Somerset Local Aggregate Assessment

Sixth Edition, data to 2019

(incorporating data from 2017-2019)

Somerset County Council with Exmoor National Park Authority

Minerals and Waste Development Framework

SOMERSET County Council

EXMOOR NATIONAL PARK

This document has been prepared by Somerset County Council in partnership with Exmoor National Park Authority

Cover photographs: Main image and bottom left image: Whatley Quarry (taken by SCC); middle left image: view of an aggregate working area (taken by SCC); top left image: Halecombe Quarry (taken by SCC).

Copies of this document are available from:

Somerset County Council
County Hall
Taunton
Somerset
TA1 4DY
Tel: 0300 123 2224
Email: mineralsandwaste@somerset.gov.uk

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https://www.somerset.gov.uk/waste-planning-and-land/

For further details of the Exmoor National Park Local Plan, please visit
http://www.exmoor-nationalpark.gov.uk/planning/planning-policy

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Somerset Local Aggregate Assessment – Sixth Edition (data to 2019)

	Sand & Gravel[1]	Crushed Rock	Crushed Rock (HPSVSA[2])	Marine Aggregates	Secondary Aggregates	Recycled Aggregates
2019 Sales	*0.500 mt*	15.19 mt	23,595 t[3]	46,832 t	0	73,950
10 year average	*0.506 mt*	12.05 mt	240,877 t	-	32,343 t	51,037 t
3 year average	*0.546mt*	15.07 mt	34,233 t	64,394 t	20,009 t	47,692 t
1 year trend	⬇	⬇	⬇	⬇	⬇	⬆
LAA rate	*0.500*	13.4 mt	400,000 t[4]	64,394 t	32,343 t	51,037 t
Reserves at end of 2019	*4.199 mt*	363.7 mt	2.9 mt	-	-	-
Landbank (years), LAA rate	*8.3*	27.1[5]		-	-	-
Landbank (years), sub-regional apportionment	*4.5*[6]	27.1	N/A	-	-	-

Comments

This LAA was published in 2021 and reports data for 2019. An LAA reporting data for 2020 will follow.

For the first time the two distinct types of crushed rock won in Somerset are reported separately ('Crushed Rock' and 'High PSV Silurian Andesite') to allow monitoring against Somerset Minerals Plan policy SMP2 which requires maintenance of separate landbanks. This has only been possible by presenting information that under normal circumstances would be considered commercially confidential. In this exceptional case explicit agreement to publication of the information was obtained from the operator.

Crushed rock sales in 2019 decreased by 1.7% from 2018 levels, which marks the first decrease in sales since 2012. Crushed rock sales from Somerset were higher than any other Minerals Planning Authority area in England and higher than sales recorded in at least the 19 years

[1] The Mineral Planning Authorities for Somerset, Devon and Cornwall have signed an MoU that provides a mechanism for sharing data and maintaining a joint sand and gravel landbank. Data shown in italics relates to sales in Devon in 2018.
[2] HPSVSA = High Polished Stone Value Silurian Andesite
[3] Single operator has agreed to waive confidentiality
[4] See paragraph 2.25 for explanation of derivation of the LAA rate for HPSVSA
[5] Policy SMP2 expects a 15 year landbank to be maintained
[6] Based on sub-regional apportionment for the period 2005-2020 of 14.91 million tonnes equating to 930,000 tonnes per annum

preceding 2018. Historic sales data for crushed rock has been amended such that crushed rock sales have been derived from total reported crushed rock sales minus High PSV Silurian Andesite sales. Somerset continues to be the most important supplier of crushed rock in the south of England and in 2019 was the largest producing county in England. Somerset is a key supplier of crushed rock to London, the South East and East of England as well as the wider South West. The two rail linked quarries supplying London, the South East and East of England have planning permission until 2030 and 2040. This matter will be considered during the review of the Somerset Minerals Local Plan.

For the fourth year in a row, annual sales of crushed rock have exceeded the annual sub-regional apportionment figure of 13.4 mt.

Crushed rock reserves at the end of 2019 have decreased by 8Mt, from 2018 estimates but are approximately the same as those in 2017.

High PSV Silurian Andesite sales are at an historic low. The theoretical landbank based on 10 year average sales is about 7 years but this masks issues associated with accessibility of the remaining reserve.

From 2018 to 2019 the data shows decreased sales for marine aggregates and increased sales for recycled aggregates.

Sales of secondary aggregate occur from a single operator with a productive capacity of up to 18,000tpa.

Further efforts to engage with operators in 2018/2019 has resulted in improved operator returns for secondary and recycled aggregate but these continue to indicate that recycled aggregate sales from CDE waste management sites make a limited contribution of overall aggregate sales in Somerset. This may be due to the abundance of primary aggregate which makes the production of recycled aggregate uneconomic.

Landings of marine won aggregate (sand and gravel) remains low with a single wharf now operational making a small contribution to aggerate supply overall.

1 Introduction

1.1 Aggregates (sand and gravel, and crushed rock) are the raw materials used to make construction products. They are an essential part of everyday life and can be found in our roads, houses, schools and hospitals.

1.2 There are three main sources of aggregate in the UK: land-won; marine-dredged; and recycled and secondary. Land-won aggregates (often referred to as "natural" or "primary" aggregates) are materials extracted directly from the ground in quarries or pits. Marine-dredged aggregates comprise sand and gravel dredged from the sea floor in licensed areas of the UK continental shelf. Secondary aggregates are a by-product from mineral operations or industrial processes. Recycled aggregates are materials produced by treatment of construction and demolition waste.

1.3 Somerset is the largest producer of crushed rock in the south of England and in 2019 was the largest producer in England. Somerset is a key supplier of crushed rock to London, the South East and East of England. The vast majority of crushed rock is extracted from quarries in the east Mendip Hills.

1.4 Two types of crushed rock are worked in Somerset - Carboniferous Limestone and Silurian Andesite (sometimes known by the generic term 'Basalt'). Silurian Andesite with a high Polished Stone Value (PSV)[7] has a distinct market in the manufacture of surface dressing for use in the skid resistant wearing course of roads.

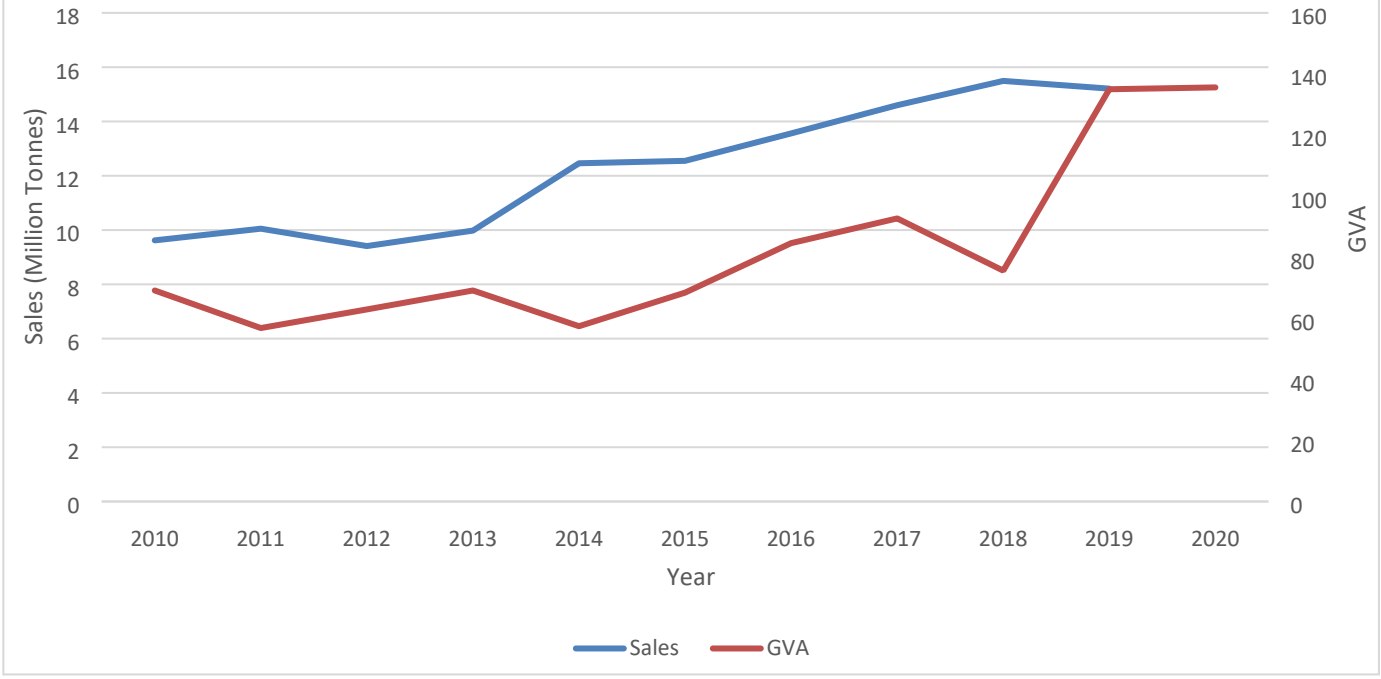
1.5 Mineral extraction is of considerable economic importance in Somerset, directly employing over 1000 Full Time Equivalent (FTE) across the four sectors of aggregates, quarry products, building stones and stonemasons. The Gross Value Added from mining and quarrying in Somerset in 2019 was modelled at around £135 million[8]. A study[9] completed in 2014 indicated that overall annual turnover across these four sectors was approximately £209.2 million in 2013 (£145 million of which came from the aggregates sector). The study also estimated that

[7] Polished Stone Value is a physical property of crushed rock aggregate which is measurable as resistance to polishing. High polished stone value materials offer a good resistance to polishing and are important in road surfacing to improve skid resistance.
[8] Source: Advanced Modelling of Regional Economies (AMORE) Database Tool 2020, provided by Dr Steven Brand, Plymouth University'. N.B. This is a modelled value and so the actual value may vary from this.
[9] Geckoella/RPA, The Benefits of Quarrying and Related Activities to the Somerset Economy – Executive Summary, July 2014

there are a minimum of 280 indirect FTE employees associated with the mining and quarrying sector in Somerset.

1.6 Figure 1 below shows the relationship between GVA and sales of crushed rock over the period 2010 to 2019.

Fig. 1 Crushed Rock Sales and GVA 2010 to 2019



Note: The GVA values for 2010 to 2018 are actual values whereas the 2019 value is modelled

A Local Aggregate Assessment for Somerset and Exmoor National Park

1.7 As stated in the National Planning Policy Framework (NPPF),[10] each Mineral Planning Authority is required to prepare an LAA assessing the demand for, and supply of, aggregates in their plan area. This is known as the Local Aggregate Assessment (LAA). Somerset County Council is the Mineral Planning Authority for Somerset, excluding Exmoor National Park. Exmoor National Park Authority (ENPA) is the Mineral Planning Authority (MPA) for Exmoor National Park.

1.8 A large proportion of Exmoor National Park lies within the historic boundary of the county of Somerset and this LAA covers that part of the National Park. The part of the Exmoor National Park not in Somerset is within the historic county of Devon and aggregate supply in this part of the National Park is addressed by the Devon LAA. The

[10] MHCLG. National Planning Policy Framework. July 2021. Paragraph 213.

purposes of National Parks are twofold: to conserve and enhance the natural beauty, wildlife and cultural heritage; and promote opportunities for the understanding and enjoyment of the special qualities of National Parks by the public.

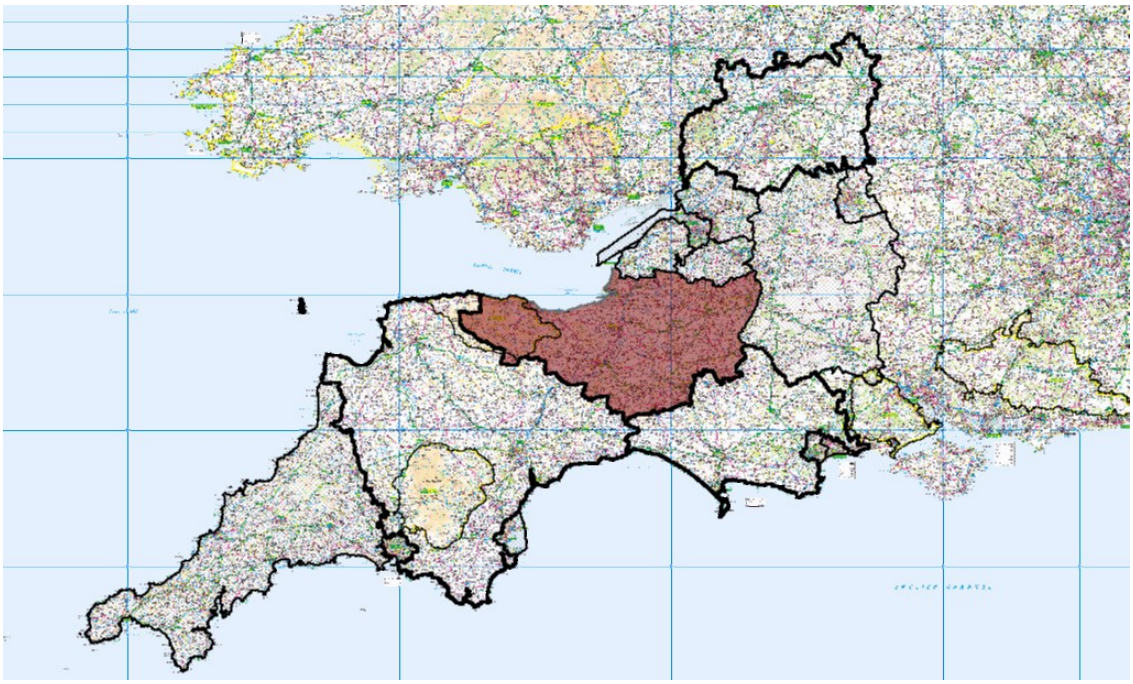
1.9 Exmoor National Park currently produces no land-won aggregates. Despite a long history of mineral extraction on Exmoor, there are at present no operative mines or quarries in the National Park although local stone for buildings which was sourced from these quarries is always in demand.

1.10 Due to the impacts of modern mineral extraction, large scale quarrying would be in conflict with the purposes of National Parks. The Exmoor National Park Local Plan recognises the potential conflict between modern mineral extraction and statutory National Park purposes; the conservation and enhancement of Exmoor's landscape, wildlife, cultural heritage, public enjoyment of the area's special qualities as well as impacts on the health and amenity of local communities. Apart from the small-scale extraction of building and roofing stone, minerals development is therefore not considered to be appropriate in the National Park and this includes development related to the supply of aggregates from within the National Park.

1.11 Historically the 'sub-regional' apportionment (the quantity of aggregates a sub-region was expected to plan for over a given time period) established by the Regional Aggregate Working Party grouped Exmoor with Somerset.

1.12 Given the location of the two authorities; National Park Purposes; and, the limited scope for aggregate working in Exmoor National Park, it is deemed appropriate by SCC and ENPA to produce a joint LAA, acknowledging also that a proportion of the Exmoor National Park lies in Devon and would be covered by Devon County Council's LAA. On this basis, this LAA has been prepared by Somerset County Council (SCC) in partnership with Exmoor National Park Authority. For the purpose of this assessment, 'Somerset' should therefore be taken to include the Somerset MPA area and a large proportion of the Exmoor National Park that is located within the county of Somerset as shown in Figure 2.

Figure 2: The Location of Somerset and Exmoor National Park within South West England (shaded area refers)



1.13 The LAA is also informed by cooperation with other Mineral Planning Authorities (in particular Devon County Council) regarding future sand and gravel provision. There is a Memorandum of Understanding between Somerset County Council and Devon County Council (and Cornwall Council) which details this cooperation (See Appendix 1)

1.14 The LAA has been informed by consultation with all the MPAs in the South West Aggregate Working Party (SW AWP) and other interested parties as appropriate (see Appendix 2 for list of consultees).

The fundamentals of Local Aggregate Assessments

1.15 There are significant geographical imbalances in the occurrence of suitable natural aggregate resources and the areas where they are most needed. Balancing these differences in supply and demand is the principle underpinning the Managed Aggregate Supply System (MASS).

1.16 The Government recognises the need to maintain the fundamental principles behind MASS and also acknowledges the importance of local factors in determining appropriate levels of aggregate extraction.

1.17 The LAA is structured around policy in the NPPF and associated planning practice guidance on minerals, which incorporates guidance on the Managed Aggregate Supply System[11]. Furthermore, SCC has had regard to a document produced by the Mineral Products Association and the Planning Officers Society[12] that provides guidance on the production of LAAs which reflects national policy and guidance.

1.18 Planning Practice Guidance expects that LAAs should contain three elements:

- *'a forecast of the demand for aggregates based on both the rolling average of 10-years' sales data and other relevant local information;'*[13]
- *an analysis of all aggregate supply options, as indicated by landbanks, mineral plan allocations and capacity data e.g. marine licences for marine aggregate extraction, recycled aggregates and the potential throughputs from wharves. This analysis should be informed by planning information, the aggregate industry and other bodies such as local enterprise partnerships; and,*
- *an assessment of the balance between demand and supply, and the economic and environmental opportunities and constraints that might influence the situation. It should conclude if there is a shortage or a surplus of supply and, if the former, how this is being addressed.'*

1.19 PPG also states that LAAs must also consider 'other relevant local information' in addition to the 10 year rolling supply, which seeks to look ahead at possible future demand, rather than rely solely on past sales. Such information may include, for example, levels of planned construction and housebuilding in their area and throughout the country. MPAs should also look at average sales over the last three years in particular to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase supply. This baseline assessment, together with an assessment of all supply options (including marine dredged, secondary and recycled sources), should help MPAs plan for a steady and adequate supply of aggregates.

1.20 The Managed Aggregate Supply System anticipates co-ordination of aggregate supply at the national level by the 'National Aggregate Co-ordinating Group' which provides guidance to government on national

[11] MHCLG. Planning Practice Guidance. March 2014. Paragraph 060[5]
[12] https://mineralproducts.org/documents/LAA_GUIDANCE_May2017.pdf
[13] Also see paragraph 213a of the National Planning Policy Framework

and sub-national guidelines on future aggregate provision which MPAs should take account of when planning for future supplies[14]. The latest guidelines[15] cover the period 2005 to 2020, which includes the period covered by this LAA, and have not yet been renewed.

1.21 The LAA takes account of feedback from the South West Aggregate Working Party (AWP), which is an advisory group comprising of Mineral Planning Authorities (including SCC and ENPA), central government and representatives from the aggregate industry operating in the south west of England. The AWP provides advice on the supply of, and demand for, aggregates to central government and Mineral Planning Authorities. The AWP also undertakes annual monitoring of aggregates production, by type, use and the level of permitted reserves allowing for annual consumption to be calculated.

1.22 The LAA for Somerset is updated regularly[16] and used as a tool to inform the development, review and/or monitoring of the Somerset Minerals Plan and the Exmoor National Park Local Plan. The LAA itself does not set policy or identify locations from where new supply should be achieved; that is done via the Minerals Plan[17].

1.23 This LAA provides an annual assessment of the level of provision required in Somerset to support an adequate and steady supply of aggregates, based on the rolling average of 10 year sales and an assessment of any relevant local information. This LAA reports data relating to 2019. A separate LAA reporting data for 2020 is being prepared.

Monitoring 'Landbanks'

1.24 Aggregate 'landbanks' are the principal monitoring tool used in LAAs to indicate to MPAs early warnings of possible disruption to the provision of a steady and adequate supply of land-won aggregates in their particular area.

1.25 The aggregate landbank is a measure of the number of years it would take for the permitted reserve in an MPA's area, in this case Somerset, to become fully depleted if the aggregate were to be worked at a rate

[14] See NPPF paragraph 207 d)

[15] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7763/aggregatesprovision2020.pdf

[16] LAAs should be updated an annual basis but due to resource constraints SCC has been unable to update the Somerset LAA in recent years. This LAA is therefore the most recent LAA for Somerset since LAA 2016.

[17] https://www.somerset.gov.uk/waste-planning-and-land/somerset-minerals-plan/

established by the LAA (using the average of annual sales over a 10 year period as a starting point) which is known as the 'LAA rate'. The calculation of the landbank is therefore the total amount of permitted reserves of aggregate for which valid permissions are extant, excluding dormant sites, divided by the LAA rate.

1.26 National policy[18] requires mineral planning authorities to plan for a steady and adequate supply of aggregates by maintaining landbanks of a least 10 years for crushed rock and 7 years for sand and gravel, whilst ensuring that the capacity of operations to supply a wide range of materials is not compromised.

1.27 National policy also expects that landbanks for any aggregate materials of a specific type or quality which have a distinct and separate market should be calculated and maintained separately.

1.28 Recognising that Somerset is a nationally important supplier of crushed rock, the Somerset Minerals Plan expects a 15 year landbank to be maintained. Furthermore, in light of their separate markets and consistent with the NPPF, the SMP makes a distinction between the crushed rock resources of Carboniferous Limestone and High PSV Silurian Andesite[19].

1.29 Policy SMP2 states the following:

'The Mineral Planning Authority will make provision for a rolling 15 year landbank of permitted reserves of both Carboniferous Limestone and Silurian Andesite throughout the Plan Period based on the findings of the Local Aggregate Assessment.'

1.30 Historically landbank calculations have been carried out based upon the permitted reserve being worked at the rate of the sub-regional apportionment. The introduction of LAAs allowed MPAs to estimate their own rate of future annual sales, rather than use the sub-regional apportionment. Guidance is included in PPG that expects LAAs to use the following to establish future demand:

"A forecast of the demand for aggregates based on both the rolling average 10-year sales data and other relevant local information;"

[18] National Planning Policy Framework (NPPF) paragraph 207

[19] Note that not all Silurian Andesite worked has a high PSV but that which has a lower PSV (weathered) contributes to other crushed rock supplies.

1.31 In light of Minerals Plan Policy SMP2, the supply and demand of the two types of crushed rock extracted in Somerset (high PSV Silurian Andesite and other forms of crushed rock) are considered separately in this LAA as set out below. It should be noted that this is the first time the LAA has considered the different crushed rock types separately.

Geology of Somerset[20]

1.32 Somerset has a diverse geology, resulting in a rich distribution of economic mineral resources – from Carboniferous limestone and igneous rock (Andesite / Tuff) in the north east (in particular in the Mendip Hills), to Devonian and Carboniferous sandstones in Exmoor National Park and west Somerset. Budleigh Salterton Pebble Beds and limited quantities of river terrace deposits form the main sand and gravel resources in the county.

1.33 Somerset is a nationally important source of crushed rock aggregates, predominantly from the Lower Carboniferous limestone of the Mendip Hills, as shown in Figure 4 (a) and (b). Large scale extraction is mainly limited to limestone of a Carboniferous age; however, Jurassic age limestones are still worked on a smaller scale for building stone.

1.34 Carboniferous limestone, such as Gully Oolite, Birnbeck Limestone, Vallis Limestone, Clifton Down Limestone and Hotwells Limestone form the broad ridge of the Mendip Hills which extends from Frome westwards to Weston-super-Mare. The Mendip sequence comprises a thick series of shelf type limestones that are divided into a number of formations, but there is little variation in their aggregate properties. All formations of limestone with the exception of Lower Limestone Shale form resources of road stone, railway ballast, construction fill and concreting aggregate.

1.35 Igneous Silurian rocks in the form of Andesite and Tuff can also be found centrally in the Mendip Hills. As noted previously, some of the Andesite material is good for road surfacing since, below the zone of weathering, it is strong, durable and resistant to polishing with a high PSV. Weathered Silurian Andesite is less suitable for skid resistant road surfacing but has other uses as a crushed rock aggregate for example in road bases.

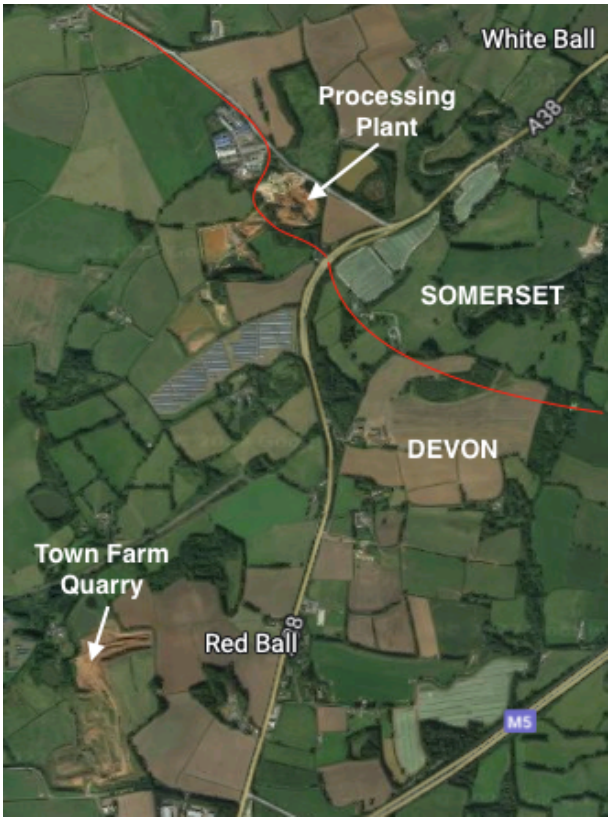
1.36 The sand and gravel resources are limited and occur largely in river terrace deposits, sub-alluvial gravel deposits and bedrock deposits.

[20] All geological information presented here is referenced from: British Geological Survey, Mineral Resource Information in support of National, Regional and Local Planning: Somerset (2005).

However, the river terrace deposits and sub-alluvial gravel deposits are of limited thickness across the county and are not currently worked.

1.37 In Somerset the Budleigh Salterton Pebble Beds form the sand and gravel bedrock. Currently these are worked at Town Farm quarry on the Devon / Somerset border; material is currently extracted on the Devon side for processing across the border in Somerset at Whiteball Quarry (see Fig. 3 below).

Fig. 3: Town Farm Quarry and Processing plant in White Ball showing the Devon Somerset border (shown by red line)



1.38 There are several aggregate workings across the county, varying in size and resource. Table 1 shows the active permitted aggregate quarries and the mineral extracted across Somerset and Exmoor National Park (excluding inactive and dormant sites). Figures 4 (a) and 4 (b) show the location of the main quarries. These Figures will be updated in the next LAA to reflect changes to sites.

Table 1: Active Permitted Aggregate Quarries in Somerset and Exmoor National Park

Quarry	Operator	Mineral	Permitted Annual Output (tonnes)	Grid Reference
Battscombe	Hanson Quarry Products Europe Ltd.	Carboniferous Limestone	1.3 million[21]	ST 459 544
Callow Rock	Aggregate Industries UK Ltd.	Carboniferous Limestone	1.3 million[22]	ST 447 560
Cannington Park Castle Hill	Castle Hill Quarry company Ltd.	Carboniferous Limestone	190,000 combined output	ST 251 403
Chard Junction[23]	Aggregate Industries UK Ltd.	Sand and Gravel	Output constrained by limit on HGV movements	ST 342 044
Gurney Slade	Morris and Perry Ltd.	Carboniferous Limestone	2.0 million	ST 625 493
Halecombe	Tarmac Quarry Products Ltd.	Carboniferous Limestone	1.0 million	ST 701 474
Moons Hill Complex	John Wainwright and Company Ltd.	High PSV Silurian Andesite	400,000[24]	ST 662 460
		Weathered Silurian Andesite	800,000[25]	
Torr Works	Aggregate Industries UK Ltd.	Carboniferous Limestone	8.0 million	ST 693 463
Whatley	Hanson Quarry Products Europe Ltd.	Carboniferous Limestone	8.0 million[26]	ST 732 480
	Total Crushed Rock (exc. HPSVSA):		**21.4 million**	
	Total High PSV Crushed Rock		**400,000**	
	Total Crushed Rock		**21.8**	

[21] 1.3 Mt derived from condition that total sales should not exceed 6.5 million tonnes over a period of 60 calendar months
[22] 1.3 Mt is an average derived from condition that total sales should not exceed 6.5 million tonnes over a period of 60 calendar months
[23] Site straddles border with Dorset – majority of extraction is within Dorset and sales are reported in the Dorset LAA. An application to extend this site to provide an additional reserve of 930,000 tonnes is being considered by Dorset County Council.
[24] Value relates to productive capacity as planning permission does not condition maximum capacity
[25] Value relates to productive capacity as planning permission does not condition maximum capacity
[26] 8Mt is an average derived from condition that allows 24 million tonnes over any successive 3 calendar years.

Figure 4 (a): Crushed Rock Aggregate Workings in east Sedgemoor[27]

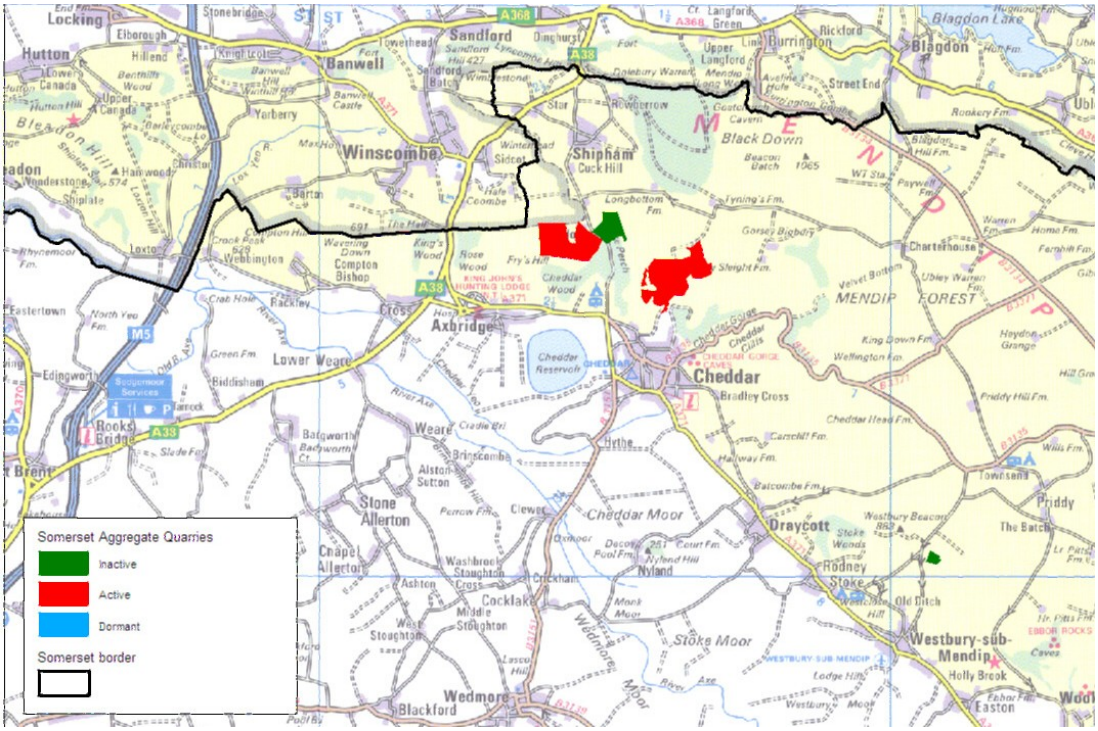
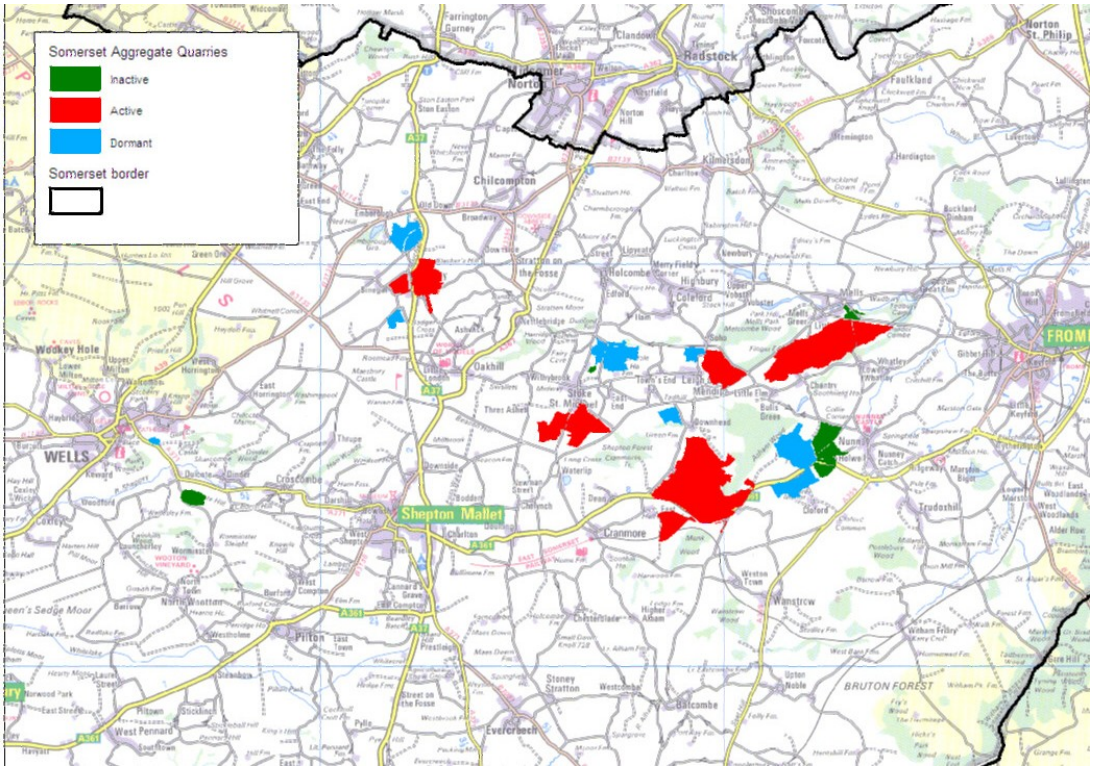


Figure 4 (b): Crushed Rock Aggregate Workings in East Mendip



[27] Figures 4 (a) and 4 (b) will be updated in the next LAA to show changes to sites

1.39 It is notable that there are several crushed rock quarries in Somerset with a large permitted output in excess of 1 million tonnes per year. The Somerset Minerals Plan[28] aims to ensure that large landbanks bound up in a few sites do not stifle competition, result in cumulative impacts and sterilisation of resource elsewhere. The Mineral Plan Policy SMP3 enables the County Council to review all proposals for crushed rock extraction taking account of the benefits they provide to the economy. The production of the LAA each year helps to provide a mechanism for monitoring any potential issues in minerals supply.

1.40 It is noted that a number of the county's building stone quarries have previously sold stone as aggregate and may have the potential to do so in the future; however, the permitted output of those quarries is very small when compared with the operations listed in Table 1.

1.41 Inactive and dormant crushed rock quarries are listed in Table 2 below. This shows the main non mineral use permissions granted where applicable. Further permissions have been issued at some sites and details may be obtained from the relevant District Council.

1.42 The current Somerset Minerals Plan does not include any allocations for the working of aggregates.

[28] See paragraph 6.48

Table 2: Inactive and Dormant Permitted Aggregate Quarries in Somerset and Exmoor National Park

Site	Aggregate type	Status (SMP)	Main non mineral use permission	Permitted Output (tonnes per annum)	Permission End Date
Cookswood /Holcombe	Crushed Rock (Limestone)	Inactive (east)/dormant (west)	1996: County permission with S106 agreement requires site not to be worked until cessation of Whatley extension, permission reference 109122/002. 2014: District permission (Mendip) for non-mineral development (development of a holiday retreat), permission reference 067818/010	-	-
Dulcote	Crushed rock	Inactive	2016: District permission (Mendip) for non-mineral development (food manufacturing) – permission reference 2016/1155/FUL	240,000	31st Dec 2013
Holwell/Colemans	Crushed rock (Limestone)	Inactive	-	930,000	21st Feb 2042
Lime Kiln Hill	Crushed rock (Limestone)	Inactive	-	No condition	21st Feb 2042
Shipham Hill	Crushed rock (Limestone)	Inactive	-	250,000[29]	21st Feb 2042
Stoke Lane	Crushed rock (Limestone)	Inactive	-	35,000 unless a Highway scheme is submitted and approved by the MPA.	2042

[29] 250,000 derived from condition that production should not exceed 1.25m tonnes over 60 calendar months

Westbury (also known as Broadmead quarry)	Crushed rock (Limestone)	Inactive	2013: County Permission for non-mineral development (explosives research, development and test centre), permission reference 2012/2357; 2018: District permission (Mendip) for the erection of a warehouse and classroom building, permission reference 2018/0683/FUL (the principle of the use has been established by the extant permission granted by the County Council in 2013).	60,000	31st Dec 2015
Barnclose	Crushed rock (Limestone)	Dormant	1996: County permission with s106 agreement for the revocation without compensation of Barnclose Quarry once the Whatley extension permission, is implemented, permission reference 109122/002	N/A	21st Feb 2042
Cloford	Crushed rock (Limestone)	Dormant	-	-	21st Feb 2042
Emborough	Crushed rock (Limestone)	Dormant	1997: County permission for use of part of land as hardcore and crushing facility, permission reference 106720/004	N/A	N/A
Highcroft	Crushed rock (Limestone)	Dormant.	2014: County permission for inert infill for restoration for part of site, permission reference 2014/0038/CNT	N/A	2042
Tadhill	Crushed rock (Silurian Andesite)[30]	Dormant	-	N/A	N/A
Tor Hill	Crushed rock (Limestone)	Dormant	2018: District permission for non-mineral development on part of site (storage of staging equipment), permission reference 2015/2405	N/A	N/A
West Quantoxhead/Vinnicombe	Crushed rock (Devonian Sandstone (High PSV))	Dormant	-	-	N/A
Westdown	Crushed rock (Limestone)	Dormant		No output restrictions	N/A
	Total Crushed rock (Limestone) permitted output (min):			**1.215 million[31]**	

[30] It is unclear whether this is High PSV Silurian Andesite

[31] This is a minimum value as quarries with no limits on production have not been added to this total. Dormant and inactive sites have not been counted where it appears there is little or no prospect of future working due to other development.

2. Land-Won Aggregates

2.1 Aggregate data are collected on an annual basis by the Mineral Planning Authorities and Aggregate Working Parties. The data collected by each MPA in the South West have historically been presented in the South West Aggregate Working Party (SW AWP - formerly South West Regional Aggregate Working Party) annual report. The report provides an annual update of the area's output and reserves and reflects the regional position of the aggregate supply system.

2.2 A four-yearly aggregate mineral survey is conducted nationally, which collects data and information on: Sales and reserves; imports and exports; and which sites work aggregate within or adjacent to environmental and/or landscape designations. While the most recent available report relates to data collected for 2014[32], the most recent survey completed collected data for 2019 and the next LAA will take account of the results of that survey.

2.3 As Minerals Plan Policy SMP2 expects landbanks of two different types of crushed rock (High PSV Crushed Rock (Silurian Andesite) and Crushed Rock other than HPSVSA ('Carboniferous Limestone') to be maintained separately, the sales and reserves of these two aggregate types ought to be reported separately. However, as High PSV Crushed Rock is supplied by a single operator from a single quarry complex the sales are confidential. Nevertheless, the two aggregate types have been dealt with separately as set out below.

2.4 The extraction of High PSV Silurian Andesite requires the prior extraction of overlying weathered Silurian Andesite material that, while not being suitable for use in asphalt, is sold for uses in construction and so is counted towards Crushed Rock sales in Somerset.

2.5 New data received from the operator extracting Silurian Andesite decouples sales of High PSV Silurian Andesite from those of lower PSV weathered Silurian Andesite material that have occurred over the last 10 years and the records of crushed rock sales in Somerset over this period have been updated accordingly.

2.6 'Crushed rock' sales in Somerset are taken as sales of Carboniferous Limestone and weathered Silurian Andesite and so the 'Carboniferous Limestone' landbank (as referred to in Policy SMP2) is derived from sales and reserves of both these aggregate types.

[32] MHCLG: Aggregate Mineral Survey 2014 available at: https://www.gov.uk/government/publications/aggregate-minerals-survey-for-england-and-wales-2014

Crushed Rock sales, reserves and productive capacity

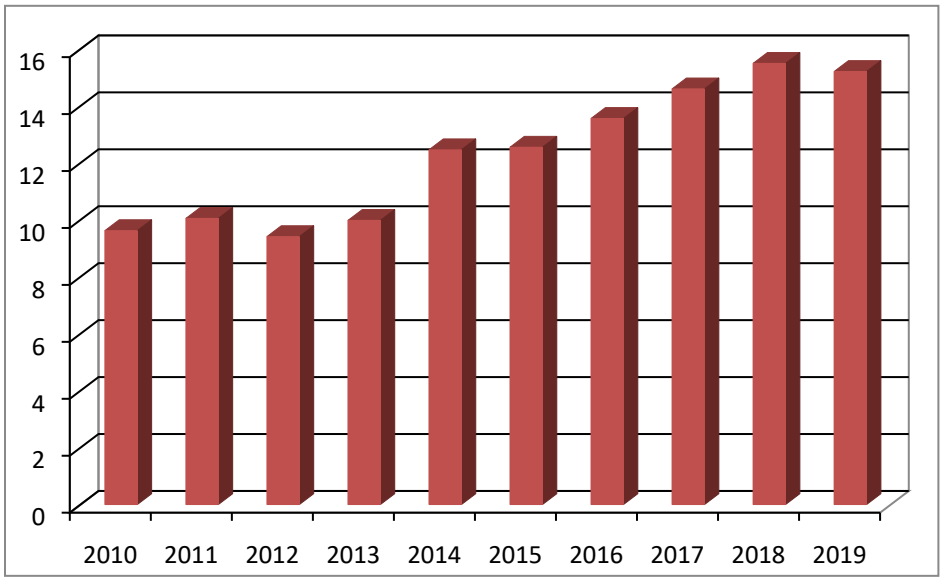
Crushed Rock (excluding high PSV) Sales

2.7 Total sales of crushed rock in the form of Carboniferous Limestone (and weathered Silurian Andesite) (referred to as 'Crushed Rock') in Somerset for a ten year period between 2010 and 2019 are shown in Table 3 and Figure 5 below.

Table 3: Crushed Rock sales in Somerset 2010-2019

Year	**Crushed rock (exc. HPSVSA) Sales (million tonnes)**	***Crushed rock sales (inc. HPSVSA) (million tonnes)***
2010	9.25	*9.62*
2011	9.650	*10.05*
2012	9.08	*9.41*
2013	9.66	*9.98*
2014	11.99	*12.46*
2015	12.27	*12.55*
2016	13.41	*13.56*
2017	14.56	*14.60*
2018	15.45	*15.49*
2019	15.17	*15.20*
10 year average	**12.05**	***12.29***
3 year average	**15.07**	***15.10***
Trend:	**Increasing**	***Increasing***

Figure 5: Total Sales of Crushed Rock in Somerset 2010-2019 (million tonnes)



2.8 The ten year sales pattern shows recovery in sales following a period of austerity which resulted in reduced levels of development which began in 2008. This is in line with national trends.

2.9 Somerset supplied some of the crushed rock needed for the infrastructure behind the London 2012 Olympic Games. The increased sales production occurred over a period of national economic austerity. If Somerset had not contributed aggregates to Olympic infrastructure the economic effects could have had a significant impact on sales. Although sales in 2019 were slightly lower than 2018 they were still higher than the at least the 19 years preceding 2018 and above the sub-regional apportionment value of 13.4mt.

2.10 It is noted that there was a slight increase in sales in 2013 when compared to the previous year, and a more significant increase in 2014 (approximately 20% increase in crushed rock sales in 2014 compared with 2013). 2015 presents a contrast to the significant increase observed in 2014, with a smaller increase of just under 1% in sales, however subsequent years show an ongoing strong increases in sales to 2018. In 2019 there was a slight decrease in sales which was likely due to the slow down in construction due to uncertainties associated with the UK leaving the European Union.

2.11 Looking at the UK picture overall, according to the Mineral Products Association[33], there was 2.2% growth in crushed rock sales and 2.9% growth in sales of sand and gravel in 2018. In 2019 crushed rock sales were reported to be nearly 100 million tonnes. Furthermore 25% growth in asphalt production was reported between 2010 and 2019.

Crushed Rock (excluding HPSVSA) reserves

2.12 Based on industry data, Somerset had estimated permitted reserves for Crushed Rock (excluding HPSVSA) at the end of 2019 of approximately 363.7 million tonnes[34].

2.13 Total permitted reserves within the county change year on year, impacted by the previous year's sales and any changes to operator estimates of permitted reserves. For the first time, the calculation of 'Crushed Rock' reserves does not include reserves of High PSV Silurian Andesite which are considered separately below. The figure for permitted reserves in Somerset at the end of 2019 takes account of these factors.

2.14 Notable increases in permitted reserves since 2015 (when the last LAA was prepared that referred to permitted reserves in Somerset of 380 mt):

[33] 8th Annual Mineral Planning Survey Report (AMPS 2019), Mineral Products Association)
[34] Note that while this value differs from that used in AMS 2019 it is considered an accurate figure.

- In 2016:
  - No permissions granted
- In 2017:
  - No permissions granted
- In 2018:
  - 30mt Northern Lateral Extension of existing Callow Rock quarry (Ref:1/17/16/083)
- In 2019:
  - Planning permission was granted for a further deepening of part of Halecombe quarry (Rookery Farm area) which provided an additional 10mt of limestone bringing the total reserves to around 16.5 mt.
  - Torr Works Quarry (Leighton Quarry area)- planning application approved to vary the approved working and restoration scheme leading to a loss of 10Mt of permitted reserves.
  - Castle Hill Quarry – (Ref 1/13/17/00012) - extraction of limestone (approved 21/6/2019 by appeal) resulting in additional reserves of 385,000 tonnes.

Crushed Rock (excluding HPSVSA) Productive Capacity

2.15 The MPA/POS guidance on the preparation of LAAs suggests that it is *"appropriate that the LAA should consider the productive capacity of sites collectively to supply material in the quantities required (as set out in the annual rates of provision expected in the LAA and/or MLP)"*. Reporting on productive capacity addresses potential concerns that, while a landbank may indicates a healthy level of reserves, by itself this is not a measure of the ability of an area to meet demand as reserves may be bound up in a small number of sites which have a maximum output limited by plant capability and planning restrictions (tonnage, working hours, lorry movements).

2.16 A basic estimate of productive capacity can be obtained from consideration of:

- The number of active sites;
- annual throughputs conditioned on planning consents;
- throughputs advised by the operator in planning applications;

2.17 The annual survey of operators in Somerset has not previously requested productive capacity information but was included in the survey of operations in 2020. Where information was received this has been taken into account in the estimate of productive capacity included in Table 4 below.

2.18 Footnotes to Table 1 show that the annual throughputs are based on conditions which allow working of a certain quantity of aggregate over a certain period and so it is possible for supply to 'flex' in years when demand is exceptionally high although ultimately the conditions mean that higher production rates could not be maintained over a period greater than 3 to 5 years. Table 4 shows the maximum average annual production rate that could be achieved taking into account the conditions on annual throughputs at certain sites.

Table 4: Crushed Rock (excluding HPSVSA) Productive Capacity Indicators

	Number	Maximum average annual production rate (tonnes)
Active sites:	7	18.9 million
Dormant and inactive sites:	13	1.275 million[35]

2.19 The value of just under 19 million tonnes productive capacity suggests there is headroom capacity of around 4 million tonnes which would allow increases in production, however this does not take account of limits on capacity that may be caused by operational constraints within individual quarries.

High PSV Silurian Andesite rock sales, reserves and landbank

2.20 As set out in Section 1.0 above, High PSV Silurian Andesite has particular resistant properties which make it especially suited to use in road wearing courses. In light of its distinct use, the sales, reserves and landbank for this type of crushed rock need to be considered separately. This is noted in the SMP that states:

"based on current evidence, the Andesite landbank is anticipated to last approximately 22 years. However, it should be noted that the LAA will be updated annually and these figures are likely to change in the future in accordance with market demand and permitted reserves."

2.21 Reserves are known to exist at the active Moons Hill quarry complex. At Moons Hill, high PSV Silurian Andesite (known colloquially as 'premium stone') has been extracted for over 100 years. Recent information provided by the operator indicates that reserves may now be as low as 2.9 million tonnes. The productive

[35] This is a minimum value as quarries with no limits on production have not been added to this total. Dormant and inactive sites where it appears there is no prospect of future working due to other development have not been counted.

capacity of the site is 400,000tpa based on the capacity of plant and equipment used to process the extracted aggregate.

2.22 In recent years access to the High PSV Silurian Andesite reserves at Moons Hill has become more constrained due to issues with the stability of the quarry benches associated with working at increasing depths. This has resulted in a marked decline in sales of High PSV Silurian Andesite from Moons Hill from a maximum of 466,906 tonnes in 2014 to 23,595 tonnes in 2019.

2.23 The difference between the 10 year average sales (240,877tpa) and the three year average (34,233tpa) reflects the recent decline in extraction.

2.24 Use of the 10 year average sales value to calculate the landbank is not considered appropriate because sales have been so heavily constrained in recent years. If the value of 400,000 tonnes is used (the productive capacity of the site) then the theoretical landbank is around 7.25 years which is well below the 15 years level included in the SMP. However, difficulties associated with accessing the reserves mean that the landbank for High PSV Silurian Andesite is much less than this.

2.25 To address this issue the operator is preparing plans to extend an existing quarry. In recognising the need to maintain a 15 year landbank for High PSV Silurian Andesite and in anticipation of the need for further development of this aggregate, Policy SMP9 safeguards the entire Silurian Andesite resource within Somerset and the SMP policies maps specifically set out an area of search for future Silurian Andesite working.

Land-won sand and gravel sales

2.26 In Somerset there is a sand and gravel resource at Whiteball in the form of the Budleigh Salterton Pebble Beds formation which straddles the Somerset- Devon border.

2.27 For some time the production at Whiteball has been based on extraction taking place on Devon's side of the border. Therefore, Somerset does not have a 10 year sales average to inform potential future supply requirements from Somerset.

2.28 Sand and gravel resources available in Somerset are generally limited. This is also the situation in Cornwall whereas resources in Devon are more plentiful. This was recognised in a joint sub-regional apportionment shared between Somerset, Cornwall and Devon. This arrangement has been continued and is recognised in a Memorandum of Understanding that was signed in 2015 (see Appendix 1). The MoU therefore provides a mechanism for sharing data and maintaining a joint sand and gravel landbank. Though not included in its most recent LAA, Devon's 7th LAA (February 2019) notes: "*For land-won sand and gravel, the Devon LAA*

includes sales and reserves within the adjoining counties of Cornwall and Somerset, as the limited levels of production and reserves within those areas prevent their separate reporting for confidentiality reasons."

2.29 The extraction operations at Whiteball mentioned above supply aggregates into both counties and have always contributed towards meeting Somerset's shared apportionment with Devon and Cornwall.

2.30 In July 2012 a Certificate of Lawfulness for an Existing Use or Development (CLEUD) was permitted for mineral processing, processing plant and ancillary operations and development at the Whiteball operations on the Somerset side of the border (Gipsy Lane).

Sand and gravel landbank

2.31 National policy[36] requires mineral planning authorities to plan for a steady and adequate supply of aggregates by maintaining landbanks of a least 7 years for sand and gravel, whilst ensuring that the capacity of operations to supply a wide range of materials is not compromised. Given the circumstances surrounding Somerset's sand and gravel resource as outlined above, Somerset is not in a position to maintain its own sand and gravel landbank and, in accordance with the MoU, also mentioned above, supply and demand considerations are combined with Devon and Cornwall with a combined landbank calculation for the three counties set out in the Devon LAA.

2.32 In its 2010-2019 LAA, Devon County Council reports sand and gravel permitted reserves at the end of 2019 of 4.199 million tonnes, with a landbank period of 8.3 years. However a more recent LAA for Devon indicates the landbank had declined below 7 years.

2.33 Information on future provision is included in section 6. Somerset County Council will continue to work with Devon County Council and Cornwall Council in the monitoring of the sand and gravel landbank in the future, as set out in the MoU.

[36] National Planning Policy Framework, paragraph 213

3 Imports and Exports

3.1 Information on the aggregates imports and exports for Somerset is available within the 2014 Aggregate Mineral Survey (AMS)[37]. AMS 2014 identifies Somerset as a net exporter of crushed rock providing markets in the south west and south east. Somerset is, however, a net importer of sand and gravel and is largely reliant on imports from other Mineral Planning Authorities in South West England.

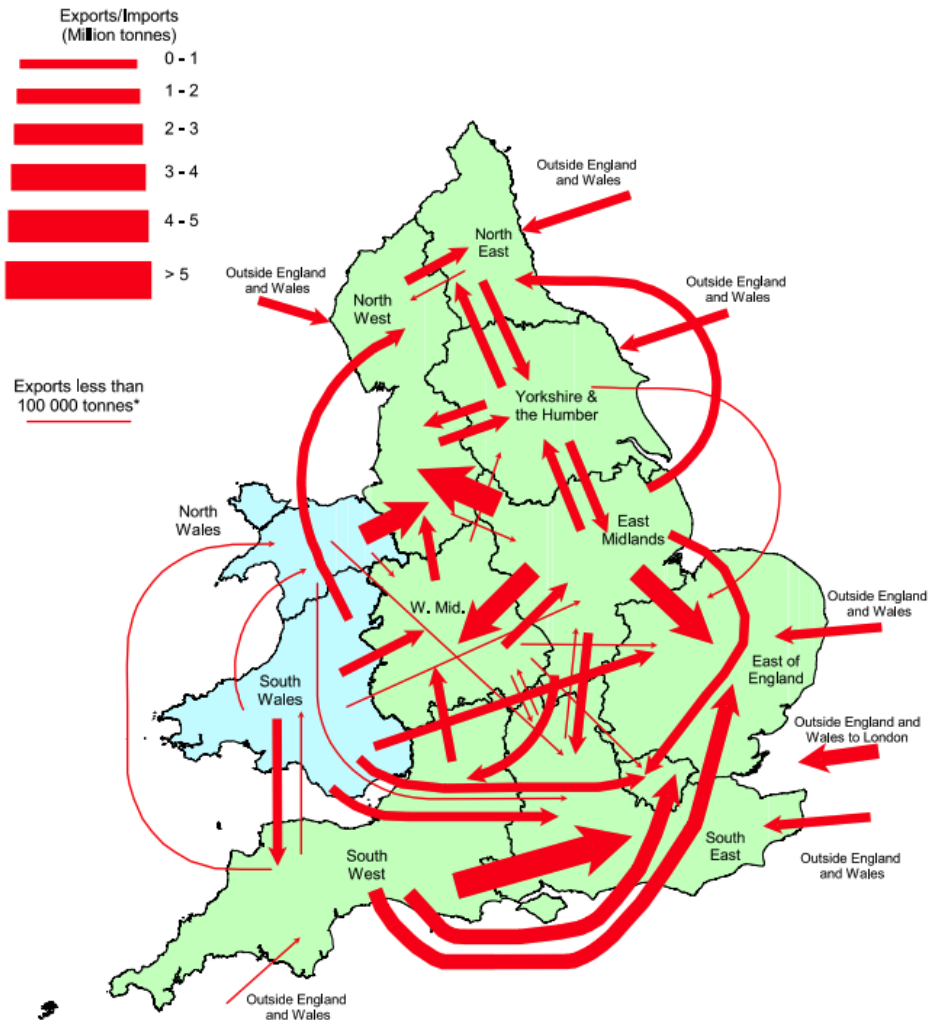
3.2 Table 5 provides details of the crushed rock exports from Somerset based on the 2014 data, showing that Somerset is a nationally significant provider of crushed rock, exporting to markets across the south of England. Approximately 26% of Somerset's crushed rock for aggregate use is exported to South East England; whilst 12% is exported to London; and 51% stays within Somerset and the south west[38].

3.3 In 2014, London was the single biggest importer of Somerset crushed rock, mainly due to the significant imbalance between aggregate sources and major development schemes and noting the rail links between Whatley and Torr Works Quarries and the South East. Outside London, Berkshire, Essex and Wiltshire were the counties importing the largest amount of Somerset crushed rock, mainly because of their limited supply and high development demand, and because the counties are also rail-linked with the Whatley and Torr Works quarries. The flows of crushed rock within England are illustrated in Figure 6 below.

[37] MHCLG: Aggregate Mineral Survey 2014 available at: https://www.gov.uk/government/publications/aggregate-minerals-survey-for-england-and-wales-2014. The 2019 Survey has been published and the results of this will be reported in the next LAA.

[38] These figures are based on the "end destinations" data collated for the BGS Aggregate Mineral Survey 2019, which does not include crushed rock sold for non-aggregate purposes.

Figure 6 Crushed rock inter-regional flows, 2014[39]



3.4 A Statement of Common Ground with West Berkshire Council has been signed concerning the ongoing supply of crushed rock by rail from Somerset to depots at Theale in West Berkshire.

3.5 In 2014, imports of crushed rock were limited. The MPA areas of Devon and North Somerset provide the largest proportion of imports serving local markets in Somerset. Small amounts of imports also come from other areas in the south west and South Wales.

[39] Source: MHCLG: Aggregate Mineral Survey 2014

Table 5: Crushed Rock Exports from Somerset (2014)

Region	Destination	Export amount (tonnes)
South West	West of England (Avon)	151,655
	Cornwall and Isles of Scilly	4,531
	Devon, Plymouth, Torbay and Dartmoor National Park	138,247
	Dorset	237,478
	Gloucestershire	21,743
	Wiltshire and Swindon	717,850
	Unknown but somewhere in the South West	501,793
South East	Berkshire	924,297
	Buckinghamshire and Milton Keynes	39
	East Sussex and Brighton and Hove	64,757
	Hampshire and the Isle of Wight	630,245
	Kent and Medway	323,446
	Oxfordshire	457,423
	Surrey	212,199
	West Sussex	538,783
	Unknown but somewhere in the South East	39
East	Essex, Southend and Thurrock	1,023,400
	Hertfordshire	59,551
	Suffolk	890
West Midlands	Herefordshire	89,609
	Staffordshire	23,295
	Warwickshire	78
	Unknown but somewhere in the West Midlands	6,847
London		1,502,020
Yorkshire and Humber		55
Wales		514
Total		**7,630,784**

3.6 The East of England's AWP's Annual Monitoring Report (AMR) (2017)[40] states that 2.8mt of crushed rock was imported into the region, however it was unable to state the sources and quantities of imports due to confidentiality reasons. If the figures have remained steady since 2014 then based on the above table, it can be assumed that at least a third of the exports from the South West region to the East of England region were from Somerset into Essex. The East of England AWP AMR also stated that its own landbank was at 11 years therefore, unless further reserves have been permitted, there is likely to be a greater reliance on imports in the future.

3.7 The London Aggregates Monitoring Report (AggMR)[41] (2017) shows that 3.9mt of crushed rock[42] was used in 2017, of which 1.5mt was imported from Somerset (0.9mt from Leicestershire).

3.8 In contrast to crushed rock, Somerset currently has no land-won sand and gravel workings and is heavily dependent on imports. Table 6 shows the majority of Somerset's sand and gravel imports come from other authorities in the south west supplemented by smaller supplies from the south east. Dorset is the single largest provider of sand and gravel, whilst Devon also makes a significant contribution. The landbank identified in the Dorset LAA (2009 to 2018) is 9.31 years. This is based on a 10 year average of sales.

3.9 The Chard Junction Quarry on the Somerset-Dorset border is a large contributor to Dorset's sand and gravel export into Somerset. The site predominantly serves local markets around the Yeovil, Taunton and Tiverton areas and is an important contributor to the local markets. An extension to this site for an additional 930,000 tonnes is being considered by Dorset Council in 2021. The planning application documents estimate that if permission is granted, the site will be worked by 2030.

3.10 Dorset's Minerals Sites Plan (adopted December 2019) estimates that the sites allocated by Policy MS-1 provide approximately 17mt of sand and gravel. This figure is higher than the 10.69mt required to be provided through the Plan, providing necessary flexibility should sales rise or allocations not come forward as expected. In addition to the estimated permitted reserves figure at the end of June 2019 of approximately 11.51mt, this will provide a total supply of approximately

[40] https://www.centralbedfordshire.gov.uk/migrated_images/2017-annual-monitoring-report_tcm3-29394.pdf
[41] https://www.london.gov.uk/sites/default/files/lawp_annual_monitoring_2017.pdf
[42] Limestone not split out

28.5mt over the plan period. The sand and gravel resource blocks identified in the Dorset Minerals Strategy (adopted 2014) are found outside Bournemouth and Poole, with some areas extending as far as Dorchester. It is clear that any site allocations for this resource will likely be some distance from the Somerset border.

3.11 A 2014 Memorandum of Understanding between Somerset and Dorset (and Gloucestershire and Wiltshire) recognises the importance of imports sand and gravel into Somerset from Dorset.

3.12 Using 2019 data, Devon CC has calculated a landbank of 8.3 years for sand and gravel based on the 10 years sales average (0.5mt) and reserves of 4.199mt. Acknowledging the potential need for other sites during the latter stages of its plan period (to 2031), Devon County Council has allocated two sites to ensure a steady and adequate supply.

3.13 The 2014 AMS reported that Gloucestershire and Wiltshire also supplied smaller amounts of sand and gravel to Somerset markets, as did Hampshire, Kent, Oxfordshire, Cambridgeshire and Swansea (City of). However, arguably these sources are less significant to Somerset's annual usage and the possibility to increase or rely on these sales – in particular from more distant counties - is constrained by the high transportation costs.

Table 6: Sand and Gravel Imports into Somerset (2014)

Region	Origin	Import amount (tonnes)
South West	Bristol	<1% (<5,000)
	Gloucestershire	<1% (<5,000)
	Dorset	70-80% (368,000-421,000)
	Devon	1-10%(5,000-50,000)
	Cornwall	0
	Avon	0
	Wiltshire	<1% (<5,000)
South East	Hampshire	<1% (<5,000)
	Kent	<1% (<5,000)
	Oxfordshire	<1% (<5,000)
Other	Cambridgeshire	<1% (<5,000)
	Swansea (City of)	<1% (<5,000)
Total		**526,000**

4. Capacity of Aggregate Transportation Infrastructure

Rail Infrastructure

4.1 There are advantages to transporting aggregates by rail instead of by road. It is thought that the transportation of aggregates is responsible for up to 40% of the carbon[43] produced by the aggregate production industry as a whole. Increasing rail transportation reduces the number of road trips made and reduces carbon production. There are also several social benefits to limiting the number of vehicles on the road, including traffic congestion, damage to minor roads and exhaust pollution amongst others.

4.2 The viability of using rail for the transportation of aggregates is largely dependent on the existing rail infrastructure. Somerset currently has two railheads, one at Whatley Quarry and the other at Torr Works. Approximately just under 40% of Somerset's crushed rock is transported from these railheads, serving markets in London, the South East and the South West of England.

4.3 Mendip Rail Limited (MRL) is a joint venture company between Aggregate Industries UK Limited and Hanson Quarry Products Europe Limited and is responsible for rail logistics from Somerset's rail-linked quarries to market destinations. It operates 24 hours per day, 6.5 days per week. Quarry operators are responsible for loading operations.

4.4 Loading operations are adjusted to suit market demands and service requirements, and currently take place 18 hours per day, 240 week days plus Saturdays as required. It is estimated that this provides for a combined capacity for the railheads at Torr Works and Whatley Quarry of approximately 6.5 million tonnes per annum. With extending hours of loading operations, this could be increased to 10 million tonnes per annum. However, in recent years, the actual amount of material moved by rail has been less, indicating there is capacity to increase the amount moved by rail subject to the demands of the market and capacity of the network.

4.5 Whatley and Torr Works maximise rail usage because rail transport to London and the South East is more practical, sustainable and cost effective. The Somerset Minerals Plan is also supportive of minerals transportation by means other than road.

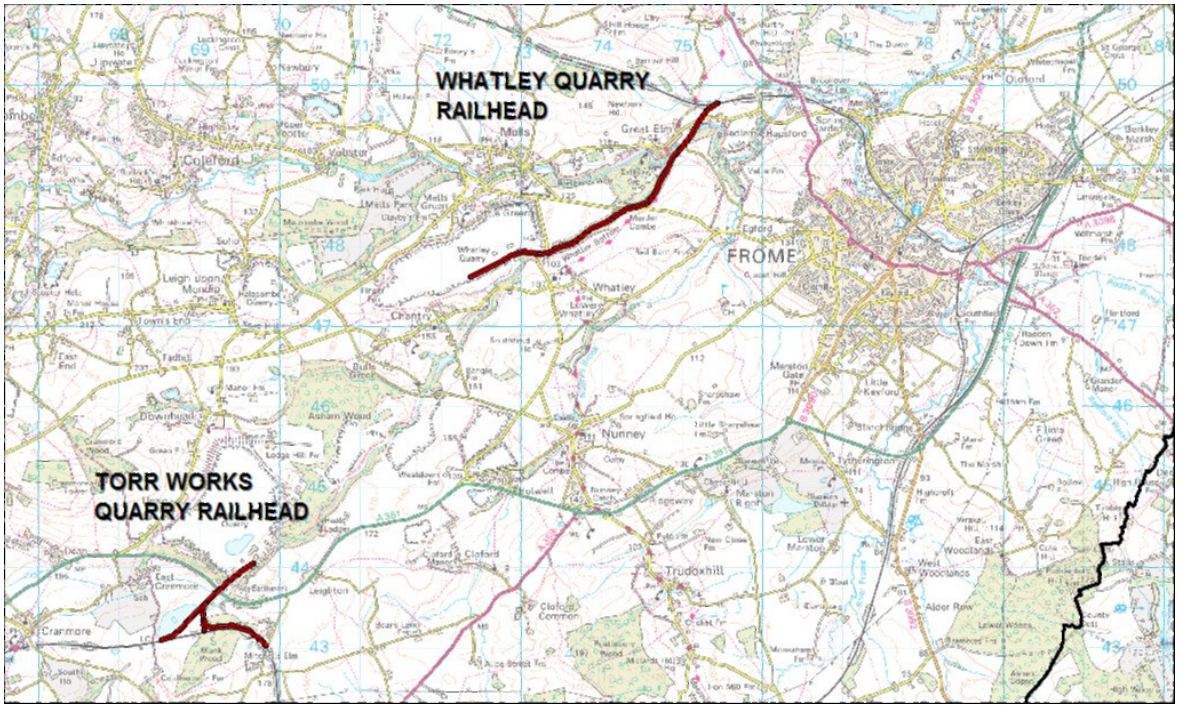
[43] Mankelow, J et al. (2010): Assessing the Carbon Footprint of Transporting Primary Aggregates

4.6 The majority of aggregates exported by rail serve markets in the south east and London, whilst aggregates transported by road are often more locally distributed within the south west.

4.7 The main railheads which have a direct link to the Mendip quarries are located in London, West Berkshire, West Sussex and Hampshire. Aggregates transported into these railheads are then either transported to neighbouring MPA areas or consumed within the importing MPA. There are also other smaller rail depots which receive crushed rock from the Mendip Hills which import less significant amounts of crushed rock.

4.8 It is important to note that while the current landbank for crushed rock in Somerset is 27.1 years, the planning permission end dates of the two main rail-linked quarries, Whatley Quarry and Torr Works, are due to expire in 2030 and 2040 respectively. This has implications for the ability of crushed rock worked in Somerset to meet future demand for crushed rock in the London and the South East.

Figure 7: Railheads in Somerset



Wharves

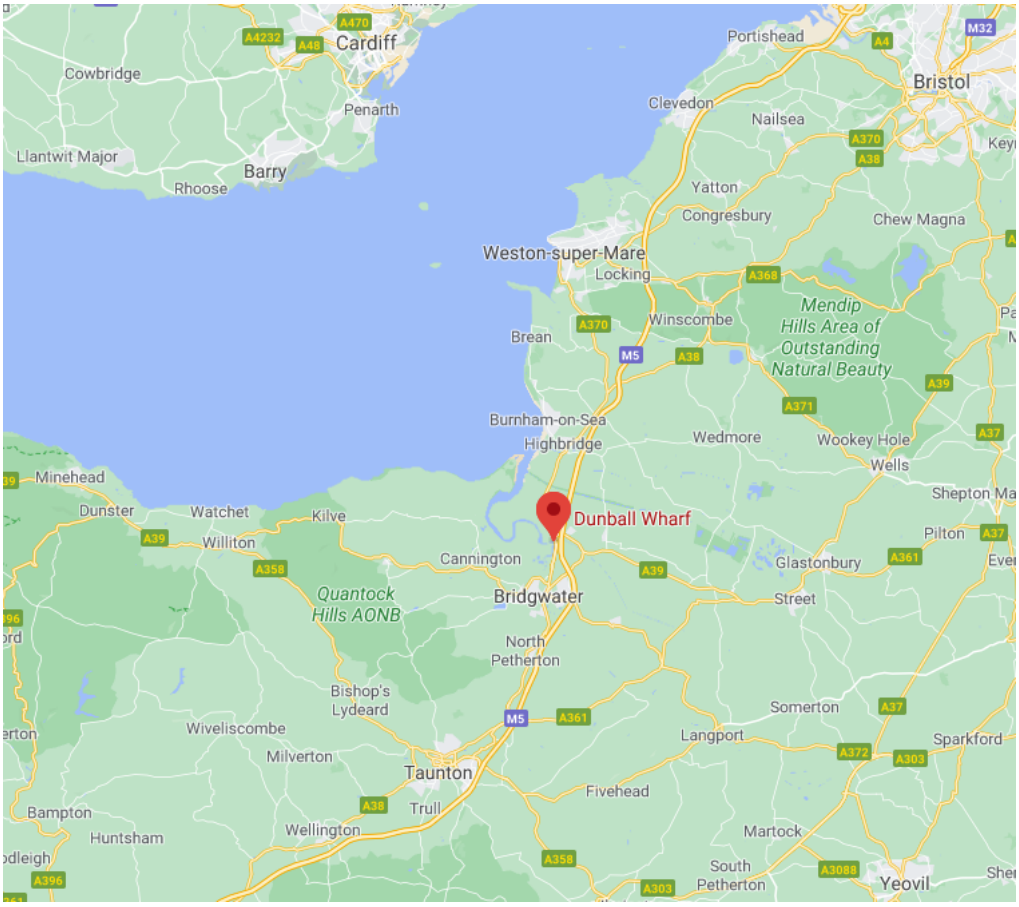
4.9 Until 2019 there were two wharves in Somerset – Dunball wharf and Combwich wharf (both located to the north of Bridgwater) importing

aggregate. Combwich wharf has recently been brought back into use to import large loads of construction materials needed for the Hinkley Point C nuclear power station development. A new jetty has also commenced operations at Combwich in 2019 for the importation of sand and gravel and aggregates to the Hinkley Point C development. Crown Estates data suggests that some of the sand and gravel imported to Combwich is marine won.

4.10 Dunball wharf ceased operations in 2019. The viability of the wharf for aggregate landing operations was affected by the number of landings that could take place within the appropriate tidal range. Data reported by the Crown Estate was used as the value for sales at Dunball Wharf in this LAA, this is because data provided by the operator is confidential due to the fact that there are so few wharves in Somerset. Landings at Dunball wharf made a small contribution to the supply of sand and gravel into Somerset.

4.11 Marine-won aggregate landings in Somerset are 2.67% of those in the South West and 0.19% of total landings in the UK.

Figure 8 – Location of Dunball Wharf



Road Network

4.12 The majority of minerals extracted in Somerset are from the Mendip Hills and the related quarries are well served by the major road network running through Somerset. The major roads provide adequate capacity for mineral transportation. The M5 motorway creates a major transport corridor running north to south and the A303 provides eastward connectivity towards London, the A361 is the main route running through the Mendip Hills and is the main haulage route connecting the large quarries to the A39 and M5 and the A36 to Wiltshire and the south.

4.13 Having noted the capacity of the major road network, it is also important to note the current[44] constraints associated with the local roads in the eastern area of the county. Appropriate mitigation measures are needed to ensure mineral transport has the least amount of impact on the local area as possible, thus reducing the adverse impact of heavy lorry movements on local communities. It should be noted that the latest County Council Annual Monitoring Report reports a very low number of public complaints received relating to mineral transport.

[44] Some of these will be overcome with planned improvement to the A303

5. Alternative Aggregates

Marine Dredged Sand and Gravel

5.1 Marine-dredged sand and gravel originating from the Bristol Channel was landed at Dunball Wharf, which was run by a single operator. Aggregate landing operations at Dunball Wharf ceased in 2019.

5.2 Data from the Crown Estates indicates that around 28,700[45] tonnes of marine-dredged sand and gravel was landed at this wharf in 2019, this is consistent with a decreasing trend of landings (65,500t in 2018[46] and 80,000 tonnes in 2017[47]). Crown Estates data also indicates that marine won sand and gravel was landed at Combwich.

5.3 Dredging for marine aggregates is licensed by the Crown Estate. In 2019 the licensed area in the South West region was 127.21 km^2 [48]. There is currently a significant difference between the licensed and actual dredging amount. The total area available to be dredged in 2019 was 28.91 km^2 and the total area actually dredged that year was 7.85 km^2 (which represents 6.17 per cent of the licensed area in the South West region). If landings and tide allow there is potential to dredge more material.

5.4 Since the last LAA the following changes to the areas licenced for dredging have occurred:

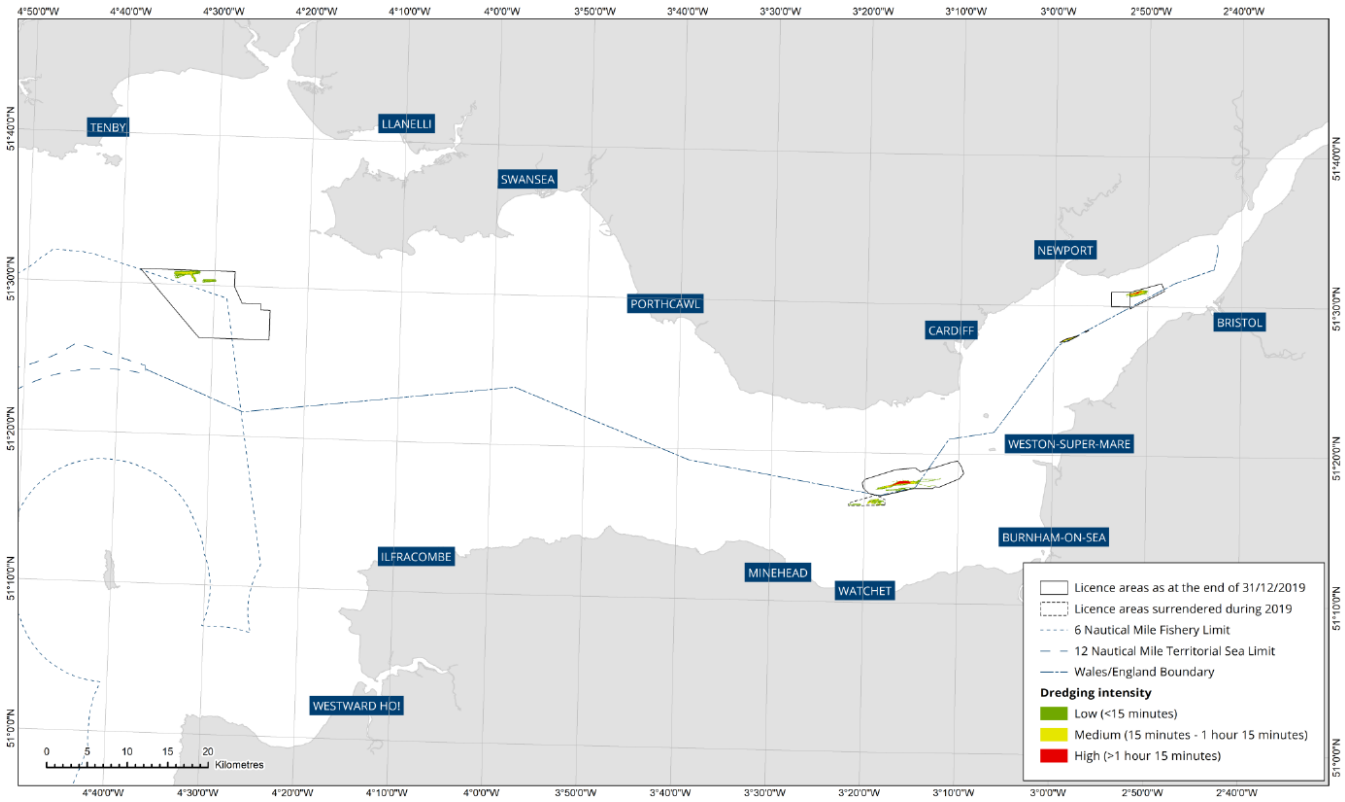
- New licenced area north of Watchet in 2018 (+30km^2)
- Licence surrendered for smaller area north of Watchet in 2019 (-4km^2)

This shows that overall the area licensed for dredging has increased.

5.5 The dredging of watercourses may help to provide limited quantities of material on a very small scale, in particular linked with identified "pinch points" where the removal of the material would help in local water level management and flood risk mitigation.

[45] https://www.thecrownestate.co.uk/media/2942/marine-aggregates-summary-statistics-2019.pdf
[46] https://www.thecrownestate.co.uk/media/2942/marine-aggregates-summary-statistics-2019.pdf
[47] https://www.thecrownestate.co.uk/media/2944/ei-marine-aggregate-statistics-2017.pdf
[48] The Crown Estate: Marine Aggregate Extraction: The area involved – 22nd annual report

Figure 9: Marine dredging licensed areas in South West England[49]



[49] Source: [The Crown Estate: Marine Aggregate Extraction: The area involved – 22nd annual report]

Recycled and Secondary Aggregates

5.6 Recycled and secondary aggregates form another potential alternative source of aggregates. In the UK the production of such alternatives has been encouraged by the introduction of the Aggregates Levy, which is applied to primary aggregates unless specifically exempt.

5.7 A 2005 government budget report commented on the impact of the aggregates levy as follows: "*There was a marked increase in the volume of china clay waste and slate waste sold as aggregate as a result of the economic incentive presented by the aggregates levy exemptions granted to these products. Between 2001 and 2004 china clay waste sold as aggregate in the UK increased by 14 per cent to 2.5 million tonnes*."[50]

5.8 The Mineral Products Association estimate that in 2018, a total of 71 million tonnes of recycled and secondary aggregates, derived from a range of sources, were re-used in construction in Great Britain, 90% (64 million tonnes) of which originated directly from construction activity, through demolition work and road repairs.

5.9 Secondary aggregates are usually obtained as a by-product of certain types of quarrying or industrial activities. As part of its operations, Bowdens Quarry (a building stone quarry) produces up to 18,000tpa of secondary aggregates.

5.10 The waste arising from construction, demolition and excavation (CD&E) comprises a range of material, of which the 'hard' inert elements (such as concrete, bricks, stone, road planings, rail ballasts and glass) can be recycled for use as aggregates.

5.11 Table 7 outlines recycled and secondary aggregate sales in Somerset, informed by surveys undertaken by Somerset County Council.

[50] HM Treasury, Budget 2005 – Investing in our Future (HC 372), March 2005

Table 7: Recycled and secondary aggregate sales 2005-2019

Year	Recycled Aggregate Sales from sites with fixed plant (tonnes)	Secondary Aggregate Sales (tonnes)
2005	14,131	40,666
2006	34,015	42,752
2007	21,162	55,474
2008	15,137	56,786
2009	25,045	116,222
2010	26,323	128,699
2011	34,059	27,955
2012	60,934	27,955
2013	105,770	2943
2014	63,170	0
2015	65,130	19,501
2016	11,911	56,095
2017	22,398	60,284
2018	46,187	0
2019	73,950	0
10 year average	51,037	32,343
3 year average	47,692	20,009

5.12 The previously unreported data for the years 2017 to 2019 shows a steady increase in recycled aggregate sales over this period. This may be due to a number of factors including:

- Improved reporting or recycled aggregate sales;
- additional sites producing recycled aggregate; and,
- ongoing impact of policy supporting the production and use of recycled aggregate.

5.13 It is acknowledged that evidence gathering for recycled aggregates remains a challenge. It should be noted that the data presented is based on a survey of fixed recycled aggregate production facilities and does not include recycled aggregate produced by mobile crushers located at demolition sites. The quantity of recycled aggregate sales reported are therefore an underestimate.

5.14 An inert waste review[51] was published in 2016 which noted that, at that time, there were 27 sites in Somerset generating recycled aggregate, treating or

[51] Waste Topic Paper B – Inert Waste Review, May 2016, Somerset County Council

transferring construction and demolition waste, and/or treating or handling soil. The review estimated that collectively these facilities offered capacity of more than 1 million tonnes per annum.

5.15 Table 8 lists the current permitted, fixed aggregate recycling facilities in Somerset. Such facilities tend to be located in former quarries or waste transfer stations. Furthermore, operational quarries and other development sites can also generate recycled aggregate e.g. via the use of on-site crushers.

Table 8: Fixed aggregate recycling plants in Somerset

Location	Operator	Application number	Permission end date
Colham Lane WTS, Cricket St Thomas, Chard, TA20 4BX	AA Pike Construction Ltd	13/02398/CPO	n/a
Emborough Quarry – inert recycling depot, Emborough, Radstock, BA3 4SD	RM Penny (Plant Hire and Demolition) Ltd	106720/008	n/a
Rear of Sycamore House, Walrow, Highbridge, TA9 4RA	JD Pope and Sons Ltd	1/12/06/006	n/a
Dunwear Depot, Rivers Lane, Dunwear, Bridgwater, TA7 0AA	RK Bell Ltd	1/09/97/009	n/a
Southwood Waste Recycling Facility, Southwood Common, Evercreech, Shepton Mallet, BA4 6LX	Commercial Recycling Ltd.	054492/028	n/a
Colemans Quarry – aggregate recycling, Holwell, Nunney, Frome, BA11 4PX	Aggregate Industries UK Ltd	077905/012	21/02/2042
Lower Farm, Podimore, Yeovil, BA22 8JG	Podimore Recycling Ltd	02/02128/CPO	n/a
Burcott House Farm WTS, Pennybatch Lane, Wells, BA5 1NH	Cheddar Skips	030580/004	n/a
The Old Railway Yard (LA Moore Demolition Ltd), Haybridge, Wells, BA5 1AH	LA Moore Demolition Ltd	101679/014	n/a
Norton Fitzwarren Sidings, Taunton, TA2 6SA	Luffman Plant Hire	SCC/3637/2019	31/12/2024
Castlefields WTS, The Drove, Castlefields Industrial Estate, Bridgwater TA6 3ED	S Roberts and Son (Bridgwater) Ltd	08/93/00118 (SDC)	n/a
Greenham Quarry WTS, Greenham, Wellington, TA21 0JU	Wasteology Ltd	4/35/13/0022	n/a

The Old Brick Works (Wellington Waste Management), Higher Poole, Wellington, TA21 9HW	Wellington Waste Management	4/46/13/0028	n/a
Lime Kiln Hill WTS, Mells, Frome, BA11 3PH	Western Skip Hire	SCC/3677/2019	31/03/2022
5 Artillery Road, Saracen Business Park, Brympton, Yeovil, BA22 8RP	YPH Waste Management	SCC/3507/2018	n/a

5.16 The fall in secondary aggregate sales shown in Table 7 is due to how extracted aggregate has previously been defined as secondary. The processes involved in quarrying for Carboniferous Limestone and Silurian Andesite do not tend to generate by-products that meet the standard definition of secondary aggregates. So, even if the product is secondary to the main / premium output of the site, most, if not all, such by-products should be considered as primary aggregates.

5.17 By continued engagement with operators, Somerset County Council is continuing to improve its records and monitor the impact of its policies in support of recycled and secondary aggregate production.

5.18 There are minimal import and export data for recycled and secondary aggregates in Somerset. There is likely to be a limited amount of cross-border transfer of material, but it is considered to be small with the bulk of material supplying local markets.

5.19 In summary it can be said that recycled aggregate sales from CDE waste management sites make a limited contribution of overall aggregate sales in Somerset. This is likely due to the local abundance of primary aggregate which makes the production of recycled aggregate particularly uneconomic in some areas of the county.

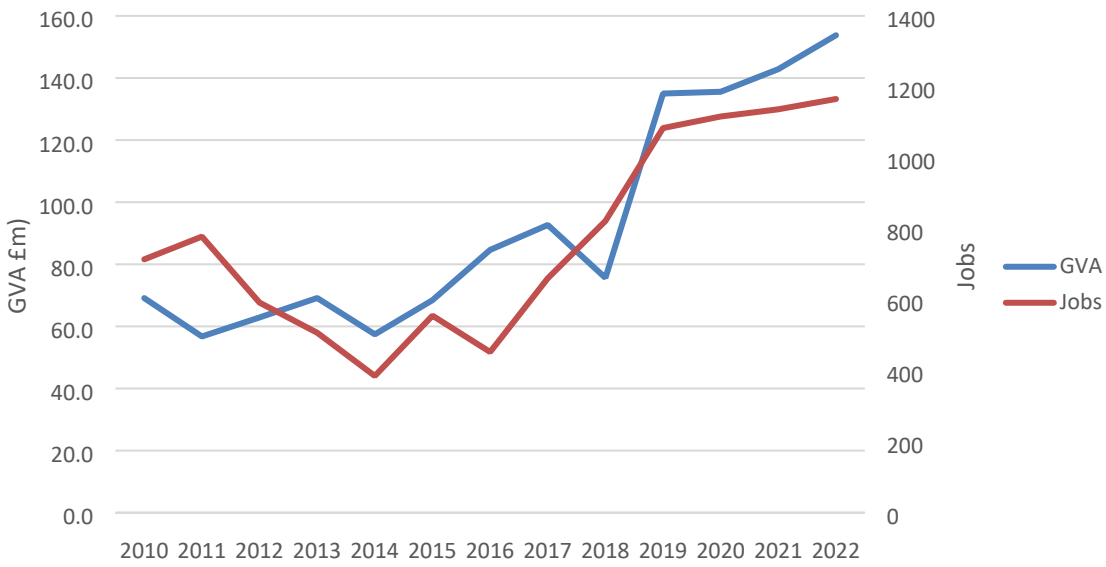
6 Future Aggregate Supply and Landbank

Factors that may impact on future provision

Anticipated growth

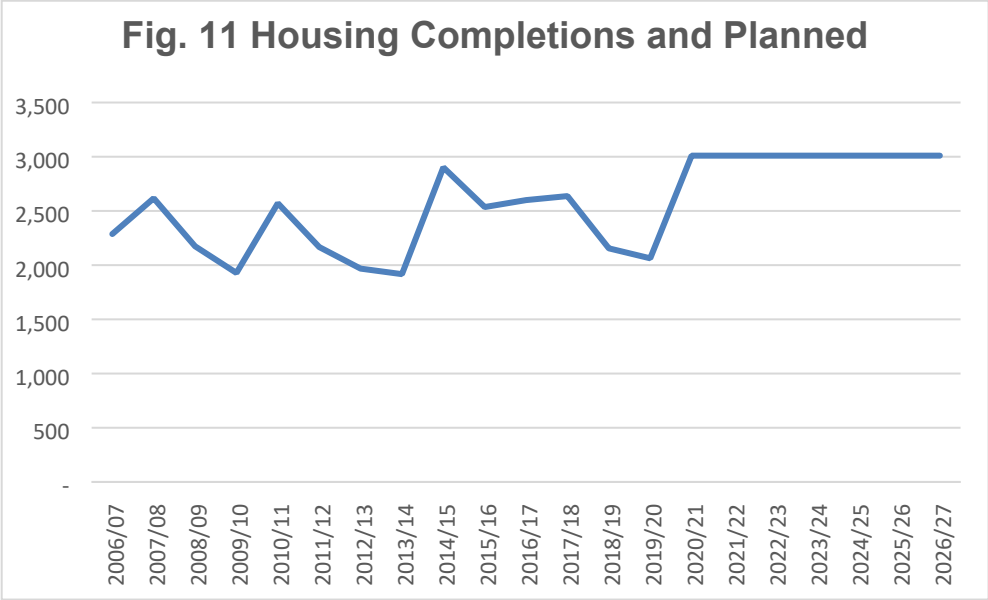
6.1 The most recent modelling[52] of growth in GVA and jobs related to quarrying activity in Somerset is set out in Figure 10 below. This modelling anticipates a significant increase in both GVA and jobs in the coming years.

Fig. 10 - Mining & Quarrying in Somerset GVA and Jobs 2010 - 2022



6.2 Data relating to housing completions and planned growth in Somerset also expects that the number of housing units delivered in future will exceed that achieved in the last 15 years. This is illustrated in Figure 11 below.

[52] Source: Advanced Modelling of Regional Economies (AMORE) Database Tool 2020, provided by Dr Steven Brand, Plymouth University'. N.B. The 2019 value is modelled and so the actual value may vary from that shown.



Source: Collated data from District Councils

6.3 The above local economic and housing data both indicate that in the coming years a local increase in demand for aggregates is more likely than a decrease.

Demand from major infrastructure

6.4 An additional factor to be considered in projecting future demand is the demand for material linked with major infrastructure investment.

6.5 The largest infrastructure project in Europe is the construction of Hinkley Point C nuclear power plant. The Freight Management Strategy in EDF Energy's Transport Assessment estimated that 7.1 million tonnes of material would be transported to/from the Hinkley Point C project sites during the construction phase. This total includes construction materials, waste and materials generated by the removal of some of the associated development facilities at the end of the HPC construction phase. The main civil works require approximately 2.3 million tonnes of materials for on-site concrete production, 80% of which will be supplied by jetty and 20 % by road. Construction will be completed by around the end of 2025.

6.6 Aggregate supply for this project is informed by a large range of factors and is market-driven, governed by EDF Energy's procurement strategy and arrangements agreed when the Development Consent Order was granted. The role of Mendip's crushed rock resource in directly contributing to this supply depends on the contracts agreed and related logistics. Transport of materials is a particularly key issue,

acknowledging the importance of mitigating impacts on the road network.

6.7 The National Infrastructure and Construction Pipeline refers to the following development projects and although specific aggregate type is not mentioned, these projects are likely to require crushed rock from Somerset based on their location and type of project:

South West:

- A303 Amesbury to Berwick Down (The Scheme would be approximately 8 miles long and would comprise the construction of a new two lane dual carriageway between Amesbury and Berwick Down)
- Seven new build schemes under the Free School Programme (Construction of seven new schools)

South East and London:

- National Fusion Technology Platform erection of research facilities and offices
- Lower Thames Crossing
- Four new schemes under the Priority School Building Programme
- Five new build schemes under the Free School Programme

6.8 There are other nationally significant construction projects that are making use (and will in future) of crushed rock products from Somerset quarries, including the Heathrow Rail Link, which will connect the Great Western Mainline to London Heathrow Terminal 5, with plans for a new rail tunnel. Other proposed national infrastructure projects include High Speed Two (HS2), Crossrail 2, the Thames Tideway Tunnel (a super sewer for London) and Sizewell C nuclear power station[53]. Even if some of these projects are not supplied by crushed rock from Somerset they will likely have knock-on effects which will create ongoing demand for crushed rock from Somerset

6.9 The London AWP monitoring report for 2017 notes that London's demand for crushed rock is likely to continue at the same rate as that experienced in previous years.

6.10 Within the South West region, there are several development projects which are likely to require crushed rock. The South West Local Enterprise Partnership highlights the following projects as either underway or upcoming:

[53] Development Consent Order application being considered in 2021, if granted construction is planned to commence in 2022 and will last for around 10 years

- Plymouth Railway Station: transformational development of station site to be a key gateway, including mixed use development of residential and student accommodation
- Forder Valley link road, Plymouth
- 635 acre innovation campus, Huntspill
- A39 strategic junction improvements, Bideford
- Junction 25, M5 improvements
- Taunton Toneway junction and route capacity between M5 and Taunton Town Centre

6.11 Other projects in the south west include the following[54]:

- Bristol Airport Expansion
- Yeovil Western corridor
- Taunton railway station
- A303 dualling (Sparkford and Amesbury)
- A358 improvements
- Northacre Renewables Energy Centre
- Gravity Smart Campus at Puriton

6.12 In May 2021 the MPA made the following observations concerning future demand for crushed rock:

6.13 *"Longer-term, recovery for **asphalt** is supported by renewed momentum in roads construction and maintenance, and market demand has rapidly recovered to pre-pandemic levels. At the start of the year, total sales volumes for asphalt were significantly higher than their previous 5-year average (2014-19). Likewise, sales volumes for crushed rock **aggregate** have also been recovering well, boosted by roadworks and HS2, which are driving demand for asphalt and bulk fill materials."*

Estimating Future Demand

6.14 Historically calculations to estimate the number of years production can continue have been based upon the permitted reserve being worked at the rate of the annual sub-regional apportionment. While reporting against the sub-regional apportionment is still of interest, Planning Practice Guidance advises that forecasts be made on the following basis:

6.15 *"A forecast of the demand for aggregates based on both the rolling average 10-year sales data and other relevant local information;"*

[54] Not all of these projects have received planning consent

6.16 Estimates of future aggregate supply requirements are informed by locally-derived figures for provision, calculated based on a rolling average of sales over a 10 year period and other relevant local information.

6.17 One mechanism to allow MPAs to consider more local factors is the scope to look at the average 3 year sales data, which enables MPAs to consider if an upturn in recent sales could indicate a need to plan for increased supply.

Meeting projected demand: Crushed Rock (Excluding HPSVSA)

6.18 In light of sales exceeding the sub-regional apportionment in recent years and the fact that there is no clear prospect of sales declining in the short to medium term, **it is considered that the former sub-regional apportionment value of 13.4 mt should be used to calculate the landbank crushed rock (excluding HPSVSA).** This value is less than the current 3 year average sale value but greater than the 10 year average.

6.19 Table 9 compares the current average annual production for crushed rock (Excluding HPSVSA) with estimated productive capacity based on permitted output. The difference between these two figures shows the potential for increased production (in one year) should that be needed to meet increased market demand.

Table 9: Comparison of Average Annual Sales and Capacity (crushed rock (Excluding HPSVSA)**)**

	Sales rate	**Potential Capacity (tonnes)**	**Balance (tonnes)**
10 year Average Annual Sales / Production (tonnes)	12.05 million	18.9 million	+ 6.85 million
LAA rate	13.4 million	18.9 million	+ 5 million

6.20 If the active crushed rock (Excluding HPSVSA) sites in Somerset were to extract at their maximum permitted annual output rate, the resulting depletion of resources may result in additional reserves being needed during the second half of the SMP period. However, the productive capacity of quarries is considered to be nearing their limit,

with sales currently exceeding the 10 year and 3 year average as well as the sub-regional apportionment and so additional capacity may be needed earlier to meet increased demands.

6.21 As previously mentioned the landbank is the permitted reserve, divided by the LAA rate giving the number of years production can continue at this rate. Table 10 shows the existing landbank based upon the sub-regional apportionment and the proposed landbank based on the average sales figures.

6.22 The NPPF seeks the maintenance of a landbank for at least 10 years for crushed rock, however, as previously mentioned, the SMP expects a landbank of 15 years to be maintained. As Table 10 shows the landbank for all scenarios is significantly above the 10 and 15 year requirements.

Table 10 Crushed Rock (Excluding HPSVSA) Landbank

Landbank and sub-regional apportionment (LAA rate)		**Landbank and 10 year average sales**		**Landbank and 3 year average sales**	
Permitted reserve	363.7 mt	Permitted reserve	363.7 mt	Permitted reserve	363.7 mt
Sub-regional apportionment	13.4mt	10 year average sales	12.05 mt	3 year average sales	15.07 mt
Estimated landbank	27.1 years	Estimated landbank	30.18 years	Estimated landbank	24.1 years

Comparison of Past Sales with the Sub-Regional Apportionments for Crushed Rock

6.23 Prior to publication of the NPPF and guidance on the Managed Aggregate Supply System, government-led apportionments were used to set the quantity (tonnes) of land-won aggregate that a Mineral Planning Authority should plan for. The most recent guideline apportionment figures were published in 2009[55] setting the

[55] MHCLG: National and Regional Guidelines for Aggregates Provision in England 2005- 2020 available at: https://www.gov.uk/government/publications/national-and-regional-guidelines-for-aggregates-provision-in-england-2005-to-2020

expected annual level of aggregate production for each region until 2020. The regional apportionment was then divided into an apportionment for each Mineral Planning Authority, known as the sub-regional apportionment. Regional Aggregate Working Parties (RAWPs) made recommendations to government for sub-regional apportionments for inclusion in Regional Spatial Strategies.

6.24 As noted in paragraph 6.22 of the SMP, the South West Regional Aggregate Working Party recommended that Somerset be given a crushed rock sub-regional apportionment, for 2005 to 2020, of 214.65 million tonnes which equates to a provision of 13.41 million tonnes each year. This was based on averaged historic proportional contributions over the period 2004 to 2008.

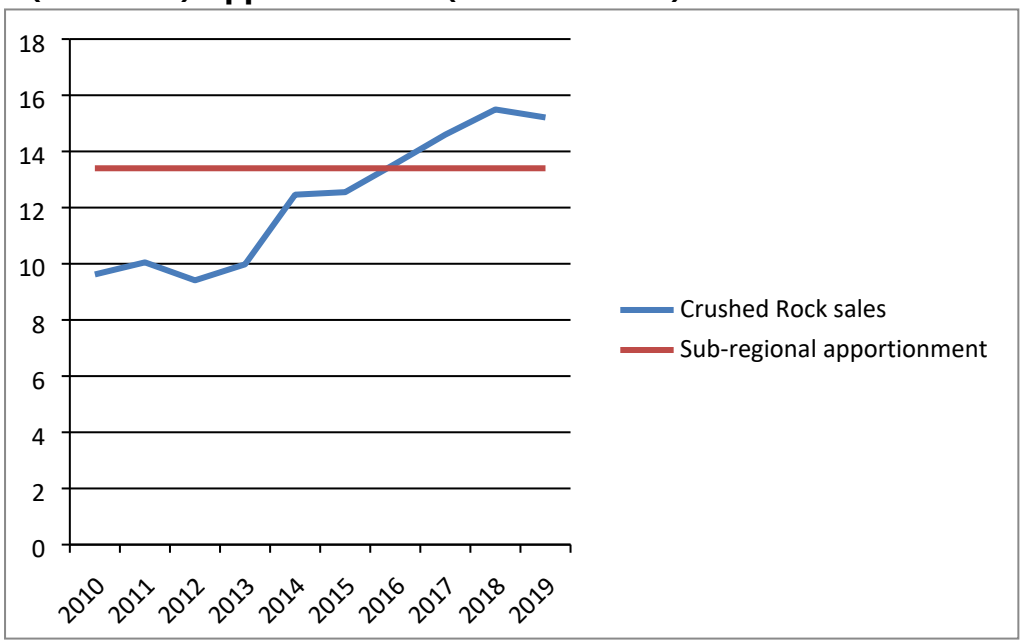
6.25 Following the introduction of the Localism Act in 2011 regional planning was abolished and each RAWP has evolved into an Aggregate Working Party (AWP). Furthermore, the latest national and regional guidelines for aggregates provision expired in 2020 and have not been updated.

6.26 Nevertheless, comparing the level of production against the apportionment values still gives a sense of how well areas are performing and the South West AWP (SWAWP) continues to report on this basis. In light of this, Figure 11 provides a comparison of Somerset's crushed rock sales, as shown in Table 3, against the sub-regional apportionment. It shows that throughout most of the last 10 year period, total crushed rock sales do not meet the level of sub-regional apportionment afforded to the county but in recent years the sub-regional apportionment has been exceeded. In addition, the South West Aggregates Working Party's Annual Report for 2018[56] (which reports on the region's aggregates sales and reserves as a whole) states:

"It is notable that, particularly in the case of crushed rock, actual sales during 2018 were very close to the amount provided for within the National Guidelines – 24.44 million tonnes (mt) (actual figure) compared with 25.75mt (guideline figure)."

[56] https://www.cornwall.gov.uk/media/0mhnhvqe/south-west-aggregates-working-party-annual-report-2018.pdf

Figure 12: Comparison of Total Crushed Rock Sales and Sub-Regional (Somerset) Apportionment (million tonnes)



6.27 Table 11 shows how long Somerset's total crushed rock landbank would last (calculated at the end of 2019) when using sub-regional apportionment figures. It should be noted that the 27.1 year period is significantly greater than the minimum 10 year requirement stated in national policy to ensure a steady and adequate future supply.

Table 11: Somerset existing crushed rock landbank (sub-regional apportionment)

Permitted Reserve	363.7 Mt
Sub-regional Apportionment	13.4 Mt
Estimated landbank	27.1 years

6.28 It is important to note that while the current landbank for crushed rock in Somerset is 27.1 years, the planning permission end dates of the two main rail-linked quarries, Whatley Quarry and Torr Works, which serve London, the South East and the East of England, are due to expire in 2030 and 2040 respectively. This has implications for the ability of crushed rock worked in Somerset to meet future demand for crushed rock in these areas.

Maintaining a 7 year landbank: Sand and gravel

6.29 National policy[57] requires mineral planning authorities to make provision for the maintenance of landbanks for a minimum of 7 years' worth of supply for sand and gravel. Given the circumstances surrounding Somerset's sand and gravel reserve, Somerset is not in a position to provide a separate sand and gravel landbank but will continue to work with Devon County Council and Cornwall Council in accordance with a signed Memorandum of Understanding, to share data on sand and gravel and maintain a joint approach to sand and gravel sales and reserves.

6.30 To help maintain supplies of land won sand and gravel which would contribute to a sub-regional supply, the Somerset Minerals Plan (adopted 2015) includes positive policy on sand and gravel extraction in the form of a Preferred Area/Area of Search at Whiteball,[58] and criteria-based policy for considering proposals elsewhere in Somerset. For more information, refer to the Somerset Minerals Plan adopted in 2015 (available for download from www.somerset.gov.uk/mineralsandwaste).

6.31 A planning application[59] has been submitted for an extension to Whiteball quarry that would result in approximately 400,000 tonnes of additional sand and gravel reserves but this has not yet been determined. This would move extraction from the Devon side of the border and, whilst this is not expected to change Somerset's approach towards sand and gravel policy, it will alter the import / export figures, leading to Somerset exporting to local markets in Devon.

[57] National Planning Policy Framework (paragraph 207)
[58] Somerset Mineral Plan, policy SMP4
[59] Reference: 4/32/17/002

6.32 Marine-dredged sand and gravel contributes to meeting demands for sand and gravel in Somerset. The comparison of actual and licensed dredging rates would suggest there is scope to increase the level of dredging in the Bristol Channel if necessary. However, with the cessation of operations at Dunball Wharf very little marine won aggregate is now landed in Somerset and so such aggregate will largely be supplied from other areas including Avonmouth.

6.33 National planning policy indicates mineral planning authorities preparing local plans 'should so far as practicable, take account of the contribution that substitute secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously'. Taking this forward, the Somerset Minerals Plan includes policy to support the production of recycled and secondary aggregates, in conjunction with the Somerset Waste Core Strategy (adopted 2013).

6.34 It should also be noted that Somerset's crushed rock sites also generate sand and gravel products which can be marketed alongside the main crushed rock output.

7 Conclusions

7.1 The Somerset Minerals Plan sets out local minerals planning policy and was adopted in early 2015. The LAA helps monitor the performance of the Plan and identifies any potential issues in aggregates supply. The Plan supports the production of recycled and secondary aggregate in conjunction with the adopted Somerset Waste Core Strategy.

7.2 The SMP expects separate 15 year landbanks of Carboniferous Limestone and Silurian Andesite to be maintained. This is because High PSV Silurian Andesite has a distinct market for use in road wearing courses.

7.3 Historic sales data for crushed rock have been amended such that crushed rock sales have been derived from total reported crushed rock sales minus High PSV Silurian Andesite sales.

7.4 Data in this Somerset LAA shows that crushed rock sales decreased by 1.7% to 15.17 million tonnes in 2019, however this was the first decrease in sales since 2012 and the 3 year average is now above the previous sub-regional apportionment value. Sales of crushed rock in 2018 were at their highest level for at least the last 19 years.

7.5 Somerset has sufficient permitted reserves to maintain a steady and adequate supply of crushed rock, based on the following calculations:

- The permitted reserves of crushed rock in Somerset at the end of 2019 are approximately 363.7 million tonnes. Despite increases in sales, overall reserves have held up quite well due to additional permissions being granted.
- The 10 year rolling sales average (covering the period 2010-2019) is 12.05 million tonnes per year and the 3 year average is now 15.07 million tonnes per year. These compare to the previous sub-regional apportionment value of 13.4 million tonnes. In light of the increasing sales trend and fact that there appear to be few signals which would indicate a change to this trend, it is considered that the sub-regional apportionment value is now the most appropriate figure to use when calculating the level of provision (i.e. the LAA rate).

- The landbank derived from this level of provision is approximately 27.1 years. This landbank is well in excess of that needed to comply with national policy and local policy.

7.6 While the permitted output of crushed rock from quarries in Somerset is around 19 million tonnes, operational limitations associated with extraction and transportation is likely to mean that the actual productive capacity is less than this. While the exact productive capacity is uncertain it is possible that quarries in Somerset may be reaching their maximum output capacities, in which case significant increases in output could not be achieved without further reserves coming on stream.

7.7 In any event Somerset continues to be the most important supplier of crushed rock in the south of England and in 2019 produced more crushed rock than any other MPA area in the country.

7.8 In addition to commitments made in the Somerset Minerals Plan on crushed rock generally, the Plan makes a commitment to monitor Silurian Andesite separately and maintain a separate landbank (of at least 15 years) for this type of rock, which has a high polished stone value and a distinct market (used in asphalt).

7.9 Recent information provided by the single producer of Silurian Andesite indicates that reserves of High PSV Silurian Andesite may now be as low as around 2.9 million tonnes and access to these reserves is not certain. A simple calculation that takes the productive capacity of the site as the LAA rate suggests that the landbank of High PSV Silurian Andesite is 7.25 years which is below the 15 year landbank required by the SMP. To address this issue the operator is preparing plans to extend an existing quarry.

7.10 Historically Somerset has shared a joint apportionment and landbank for sand and gravel with Devon and Cornwall. Somerset relies mainly on the working of the Budleigh Salterton Pebble Bed resources that cross the Somerset-Devon border at Whiteball. There has been minimal extraction activity in Somerset during the last 10 years. Sand and gravel have been worked just over the Devon border, with the extracted material processed in Somerset.

7.11 An application for extraction at Whiteball on the Somerset side of the border has been made which is supported by the positive policy, including an area of search, on sand and gravel extraction in the adopted Somerset Minerals Plan.

7.12 In late 2015 Devon County Council, Cornwall Council and Somerset County Council signed a new Memorandum of Understanding that provides a mechanism to share data and maintain a joint sand and gravel landbank. Using 2019 data Devon CC calculated a landbank of 8.3 years for sand and gravel based on the 10 years sales average (0.5mt) and reserves of 4.199mt. However 2020 data shows that the landbank has decreased below 7 years.

7.13 The landing of marine won sand and gravel in Somerset has reduced as aggregate operations at Dunball Wharf have come to a close. Some landing of such aggregate is still occurring at Combwich jetty.

7.14 SCC surveyed operators that generate recycled and / or secondary aggregates for sales in 2019, and while data collection remains an issue some improvement on the level of returns received has been achieved. SCC will continue its work to strengthen the data collected.

7.15 Data on imports and exports will be updated in the next LAA to take account of the MHCLG 2019 Aggregate Monitoring Survey.

Appendix 1 – Memorandum of Understanding between Somerset County Council, Devon County Council and Cornwall Council (2015)

1. Introduction

1.1 Publication of the National Planning Policy Framework [NPPF] in March 2012introduced Local Aggregate Assessments [LAAs] as the main tool in implementing national aggregate minerals policy at the local level. Prior to the NPPF, the national and regional aggregates guidelines were allocated toindividual mineral planning authorities [MPAs], or groups of MPAs, through the mechanism of sub-regional apportionment [SRA].

1.2 For SRA purposes, 'Devon' comprised the areas for which Devon County Council, Plymouth City Council, Torbay Council, Dartmoor National Park Authority and, for that part of its area within Devon, Exmoor National Park Authority are the MPA. 'Cornwall' comprised the areas covered by CornwallCouncil and the Council of the Isles of Scilly, while 'Somerset' included thatpart of Exmoor National Park within the county as well as the area for which Somerset County Council is the MPA.

1.3 As levels of sales and/or reserves of sand and gravel within Cornwall and Somerset have been low in recent years, those counties were grouped withDevon for the purposes of SRA of sand and gravel.

1.4 Evidence from the British Geological Survey[1] indicates that, within these threecounties, there is no history of, or potential for, sand and gravel extraction within Dartmoor National Park, Exmoor National Park, Plymouth, Torbay and the Isles of Scilly. The scope of this Memorandum is therefore limited to the areas for which Devon County Council, Somerset County Council and Cornwall Council are each the MPA.

1.5 The purpose of this Memorandum is to provide a framework for the future supply of sand and gravel in Devon, Somerset and Cornwall to ensure coordinated provision through each MPA's Minerals/LocalPlan and assist incomplying with the statutory Duty to Cooperate. Following an account of recent sales patterns and a review of each MPAs adopted or emerging policyapproach to sand and gravel, the Memorandum proposes arrangements for the planning and monitoring of future supply from the three counties.

[1] The BGS has published mineral resource reports for each of the three counties which areavailable at http://www.bgs.ac.uk/mineralsuk/planning/resource.html#MRM

2. Sand and Gravel Production in Devon, Somerset and Cornwall

2.1 Within the past 1O years, extraction of land-won sand and gravel within the three counties has been limited to Devon with the exception of some small- scale working in Cornwall that ceased in 2006. Extraction within Devon is largely reliant on the Budleigh Salterton Pebble Beds which yield 80-85% ofits annual production, with the following units currently being operational:

- Blackhill Quarry near Exmouth, which processes materials extracted atVenn Ottery Quarry[2]; and
- Town Farm Quarry near Burlescombe, from where extracted materialsare transported to the nearby processing facility at Whiteball in Somerset.

2.2 Substantial reserves are also present at Hillhead Quarry near Uffculme inDevon, but no new extraction has occurred there since 2009.

2.3 Elsewhere in Devon, smaller scale sand and gravel extraction takes place near Newton Abbot (at Zig Zag and Babcombe Copse Quarries), with a further inactive site at Haldon near Exeter. Each of these quarries has verylimited reserves.

2.4 Land-won sand and gravel extraction is supplemented by other sources ofsimilar materials including:

- marine-dredged aggregates from the Bristol Channel that are landed at Dunball Wharf in Somerset, and at Appledore and Yelland in north Devon;
- secondary aggregates , primarily from china clay production in Cornwalland Devon and, to a much smaller extent, from ball clay production in Devon;
- fine aggregate material from limestone quarries[3] in Somerset andDevon.

2.5 Data from aggregate surveys indicate that around 90% of the land-won sandand gravel extracted in Devon is sold to destinations within the county, with most of the remainder being sold into Somerset.

2.6 Relatively small quantities of sand and gravel are imported into Devon, mainly from Dorset which also supplies larger quantities (around 290,000 tonnes in 2009) to Somerset. Limited quantities of sand and gravel are also transported to Somerset from Wiltshire and Gloucestershire.

[2] Extraction at Venn Ottery is likely to cease in Spring 2016, and the operator has submitted planning applications to enable extraction to commence at a new site near Ottery St Mary with processing continuing at Blackhill Quarry

[3] For aggregate survey purposes, these materials are classed as crushed rock rather thansand and gravel

3. Adopted and Emerging Policy Framework

Somerset

3.1 Somerset County Council adopted its Minerals Plan in February 2015, which "plans to maintain provision for future working of sand and gravel from within Somerset to supply the Whiteball operation following the anticipated cessation of the Town Farm site in Devon in the early 2020s". Policy SMP4 therefore identifies a Preferred Area and an Area of Search at Greenham to the north of the Whiteball plant to contribute to sand and gravel supply in conjunction withDevon.

3.2 Policy SMP4 also allows for sand and gravel extraction elsewhere in Somerset outside the Greenham Preferred Area and Area of Search where an applicant can demonstrate net environmental benefits over the PreferredArea and Area of Search.

Devon

3.3 Devon County Council undertook pre-submission consultation on the Devon Minerals Plan from 24th August to 16th November 2015, with the intention of submitting the Plan to the Secretary of State in February 2016. Policy M11 commits the County Council to maintaining a minimum seven year landbank for sand and gravel, based on the rate of supply in the annual LAA, and enables new or extended sites to be permitted where the landbank is close toor below that minimum duration. The Policy also provides criteria for allowingnew or extended sites where the landbank significantly exceeds the minimumduration.

3.4 Policy M12 recognises that Devon's sand and gravel landbank is insufficient for the Plan period, and therefore proposes that supply be maintained through extraction of remaining reserves, development of resources at two new locations in the Budleigh Salterton Pebble Beds, and small-scale working in the Exeter and Newton Abbot areas.

Cornwall

3.5 Cornwall Council submitted the Cornwall Local Plan: Strategic Policies in February 2015, with examination hearings held in May 2015. Following the inspector's preliminary findings, Cornwall Council's request for suspension of the examination to enable further work to be undertaken was accepted by theinspector in July 2015. Consultation on revisions to the Plan is scheduled for January 2016, with the examination expected to resume in April 2016.

3.6 Paragraph 2.70 of the submitted Local Plan notes the absence of major deposits of primary sand and gravel in Cornwall and, given the abundance of secondary sand and gravel aggregates from china clay waste, states that it isnot necessary to allocate land for primary sand and gravel extraction . The agreement with Devon and Somerset that Cornwall is unable to contribute to the shared sub-regional apportionment is also noted.

4. Joint Arrangements for Future Supply and Monitoring

4.1 The NPPF requires MPAs to prepare a LAA, individually or jointly, based onan average of ten years' sales, and to maintain a landbank (calculated usingthe rate of supply in the LAA) of at least seven years for sand and gravel. Given the characteristics of sand and gravel extraction in Somerset and Cornwall outlined in Section 2, it is impractical for those counties to individually meet this requirement as:

- Somerset has seen no extraction during the past 10 years , while Cornwall's limited production to 2006 was derived from a single site andconfidentiality considerationsprevent separate publication of its output;

- the absence of any existing permitted land-won (primary) sand and gravel reserves in Somerset and Cornwall prevents calculation of a landbank for either county; and

- the granting of a new permission for sand and gravel resources in either of those two counties at one or two sites would not enable identification of a separate landbank for confidentiality reasons.

4.2 Cornwall, Devon and Somerset each has significant crushed rock productionand, in the case of the first two counties , secondary aggregate sales that warrant preparation of separate LAAs for each county to reflect its specific characteristics . However, a joint approach for land-wonsand and gravel is required to address the limitations identified in 4.1.

4.3 This memorandum therefore proposes that:

4.3.1 any land-won sand and gravel sales and reserves in Cornwall and Somerset will be combined with those arising in Devon and published inan aggregated form for the three counties in the annual Devon LAA;

4.3.2 Cornwall Council and Somerset County Council will cooperate in preparation of the Devon LAA by collecting and providing data on salesand reserves of land-won sand and gravel as may occur within their counties ;

4.3.3 Devon County Council will continue to publish land-won sand and gravel data for the three counties within the Devon LAA and to providethese data to the South West Aggregate Working Party for regional monitoring purposes;

4.3.4 Somerset County Council will contribute to Devon's land-won sand andgravel landbank through implementation of Policy SMP4 of the Somerset Minerals Plan, recognising that delivery of new resources in Somerset will not be required until such time as supply cannot be maintained from Town Farm in Devon;

4.3.5 there is no requirement for any further contributionto sub-regional supply of land-won sand and gravel from within Cornwall; and

4.3.6 the memorandum will be reviewed annually through each MPAs Monitoring Report and any necessary amendmentsjointly agreed .

5. Signatures

Cornwall Council

Signed by: Date: 10.12.15

Name: Terry Grove-White
Position: Planning Strategy Manager

Devon County Council

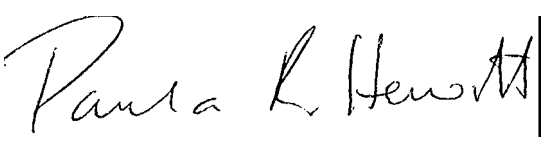
Signed by: Date:

23/11/15

Name: Dave Black
Position: Head of Planning, Transportation & Environment

Somerset County Council

Signed by: Date: 21/12/15



Name: Paula Hewitt
Position: Lead Commissioner for Economic and Community Infrastructure

Appendix 2 Memorandum of Understanding between Somerset County Council, Dorset County Council, Gloucestershire County Council and Wiltshire County Council (2014)

MEMORANDUM OF UNDERSTANDING (MoU)

Version 3.0 | January 2014

Steady and adequate supply of Sand and Gravel

1. Purpose and scope of this MoU

1.1. The purpose of this MoU is to establish a framework (outlining the roles and responsibilities) of Somerset County Council (SCC) and other signatories to this MoU with regard to fulfilling the Duty to Cooperate for the steady and adequate supply of sand and gravel in Somerset over the period to 2030.

1.2. The MoU is intended to enhance and formalise partnership working in:

- plan preparation;
- evidence gathering;
- recording and monitoring minerals issues; and
- plan implementation.

1.3. Further information on SCC's approach to the Duty to Cooperate can be found in the SCC's *Duty to Cooperate Statement.*

2. Background on sand and gravel: summary of evidence

Somerset (including Exmoor National Park), Devon and Cornwall

2.1. Somerset currently has no land-won sand and gravel workings and superficial deposits of sand and gravel in Somerset are generally limited.[1]

2.2. The Lower Triassic Budleigh Salterton Pebble Beds form the bedrock in the south western section of the county, crossing the Somerset / Devon border. This formation is worked for sand and gravel at Hanson's Whiteball operation on the Somerset / Devon border (adjacent to Gipsy Lane, Greenham). The Somerset Minerals Local Plan (adopted 2004) included a policy (M50) that identified land at Whiteball as a Preferred area and an Area of Search for sand and gravel extraction. A map showing these areas is included as Inset Plan 6 in the Somerset Minerals Local Plan (adopted 2004).

2.3. In recent years, virtually all extraction of sand and gravel for the Whiteball operations has taken place in Devon (most recently from the Town Farm site) for processing by facilities on the Somerset side of the border.

2.4. The Town Farm site makes a significant contribution to Devon's sand and gravel production and landbank. It has planning permission until 25 June 2023. The most recent planning application envisaged production at a scale of 200,000 tonnes per year for around 10 years, although recent output has been at a lower level.

[1] Information on the geology of Somerset is included in the Aggregates Topic Paper (available via www.somerset.gov.uk/mineralsandwaste). For more detail refer to a report published by the British Geological Survey entitled 'Mineral Resource Information in support of National, Regional and Local Planning: Somerset (2005)'.

2.5. Devon's 1st Local Aggregate Assessment (February 2013) gives a weighted ten year average sales figure for land-won sand and gravel of 610,000 tonnes.

2.6. Furthermore, Devon's 1st LAA states that the quantity of permitted reserves of land-won sand and gravel at the end of 2011 was 9.16 million tonnes.

2.7. Using Devon's weighted ten year average provides a landbank of approximately 15 years.[2]

2.8. Cornwall's Local Aggregate Assessment (March 2013) states that: "*It is acknowledged that there are limited resources of natural sand and gravel in Cornwall and the county is unlikely to be able to contribute to the shared sub-regional apportionment from primary resources. As part of the Duty to Co-operate Devon County Council and Cornwall Council have agreed that "any shortfall in the sub-regional apportionment would be met by Devon (and potentially some contribution from Somerset), with no further contribution from Cornwall"…"* It is also noted that Cornwall has significant reserves of secondary aggregates which can be substituted for primary material.

2.9. Historically, Somerset has shared a joint sub-regional apportionment for sand and gravel with Devon and Cornwall of 14.91 million tonnes. Covering the period 2005- 2020, this equated to an apportionment of 930,000 tonnes per year.[3] (NB: historically, sub-regional apportionment has also seen Exmoor National Park grouped with Somerset.)

2.10. In its Preferred Options document (2013) Somerset County Council stated that: "*The Council believes that it is appropriate to retain the Areas of Search and Preferred Areas around Whiteball and to include a criteria-based approach in its policy on sand and gravel, based on the following factors:*

- *the spread of opinion during consultation;*
- *historic and current cooperation with Devon County Council;*
- *there are sufficient reserves within the area of search and preferred area to contribute to the required demand for land-won sand and gravel over the plan period, which is to be planned for by Devon and Somerset together; and*
- *no additional areas of interest have been put forward by the minerals industry."*

Dorset

2.11. The Bournemouth, Dorset and Poole Minerals Strategy has been found sound following Examination and the Councils are moving to adopt it as soon as possible. The Minerals Strategy commits to maintaining a landbank of sand and gravel reserves equivalent to at least 7 years supply, based on a rolling average of the previous 10 years of sales. For the period 2003 to 2012, this equates to a figure of 1.57 mtpa.

2.12. According to the 2009 Aggregate Minerals Survey, approximately 65% of sand & gravel imports into Somerset come from Dorset (circa 290,000 tonnes per year). A key resource is the River Terrace deposits which are worked at the Chard Junction site in north west Dorset (4.5km south east of Chard).

[2] The NPPF requires Mineral Planning Authorities to make provision for a landbank of permitted reserves for a minimum of 7 years worth

of supply for sand and gravel.

[3] SW RAWP Annual Report 2009

2.13. The Chard Junction site (which has planning permission until 31 March 2023) makes an important contribution to sand & gravel supply in Somerset; in particular in the Yeovil area – which is a strategically significant town in South Somerset - and other centres of future development such as the primary market towns of Chard and Ilminster.

2.14. The Chard Junction site lies in an Area of Outstanding Natural Beauty (AONB) and the importance of protecting designated areas in Dorset is noted.

2.15. Dorchester, which lies at the western edge of one of the two resource blocks identified by Dorset County Council, is approximately 33km from Yeovil and 74 km from Taunton. The average road delivery distance for aggregates in 2011 was 43km.[4]

2.16. If/when production ceases in the north west of Dorset, and if no further permissions come forward in this north west area, it is likely that there will be constraints (linked with the costs of minerals transportation and potentially capacity of the road network) to exporting sand and gravel from the resource blocks into Somerset. Such constraints will not prevent continued supply but may result in exports into Somerset decreasing over the longer term.

Gloucestershire

2.17. According to the 2009 Aggregate Minerals Survey, Gloucestershire supplies ≤ 40,000 tonnes of sand and gravel into Somerset. This equates to less than 5% of Gloucestershire's output. This is unlikely to increase due to the high costs of transportation.

Wiltshire

2.18. According to the 2009 Aggregate Minerals Survey, Wiltshire supplies ≤ 20,000 tonnes of sand and gravel into Somerset. This is unlikely to increase due to the high costs of transportation.

Other potential sources of sand and gravel

2.19. Limestone sand can be produced from the processing of scalpings at crushed rock quarries. This is an important source of such material in the eastern part of Somerset.

2.20. Marine-dredged sand and gravel landed at Dunball Wharf equates to roughly 5-10% of Somerset's sand and gravel consumption. A comparison of actual and licensed dredging rates suggest there may be scope to increase the level of dredging in the Bristol Channel if necessary; however, there are logistical constraints to consider (in particular linked with use of Dunball Wharf, weather and tides) which affect the potential to increase the county's dependence on marine-dredged aggregates.

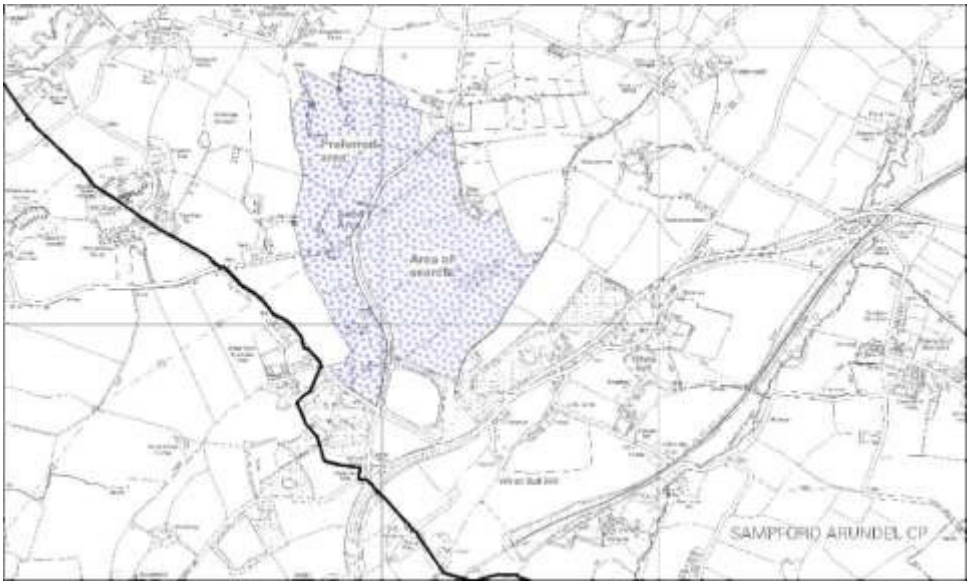
[4] Minerals Products Association: Summary Sustainable Development Report 2011

3. Joint approach

3.1. It is agreed that:

- Due to its historic arrangements and limited sand and gravel resources, Somerset does not currently maintain its own landbank of permitted reserves for sand and gravel and has not extracted sand and gravel during the past 10 years (or at most very minor quantities).
- As a result, Somerset does not have a 10 year average that can inform any potential future provision. However, Somerset County Council intends to maintain provision for future working of sand and gravel from within Somerset to supply the Whiteball operation following the anticipated cessation of the Town Farm site within Devon in the early 2020s.
- To maintain sub-regional supply (contributing to Devon's existing landbank for sand and gravel and maintaining production at Whiteball) Somerset County Council proposes to extend the approach established in the Minerals Plan (adopted 2004) which outlines a Preferred Area and Area of Search adjacent to Gipsy lane, Greenham (see map below), and use a criteria-based approach to consider proposals elsewhere in Somerset. This preferred approach was made clear in the Preferred Options consultation carried out by Somerset County Council in 2012/13.
- The Chard Junction site on the Somerset / Dorset border makes an important contribution to sub-regional supply, which is expected to continue also until the early 2020s.
- Somerset County Council and Dorset County Council will continue to co- operate on cross-boundary mineral interests, including on-going monitoring, whereby the reciprocal supply of minerals is considered fully in emerging plans[5]. The Bournemouth, Dorset and Poole Minerals Strategy has taken account of mineral exportation and importation (including movements between Dorset and Somerset) in identifying mineral needs to 2028 and, once adopted, it will set the strategic context for the emerging Bournemouth, Dorset and Poole Mineral Sites Plan.
- Exports of relatively small quantities of sand and gravel from Gloucestershire and Wiltshire into Somerset are anticipated to continue during the plan period.

[5] Somerset is a major supplier of crushed rock to Dorset, while Dorset exports sand and gravel to Somerset.



3.2. The MoU shall be reviewed by the signatories as/when required to ensure that it remains fit for purpose. It is expected that the MoU will remain in place until at least the adoption of all relevant Local Plan documents covering Somerset, Cornwall, Devon and Exmoor National Park.

4. Somerset County Council's specific responsibilities under this MoU

4.1. As Mineral Planning Authority for Somerset, Somerset County Council has undertaken and will continue to undertake to cooperate with all other signatories of this MoU in the preparation and delivery of the Somerset Minerals Plan by:

- notifying signatories at each consultation stage in the preparation of its local development documents and plans relevant to its statutory functions; and if appropriate, meet and discuss any issues raised by one or more of the other Local Authorities and take into account any views expressed on those issues;
- meeting with signatories as required to monitor the preparation and implementation of minerals policy and strategy across Somerset; and review work undertaken jointly by parties signed up to the MoU;
- co-operating with signatories in the preparation of the annual Somerset Local Aggregate Assessment, including related dialogue with members of the South West Aggregate Working Party (SW AWP);
- liaising with Taunton Deane Borough Council and Mid Devon District Council as required with regard to the availability of land in the Preferred Area and Area of Search covered in the Somerset Minerals Plan; and
- co-operating with relevant professional organisations, in particular the British Geological Survey and the Department for Communities and Local Government (DCLG) and, as required, the relevant Local Economic Partnership(s).

5. General responsibilities of other signatories under this MoU

5.1. As signatory to this MoU, all partners will undertake to cooperate with other signatories of this MoU in the preparation and delivery of the Somerset Minerals Plan. In particular, this will entail:

- responding to each consultation stage in the preparation of Somerset's local development documents and plans (also including the Somerset Local Aggregate Assessment) relevant to Somerset County Council's statutory functions; and if appropriate, meet and discuss any issues raised by one or more of the other signatories;
- meeting with other signatories as required to monitor the preparation and implementation of minerals policy and strategy across Somerset; and review work undertaken jointly by parties signed up to the MoU; and informing Somerset County Council should there be any substantive change in respective positions summarised in the background evidence on sand and gravel (section 2 of this MoU).

Appendix 3 – Consultees

The following were consulted on the drafts of this Local Aggregates Assessment:

- Primary Aggregate Operators in Somerset (Via South West Aggregate Working Party/non-members direct)
- All Mineral Planning Authorities in the south west (via the South West Aggregate Working Party)
- District Councils in Somerset
- South East Aggregate Working Party
- London Aggregate Working Party
- East of England Aggregate Working Party
- Minerals Products Association (via the South West Aggregate Working Party)
- British Aggregates Association (via the South West Aggregate Working Party)