

Bournemouth, Christchurch, Poole and Dorset 11th Local Aggregate Assessment 2012 - 2021

Incorporating data up to and including 2021

Dorset Council

BCP Council

30th November 2022

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Table 1 – 2019/2020/2021 Comparison

Type of Aggregate	2019			2020			2021				
	Sales (tonnes) - LANDINGS for marine dredged)	10 year average (mt)	3 year average (mt)	Sales (tonnes) - LANDINGS for marine dredged)	Compared to previous year	10 year average (mt)	3 year average (mt)	Sales (tonnes) - LANDINGS for marine dredged)	Compared to previous year	10 year average (mt)	3 year average (mt)
Recycled	586,572	0.35	0.45	394,221	Decrease over previous year	0.36	0.46	475,093	Increase over previous year	0.38	0.49
Marine Dredged (TONNES LANDED)	71,327 landed in 2019	0.08	0.07	80,277 landed in 2020	Increase over previous year	0.08	0.07	104,659 landed in 2021	Increase over previous year	0.08	0.09
Crushed Rock – Local Land-won	213,699	0.21	0.21	197,375	Decrease over previous year	0.20	0.20	233,251	Increase over previous year	0.21	0.21
Sand and Gravel – Local Land-won	1,187,576	1.42	1.22	1,253,903	Increase over previous year	1.41	1.21	1,237,930	Decrease over previous year	1.37	1.23

Table 1A – Landbanks and Reserves

Type of Aggregate	2019		2020			2021		
	Landbank (Years)	Reserves at end of 2019 (tonnes)	Landbank (Years)	Reserves at end of 2020 (tonnes)	Compared to previous year	Landbank (Years)	Reserves at end of 2021 (tonnes)	Compared to previous year
Crushed Rock – Local Land-won	c.57	c. 12,000,000	c. 57+	c. 11,750,000	Small decrease over previous year	c. 55	c.11,500,000	Small decrease over previous year
Sand and Gravel – Local Land-won	9.3	13,156,851	8.6	12,088,076	Decrease over previous year	8.1	11,177,666	Decrease over previous year

Summary

- E.1. Mineral Planning Authorities are required¹ by the National Planning Policy Framework 2021 (NPPF) to ensure a steady and adequate supply of aggregates and to prepare a Local Aggregate Assessment (LAA) annually. National Minerals Planning Practice Guidance (NPPG) was published by the then Department of Communities and Local Government (DCLG) in 2014, followed by Practice Guidance on the Production and Use of LAAs from the Planning Officers Society and Minerals Products Association in 2017, both setting out further details on how LAAs should be prepared. This LAA, covering the period 2012 to 2021, has been produced with due regard to the NPPF and these guidance documents.
- E.2. In Dorset, Bournemouth, Christchurch and Poole, total sales of all types of aggregate in 2021 were 2,041,359 tonnes, an increase of some 117,640 tonnes from the 2020 figure of 1,923,719 tonnes. For comparative purposes, figures for 2019, 2020 and 2021 are set out in **Table 1** above.

Recycled aggregate

- E.3. In 2021 recorded sales of recycled aggregate increased to 475,093 tonnes from 394,221 tonnes. This likely due to increasing construction activity following lockdown. It is noted that sales/production are likely to be higher than is indicated as the surveying only records output from permitted sites. Permitted capacity is in excess of this figure, and it is assumed that output could increase, provided increased waste arisings and markets were both available.

¹ NPPF 2021, paragraph 213 (<https://www.gov.uk/government/publications/national-planning-policy-framework--2>)

Marine dredged sand and gravel

- E.4. In 2021, marine dredged aggregate landed at Poole Wharf showed an increase over the previous year, the third rise in a row. Indications are that more could be imported if demand existed. The highest amount imported since figures were recorded in 2003 was c. 110,000 tonnes in 2008. Further marine aggregate supply is available.

NB: for reasons of confidentiality through this LAA figures shown are for landings of marine dredged aggregate rather than sales. Sales figures follow the trend of landings, but are less.

Crushed rock – land-won

- E.5. In 2021, sales of crushed rock were 233,251 tonnes, an increase over the previous year's production. The ten year average of sales is approximately 210,000 tonnes per annum. The highest level of annual sales since 1999 was 440,000 in 2001, indicating potential for increased production. The landbank is estimated to be at least 50 years and it is considered that sales could increase if demand existed, subject to other constraints such as access between quarries and markets. The Mineral Planning Authority (MPA) considers it appropriate to continue to use the 10 year average of sales to determine the landbank.

Crushed rock – rail imported

- E.6. In 2018, Hanson's ceased using the Hamworthy rail depot for importing crushed rock from the Mendips. A local minerals operator has taken over the lease but to date no crushed rock has been imported by rail as maintenance/repairs to the line are awaited. Historically, the maximum amount imported in any one year since 2003 was 160,000 tonnes in 2004. The 10 year average, measured from 2003 to 2012 (the most recent period for which consistent data exists), was some 90,000 tonnes per annum. Although indications are that there is capacity to import at least 90,000 tonnes or more per annum, the issue of whether the necessary repairs/upgrading will be carried out must be addressed. Until this is done it cannot be assumed that future supply will be available from rail imports.

Crushed rock – road imported

- E.7. The 2014 AM survey indicated that approximately 260,000 tonnes of crushed rock was imported by road in 2014, primarily from Somerset. The 2019 AM survey indicates a decrease in the level of imports, with between 115,000 and 144,000 tonnes of crushed rock being imported by road from Somerset. There are no planning restrictions on the amount that can enter Dorset this way and Somerset's landbank is adequate to maintain sales so subject to other constraints (e.g. traffic volumes) it is expected that supply will be maintained and will increase to meet demand if required.

Land-won sand and gravel

- E.8. Land-won sand and gravel is by far the highest proportion of the 'mix' of supply of aggregate for Bournemouth, Dorset and Poole. There was a decrease in sales between 2020 and 2021 as shown in **Table 1**, from 1,253,903 tonnes to 1,237,930 tonnes. At 1.24 mt, sales in 2021 were below the ten year average figure of 1.37 mt and just above the three year average figure of 1.23 mt.
- E.9. The reason for this decrease is not clear, as an increase in sales might be expected following lockdown. At least one quarry was potentially coming to the end of its life, and output had decreased with a view to husbanding the remaining reserve. It is still expected that the rate of housing completions, one possible

measure of future demand, is likely to increase in the future although no sharp, short-term increases are expected. There are no other projects likely to lead to sharp, sudden changes in demand. The landbank has decreased in size and number of years, but remains above 7 years. No new permissions were granted in 2021.

- E.10. Future sales will be met from existing permitted reserves together with the sites allocated through the Bournemouth, Christchurch, Poole and Dorset Mineral Sites Plan 2019. Both Poole Formation and River Terrace sales have shown no growth over the past year. The Mineral Planning Authority is inclined to continue to use the ten-year average for the coming year to determine the landbank and to estimate likely future demand and reserve depletion, to be reviewed again through future Local Aggregates Assessments.
- E.11. All sources of aggregate (apart from rail imported crushed rock) demonstrate potential for some increase in supply, should demand increase. No sharp increases in demand are expected in the next year. In the longer term, there are adequate landbanks for sand and gravel and crushed rock. The Mineral Sites Plan 2019 allocates new sites for sand and gravel to maintain production and sales, and includes a policy for development of unallocated site under certain conditions. The MPA has reasonable confidence that sand and gravel will continue to flow at the level of provision as set out in Policy AS1 of the 2014 Bournemouth, Dorset and Poole Minerals Strategy. If monitoring of supply shows that the identified need is unlikely to be delivered, it may become necessary to review the strategy/policies.
- E.12. **It is therefore considered appropriate to continue to use the 10 year average (2012-2021) figure for sales of sand and gravel of 1.37 mtpa as set out in this Local Aggregate Assessment, to establish the size of the landbank and level of provision for sand and gravel. This figure is in excess of sales for the past 5 years.**
- E.13. **Similarly, it is considered appropriate to continue to use the 10 year average (2012-2021) figure for sales of crushed rock of 0.21 mtpa to establish the size of the landbank and level of provision for crushed rock. This figure is in the vicinity of sales over the past 5 years.**

1. Introduction

- 1.1. National Minerals Planning Practice Guidance on preparation of Local Aggregates Assessments was published by the then Department of Communities and Local Government (DCLG) in 2014, followed by *Practice Guidance on the Production and Use of LAAs* from the Planning Officers Society and Minerals Products Association in 2017. The advice contained in these sources has been taken into consideration in preparation of the current LAA.
- 1.2. LAAs provide an annually-updated evidence base, contributing to monitoring of aggregate provision and informing production/review of minerals plans. The National Planning Practice Guidance (NPPG) refers to LAAs containing 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 (information on sales of aggregates over the last three years should also be taken into consideration, to seek to identify more recent trends that might indicate whether an increased supply was appropriate);
 - an analysis of all aggregate supply options, as indicated by landbanks, mineral plan allocations and capacity data e.g. marine licenses for marine aggregate extraction, recycled aggregates and the potential throughputs from wharves/rail depots; 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.
- 1.3. Paragraph 213 of the NPPF (MHCLG 2021) requires Mineral Planning Authorities (MPAs) to *'plan for a steady and adequate supply of aggregates by:*
 - a. *preparing an annual Local Aggregate Assessment, either individually or jointly, to forecast future demand, based on a rolling average of 10 years' sales data and other relevant local information, and an assessment of all supply options (including marine dredged, secondary and recycled sources);*
- 1.4. 'Dorset' LAAs have consistently been prepared on a joint basis. Originally Dorset County Council prepared them on behalf of the Borough of Poole and Bournemouth Borough Council. On 1 April 2019, two new unitary authorities – Dorset Council and Bournemouth, Christchurch and Poole Council – replaced the former Dorset County Council, Bournemouth Borough Council, Borough of Poole and the Dorset district and borough councils. Since then joint LAAs have been prepared by Dorset Council on behalf of Bournemouth, Christchurch and Poole (BCP) Council, covering the administrative areas of Dorset Council and BCP Council.
- 1.5. Local minerals policy is set by the Bournemouth, Dorset and Poole Minerals Strategy, (adopted by Dorset County Council, Bournemouth Borough Council and Borough of Poole in May 2014, and setting out the strategy for the supply of minerals, including aggregates, up to 2028) and the Bournemouth, Christchurch, Poole and Dorset Mineral Sites Plan (MSP) adopted 31 December 2019, intended to complement and deliver the Minerals Strategy 2014.
- 1.6. LAAs have been prepared for the joint MPA area for each calendar year. To date the following have been produced:
 - 2011 LAA, completed in 2013;
 - 2012 LAA, completed in 2014;
 - 2013 LAA, completed in 2014;
 - 2014 LAA, completed in 2016;
 - 2015 LAA, completed in 2017;
 - 2016 LAA, completed in 2018;
 - 2017 LAA, completed in 2019;
 - 2018 LAA, completed in 2019 (amended February 2020);
 - 2019 LAA completed in 2021;
 - 2020 LAA completed in 2021;

- 1.7. This LAA reviews provision of various types of aggregates from various sources in the Dorset and Bournemouth, Christchurch and Poole council areas. It considers likely future demand for and feasibility of current and future supply of aggregate, based on data collected up to and including 2021. The most recent extended monitoring survey was in 2019, collecting data on aggregate movements between MPAs and providing a picture of relative levels of consumption nationally and regionally, including information on flows of aggregate to and from Dorset. The current LAA uses the findings of this survey where appropriate.
- 1.8. The primary and recycled aggregate sales data set out in this report reflect the returns from an Annual Minerals Survey conducted by Dorset Council. Dorset/BCP do not produce any secondary aggregates.
- 1.9. This **draft** LAA is subject to consultation with the members of the South West Aggregates Working Party (SWAWP).

2. The Resource

- 2.1. Aggregates are hard granular (mineral) materials, essential requirements for a range of uses in society. They are raw materials for the construction industry, required for built development, manufacturing and the maintenance of infrastructure such as roads and sea defences. They also have other uses, including for recreational facilities and in horticulture/landscaping. They are required to support economic development. They may be primary (excavated or dredged specifically for use as aggregates), secondary (produced as a by-product of some other process or excavation) or recycled from appropriate waste material.
- 2.2. In Dorset, land-won or primary aggregates are either quarried from limestone deposits and crushed to various sizes (crushed rock) or quarried from sand/gravel formations, both bedrock or superficial, and processed and sold. Marine aggregates are dredged from the sea bed, and landed at an aggregate wharf in Poole. Sand is produced alongside ball clay and in Dorset it is classified as primary aggregate, not secondary, as it is generally located above the ball clay. No secondary aggregate is produced in Dorset. Recycled aggregates are derived from processed construction, demolition and excavation waste.
- 2.3. Dorset's varied geology makes it a mineral rich county with a range of resources. Mineral extraction is tightly constrained by landscape, nature conservation and other interests. Much of the sand and gravel bearing areas coincide with important landscapes and designated ecological habitats, but much also lies in areas where there are opportunities to avoid or mitigate against the adverse impact of development by re-creating habitats such as lowland heath.
- 2.4. Dorset contains deposits of both River Terrace sand and gravel and underlying Poole Formation sands, and is also a (relatively low) producer of crushed Jurassic limestone, sourced from Portland and Purbeck. Dorset's sand and gravel resources are largely concentrated in the south east of the county.
- 2.5. Dorset has one aggregates wharf at Poole, handling marine dredged sand and gravel; one railhead at Wool which has been used in the past for exporting sand to London and one aggregates rail depot at Hamworthy (Poole), bringing crushed limestone from the Mendips. Neither the railhead or the rail depot are currently active.

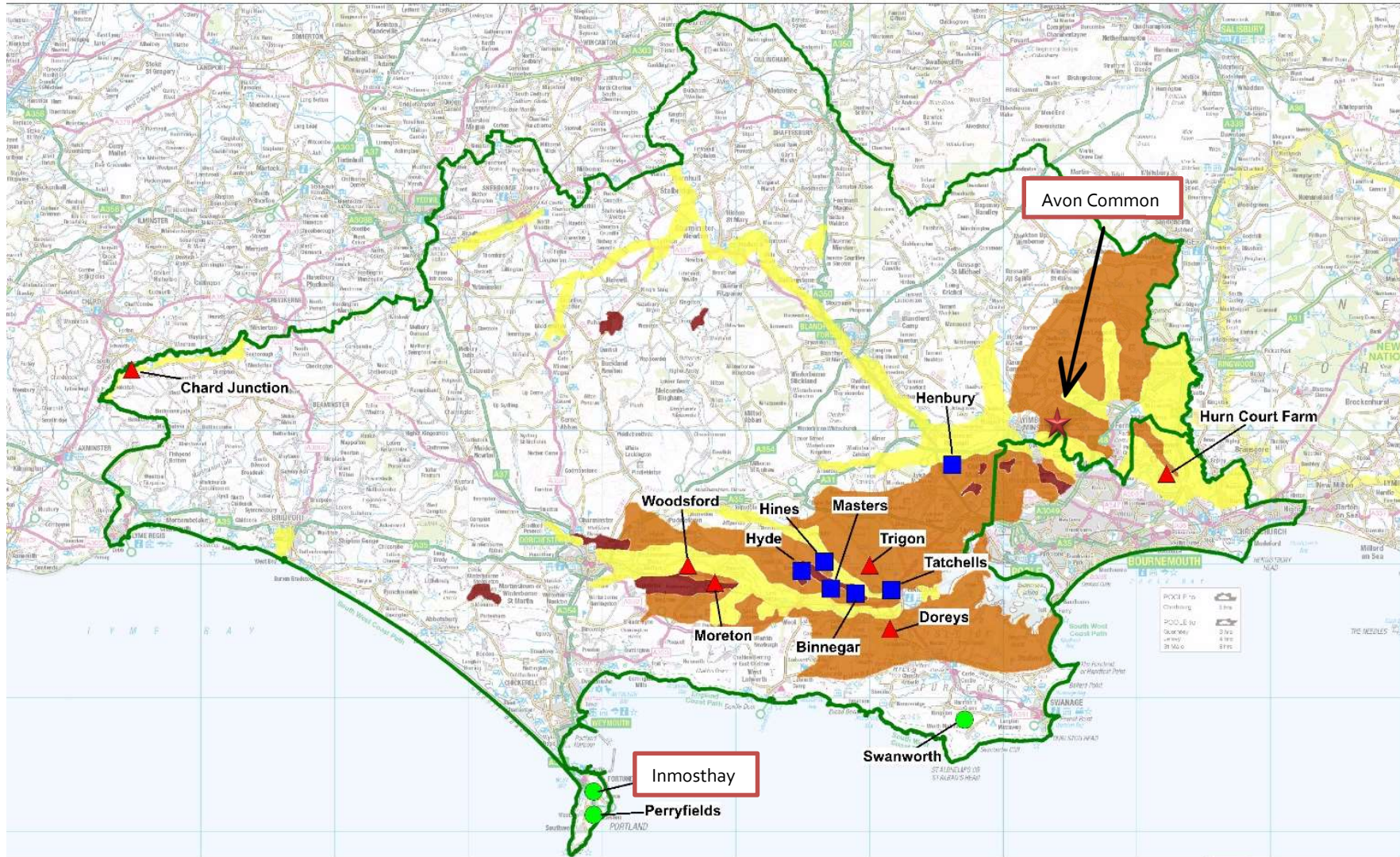
Sand and Gravel

- 2.6. Sand and gravel in Dorset is produced primarily from Poole Formation sand (geologically a bedrock deposit) and River Terrace or plateau sand and gravel (geologically a superficial deposit). Poole Formation sand is the most important source of sand in the plan area, outcropping in the south east of the county and forming hills and ridges in a broad zone stretching from Dorchester to Wareham and around the fringes of Poole and Verwood. The sands comprise a series of upward fining sequences, becoming finer grained with increasing silt content towards the south east. The large variations in particle size enable a wide range of products to be produced, but their unpredictable distribution presents difficulties. They form the most important source of sand in Dorset and give rise to the ecologically important heathlands.
- 2.7. Between these areas of higher land run the river valleys of the Frome, Piddle, Stour and Avon. Extensive spreads of river terrace sand and gravel are deposited along the flanks of these valleys. In the north-west, the valley of the River Axe contains exceptionally deep gravel deposits, up to 20m thick. Large flint pebbles

and cobbles are found within some river terrace deposits, particularly east of Dorchester. Plateau gravels are found capping many of the hills and ridges. Only isolated pockets now remain available, the majority already being worked out, built upon or of ecological importance. These deposits are now of only limited economic importance.

- 2.8. The ball clay resource is also located within the Poole Formation, and sand (and gravel) sometimes overlies the clay. Permissions can be granted for the extraction of the sand and gravel, in advance of, alongside or after, the ball clay extraction. In Dorset, this sand and gravel is treated as a primary aggregate.
- 2.9. **Figure 1** below shows the general spatial distribution of the three types of sand and gravel. They occur predominantly in the south east of the plan area and coincide with the location of most of the urban development in the county. Urban development sterilises much of the deposit.

Figure 1 – The Sand and Gravel Resource, with aggregate quarries operational in 2021



Aggregate sites in Dorset

- Poole formation deposits
- Plateau gravel deposits
- River terrace gravel deposits

- Operational sand and gravel extraction sites
- Operational sand extraction sites
- Operational crushed rock sites



Crushed rock

- 2.10. Crushed rock in Dorset is supplied from crushing of stone in the Portland quarries, and from Swanworth Quarry in Purbeck. On Portland, a large composite planning permission was granted in 1951, with an end date of 2042. It covers approximately two thirds of the plateau forming the top of the island and was intended primarily to provide Portland Stone as dimension stone, but crushed rock is also produced from the crushing of waste stone, offcuts and the underlying cherty series. Mining as a means of extracting dimension stone is becoming more widely used on Portland, and the waste stone is used in the restoration of worked out mines, potentially reducing the availability of stone that can be crushed.
- 2.11. Threats to the continued operation of crushed rock sales also include alternative restoration options for the quarries on Portland, where various uses have been proposed (e.g. leisure, tourism or housing proposals). These have the potential to reduce further the availability of crushed rock. In a number of cases as part of other planning applications mineral operators have relinquished the rights to crush stone, or blast and crush cherty, further reducing the potential availability of crushed rock in the future. There is therefore no certainty that all the approximately 12 mt of crushed rock reserves referred to above are and will remain available for extraction and sales. Most recently crushed rock has been produced in three quarries on Portland, although not all at the same time.
- 2.12. The Jurassic Limestone from Dorset is generally regarded as relatively weak, a softer rock than Carboniferous Limestone and is normally unsuitable as a concreting aggregate. It is often used as fill or as Type 1 aggregate for construction purposes. Stone to be crushed for aggregate sales is either waste stone resulting from production of dimension stone, certain other types of stone not suitable for dimension stone or stone from the cherty series, which forms the deepest quarried bed on Portland and is only suitable for crushing. Working of the cherty beds results in a deeper void space and delays quarry restoration.
- 2.13. The only crushed rock aggregate quarry outside Portland is Swanworth Quarry, near Worth Matravers in Purbeck. It produces crushed rock from the Portland Beds. Swanworth Quarry is situated within the AONB and the Heritage Coast. Reserves in the existing quarry are now exhausted. An extension is allocated in the Mineral Sites Plan 2019 and an application has been submitted and is currently being considered.
- 2.14. Crushed rock is also imported from elsewhere, principally Somerset, by road. This is the much harder Carboniferous limestone, suitable for road building/maintenance and other construction uses.

3. Sources of Aggregate 2012 – 2021: Crushed rock and sand and gravel

- 3.1. The National Planning Policy Framework (NPPF) requires an LAA to be based on a rolling average of sales over ten years – along with other relevant local information and an assessment of all supply options. The three year average should also be taken into consideration. **Table 2** and **Figure 2** below set out the ten-year average and three-year average sales figures for all the types of aggregates produced in Dorset, along with historic sales figures. It also includes figures for rail imports of crushed rock from Somerset and marine dredged sand and gravel landings at Poole Wharf.

Table 2 – Aggregate Sources and Amounts 2012 – 2021 (million tonnes)

Aggregate type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	10 YEAR AVERAGE	3 YEAR AVERAGE
River Terrace**	0.48	0.49	0.56	0.58	0.56	0.52	0.49	0.42	0.39	0.39	0.49	0.40
Poole Formation**	0.95	1.11	1.17	0.92	0.82	0.75	0.71	0.77	0.86	0.85	0.89	0.82
Total Land-Won Sand and Gravel**	1.43	1.60	1.73	1.50	1.39	1.27	1.19	1.19	1.25	1.24	1.37	1.23
Land-Won Crushed Rock**	0.15	0.16	0.28	0.24	0.20	0.22	0.20	0.21	0.20	0.23	0.21	0.21
Crushed Rock - <u>Rail Imports</u>	0.04	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.01	0.00
Marine Dredged Sand and Gravel - <u>Landings at Poole Wharf</u>	0.09	0.09	0.08	0.09	0.07	0.07	0.06	0.07	0.08	0.10	0.08	0.09
Recycled aggregates**	0.32	0.30	0.32	0.33	0.35	0.37	0.39	0.60	0.39	0.48	0.38	0.49
Totals - million tonnes per annum	2.03	2.14	2.42	2.16	2.02	2.01	1.85	2.07	1.92	2.04	2.07	2.01

** Represents Sales figures – million tonnes per annum

Figure 2 : Sources of Aggregate 2012 – 2021 (figures in million tonnes per annum)

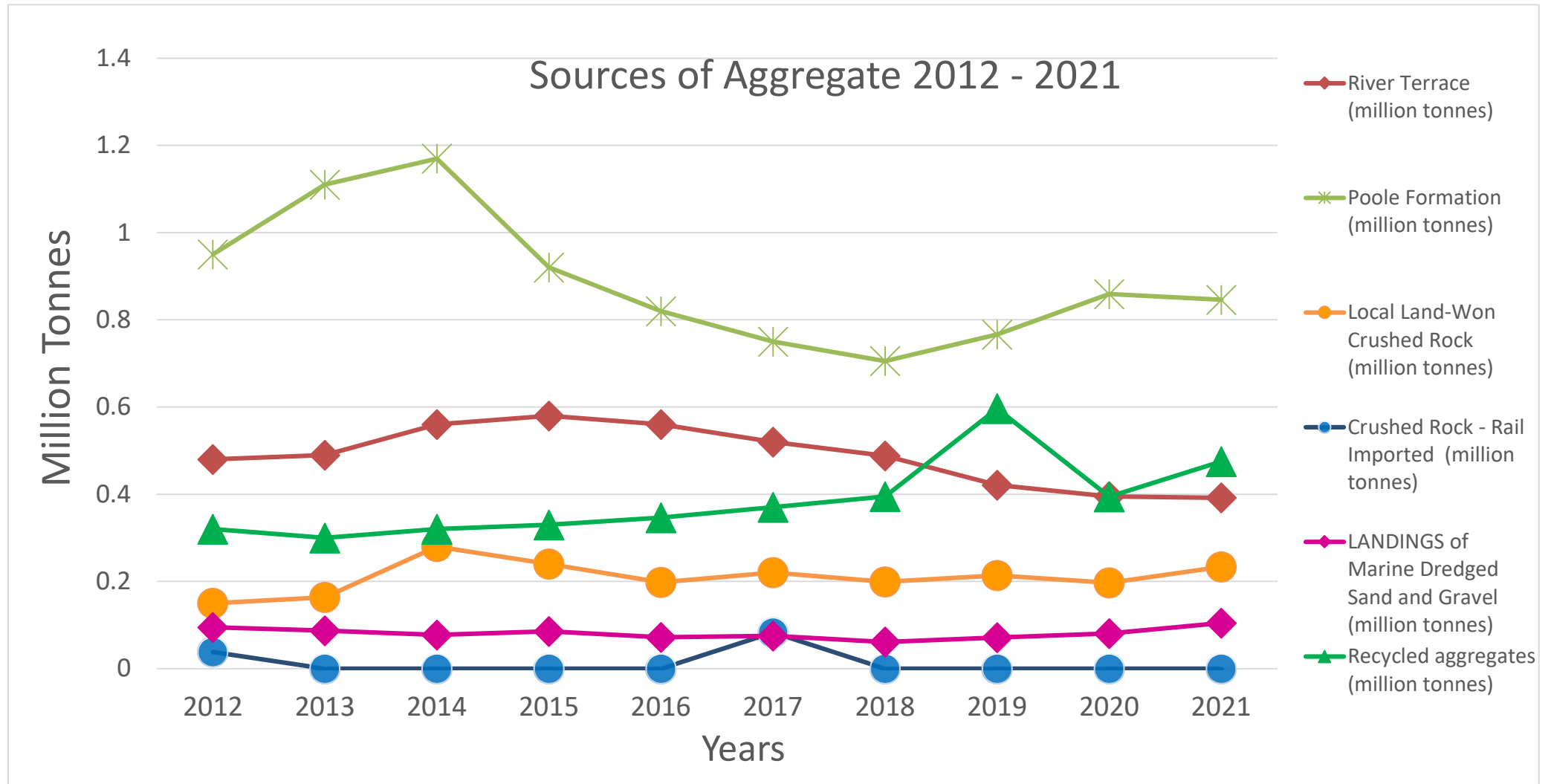


Table 2 & Figure 2 - Notes

Marine dredged figures are for amounts landed, rather than amount sold
 Rail imports of crushed rock are sourced from Somerset.
 Some recycled aggregate annual totals include some estimations due to incomplete returns.

3.2. **Table 2** and **Figure 2** indicate:

- Sales of local land-won crushed rock have increased slightly after a period of remaining generally flat
- Both River Terrace and Poole Formation sales have fallen slightly
- **Table 2** shows a 10 year average of 1.37 mt per annum (mtpa) for land won sand and gravel (Poole Formation and River Terrace combined) and 0.21 mtpa for local land-won crushed rock
- In addition to the 10 year average, paragraph 064 of Planning Policy Guidance advises Mineral Planning Authorities to '*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.*' For the three years up to and including 2021, average sales of sand and gravel (Poole Formation and River Terrace combined) were 1.23 mtpa, less than the 10 year average and slightly higher than the 2020 three year average figure
- The 3 year sales average for crushed rock is 0.21 mtpa, again the same as the 10 year sales average

4. Crushed Rock

Landbank

- 4.1. The NPPF requires Mineral Planning Authorities to maintain a landbank of at least 10 years for crushed rock. The estimated reserve for crushed rock, incorporating that on Portland and at Swanworth Quarry in Purbeck, is approximately 11,500,000 tonnes.
- 4.2. The landbank is almost entirely located on Portland, within a composite planning permission granted in 1951 covering around two thirds of the top of the island. Due to the lack of detail in this permission, it is difficult to have any certainty as to the accuracy of the crushed rock landbank on Portland. The permission is for the quarrying of dimension stone - the crushed rock element is obtained from crushing of waste, off-cuts and the deeper cherty layer.
- 4.3. The amount available for crushing varies depending on other circumstances, hence it is difficult to estimate the landbank with any certainty. Parts of the permission are sensitive environmentally and in amenity terms. The figure of c. 11.5 mt is derived from estimating how much stone could be available for crushing that wouldn't be used for dimension stone. It is an estimate only, and potentially subject to change.
- 4.4. The Minerals Strategy 2014 advocates underground mining on Portland to access parts of the dimension stone reserve to minimise impacts. Where mining permissions have been granted, this reduces the availability of stone that may ultimately be crushed. Additionally, there has been a need for minerals buffer areas to be implemented around new housing developments within or close to the 1951 permission, further reducing the reserve. Although these factors have been taken into account in assessing the current estimated reserve wherever possible, the reserve could be further reduced as more situations such as these occur.

- 4.5. The Mineral Sites Plan 2019 does not propose any new open-cast quarries on Portland, nor does it propose any new mines.
- 4.6. The 10 year average of sales (2012 to 2021), as set out in **Table 2**, is 0.21 mtpa. If this figure is applied to the estimated reserve (see **Table 3**), this gives the following result:

Crushed rock landbank: 11.5 mt / 0.21 mtpa = c. 55 years

- 4.7. The crushed rock landbank at the end of 2021 is therefore calculated as c.55 years supply. This is well in excess of the required 10 years, and also far in excess of the requirement over the timescale of the adopted Bournemouth, Dorset and Poole Minerals Strategy (2014-2028) and the Mineral Sites Plan 2019 (2019-2034).
- 4.8. Swanworth Quarry in Purbeck has historically been the largest producer of crushed rock in Dorset, and its closure would impact strongly on sales of crushed rock. The Mineral Sites Plan 2019 allocates an extension to Swanworth Quarry. The current quarry and its proposed extension are located in the Dorset Area of Outstanding Natural Beauty. The application for the extension is currently being determined and if it is ultimately unsuccessful, the annual output of crushed rock could fall below the current 10 year average during the timescale of the Mineral Sites Plan 2019 unless quarries on Portland can significantly increase their output.
- 4.9. No permissions for new or extended crushed rock sites were issued in 2021.

Importation of Crushed Granite

- 4.10. Crushed granite has in the past been imported into Poole Wharf from Northern Ireland for exclusive use in an asphalt producing plant in Poole. However, no granite has been imported since 2012.

Rail Imports

- 4.11. Hamworthy rail depot in Poole, prior to its closure in 2012, received crushed limestone from Whatley Quarry in Somerset for local distribution and use. An average of approximately 90,000 tpa was imported up to the end of 2012, while the site was still active. The facility was temporarily reopened in 2017, importing around 83,000 tonnes.
- 4.12. Hanson ceased using the depot in 2018 and a local quarry operator has taken over the lease. As noted earlier, a decision on repairs/upgrading of the line is awaited. Subject to the outcome of this matter, rail imports of crushed rock could cease. There were no rail imports of crushed rock from the Mendips or elsewhere in 2021.
- 4.13. Opportunities for the establishment of additional rail depots are limited. In the north, where the Salisbury-Exeter line passes in and out of Dorset, the Mendip quarries are relatively close, but road links are more direct and markets more distant. The north-south single line from Yeovil to Dorchester passes through a rural area with limited opportunity and need for such a facility. On this line, and the main line from London to Weymouth, new depots or the expansion of existing depots are encouraged through Policy AS4 of the Minerals Strategy 2014. However, no new rail depots have been proposed through the Mineral Sites Plan.
- 4.14. Rail sidings at Wool have in the past been used for the export of sand from Warmwell Quarry to London, and were last used in 2015.

Road imports

- 4.15. It is difficult to put a firm figure on levels of input from road imported crushed rock as the amount brought in will depend largely on market demand/supply. The 2014 AM survey indicated that approximately 260,000 tonnes of crushed rock were imported by road from Somerset. The 2019 AM survey indicates a decrease in the level of imports, with between 115,000 and 144,000 tonnes of crushed rock being imported from Somerset. Since the Hamworthy Depot was not in operation, this indicates that all was imported by road.
- 4.16. There are no planning restrictions on the amount that can enter Dorset this way. The Somerset Local Aggregate Assessment Sixth Edition, incorporating data from 2017 to 2019, notes that the county had estimated permitted reserves for crushed rock at the end of 2019 of approximately 363.7 mt, which is estimated to last for 27.1 years. Given that it is likely that Somerset will maintain its production of crushed rock and provided the demand exists in Dorset, it is expected that road imports will continue at levels dictated by the market.

5. Sand and Gravel

Landbank

- 5.1. The NPPF requires Mineral Planning Authorities to maintain a landbank of at least 7 years for sand and gravel.
- 5.2. The reserve for sand and gravel at the end of 2021 was 11,177,666 tonnes. The 10 year average of sales (2012 to 2021), set out in **Table 2**, is 1.37 mtpa. If this figure is applied to the estimated reserve (see **Table 3**), this indicates a landbank of over 8 years:

Sand and gravel landbank: 11.2 mt / 1.37 mtpa = 8.2 years

- 5.3. As noted earlier, land won sand and gravel in Dorset comprises primarily Poole Formation sand and River Terrace sand and gravel. The landbank for sand and gravel (both Poole Formation and River Terrace aggregates combined) at the end of 2021 was 8.2 years, in excess of the required 7 years. This represents a decrease from the equivalent figure of 8.6 years at the end of 2020.
- 5.4. At the end of 2021 the Mineral Planning Authority was in compliance with Policy AS1 of the 2014 Minerals Strategy which states that "*An adequate and steady supply of locally extracted sand and gravel will be provided by maintaining a landbank of permitted sand and gravel reserves equivalent to at least 7 years' worth of supply over the period to 2028, based on the current agreed local annual supply requirement for Bournemouth, Dorset and Poole*". However, it is expected that existing reserves will not be enough to maintain supply during the life of the Mineral Sites Plan 2019 and additional sites will need to be developed during the plan period.
- 5.5. It is difficult to predict when new allocations will be needed, partially due to the Avon Common permission in Christchurch (as discussed below), which could be brought on-stream at relatively short notice. It is acknowledged that the River Terrace supply to central and western Dorset is fragile in the sense that Woodsford Quarry is the main source for this aggregate. Chard Junction Quarry in the far west of Dorset is almost completely finished. An application to extend the quarry was submitted and refused. This decision has been appealed, and an Inquiry was held in August 2022. A second application was submitted

and subsequently withdrawn. If the appeal is unsuccessful there could be implications for Dorset's annual aggregate supply, subject to the response of the market in seeking to meet any shortfall from other sources.

- 5.6. The MPA are satisfied that the Mineral Sites Plan 2019 identifies sufficient sites and, in conjunction with existing reserves and the unallocated sites policy in the Mineral Sites Plan 2019 the requirements of Policy AS1 of the Minerals Strategy can be met. It was calculated that in order to meet the provision of sand and gravel from 2019 to 2034, at least 10.69 million tonnes would have to be provided for through new allocations. The allocated sites in the Mineral Sites Plan provide for approximately 17 million tonnes. The process for developing new sites is market driven, and relies on the private sector making the necessary applications.

Imports

- 5.7. The AMS 2019 survey indicates that Dorset is largely self-sufficient in land-won sand and gravel, but does import from Devon (up to approximately 70,000 tonnes), from Hampshire (up to approximately 140,000 tonnes) and from BCP Council (the latter would comprise aggregates from Hurn Court Farm Extension travelling into Dorset). Although not recorded in this survey, it is expected that BCP would (in addition to production from Hurn Court Farm Extension) also import sand and gravel from quarries Dorset, and it is expected from Hampshire as well (particularly when Roeshot in Hampshire begins production).

6. Monitoring Separate Poole Formation and River Terrace Aggregate Landbanks

- 6.1. As required by Policy AS2 of the Minerals Strategy 2014 the Mineral Planning Authority monitors separate landbanks for Poole Formation and River Terrace aggregate. This is done through monitoring sales from quarries which produce primarily one type of aggregate or the other.
- 6.2. As shown in **Table 3**, at the end of 2021 reserves of Poole Formation were 6.4 mt and River Terrace were 4.8 mt. Approximately 0.85 mt of Poole Formation sand (68% of total sales), and approximately 0.39 mt of River Terrace (32% of total sales) aggregate, were sold in 2021.
- 6.3. The ten year average sales figures from 2012 to 2021 are 0.89 mtpa for Poole Formation and 0.49 mtpa for River Terrace. If these sales figures are applied to the reserve figures, they indicate that both the Poole Formation and the River Terrace landbank figures are in excess of 7 years.

Poole Formation: 6.4 mt (reserves) / 0.89 mt (10 year average to 2021) = 7.2 years

River Terrace: 4.8 mt (reserves) / 0.49 mt (10 year average to 2021) = 9.8 years

- 6.4. The overall landbank (i.e. Poole Formation and River Terrace combined) is 8.2 years.

7. Trending Changes for Sales, Reserves and Landbanks.

- 7.1. Existing aggregate quarries and other facilities in Bournemouth, Dorset and Poole are set out in **Appendix 1**, with operational quarries shown in **Figure 1**. The overall level of reserves at 31st December 2021 is shown in **Table 3** below.
- 7.2. **Table 3** indicates the trending changes for sales and reserves for sand and gravel and crushed rock over the past 4 years.
- Poole Formation sales rose through to 2020, with a fall in 2021, while reserves showed continued decline. The Poole Formation landbank remained above 7 years at the end of 2021, but is likely to be under 7 years at the present time.
 - River Terrace sales continued to fall, as did reserves. The landbank remains significantly above 7 years
 - The combined River Terrace and Poole Formation landbank has fallen
 - The crushed rock reserves, most of which are on Portland, are estimated and remain well in excess of the 10 year requirement.

Table 3 - Sand and Gravel and Crushed Rock - Sales, Reserves and Landbank Figures

At the end of...

	2018	2019	2020	2021
Poole Formation Sales (tonnes)	705,581	766,488	858,965	846,074
Remaining Poole Formation Reserve (tonnes)	8,958,256	7,566,351	6,927,576	6,360,072
Poole Formation Landbank in years (based on ten-year sales average)	9.43	8.22	7.53	7.15
Poole Formation Landbank in years (based on three-year sales average)	11.79	10.22	8.88	7.76

	2018	2019	2020	2021
River Terrace Sales (tonnes)	488,337	421,088	394,938	391,856
Remaining River Terrace Reserve (tonnes)	5,115,331	5,590,500	5,160,500	4,817,594
River Terrace Landbank in years (based on 10 year average)	10.66	11.18	10.53	9.83
River Terrace Landbank in years (based on 3 year average)	9.84	11.65	12.00	12.04
Total (River Terrace and Poole Formation) Aggregate Sales (tonnes)	1,193,918	1,187,576	1,253,903	1,237,930
Remaining River Terrace and Poole Formation Reserve (tonnes)	14,073,587	13,156,851	12,088,076	11,177,666
River Terrace and Poole Formation Landbank in years (based on 10 year average)	9.84	9.27	8.57	8.1
River Terrace and Poole Formation Landbank in years (based on 3 year average)	10.9	10.78	9.99	9.09
Land-Won Crushed Rock Sales (tonnes)	198,738	213,699	197,375	233,251
Remaining Reserve ² (tonnes)	c. 12,000,000	c.12,000,000	c. 11,750,000	c. 11,500,000
Crushed rock Landbank in years (based on 10 year average)	c.57	c.57	c. 55	c. 55 years
Crushed rock Landbank in years (based on 3 year average)	c.57	c.57	c. 59	c. 55 years

² NB The estimated remaining reserve of land-won crushed rock was re-assessed in 2016 to account for areas where the permission on Portland had been relinquished.

8. Allocated Sites

- 8.1. In addition to supply from current permissions, the Bournemouth, Christchurch, Poole and Dorset Mineral Sites Plan 2019 (MSP) allocated (via Policy MS-1: Production of Sand and Gravel) 7 new sites or extensions, as shown in **Table 3A** below.
- 8.2. The policy states that these sites will be permitted, provided they meet certain criteria. Of these 7 allocations, one (AG3 Tatchell's Quarry Extension) has already been permitted, although to date the permission has not been implemented. No applications have yet been submitted for any of the other allocations.

Table 3A – Mineral Sites Plan 2019 - Status of Aggregates Site Allocations

Site Name	Mineral Type	Commentary
AG1 Great Plantation, Puddletown Road, East Stoke	Approximately 2,000,000 tonnes of primarily Poole Formation sand	No approach made to MPA.
AG2 Roeshot Quarry Extension, Christchurch	Approximately 3,500,000 tonnes of primarily River Terrace aggregate	No approach made to MPA. This site is in two part, one in Hampshire and one in BCP Council – the Hampshire part has recently been given approval, and is being prepared for development. The BCP part will not be considered for development for some years yet.
AG3 Tatchell's Quarry Extension, Wareham	Approximately 330,000 tonnes of sand with some gravel	Permitted but not yet implemented.
AG4 Woodsford Quarry Extension, Woodsford	Approximately 2,100,000 tonnes of primarily River Terrace aggregate	Site under investigation but no formal approach made to MPA.
AG5 Station Road, Moreton	Approximately 3,100,000 tonnes comprising River Terrace and Poole Formation aggregate	Site investigation undertaken but no formal approach made to MPA..
AG6 Hurst Farm, Moreton	Approximately 3,300,000 tonnes comprising River Terrace and Poole Formation aggregate	Site investigation undertaken but no formal approach made to MPA..
AG7 Land at Horton Heath, Horton	Approximately 3,500,000 tonnes comprising primarily Bagshot Sand with some gravel	No approach made to MPA.

- 8.3. In addition, Policy MS-2: Unallocated Sand and Gravel Sites of the MSP refers to permitting unallocated sand and gravel sites provided they meet certain criteria and are located within the Aggregate Resource Blocks designated through Policy AS1 of the Minerals Strategy 2014. No applications under, or expressions of interest about, this policy have yet been received by the Mineral Planning Authority.

9. Supply of aggregate and productive capacity of current sites

- 9.1. A site capacity question is included as part of the Aggregate Monitoring survey to assist in understanding how much any site is (potentially) capable of producing working at full capacity, and this can assist in planning for future demand. The results of this are shown in **Table 4**. Not all operators have responded, but more have responded than did in 2020.

Table 4 – Indicative Productive Capacity

	Sales (2021 - tonnes)	Capacity ³ (tonnes)	Sales as % of capacity
Poole Formation sites	846,070	1,440,000	58.7%
River Terrace sites	391,856	680,000	57.6%
Totals	1,237,930	2,120,000	58.4%

- 9.2. **Table 4** indicates that for land-won aggregate, there is the potential for sales to be higher than currently recorded, with sites currently producing at approximately 60% of capacity.
- 9.3. As noted in **Tables 5** and **13**, there is an existing permission at Avon Common just off the A338, within BCP Council, to the north of Christchurch. It is an implemented permission granted in 2007 that has never yet been worked, with an (expected) permitted reserve of some 1.8 mt of River Terrace aggregate. As a permitted reserve it comprises part of the landbank and the MPA expect that it will at some point be worked.
- 9.4. The Avon Common reserve figure tends to mask the fact that supply of River Terrace aggregate within central and south-eastern Dorset and in BCP relies on Woodsford Quarry to the east of Dorchester and Hurn Court Farm at Parley adjacent to Bournemouth Airport – together with imports from Hampshire. Within Dorset there are only these two quarries supplying River Terrace aggregate. Chard Junction Quarry is almost exhausted and unless the appeal into the refusal of permission for an extension is granted then it will cease production in 2022.

³ NB: Not all operators have returned figures, so there is at present no complete knowledge of capacity – actual capacity will be higher than the figures recorded in Table 4

- 9.5. Should any of these sites for some reason cease production it is expected that supply chains would adjust, and demand would be met from other quarries, including from quarries around Dorset/BCP. This could in some cases require significantly longer transportation distances. There would likely be a period of time when Dorset/BCP were not meeting the expected annual supply rate.
- 9.6. The site allocations in the Mineral Sites Plan 2019 include both Poole Formation and River Terrace producing sites. The Mineral Planning Authority is satisfied that there is adequate provision for new aggregate supply through site allocations in the Mineral Sites Plan 2019 and the unallocated sites policy.
- 9.7. However, it is impossible to predict when any of these allocations will be developed. The sites are all in private ownership, and market forces will dictate when applications come forward for the development and working of these sites. There is no certainty that any allocation will actually be approved for development following the rigorous assessment process of a planning application. A decreasing landbank should encourage applications. The fact that the landbank is above 7 years will not preclude such applications.

10. Crushed rock landbank

- 10.1. As set out in **Table 3** above, the crushed rock landbank remains around 11,500,000 tonnes or around 55 years, both figures being only an estimate.
- 10.2. Most of Dorset's crushed rock reserve is on the Isle of Portland. However, there are no specific crushed rock quarries on Portland – they are all dimension stone quarries, and the main business of the two stone companies operating on Portland is dimension stone. Material such as unwanted offcuts and quarry/mining waste is crushed and sold as aggregate or armourstone. In addition, a layer of cherty stone underlying the dimension stone can potentially be extracted and crushed and sold as aggregate from some sites.
- 10.3. The majority of Portland is quarried under a permission granted in 1951 with few conditions. There is no specific, permitted amount of crushed rock reserve that can be clearly identified and quantified. The landbank for crushed rock is therefore an estimate and can vary.
- 10.4. The 2018, 2019, 2020 and 2021 estimates of stone with potential to be crushed as set out in **Table 3** take a realistic view, accounting for other development on Portland that has reduced the availability of stone. This includes where underground mines have been permitted within the 1951 permission and where buffer zones restricting minerals development have been implemented around new housing developments within or close to the 1951 permission. It also takes into account other areas within the 1951 permission that have been relinquished or revoked.
- 10.5. The only other crushed rock quarry in Dorset is Swanworth Quarry in Purbeck, with very limited stone reserves. As mentioned, an extension is allocated in the Mineral Sites Plan 2019. An application for extension is being determined.

11. Aggregate Supply from other Mineral Planning Authorities

- 11.1. The Aggregates Monitoring survey 2014 indicated that Dorset (Bournemouth, Dorset and Poole) consumed approximately 730,000 tonnes of sand and gravel⁴ of which approximately 80%-90% was produced in Dorset and 10%-20% was imported from Hampshire, with very small amounts from other mineral planning authorities, including Devon and Wiltshire.
- 11.2. This was updated by the 2019 AM survey, which showed that a similar amount of sand and gravel (727,000 tonnes⁵) was consumed in Dorset (which is taken to include Bournemouth, Christchurch and Poole). However, the main difference with this survey is the fact that in April 2019 Christchurch Borough became part of BCP Council. There is one active sand and gravel site in BCP Council, which supplies aggregate to both Dorset Council and BCP Council. Devon CC and Hampshire CC were the other neighbouring MPAs which supplied sand and gravel to Dorset Council.
- 11.3. Of the 727,000 tonnes of sand and gravel consumed in Dorset, **Table 4A** below shows the source MPAs and approximate amounts supplied:

Table 4A – Sand and Gravel Supply Sources

Source MPA	% supply	Tonnes
BCP Council	10 – 20 %	72,700 - 145,400
Devon County Council	1 - 10 %	7,270 - 72,700
Dorset Council	70 – 80 %	508,900 - 581,600
Hampshire County Council	10 – 20 %	72,700 - 145,400
Other	< 5 %	c. 36,350

⁴ Information provided by the British Geological Survey – from 2014 AM survey.

⁵ Also from the British Geological Survey – 2019 AM survey.

- 11.4. The 2019 AM survey also indicated that Dorset (with BCP) consumed approximately 287,000 tonnes of crushed rock. **Table 4B** shows the source MPAs and approximate amounts supplied:

Table 4B – Crushed Rock Supply Sources

Source MPA	% supply	Tonnes
Devon County Council	1 - 10 %	2,870 – 28,700
Dorset Council	40 - 50 %	114,800 – 143,500
North Somerset	1 - 10 %	2,870 – 28,700
Somerset County Council	40 - 50 %	114,800 – 143,500
Leicestershire County Council	1 - 10 %	2,870 – 28,700
Powys	1 - 10 %	2,870 – 28,700
Other	< 5 %	c. 5,700

- 11.5. The British Geological Survey (BGS) do not indicate the amount of sand and gravel (or crushed rock) consumed in BCP or where it came from. However, source MPAs to BCP would primarily be Dorset Council and Hampshire County Council. The supply from Hampshire is expected to be maintained, with two site allocations identified in the Hampshire Minerals and Waste Plan 2013 (Purple Haze at Verwood and Roeshot at Christchurch - the latter recently permitted and an application currently being determined for the former) being immediately adjacent to Dorset. It is expected that these sites, should both be permitted, will provide a significant local supply of aggregate to Dorset and BCP Councils.

12. Quarries in Dorset

12.1. Table 5 below lists the sand and gravel quarries in Dorset, showing the end-dates for the permissions.

Table 5 – Permitted Sand and Gravel Quarries in 2021

Name of Quarry	Operator	(Predominant) Aggregate Type produced	End of Permission
Binnegar Quarry	Raymond Brown	Poole Formation sand	31.12.2030
Dorey's Pit	Holme Estate	Poole Formation sand	30.09.2026
Hines	Hanson	Poole Formation sand	30.05.2021 (application for extension of time to 30.05.2023 is currently being determined)
Hyde	Hanson	Poole Formation sand	22.02.2042
Masters North and South	Holme Sand & Ballast	Poole Formation sand	When mineral deposit is extracted or by 31.12.2032, whichever is sooner.
Tatchell's Quarry,	Aggregate Industries	Poole Formation sand	21.02.2042
Tatchell's Baggs Land	Aggregate Industries	Poole Formation sand and some flinty gravel	7 years from date development commences
Trigon Hill	Landowner	Poole Formation sand	15 years from start of further working – ball clay only ⁶

⁶ The working area at Trigon Hill has been extended, along with end-date for working and is now 15 years from start of further working – however, this applies to ball clay working only and aggregate extraction has ceased, although some aggregate is still sold from stockpiles.

Name of Quarry	Operator	(Predominant) Aggregate Type produced	End of Permission
Henbury Pit	M B Wilkes	Poole Formation sand	21.02.2042
Redman's Quarry	Redman's Sand Ltd	Bagshot sands	31.12.2024
Redbridge Road Quarry	G Crook & Sons	River Terrace sand and gravel	Mineral working to cease by 31.12.2021
Chard Junction Quarry	Aggregate Industries	River Terrace sand and gravel	31.03.2023
Woodsford Quarry	Hills Quarry Products	River Terrace sand and gravel	2028
Avon Common ⁷	Tarmac	River Terrace sand and gravel	11 years from commencement of sales of sand and gravel – extraction has not begun although permission has been implemented
Hurn Court Farm (BCP Council)	New Milton Sand & Ballast	River Terrace sand and gravel	26.09.2019 - extension to 2031 granted for use of plant and final restoration
Hurn Court Farm Extension (BCP Council)	New Milton Sand & Ballast	River Terrace sand and gravel	2031

13. Other Sources of Aggregate Supply for Dorset

13.1. In addition to land-won aggregate, there are other sources of aggregate that Dorset and BCP can rely on, including:

- marine dredged aggregate – sand and gravel dredged from the licensed dredging areas off the south coast
- recycled aggregate – aggregate recycled from the processing of construction, demolition and excavation waste (CDEW), at either fixed processing sites or at construction sites

⁷ Permission has been implemented, but no further development to date

13.2. Secondary aggregates, materials produced as industrial by-products such as foundry sand or crushed glass, are not currently produced in Dorset or BCP. In the past, spent foundry sand has been imported into Poole for use at the asphalt plant there, but none was imported in 2021. Secondary aggregates can also be by-products of other mineral extraction as in the case of the sand removed to access underlying ball clay. However, in Dorset sand from this source is included with primary aggregate and is not recorded separately. The following analysis reviews recent levels of supply of marine dredged and recycled aggregate and considers the likelihood of their supply being maintained.

14. Marine Dredged Aggregate

14.1. Marine dredged sand and gravel is extracted from the sea bed from licensed areas. Along the south coast, these include areas off the coast of Hampshire, the Isle of Wight and West Sussex. These deposits of marine aggregate (sand and gravel) are considered to be fluvial, fluvio-glacial, or beach deposits formed during glacial episodes within the last 2 million years when sea levels were lower. Mineral rights for marine sand and gravel are owned by the Crown Estate, and extraction can only take place following the award of a marine licence by the Marine Management Organisation.

Poole Wharf

14.2. The only wharf currently landing marine dredged aggregates is Poole Wharf, operated by CEMEX in the Port of Poole. Landings were formerly relatively constant at between 80,000 and 100,000 tonnes per annum, but this figure decreased to a low in 2018. Imports have since risen steadily in recent years, with over 100,000 tonnes landed in 2021. The ten year average and three year average of marine aggregate landings are approximately 80,000 and 90,000 tonnes per annum, respectively.

Table 6 – Summary of Marine Dredged Aggregate Landings (mt)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	10 YEAR AVERAGE	3 YEAR AVERAGE
Marine Dredged Sand and Gravel - Landings @ Poole Wharf	0.09	0.09	0.08	0.09	0.07	0.07	0.06	0.07	0.08	0.10	0.08	0.09

14.3. Marine aggregate makes a relatively small contribution to the supply of aggregate in Dorset (approximately 5% in 2021) and much of what is landed is likely to be used within the Poole/Bournemouth/Christchurch conurbation. In 2014, approximately 70% of marine dredged sand and gravel landed was consumed within Dorset (including Poole/Bournemouth). In 2019, this figure was 90-100%. The marine aggregate landed at Poole Wharf is from the South Coast dredging region. The Crown Estate produces a Marine Aggregates Annual Capability and Portfolio report⁸ and **Figures 3** and **4** below are taken from this report. **Figure 3** illustrates where the licenced dredging areas closest to Dorset are, and where marine dredged aggregate is taken to. **Figure 4** shows the resource and reserves.

⁸ <https://www.thecrownestate.co.uk/media/3945/2021-capability-portfolio-report.pdf>

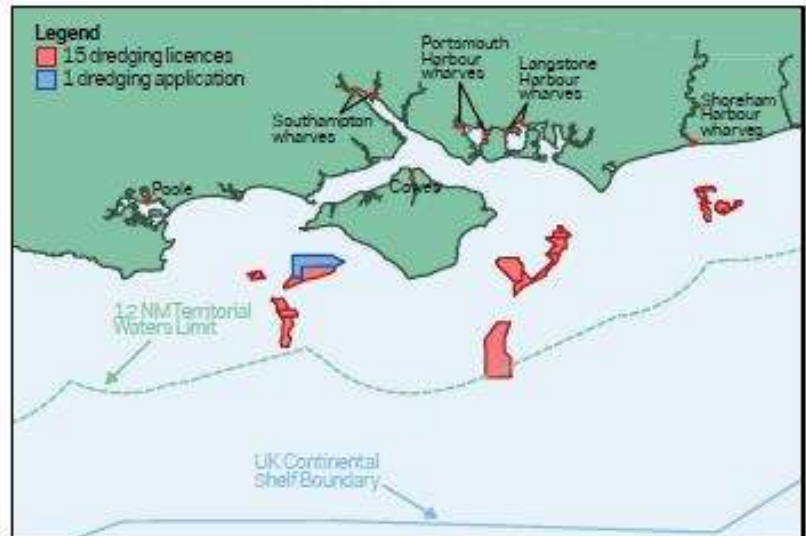
Figure 3 - Marine Dredged Aggregate – South Coast Region⁹

The South Coast region

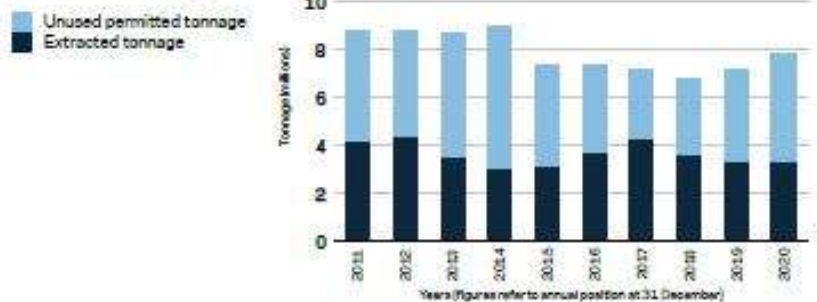
7.83
million tonnes can be extracted from **15** licences annually

24
Current estimates suggest there are **24** years of primary marine aggregate production permitted

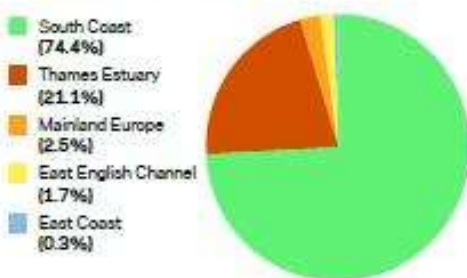
1
application for a licence could, if approved, increase the permitted tonnage by **0.3** million tonnes



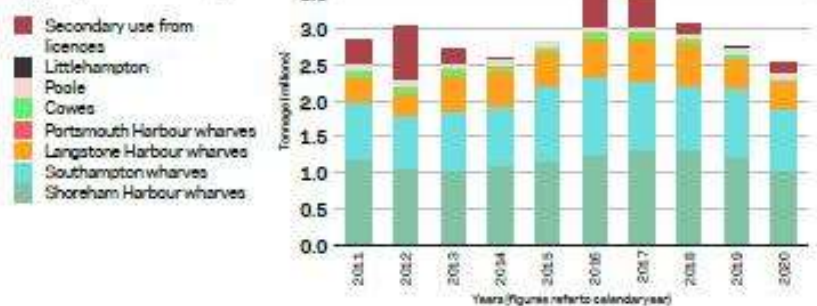
Permitted and extracted tonnage



During 2020 material extracted from the region was delivered to:



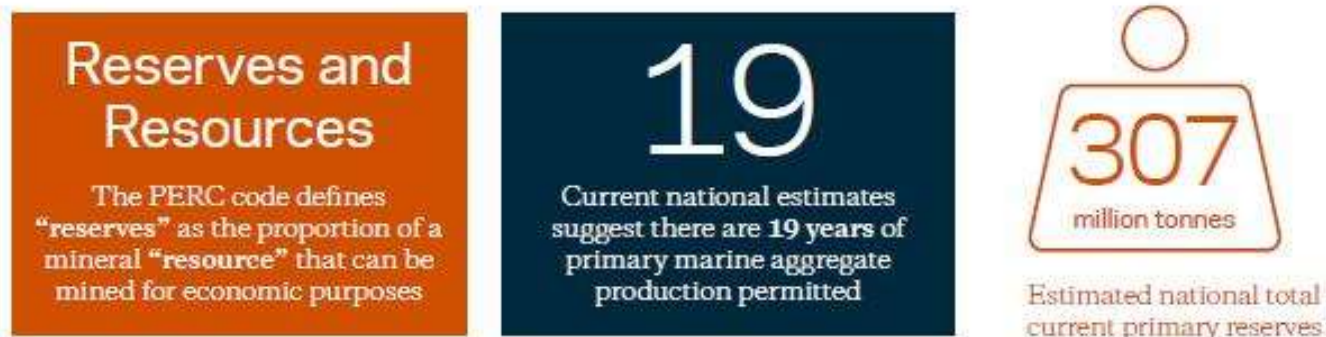
Delivery of marine aggregate to the region



⁹ Marine Aggregates – Capability and Portfolio 2021: Crown Estate 2021

Figure 4 – Reserves and Reserve Life¹⁰

Reserves and resources



Region	Total current primary reserves	10-year average annual offtake	3-year average annual offtake*	Peak annual offtake during 10-year period*	Annual permitted offtake (as July 2021)	Regional reserve life at 10-year average annual offtake
		Primary (construction aggregate)				
Humber	46.17	2.11	3.27	3.52	6.98	21.90
East Coast	48.95	4.21	3.73	5.28	7.08	11.64
Thames Estuary	30.78	1.28	1.48	1.94	3.80	24.03
East English Channel	56.52	3.96	4.15	4.65	9.17	14.27
South Coast	79.73	3.38	3.32	3.92	7.83	23.60
South West	34.64	1.18	1.31	1.38	2.75	29.46
North West	9.81	0.28	0.22	0.38	1.10	35.16
Total	306.60	16.39	17.47	18.10	38.71	18.71

All figures are in millions of tonnes
*Totals are national averages and peaks, not the sum of regional figures

¹⁰ Marine Aggregates – Capability and Portfolio 2021: Crown Estate 2021

Constraints and Future Supply

- 14.4. The main constraints affecting future supply are the amount and availability of licensed areas for dredging and the capacity of the wharf to handle the material landed. As the Poole wharf is a relatively small wharf, capacity is limited. The wharf is safeguarded through the Bournemouth, Dorset and Poole Minerals Strategy (2014) and the Bournemouth, Christchurch, Poole and Dorset Mineral Sites Plan 2019. It has no planning restrictions regarding imports of aggregate. Capacity is influenced by factors such as the size and availability of dredgers, the permitted rates of dredging and then the capacity of the wharf to handle dredgers and the navigational restrictions.
- 14.5. Industry notes that while the wharf in Poole Harbour has some constraints (related to access to the berth, which requires supplying vessels to 'book in'), this is not believed to represent a constraint that limits the supply to the historic levels of around 90,000 tonnes. Instead, the level of supply provided relates to the scale of market demand that exists for marine products, compared to the wider portfolio of supply options. If the market demand altered or the balance of the supply portfolio changed, marine supplies could potentially play a larger role if required. It is understood from the operator that there is the potential for further tonnage to be landed should the market demand exist.
- 14.6. As shown in **Figure 4**, the Marine Aggregates Capability and Portfolio Report 2021 (Crown Estate) indicates that for the South Coast area, the total current primary reserves (the current licensed production areas) are 79.73 mt, with a 10-year annual average offtake of 3.38 mt. This equates to a land bank of 23.6 years, indicating that a continuation of supply (or even an increase, should the need arise) is expected to be possible from this source.

15. Recycled Aggregates

- 15.1. Recycled aggregates are usually construction, demolition and excavation (CDE) wastes such as brick, concrete, soils and sub-soils and road planings which can be re-used as aggregate, usually after some form of processing. This processing can include screening, sorting, crushing, washing or blending with land-won aggregate. Processing generally takes place either at fixed recycling sites (including at quarries) where the product is sold on the open market; or at temporary, mobile plant sites (e.g. construction sites), where the demolition or extraction waste is processed and either re-used on site or sold.
- 15.2. Recycled aggregates reduce the demand for land-won or marine aggregate and have a range of uses, including bulk fill for construction projects or as base layers for roads and other built development. When recycled aggregate is blended with land won material, as referred to earlier, the resultant 'hybrid' material can be used for higher specification applications.
- 15.3. Sales in 2021 were approximately 475,093 tonnes, an increase over the previous year. The ten year average of sales is approximately 380,000 tonnes per annum and the three year average is approximately 490,000 tonnes. After the unusually high figure of 2019 and following drop in production, the 2021 shows a continuing general increasing trend. Some figures for 2014 - 2017 are estimated, due to lack of returns from some operators.

Table 7 – Summary of Recycled Aggregate Sales (mt)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	10 YEAR AVERAGE	3 YEAR AVERAGE
Recycled aggregates	0.32	0.30	0.32	0.33	0.35	0.37	0.39	0.59	0.39	0.48	0.38	0.49

- 15.4. In addition to these fixed recycling sites it is expected that a significant amount of recycled aggregate is produced at development/construction sites, using mobile crushing/processing plant. It is difficult to estimate how much this might be. Paragraph 4.31 of the *Survey of Arisings and Use of Alternatives to Primary Aggregates*¹¹ suggests that of the total sales of recycled aggregate, some 80% is derived from fixed sites with an additional 20% from construction sites.
- 15.5. Given that this report is dated 2007, it may be that the proportion from mobile plant is now even higher as plant efficiency increases. Applying an 80/20 split to the 2021 sales, actual production in 2021 could have been as high as approximately 594,000 tonnes.
- 15.6. In 2021 there were 13 known fixed aggregate recycling sites, as illustrated in **Figure 5** and **Table 8**.

11 Capita Symonds Ltd, in association with WRc plc. February 2007, Department for Communities and Local Government : London

Figure 5 – Fixed Recycling Facilities 2021



Table 8 - Recycled Aggregate Sites and Operators

Ref No	Site Name	Site Operator	MPA	End Date
DC1	Downend Farm, Blandford Forum	Mark Farwell Plant Hire Ltd	Dorset Council	Permanent
DC2	Spratley Wood, Puddletown Road	Mr P Andrews	Dorset Council	30 September 2032
DC3	Redbridge Road Quarry, Moreton	G Crook & Sons	Dorset Council	31 December, 2022
DC4	Masters Quarry, Puddletown Road	New Milton Sand & Ballast	Dorset Council	31 December 2032
DC5	Henbury Quarry, Wimborne	MB Wilkes Ltd	Dorset Council	...
DC6	Henbury Allasso, Wimborne	Allasso	Dorset Council	Permanent
DC7	Swanworth Quarry, Purbeck	J Suttle Transport	Dorset Council	26 June 2024
DC8	Kings Stag Mill, Sturminster Newton	R B Snook Ltd and Sturminster Building Supplies	Dorset Council	Permanent
DC9	Rogers Concrete Yard, Puddletown Road	The Waste Group Ltd.	Dorset Council	Permanent
DC10	Broadcroft Quarry	Portland Stone Ltd	Dorset Council	31 December 2028
BCP1	Whites Pit Landfill Recycling Site	Commercial Recycling Ltd	BCP Council	Permanent
BCP2	Canford Recycled Aggregates Washing Plant	Commercial Recycling Ltd	BCP Council	Permanent
BCP3	Manning's Heath Depot (Haymoor Bottom), Manning's Heath	J Suttle Transport	BCP Council	31 December 2022
BCP4	Parley Composting and Parley Road Sweepings, Chapel Lane, Parley, Christchurch	Eco Sustainable Solutions	BCP Council	Permanent

Capacity, Constraints and Future Supply

15.7. The total permitted capacity for aggregate recycling production is approximately 940,000 tonnes¹², above the level of current or average sales. Existing recycling sites potentially have capacity to increase sales in response to demand, should this be required. Constraints to increasing sales include:

- availability of material to be recycled
- distance from source materials for recycling
- distance from markets for recycled aggregate, and

¹² Bournemouth, Dorset & Poole Minerals Strategy (2014)

- loss of aggregate recycling sites through site closure or ending of temporary planning permission without renewal or being made permanent.
- 15.8. Demand will be affected by the limited range of applications of the product, the availability/price of other sources of aggregate and whether recycled aggregate would be technically suitable for specific needs. As the 2014 Minerals Strategy encourages increased sales and permitted capacity far exceeds current supply, it is expected that supply will increase as dictated by market demand and subject to availability of material to be recycled.

16. Uses of Dorset's Aggregate Resource

- 16.1. Aggregates have a range of uses in construction, with Dorset's aggregates being primarily for concrete, road construction and road maintenance (including asphalt making). Other uses include constructional fill and armourstone (crushed rock). The physical properties of some aggregates (e.g. strength, shape) make them more suitable for some uses than others – for example, most Dorset limestone is relatively soft and not suitable for road construction or concrete manufacture.
- 16.2. The Aggregates Monitoring Survey for 2014 showed that:
- for Dorset's land-won sand and gravel, the main uses are sand for concreting (54%) with gravel for concrete (17%) and sand for use in mortar (14%)
 - for Dorset's crushed rock, the main uses are other screened and graded aggregates (51%) and Type 1 and 2 uncoated roadstone (34%)
 - marine dredged aggregate was primarily used as sand or gravel for concreting, mostly within Dorset but also elsewhere in the South-West.
- 16.3. AMS 2019 shows that:
- For local land-won sand and gravel, concreting (sharp) sand, gravel for concrete and soft sand for use in mortar remain the main construction aggregate uses for local land-won sand and gravel, in generally similar proportions
 - 8% of sales went for non-aggregate use, e.g. animal bedding
 - for crushed rock, not all sales returns were allocated to specific uses. However, of those that were, almost twice as much Type 1 and 2 Uncoated Roadstone was sold as was Other Screened and Graded Aggregates
 - marine dredged aggregate was again primarily used for concrete, and other construction uses; most of the material landed in Poole remained in Dorset/BCP with a small amount exported to Hampshire

17. Exports from Dorset

- 17.1. This section of the report considers movement of aggregates, including movements between Dorset and other mineral planning authorities, as informed by the 2019 Aggregates Monitoring survey.
- 17.2. **Table 9** shows that of the locally produced land-won sand and gravel sold in 2019, 58.2% was consumed in Dorset; 19.1% was exported to Dorset's immediate neighbours, 21% was exported to the rest of the south west and 0.9% was exported outside of the south-west (excluding Hampshire, which was included as one of Dorset's neighbours). Comparing this to **Table 10**, the results of the AM2014 survey, shows decreased sales generally along with relatively lower exports to Dorset's immediate neighbours and outside the south-west, with a higher proportion of exports to the south west apart from Devon, Somerset and Wiltshire.
- 17.3. For crushed rock and to a lesser extent marine dredged sand and gravel (**Tables 11 to 14**), a much higher proportion of what is produced in Dorset remains in Dorset. This is particularly true for crushed rock, with 95% of local production remaining within Dorset - the Jurassic limestone produced in Dorset is relatively soft and is used for lower specification uses. It does not travel far.

Table 9 – Destination of Land-Won sand and gravel aggregate sales from Dorset in 2019 (AM 2019)

	Total Sales	Dorset	Hampshire, Wiltshire, Somerset and Devon	Rest of South West	Outside South West (excluding Hampshire)
mt	1.1	0.64	0.21	0.23	0.01
%	100%	58.2%	19.1%	21%	0.9%

Figures in million tonnes (mt)

Table 10 – Destination of Land-Won sand and gravel aggregate sales from Dorset in 2014 (AM 2014)

	Total Sales	Dorset	Hampshire, Wiltshire, Somerset and Devon	Rest of South West	Outside South West (excluding Hampshire)
mt	1.73	0.86	0.58	0.15	0.15
%	100%	49.4%	33.6%	8.5%	8.5%

Figures in million tonnes (mt)

Table 11 – Destination of Crushed Rock aggregate sales from Dorset in 2019 (AM 2019)

	Total Sales	Dorset	Hampshire, Wiltshire, Somerset and Devon	Rest of South West	Outside South West (excluding Hampshire)
mt	0.21	0.20		0.01	
%	100%	95%		4.8%	

Figures in million tonnes (mt)

Table 12 – Destination of Crushed Rock aggregate sales from Dorset in 2014 (AM 2014)

	Total Sales	Dorset	Hampshire, Wiltshire, Somerset and Devon Rest of South West	Outside South West	Outside South West (excluding Hampshire)
mt	0.28	0.27		0.008	
%	100%	97.2%		2.8%	

Figures in million tonnes (mt)

Table 13 – Destination of Marine Dredged aggregate from Dorset in 2019 (AM 2019)

	Total Sales	Dorset	Hampshire, Wiltshire, Somerset and Devon	Rest of South West	Outside South West (excluding Hampshire)
mt	0.07	0.06	0.01	0	0
%	100%	85.7%	14.3%	0	0

Table 14 – Destination of Marine Dredged aggregate from Dorset in 2014 (AM 2014)

	Total Sales	Dorset	Hampshire, Wiltshire, Somerset and Devon	Rest of South West	Outside South West (excluding Hampshire)
mt	0.93	0.67	0.02	0.26	0
%	100%	72%	0.2%	28%	0

Figures in million tonnes (mt)

18. Consumption within Dorset

18.1. The AM2014 report along with additional material made available by the British Geological Survey¹³ shows that in 2014, Dorset consumed:

- approximately 732,000 tonnes of land-won sand and gravel - some 80-90% of this was produced within Dorset, with 10% to 20% coming in from Hampshire. Dorset is largely self-sufficient in land-won sand and gravel, and it is expected that the imports from Hampshire are supplying those areas close to the county boundary
- approximately 68,000 tonnes of marine dredged sand and gravel – the majority of which was landed in Dorset (Poole) with the rest imported from Hampshire, and
- approximately 531,000 tonnes of crushed rock, of which approximately 50% was produced in Dorset and 50% imported from Somerset

18.2. For AM2019¹⁴, the corresponding figures show that in 2019 Dorset consumed:

- approximately 727,000 tonnes of sand and gravel, with the majority (70-80%) produced in Dorset, 10-20% imported from Hampshire and 1-10% imported from Devon

¹³ AM2014 source of primary aggregates by sub-region – percent categories (British Geological Survey, 2016)

¹⁴ AM2019 source of primary aggregates by sub-region (British Geological Survey, 2021)

- approximately 59,000 tonnes of marine dredged sand and gravel, the majority landed in Dorset and relatively small amounts imported from Hampshire and/or Southampton
- approximately 287,000 tonnes of crushed rock, with up to 50% produced in Dorset, up to 50% imported from Somerset and relatively small amounts imported from Devon, North Somerset and Leicestershire.

19. Future Demand

- 19.1. Aggregates are primarily used in construction of new infrastructure and other built development, along with the maintenance of existing infrastructure. Future demand for aggregates will therefore be influenced by future levels of construction activity, including new development and maintenance of existing infrastructure.
- 19.2. Dorset is affected by demand both within and outside of Dorset Council and BCP Council. Overall land-won sand and gravel sales for the south west sub-national area have generally declined since 2001, while sales have been more steady for Dorset itself (**Table 15** below). The reason for this, compared with the fall outside of Dorset, is not clear but could be due to various factors including the fact that Dorset is a supplier of aggregate (particularly Poole Formation sand) to other parts of the country such as south-east England, including London, and elsewhere in the south west.

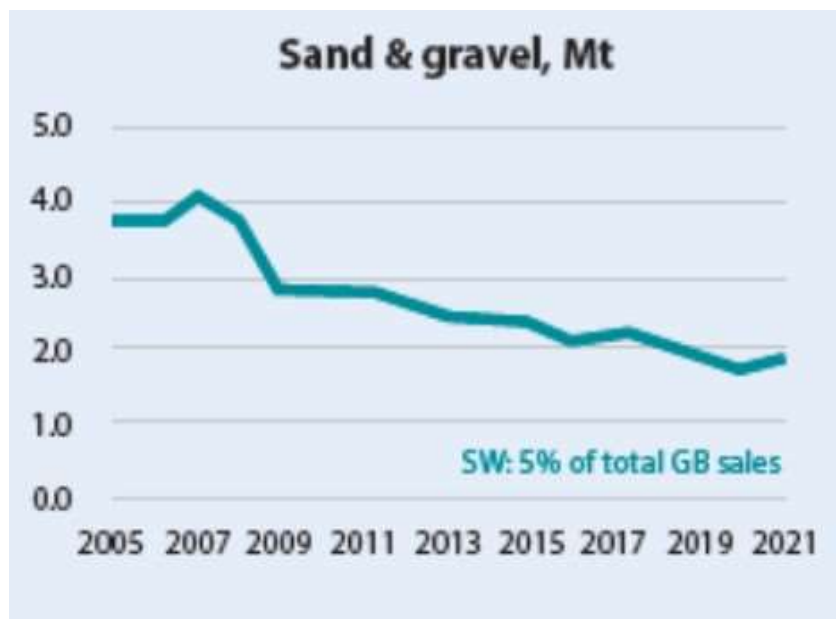
Table 15 – Land-won sand and gravel sales – Dorset and South-West compared¹⁵

Year	Land-won sand and gravel sales – Dorset	Land-won sand and gravel sales – South West AWP
2001	1,605,000 tonnes	5,604,000 tonnes
2005	1,684,000 tonnes	4,603,000 tonnes
2009	1,273,000 tonnes	3,152,000 tonnes
2014	1,605,000 tonnes	3,278,000 tonnes
2019	1,090,000 tonnes	2,870,000 tonnes

¹⁵ Collation of the results of the 2001 Aggregate Mineral Survey for England and Wales (Prepared by British Geological Survey on behalf of ODPM 2001). Similarly for the 2005, 2009, 2014 and 2019 reports, though these were commissioned by Department for Communities and Local Government.

- 19.3. The Mineral Products Association publication *Regional overview and forecasts of construction and mineral products markets in Great Britain - Spring 2022*¹⁶ illustrates a number of years of declining sand and gravel sales in the south-west, with signs of a recent upturn in sales, as illustrated in **Figure 5 A**.

Figure 5 A – Trends in Sales of Sand and Gravel in the South-West



- 19.4. The Construction Products Association, in its report '*Construction Industry Scenarios 2021 - 2022*¹⁷' predicted that construction output will rise by 14% in 2021, and again by 4.9% in 2022 as the industry continues to recover from covid induced restrictions.
- 19.5. In its 2022 *Regional Overview and Forecasts of Construction and Mineral Products Markets in Great Britain*¹⁸, the Mineral Products Association noted that construction activity in Great Britain was above pre-Covid levels by the end of 2021, and output rose a record 12.7% above 2020 levels. Construction output is

¹⁶ Mineral Products Association, (2022). *Regional Overview and Forecasts of Construction and Mineral Products Markets in Great Britain* [online]. Available at: https://www.mineralproducts.org/MPA/media/root/Publications/2022/Regional_overview_and_forecasts_markets_in_GB_Spring22.pdf

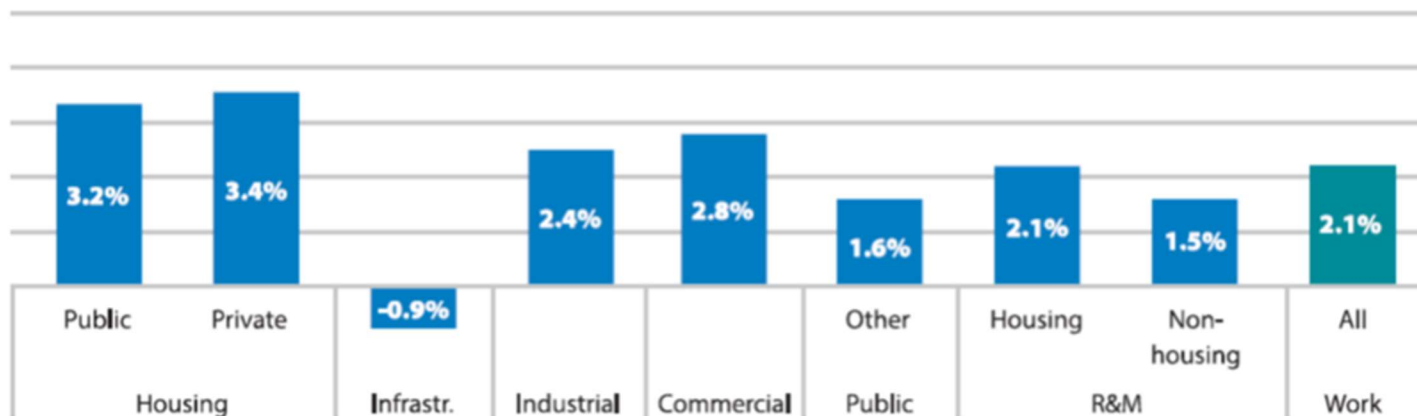
¹⁷ Construction Products Association, (2021). *Construction Industry Scenarios - Winter 2020/21* [online]. Available at: Available at: <https://www.constructionproducts.org.uk/publications/economics/construction-industry-forecasts/construction-industryscenarios-winter-20201/>

¹⁸ Mineral Products Association, (2022). *Regional Overview and Forecasts of Construction and Mineral Products Markets in Great Britain* [online]. Available at: https://www.mineralproducts.org/MPA/media/root/Publications/2022/Regional_overview_and_forecasts_markets_in_GB_Spring22.pdf

also predicted to rise by 4.3% in 2022 and 2.5% in 2023. **Figure 5 B** below illustrates other construction forecasts for the South West, showing (with one exception) general increases in construction output forecast.

Figure 5B – Construction Output Forecasts for the South-West

Annual average construction output growth by sector: 2022-25 forecast (source: CITB)



- 19.6. To understand the wider demand for aggregates, based on construction, the National Infrastructure Delivery Plan 2016-2021 (NIDP) has been considered. This provides a strategic overview of UK infrastructure investment to 2020-21. No projects likely to affect Dorset Council/BCP Council were identified.
- 19.7. Finally, analysis of the list of 300 'shovel ready' projects¹⁹ given funding by the Government in August 2020 does not reveal any that would necessarily result in any significant increase in the demand for aggregate in Dorset Council/BCP Council

Planned built development.

- 19.8. To help assess the future demand for aggregates this section looks at housing numbers in the sub region. Housing, with associated infrastructure, is a significant user of the county's aggregates. **Table 16** below shows the levels of housing development that are planned for in adopted plans. Although the plans cover different time periods they give a good indication of the levels of housing development anticipated over the next 5 to 10 years.

¹⁹ Ministry for Housing, Communities and Local Government and Ministry for Business, Energy and Industrial Strategy, (2020). £1.3 Billion Investment to Deliver Homes, Infrastructure and Jobs [online]. Available at: <https://www.gov.uk/government/news/1-3-billion-investment-to-deliver-homes-infrastructure-and-jobs>

Table 16 - Proposed Housing Development in current adopted Local Plans / Development Plan Documents in Bournemouth, Dorset and Poole

Local Authority	Local Plan / DPD	Status	Plan period	Total Proposed dwellings	Annual average rate (dwellings per annum)
Bournemouth Borough Council	Bournemouth Core Strategy	Adopted 2012	2006 – 2026	14,600	730
Borough of Poole	Poole Local Plan	Adopted 2018	2013-2033	14,200	710
Christchurch Borough Council + East Dorset District Council	Christchurch and East Dorset Core Strategy	Adopted 2014	2013 – 2028	8,490	566
North Dorset District Council	North Dorset Local Plan Part 1	Adopted 2016	2011 – 2031	5700	285
Purbeck District Council	Purbeck Local Plan Part 1	Adopted 2012	2006 - 2027	2,520	120
West Dorset District Council + Weymouth and Portland Borough Council	West Dorset, Weymouth and Portland Local Plan	Adopted 2015	2011 – 2031	15,500	775
Bournemouth, Dorset and Poole				61,010	3,186

Source: Dorset County Council Economy and Enterprise - BDP Local Plan/Core Strategy Monitoring. Historic Levels of Development.

- 19.9. **Table 17** shows the historic levels of housing completions in Dorset and Bournemouth/Poole over the 10 years 2011/12 – 2020/21. There was a sharp divide in the level of development pre- and post- 2009 when the housing recession really began to bite. Completions pre 2009 were over 3,000 every year, hitting 3,700 in 2005/6, whereas from 2009/10 they fell below 2000 dwellings per annum, only recovering in 2014/15. For 2015/16, they approached 3,000 completions per annum, however there was a fall in 2016/17 to just over 2000. In 2020/21, completions have again exceeded 3,000 dwellings.
- 19.10. For comparison, figures for annual sand and gravel sales, from 2011 to 2020, have been added to **Table 17**, demonstrating some level of correlation between housing completions and aggregate sales, although there is often a bit of a lag.

Table 17 - Net Annual Completions

Local Authority	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Christchurch	0	0	0	0	0	0	0	0	0	0
East Dorset	107	61	149	163	236	148	319	289	0	0
North Dorset	375	144	227	178	220	142	159	223	0	0
Purbeck	107	79	72	67	232	86	122	73	0	0
West Dorset	376	364	258	251	465	603	421	640	0	0
Weymouth and Portland	169	205	112	148	201	169	212	289	0	0
Dorset Council	1,134	853	818	807	1,354	1,148	1,233	1,514	1,420	1,376
Bournemouth	555	639	394	964	817	337	635	659	0	0
Poole	187	208	257	199	438	591	307	426	0	0
Christchurch	62	71	149	154	125	180	100	187	0	0
BCP Council	804	918	800	1,317	1,380	1,108	1,042	1,272	1,703	790
Totals (BCP/Dorset)	1,939	1,772	1,627	2,141	2,899	2,110	2,270	2,786	3,123	2,166
Sand and gravel sales (mt) 2012 - 2021	1.43	1.6	1.73	1.5	1.39	1.27	1.19	1.19	1.25	1.24

From 'New builds' from 'Live tables on housing supply: net additional dwellings – Table 122'
<https://www.gov.uk/government/statistical-data-sets/live-tables-on-net-supply-of-housing>
 and also supplemented by local authority housing data

19.11. It is noted that published Mineral Products Association data shows that new housing only forms circa 25% of 'construction output' (as a proxy for demand) with repair and maintenance, commercial and infrastructure development forming higher proportions. Continued monitoring will indicate if the increase in demand for aggregate is such that further action is required. Existing reserves and new site allocations remain available to meet demand.

20. Projected development beyond current Plan periods

- 20.1. Although it is not clear what future levels of development will be, it remains a key objective of national planning policy as set out in the National Planning Policy Framework 2021 to 'boost significantly' the supply of housing. Over the period 2009-2019, Dorset's population grew by 14,940, a growth of 4% compared with 8% nationally. Over the period 2019 to 2029 the population is projected to grow by another 4% (16,300) compared to 5% nationally.
- 20.2. Following Local Government Reorganisation, from April 2019 the district/borough, unitary and county authorities making up Bournemouth, Dorset and Poole have been replaced by Dorset Council and Bournemouth Christchurch and Poole Council. Both new authorities have begun preparation of new local plans, although these will not include minerals or waste provision. Until the new plans are adopted, or well on the way to being adopted, the existing plans (**Table 16**) will continue to guide development. There have been no new plan adoptions since the last Local Aggregates Assessment, although the former Purbeck District Council's emerging local plan has undergone examination.
- 20.3. Across the area as a whole, some 3,186 new dwellings are currently planned per annum (**Table 16**). This figure is likely to rise in coming years with the preparation of new Local Plans and the application of the revised approach to determining future housing need.
- 20.4. Both Dorset Council and Bournemouth, Christchurch and Poole Council have begun preparation of new Local Plans to replace the existing Local Plans. Housing requirements are derived from the Government's Standard Methodology and are subject to change as new data is released. For Dorset Council, the Dorset Council Local Plan Consultation January 2021 states that during the Plan period of 2021 to 2038 the Plan will provide for 30,481 dwellings at a rate of 1,793 dwellings per annum.
- 20.5. BCP Council have carried out a consultation on their emerging Draft Plan and as part of this they noted that "*the government's standard methodology for calculating housing need generates a housing need figure for the BCP area of a minimum of 2,667 homes per year, or 42,672 homes to 2038.*" It is considered that there is scope within government policy and guidance to set a locally derived housing need figure when there are exceptional local circumstances which justify an alternative approach to the standard methodology. An alternative model *initially generates a minimum housing need of approximately 1,600 homes a year, or 25,600 homes to 2038.*
 - Dorset Council – estimated future housing provision to 2038: 1,793 dwellings per annum
 - BCP Council – estimated future housing provision to 2038: between 1,600 and 2,667 dwellings per annum
 - Total projected is 3,393 to 4,460 homes per annum, compared to the current 3,186 of adopted plans
- 20.6. Dorset Council's figure is close to previous projections, however the Standard Methodology gives a higher figure for the BCP area. It is therefore possible that some of the housing may need to be located within Dorset Council area. **Table 16** puts the current (from current adopted plans) targets at 3,186 across Dorset/Bournemouth/Poole but the emerging figures for Dorset and BCP are in the vicinity of 3,393 to 4,460 homes per annum, indicative of an increase between 207 to 1,274 homes per annum – in terms of overall aggregate consumption for housing construction, a moderate increase is expected.
- 20.7. It is understood that there are ongoing discussions regarding the most appropriate approach to estimating housing need, and how/where such need should be met.

- 20.8. **Figure 6** compares actual combined Poole Formation and River Terrace sales figures with the Local Aggregates Assessment Rate for the past 10 years. Since 2015 actual sales have been below the ten year average figure, as established by the LAA. For comparison, the proposed figure of 1.97 mtpa for Dorset's sand and gravel apportionment as derived by the former South West Regional Aggregates Working Party, from the *National and regional guidelines for aggregates provision in England 2005-2020* (2009) is also included. Sales have never been this high for over 10 years.
- 20.9. In addition, a line indicating net housing completions for Dorset and BCP together, for the past 10 years, has been included. Despite considerable fluctuations, this shows a steady increase while sales show a steady decrease, with very minor variations relating to fluctuations in completions.

Figure 6 – Comparing Aggregate Sales with Housing Completions

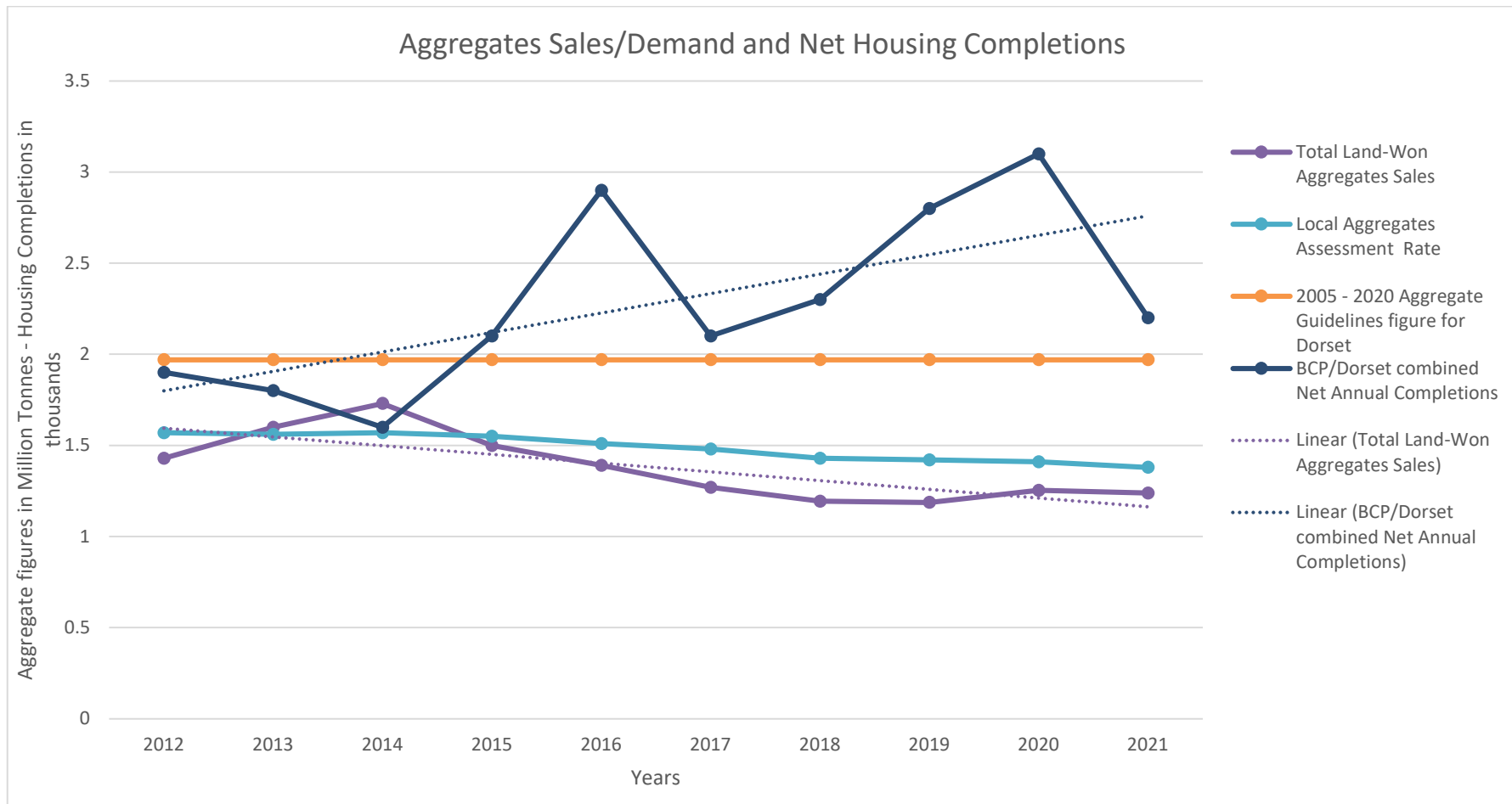


Table 17A – Estimated use of aggregate for house construction – showing estimated % of aggregate sales

Forecast of housing development options	Annual aggregate demand for housing at 60 tonnes per house, excluding supporting infrastructure.	Annual aggregate demand for housing at 200 tonnes per house, excluding supporting infrastructure.	Annual aggregate demand for housing at 400 tonnes per house, excluding supporting infrastructure.
<p>Housing development at average number of completions delivered between 2011/12 and 2020/21 (Table 17):</p> <p>Approximately 1,116 (Dorset Council)</p> <p>Approximately 1,113 (BCP Council)</p> <p>Total: 2,279 completions per annum</p>	<p>Approximately 140,000 tpa</p> <p>Equivalent to:</p> <p>10% of ten year average 2012-21</p> <p>And</p> <p>11% of sales in 2021</p>	<p>Approximately 456,000 tpa</p> <p>Equivalent to:</p> <p>33% of ten year average 2012-21</p> <p>And</p> <p>37% of sales in 2021</p>	<p>Approximately 910,000 tpa</p> <p>Equivalent to:</p> <p>66% of ten year average 2012-21</p> <p>And</p> <p>74% of sales in 2021</p>
<p>Housing development at average number of completions per annum according to adopted plans (for Dorset and BCP combined – Table 16)</p> <p>Total: 3,186 completions</p>	<p>Approximately 192,000 tpa</p> <p>Equivalent to:</p> <p>14% of ten year average 2012-21</p> <p>And</p> <p>16% of sales in 2021</p>	<p>Approximately 637,000 tpa</p> <p>Equivalent to:</p> <p>46% of ten year average 2012-21</p> <p>And</p> <p>51% of sales in 2021</p>	<p>Approximately 1,280,000 tpa</p> <p>Equivalent to:</p> <p>93% of ten year average 2012-21</p> <p>And</p> <p>103% of sales in 2021</p>
<p>Housing development at possible future rates, according to emerging plans – between:</p> <p>3,393 completions per annum...</p>	<p>Approximately 204,000 tpa</p> <p>Equivalent to:</p> <p>15% of ten year average 2012-21</p> <p>and</p> <p>17% of sales in 2021</p>	<p>Approximately 679,000 tpa</p> <p>Equivalent to:</p> <p>49% of ten year average 2012-21</p> <p>and</p> <p>55% of sales in 2021</p>	<p>Approximately 1,357,000 tpa</p> <p>Equivalent to:</p> <p>98% of ten year average 2012-21</p> <p>and</p> <p>109% of sales in 2021</p>

Forecast of housing development options	Annual aggregate demand for housing at 60 tonnes per house, excluding supporting infrastructure.	Annual aggregate demand for housing at 200 tonnes per house, excluding supporting infrastructure.	Annual aggregate demand for housing at 400 tonnes per house, excluding supporting infrastructure.
and 4,460 completions per annum	Approximately 267,600 tpa Equivalent to: 19% of ten year average 2012-21 And 22% of sales in 2021	Approximately 892,000 tpa Equivalent to: 65% of ten year average 2012-21 And 72% of sales in 2021	Approximately 1,784,000 tpa Equivalent to: 129% of ten year average 2012-21 And 144% of sales in 2021

20.10. Construction of a typical new house is estimated to use between 60-200 tonnes of aggregate, or up to 400 tonnes of aggregate when supporting infrastructure, such as access roads, is taken into account^{20,21}. This does not distinguish between use of sand and gravel and crushed rock, and does not include any indication of the likely level of demand for material used in maintaining or refurbishing existing housing stock, but does enable calculations to be made of the likely scale of demand for aggregate for new housing development.

20.11. **Table 17A** above applies these estimates to assess possible aggregate demand associated with new housing, along with both the 10- year sales average of aggregate (sand and gravel) produced in Dorset and the 2021 total consumption of aggregates in Dorset.

20.12. When considering these figures it must be remembered that they are for land-won sand and gravel only, and do not take into account other sources of aggregate e.g. imported crushed rock or land-won crushed rock, imported sand and gravel or recycled aggregates. The chart accompanying **Table 15** indicates an ongoing downward trend, with only small recent signs of increase. Also the emerging plans are at an early stage and the MPA will continue to monitor development estimates as the plan progress. It is expected that that the ten year average of sales, for land-won sand and gravel and crushed rock, will be appropriate for the annual rate for the current Local Aggregates Assessment.

²⁰ The British Geological Survey (2008) report *The need for indigenous aggregates production in England* states that “Each new house built in England requires 60 tonnes of aggregates (three lorry loads). If all roads and utilities are included, the requirement can increase to as much as 400 tonnes of aggregates per house (twenty lorry loads)”, <http://nora.nerc.ac.uk/id/eprint/3711/1/Aggregates - Final Report June 2008.pdf>.

²¹ The Mineral Products Association’s *Profile of the UK Mineral Products Industry - 2020 Edition* (published in 2021) states that a “typical home” uses 12 tonnes of mortar and 200 tonnes of aggregate, https://www.mineralproducts.org/MPA/media/root/Publications/2021/Profile_of_the_UK_Mineral_Products_Industry_2021.pdf

21. Other Potential Future Need for Aggregates

- 21.1. Considering the broad distribution of future development, it is likely that the main focus will be in and around Poole and Bournemouth and the Dorchester-Weymouth corridor. Both the Strategic Economic Plan "Transforming Dorset" prepared by the Dorset Local Enterprise Partnership and the Implementation Plan 2 (2014 – 17) of the *Bournemouth, Dorset and Poole Local Transport Plan 3* highlight potential future infrastructure projects:
- Unlocking the potential of "Aviation Park" at Bournemouth Airport - a 59 hectare site for employment use with the potential to create 16,000 new jobs, by improvements to the A338 Spur Road and other local road improvements, including the Enmore Green link and the Crossways link;
 - Completion of the regeneration of the Port of Poole with the potential to accommodate 5,000 jobs and 2,000 homes by improvements to the highway network to supplement the completion of the Twin Sails Bridge in 2011, including improvements to the port and regeneration area.
 - Dorset Innovation Park with the potential to facilitate 2000 new jobs, 55 new businesses, 58,000 sq. metres of workspace and about £30m of business rate retention which will help improve the site and local infrastructure;
 - Dorset County Hospital reconfiguration;
 - The Visual Impact Provision project in the Dorset Area of Outstanding Natural Beauty (AONB) aims to reduce the visual impact of National Grid's overhead line near the villages of Martinstown and Winterbourne Abbas, south-west of Dorchester - this will require aggregate as bedding/covering for the buried cables
 - Development around the two Universities in Bournemouth and Poole, creation of a Joint Universities Business Campus
 - Investment in the Bournemouth Seafront
 - Cobham Gate Business Park at Ferndown, Dorset
 - Lansdowne Road in Bournemouth – development of a commercial business district
 - Weymouth Town Regeneration
 - Major urban extension of almost 1,000 dwellings north of Christchurch
- 21.2. Elsewhere a major urban extension (1800 dwellings) is proposed in Gillingham in the north of the council area and over 1200 dwellings in and around Wimborne in the east. In the west, Dorchester will be the main focus of development with around 1000 dwellings currently allocated and extensions on the edge of Weymouth will also boost that town's growth by around 1300 dwellings.

22. Maintaining Supply

- 22.1. Minerals can only be worked where they are found and much of Dorset's environment is highly protected and under pressure from a range of other uses/constraints. Environmental designations (including international, national and local), landscape, heritage and other designations (e.g. the World Heritage Site) all restrict minerals development. Similarly, the water environment (including floodplains, Source Protection Zones, aquifers, groundwater depth and geology, Nutrient Neutrality requirements) can also restrict development. Minerals development has the potential to significantly affect settlements and tourism interests, although impacts should be mitigated if the development is properly located, designed and managed. However, the level of settlement and tourist interest in Dorset does have a limiting effect on minerals development.
- 22.2. The ability to deliver the levels of aggregate provision identified in the Minerals Strategy 2014, particularly regarding provision of land-won sand and gravel and crushed rock, has been tested through the preparation of the Mineral Sites Plan. An allocation of sand and gravel sites providing a nominally greater tonnage than will be needed over the life of the plan was tested through Examination and found sound by the Inspector. In order to respond to unforeseen rises in demand for sand and gravel and crushed rock, the 2014 Minerals Strategy will be subject to robust monitoring of all policies so that sales can be related to supply/demand and the effectiveness of the policies at delivering minerals for BDP and surrounding areas can be continuously assessed. The LAA will specifically monitor aggregates sales and landbanks. If monitoring indicates that Policy AS1 is failing to meet demand, this could trigger a review of the Minerals Strategy or the relevant parts of it.

Capacity and Constraints

- 22.3. Individual sites may have limits placed on their working by the planning permission under which they are worked. As with other aggregate sources, sales of sand and gravel are market driven, with increased demand leading to increased supply. In periods of lower economic growth and demand for construction, there will be less development of sand and gravel sites and lower production at such sites.
- 22.4. The landscape and environmental sensitivity of Dorset, and to a lesser extent, Bournemouth and Poole, also set limits on the development of mineral sites. Policy AS1 of the 2014 Minerals Strategy notes that:

Sites will only be considered where it has been demonstrated that possible effects (including those related to hydrology, displacement of recreation, species, proximity, land management and restoration) that might arise from the development would not adversely affect the integrity of the Dorset Heaths SAC, Dorset Heathlands SPA and Dorset Heathland Ramsar site either alone or in combination with other plans or projects.
- 22.5. Ecological, heritage and landscape constraints could act to limit production. A lack of landowners willing to release their land for aggregates development could also be a constraint. In such a case there would need to be a reassessment of the provision for sand and gravel sales but it is not expected that these issues will threaten sales in the near future.

Selection of Aggregates Rate of Supply

- 22.6. This Local Aggregates Assessment has considered aggregate supply over the past 10 years, and specifically for the past year (2021). It has looked at options for future supply and has sought to take into consideration future demand for aggregates, however that may be determined. It is considered that all sources of aggregate (apart from rail imports) demonstrate capacity for some increase in supply, should demand increase.

- 22.7. Although indications are that demand for aggregate will increase to some extent, no sharp increases in demand are expected in the next year. The landbank for sand and gravel remains above 7 years, and the Mineral Sites Plan identifies adequate new sites to maintain production and sales. If for some reason it proves impossible to maintain supply, the strategy for mineral provision will have to be re-visited.
- 22.8. It is therefore considered that it is appropriate to continue to use the 10 year average figure, as set out in this Local Aggregates Assessment, to establish the size of the landbank and level of provision for both sand and gravel and crushed rock.

23. Appendix 1

A.1. Tables 18 to 23 below show the various aggregate producing/handling facilities in Bournemouth, Dorset and Poole, both active and inactive, in 2020.

Table 18 - Land Won Sand and Gravel Quarries – operational in 2021 (see Figure 1 for locations)

MPA	Quarry	Site Operator	Mineral
Dorset Council	Tatchell's Quarry	Aggregate Industries	Sand
Dorset Council	Masters Pit	Holme Sand and Ballast	Sand
Dorset Council	Dorey's Pit	Ball Clay site – worked by Imerys ²²	Gravel
Dorset Council	Binnegar Quarry	Raymond Brown	Sand
Dorset Council	Henbury Quarry	M B Wilkes	Sand
Dorset Council	Trigon Pit	Ball Clay site – worked by Imerys ²³	Primarily Sand, some Gravel – extracted with the ball clay
Dorset Council	Chard Junction Quarry	Aggregate Industries	Sand and Gravel
Dorset Council	Woodsford Quarry	Hills Aggregates	Sand and Gravel
Dorset Council	Redbridge Road Quarry	G Crook and Sons	Sand and Gravel
Dorset Council	Hyde Pit (no extraction currently, processing plant is located here - reserves remain for future working)	Hanson Aggregate	Sand
Dorset Council	Hines Pit	Hanson Aggregate	Sand
BCP Council	Hurn Court Farm	New Milton Sand and Ballast	Sand and Gravel

²² Aggregate output from Dorey's is taken to Masters Pit (Holme Sand and Ballast) and processed there.

²³ Aggregate output is sold separately by landowner.

Table 19 - Land Won Sand and Gravel Quarries – inactive in 2021

MPA	Quarry	Site Operator	Mineral Type
Dorset Council	Avon Common	Tarmac	Sand and Gravel
Dorset Council	Redman's Sand Quarry	Redman's Sand Quarries	Sand

Table 20 - Crushed Rock Quarries – operational in 2021

MPA	Quarry	Site Operator	Mineral Type
Dorset Council	Swanworth Quarry	Suttle Quarries	Crushed Rock, some dimension stone
Dorset Council	Inmosthay Quarry	Crook and Sons	Crushed rock (offcuts etc)
Dorset Council	Perryfield Quarry	Portland Stone Ltd	Crushed rock (offcuts etc)

Table 21 - Aggregate Wharf

MPA	Site	Site Operator	Mineral Handled/Produced
BCP Council	CEMEX Aggregates Wharf	CEMEX	Marine Dredged sand and gravel

Table 22 - Aggregate Rail Depots (both currently inactive)

MPA	Site	Site Operator	Mineral Handled/Produced
BCP Council	Dawkins Road Rail Depot, Hamworthy, Poole ²⁴	Formerly Hanson's, now Suttle's	Crushed Mendip limestone
Dorset Council	Wool Sidings, Wool ²⁵	Network Rail	Historically, sand from Warmwell Quarry (now closed)

Table 23 - Known Recycled Aggregate Facilities – operational in 2021

MPA	Site	Site Operator
BCP Council	Canford Recycled Aggregates Washing Plant	Commercial Recycling Ltd
BCP Council	Whites Pit Landfill Recycling Site	Commercial Recycling Ltd
BCP Council	Chapel Lane, Christchurch	Eco-Sustainable Solutions
BCP Council	Manning's Heath Depot, Manning's Heath	J Suttle Transport
Dorset Council	Downend Farm, Blandford Forum	Mark Farwell Plant Hire Ltd
Dorset Council	Henbury Quarry, Wimborne	M B Wilkes Ltd
Dorset Council	Redbridge Road Quarry, Moreton	G Crook & Sons
Dorset Council	Masters Quarry, Puddletown Road	New Milton Sand & Ballast
Dorset Council	Spratley Wood, Puddletown Road	Mr P Andrews

²⁴ Site not operational in 2020.

²⁵ Site not operational in 2020.

MPA	Site	Site Operator
Dorset Council	Henbury Road Planings Facility, Wimborne	Allasso Recycling
Dorset Council	Swanworth Quarry	J Suttle Transport Ltd
Dorset Council	Kings Stag Mill, Sturminster Newton	R B Snook
Dorset Council	Broadcroft Quarry	Portland Stone Ltd
Dorset Council	Rogers Concrete Yard, Puddletown Road	The Waste Group