85	0.86	0.86	0.87	0.87	0.88	0.88	0.89	0.89	0.90
Annual provision @ 10 yr avg sales		2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Surplus/deficit (Provision less consumption)		1.97	1.97	1.96	1.96	1.95	1.95	1.94	1.94	1.93	1.93	1.92	1.92	1.91	1.91	1.90
2021 LAA provision rate - 10 yr average sales		2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Surplus/deficit (Provision less consumption)		1.97	1.97	1.96	1.96	1.95	1.95	1.94	1.94	1.93	1.93	1.92	1.92	1.91	1.91	1.90

Note – this table still using ONS mid-2016 population forecasts