Bournemouth, Christchurch, Poole and Dorset 9th Local Aggregate Assessment 2010 - 2019

Incorporating data up to and including 2019

Dorset Council

BCP Council

December 2021

Table 1 – 2018/2019 Comparison

	2018			2019			
Type of Aggregate	**Sales (tonnes)**	**10 year average (mt)**	**3 year average (mt)**	**Sales (tonnes)**	**Compared to previous year**	**10 year average (mt)**	**3 year average (mt)**
Recycled	394,928 (21.4%)	0.31	0.37	586,572 (28.5%)	Increase over previous year	0.35	0.45
Marine Dredged	56,217 (3%)	0.08	0.07	69,047 (3.4%)	Increase over previous year	0.08	0.07
Crushed Rock – Local Land-won	198,738 (10.8%)	0.21	0.21	213,699 (10.4%)	Increase over previous year	0.21	0.21
Land-won Sand and Gravel	1,193,918 (64.8%)	1.43	1.29	1,187,576 (57.7%)	Decrease over previous year	1.42	1.22
Total Aggregate	**1,843,801 (100%)**	**2.03**	**1.94**	**2,056,894 (100%)**	**Increase over previous year**	**2.08**	**1.97**

Table 1A – Landbanks and Reserves

	2018		2019		
Type of Aggregate	***Landbank (Years)***	***Reserves at end of 2018 (tonnes)***	***Landbank (Years)***	***Compared to previous year***	***Reserves at end of 2019 (tonnes)***
Crushed Rock – Local Land-won	c. 55+	c.12,000,000	c.57	Increase over previous year	c. 12,000,000
Land-won Sand and Gravel	9.84 (revised figure)	14,073,587 (revised figure)	9.2	Decrease over previous year	13,156,831

Summary

E.1. In Dorset, Bournemouth, Christchurch and Poole, total sales of all types of aggregate in 2019 were 2,056,894 tonnes, an increase of some 213,093 tonnes from the 2018 figure of 1,843,801 tonnes. The total sales figures for 2018 and 2019, broken down by aggregate type, are set out in **Table 1** above.

Recycled aggregate

E.2. In 2019 recorded sales of recycled aggregate showed a significant increase. The reason for this is not clear. Sales/production are likely to be higher than is indicated by recording output from permitted sites. Permitted capacity is in excess of this figure, and it is assumed that output could increase, provided the source of supply and markets were both available.

Marine dredged sand and gravel

E.3. In 2019, the wharf at Poole imported 69,047 tonnes of marine dredged aggregate, an increase over the previous year. Indications are that it could import more if demand existed. The highest amount imported since figures were recorded in 2003 was 110,000 tonnes in 2008, indicating a capacity for increased importation. Supply is available.

Crushed rock – land-won

E.4. In 2019, sales of crushed rock were 213,699 tonnes. 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. This indicates there is likely to be capacity to increase sales. 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 considers it appropriate to continue to use the 10 year average to determine the landbank.

Crushed rock – rail import**ed**

E.5. In 2018, Hanson's ceased using the Hamworthy rail depot for importing crushed rock from the Mendips. A local quarry company 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.6. Approximately 260,000 tonnes of crushed rock was imported by road in 2014, primarily 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 can increase to meet demand as required.

Land-won sand and gravel

E.7. 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 small decrease in sales between 2018 and 2019 as shown in **Table 1.** At 1, 187,576 tonnes, sales in 2019 were below both the ten year average figure of 1.42 mt and the three year average figure of 1.22 mt.

E.8. This decrease in sales may be a response to uncertainty in economic forecasts. It is also a result of decreasing production from some of the Poole Formation sand quarries, as reserves decline. It is also noted 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 (but see further commentary at para 17.15). There are no other projects likely to lead to sharp, sudden changes in demand.

E.9. There were two permissions in 2019, an extension to Tatchell's Quarry and excavations necessary for silt pond creation at Woodsford Quarry. However, the landbank has decreased in size and number of years, although it remains above 7 years.

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, which was adopted at the end of 2019. Since sales have continued to show a decline, rather than a continued increase, the Mineral Planning Authority is inclined to use the ten-year average for the coming year to determine the landbank and to estimate likely future demand and reserve depletion. This will be reviewed again through the Local Aggregates Assessment 2020.

E.11. All sources of aggregate (apart from rail imported crushed rock) demonstrate capacity 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 adequate new site capacity for sand and gravel to maintain production and sales, and includes a policy stance to allow for flexibility in the market. The Mineral Planning Authority has reasonable confidence that sand and gravel supply will be maintained 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 that it is appropriate to continue to use the 10 year average (2010-2019) figure of 1.42 mtpa as set out in this Local Aggregate Assessment, to establish the size of the landbank and level of provision for sand and gravel.

E.13. Similarly, it is considered appropriate to continue to use the 10 year average (2010-2019) figure of 0.20 mtpa to establish the size of the landbank and level of provision for crushed rock.

Preparation of the Local Aggregate Assessment 2019

1.1. 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 some appropriate waste material.

1.2. 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. 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.

1.3. Paragraph 213 of the National Planning Policy Framework (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. This Local Aggregate Assessment (LAA) is prepared in compliance with this requirement and 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 supply of aggregates for the future. The LAA includes data collected up to and including 2019. The most recent extended monitoring survey was in 2019 however as this data is not yet available the data of the previous extended monitoring survey in 2014 will be used where necessary. This collected data on aggregate movements between MPAs and gave a picture of relative levels of consumption nationally and regionally, including information on flows of aggregate to and from Dorset.

1.5. This LAA is intended to provide an annually-updated evidence base, contributing to monitoring of aggregate provision and informing production/review of minerals plans. The National Planning Practice Guidance (PPG) 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;
- 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

1.6. 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. This is a joint LAA, prepared by Dorset Council on behalf of Bournemouth, Christchurch and Poole (BCP) Council and covering the administrative areas of Dorset Council and BCP Council.

1.7. 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.

The Resource

2.1. 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 ecologically designated 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.

2.2. Dorset contains deposits of both River Terrace sand and gravel and underlying Poole Formation sands, and is also a (relatively low) producer of crushed limestone, sourced from Portland and Purbeck. Dorset's sand and gravel resources are largely concentrated in the south east of the county.

2.3. Dorset has one 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 rail depot at Hamworthy (Poole), bringing crushed limestone from the Mendips. Neither the railhead or the rail depot are currently active.

Sand and Gravel

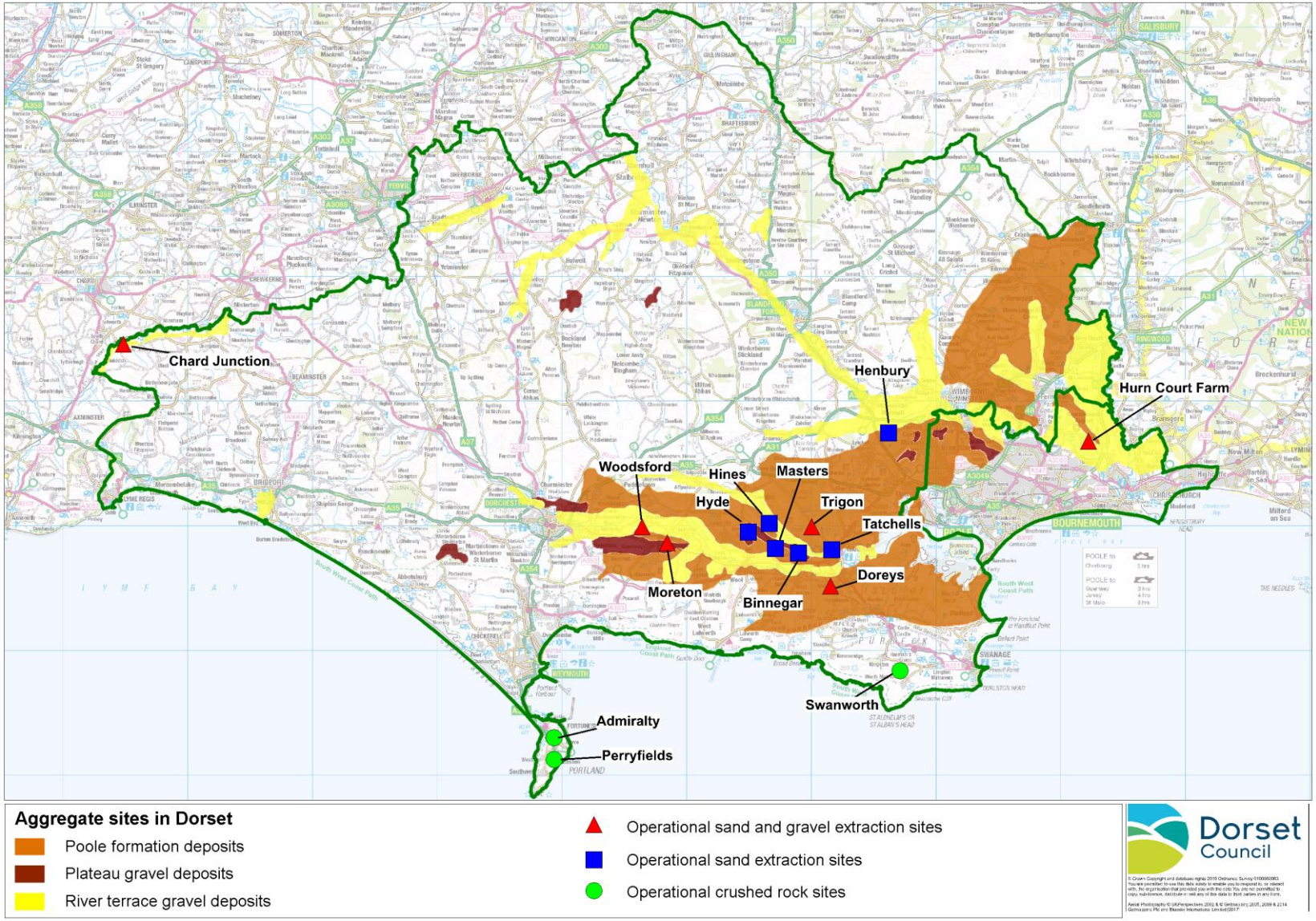
2.4. Sand and gravel in Dorset is produced primarily from Poole Formation sand (geologically considered a bedrock deposit) and River Terrace or plateau sand and gravel (geologically considered a superficial deposit). Poole Formation sand is the most important source of sand in the plan area, outcropping 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.

2.5. 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 of only limited economic importance.

2.6. The ball clay resource is also located within the Poole Formation with sand (and gravel) often forming a deep overburden over 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. The 2014 Minerals Strategy restricts the extraction of this sand and gravel resource associated with ball clay within the Dorset AONB.

2.7. 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 2019



Crushed rock

2.8. 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, covering approximately two thirds of the plateau forming the top of the island and lasting until 2042. This 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 for sales of crushed rock.

2.9. Threats to continued 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 mineral operators have relinquished the rights to crush stone, or blast and crush cherty, all further reducing the potential availability of crushed rock in the future. There is therefore no certainty that the full 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 two quarries on Portland.

2.10. The Jurassic Limestone 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.

2.11. 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 almost exhausted. An extension is allocated in the Mineral Sites Plan 2019 and an application to develop this extension is expected.

2.12. Crushed rock is also imported from elsewhere, principally Somerset, by road. This is much harder Carboniferous limestone suitable for road building/maintenance and other construction uses.

Aggregate Sales – 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. Table 2 below sets out the ten-year average and three-year average sales figures for all the types of aggregates produced in Dorset. Historic sales of land won aggregates, both sand and gravel and crushed rock, are set out below in Table 2 and Figure 2.

Table 2 – Aggregate Sales 2010 – 2019 (million tonnes)

Aggregate types	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	10 YEAR AVERAGE	3 YEAR AVERAGE
River Terrace	0.46	0.42	0.48	0.49	0.56	0.58	0.56	0.52	0.54	0.45	**0.49**	**0.54**
Poole Formation	0.95	1.1	0.95	1.11	1.17	0.92	0.82	0.75	0.66	0.74	**0.94**	**0.74**
Total Land-Won Sand and Gravel	**1.41**	**1.52**	**1.43**	**1.60**	**1.73**	**1.50**	**1.39**	**1.27**	**1.20**	**1.19**	**1.42**	**1.22**
Land-Won Crushed Rock	0.26	0.15	0.15	0.16	0.28	0.24	0.20	0.22	0.20	0.21	**0.21**	**0.21**
Rail Imported Crushed Rock	0.05	0.07	0.04	0.00	0.00	0.00	0.00	0.08	0.20	0.21	**0.21**	**0.21**
Marine Dredged Sand and Gravel	0.09	0.09	0.09	0.08	0.09	0.09	0.08	0.07	0.06	0.07	**0.08**	**0.07**
Recycled aggregates	0.24	0.27	0.32	0.30	0.32	0.33	0.35	0.37	0.39	0.59	**0.35**	**0.45**
Total production	**2.05**	**2.1**	**2.03**	**2.14**	**2.42**	**2.16**	**2.02**	**2.01**	**1.85**	**2.06**	**2.08**	**1.97**

Figure 2 : Aggregate Sales 2010 – 2019

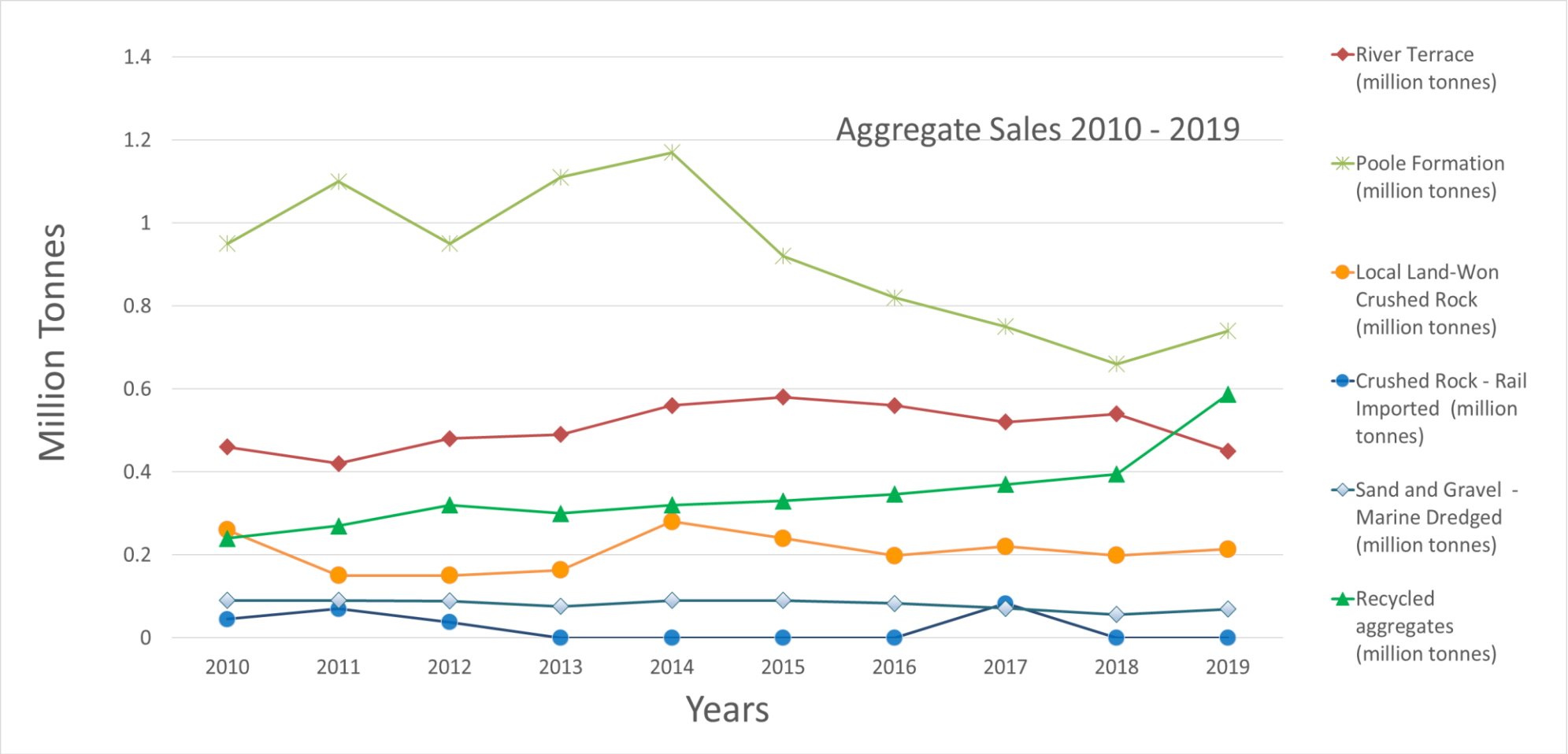


Table 2 & Figure 2 - Notes

1. Figures in million tonnes per annum.
2. Some recycled aggregate total based on some estimated figures due to incomplete returns.

3.2. Table 2 and Figure 2 indicate:

- Sales of local land-won crushed rock remain generally flat
- Poole Formation sales show a small increase
- River Terrace aggregate sales show a small decrease
- Table 2 shows a 10 year average of 1.42 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 2019, average sales of sand and gravel (Poole Formation and River Terrace combined) were 1.22 mtpa, lower than the 10 year average and reflecting an overall continued decline in sales
- The 3 year average for crushed rock is 0.21 mtpa, the same as the 10 year average

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, is approximately 12,000,000 tonnes.

4.2. The 10 year average of sales (2010 to 2019), as set out in Table 2, is 210,000 tpa. If this figure is applied to the estimated reserve (see Table 3), this gives the following result:

Crushed rock landbank: 12 mt / 0.21 mtpa = c. 57 years

4.3. The crushed rock landbank is therefore calculated as c.57 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).

4.4. 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 from crushing of waste, off-cuts and the deeper cherty layer.

4.5. 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. 12 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.

4.6. The Minerals Strategy advocates underground mining to access parts of the dimension stone reserve to minimise impacts. Where mining permissions have been granted, this reduces the availability of crushed rock. 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.

4.7. The Mineral Sites Plan 2019 does not propose any new open-cast quarries on Portland, nor does it propose any new mines.

4.8. Swanworth Quarry in Purbeck is the largest producer of crushed rock in Dorset, producing approximately half of the total annual output. With significantly limited remaining reserves, 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 and there is some uncertainty regarding the level of landscape impact of the proposed extension. If the expected application for a quarry extension is ultimately unsuccessful, the annual output of crushed rock could fall below the current 10 year average during the timescale of the Plan unless quarries on Portland can significantly increase their output.

4.9. No permissions for crushed rock were issued in 2019.

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 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. There were no rail imports of Mendips crushed rock in 2019. 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.

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. 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. 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 Aggregates Monitoring 2014 survey showed that Dorset (Bournemouth, Dorset and Poole) consumed approximately 530,000

tonnes[1] of crushed rock, of which approximately 51% was produced in Dorset and the remainder primarily sourced from Somerset. Since the Hamworthy Depot was not in operation, this indicates that all was imported by road.

4.16. The Somerset Local Aggregate Assessment Fifth Edition, incorporating data from 2007 to 2016, notes that the county had estimated permitted reserves for crushed rock at the end of 2016 of approximately 377 mt, which is estimated to last for 28.1 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, taking into account the resumption of rail imports into Poole.

Sand and Gravel

Monitoring Landbanks

5.1. The NPPF requires Mineral Planning Authorities to maintain a landbank of at least 7 years for sand and gravel. Land won sand and gravel in Dorset comprises Poole Formation sand and River Terrace sand and gravel. Policy AS1 of the Minerals Strategy 2014 refers to maintaining "an adequate and steady supply of locally extracted sand and gravel". The MPA consider that this means both Poole Formation and River Terrace aggregate, and therefore these mineral types are monitored and recorded together, as well as separately as set out below.

Combined Poole Formation and River Terrace Landbank

5.2. The reserve for sand and gravel at the end of 2019 was approximately 13,156,831 tonnes. The 10 year average of sales (2010 to 2019), set out in Table 2, is 1.42 mtpa. If this figure is applied to the estimated reserve (see Table 3), this indicates a landbank of over 9 years:

Sand and gravel landbank: 13.2 mt / 1.42 mtpa = 9.29 years

5.3. The landbank for sand and gravel (both Poole Formation and River Terrace aggregates combined) at the end of 2019 was 9.29 years, in excess of the required 7 years. This represents a decrease from the equivalent figure of 9.84 years at the end of 2018 (revised figures were received for some sites subsequent to the publication of the 8th Local Aggregates Assessment, covering the period up to the end of 2018).

5.4. At the end of 2019 the Mineral Planning Authority was therefore 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. The MPA are satisfied that the Mineral Sites Plan 2019 identifies sufficient sites to meet the requirements of Policy AS1 of the Minerals Strategy. 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. As the sites proposed for allocation in the Mineral Sites Plan provide for approximately 17 million tonnes, the MPA are

[1] This figure varies from the figures provided by the BGS (AM2014 Source of Primary Aggregates by Region – percent categories) as there was an error in recording information collected through the 2014 AM survey.

satisfied that, along with the policy in the Mineral Sites Plan 2019 enabling unallocated sites to be considered provided certain criteria are met, demand can be met over the plan period as required by Policy AS1 of the Minerals Strategy 2014.

Separate Sand and Gravel Landbanks

5.6. As required by Policy AS2 of the Minerals Strategy 2014 the Mineral Planning Authority also 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.

5.7. As shown in Table 3, at the end of 2019 reserves of Poole Formation were 7.5 mt and River Terrace were 5.6 mt. For sales , approximately 0.74 mt of Poole Formation (62.5% of total sales) were sold compared with approximately 0.45 mt of River Terrace (37.5% of total sales) in 2019.

5.8. The ten year average sales figures from 2010 to 2019 are 0.92 mtpa for Poole Formation and 0.51 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: 7.51 mt (reserves) / 0.92 mt (10 year average to 2019) = 8.2 years

River Terrace: 5.6 mt (reserves) / 0.51 mt (10 year average to 2019) = 11 years

5.9. 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 a permitted reserve of some 1.8 mt of River Terrace aggregate. As a permitted reserves it comprises part of the landbank and the MPA expect that it will at some point be worked. Para 8.3 below notes that the overall figures mask the fact that Woodsford Quarry to the east of Dorchester comprises a significant part of the River Terrace landbank.

5.10. The site allocations in the Mineral Sites Plan 2019 include both Poole Formation and River Terrace producing sites. 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. A decreasing landbank and strong sales will encourage applications for development of new sites. There is obviously no certainty that any allocation will actually be approved, following the rigorous assessment process of a planning application. The MPA is satisfied that there is adequate flexibility with the allocations of the Mineral Sites Plan 2019, including the policy relating to unallocated sites.

Trending Changes for Sales, Reserves and Landbanks.

6.1. 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 2019 is shown in Table 3 below.

6.2. Table 3 indicates the trending changes for sales and reserves for sand and gravel and crushed rock over the past 4 years.

- Poole Formation (sand) sales rose in 2019, while reserves decreased. The Poole Formation landbank remains above 7 years
- River Terrace sales fell, while reserves showed an increase but 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. An extension to Swanworth Quarry in Purbeck is allocated in the Bournemouth, Dorset and Poole Mineral Sites Plan

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

	2016	2017	2018	2019
Poole Formation Sales (tonnes)	**823,081**	**745,942**	**655,581**	**742,488**
Remaining Poole Formation Reserve (tonnes)	**7,562,949**	**6,676,012**	**8,923,256**	**7,511,351**
Poole Formation Landbank in years (based on ten-year average for sales)	**7.56**	**6.81**	**9.49**	**8.16**
Poole Formation Landbank in years (based on three-year average for sales)	**7.80**	**8.04**	**12.1**	**10.43**
River Terrace Sales (tonnes)	**563,018**	**519,789**	**538,337**	**445,088**
Remaining River Terrace Reserve (tonnes)	**5,985,000**	**5,931,000**	**5,150,331**	**5,645,480**
River Terrace Landbank in years (based on 10 year average)	**11.97**	**11.86**	**10.51**	**11.07**
River Terrace Landbank in years (based on 3 year average)	**10.50**	**10.78**	**9.54**	**11.3**
Total (River Terrace and Poole Formation) Aggregate Sales (tonnes)	**1,386,099**	**1,265,731**	**1,193,918**	**1,187,576**
Remaining River Terrace and Poole Formation Reserve (tonnes)	**13,547,949**	**12,607,012**	**14,073,587**	**13,156,831**
River Terrace and Poole Formation Landbank in years (based on 10 year average)	**8.97**	**8.52**	**9.84**	**9.27**
River Terrace and Poole Formation Landbank in years (based on 3 year average)	**8.80**	**9.07**	**10.9**	**10.8**

	2016	2017	2018	2019
Land-Won Crushed Rock Sales (tonnes)	**197,873**	**219,703**	**198,738**	**213,699**
Remaining Reserve [2] (tonnes)	**12,200,000**	**12,185,000**	**c. 12,000,000**	**c.12,000,000**
Crushed rock Landbank in years (based on 10 year average)	**c. 53**	**c. 55**	**c.57**	**c.57**
Crushed rock Landbank in years (based on 3 year average)	**c. 51**	**c.55**	**c.57**	**c.57**

Supply of aggregate and productive capacity of current sites

7.1. 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.

Table 4 – Indicative Productive Capacity

	Sales (2019 - tonnes)	Capacity[3] (tonnes)	Sales as % of capacity
Poole Formation sites	742,488	940,000	79%
River Terrace sites	445,088	580,000	77%
Totals	1,187,576	1,520,000	78%

7.2. 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 an average rate of 78% of capacity.

7.3. It is noted that these figures mask the fact that a large proportion of River Terrace sales/reserves comes from a single site in the vicinity of Dorchester. Should this site for some reason cease production it is expected that supply would come in from other quarries, probably towards the south-eastern part of Dorset Council/BCP Council or within Hampshire, requiring significantly longer transportation distances. Sites are allocated in central Dorset in the Mineral Sites Plan 2019, but these would be expected to take a number of years to actually enter production.

7.4. This exercise of comparing capacity and sales will be continued and developed further in future Local Aggregates Assessments.

[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.

[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**

Crushed rock landbank

8.1. As set out in Table 3 above, the crushed rock landbank remains around 12,000,000 tonnes, a figure which can only be an estimate.

8.2. 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 is extracted and crushed and sold as aggregate from some sites.

8.3. 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 be variable.

8.4. The 2016, 2017, 2018 and 2019 estimates 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.

8.5. The only other crushed rock quarry in Dorset is Swanworth Quarry in Purbeck, which has less than 1 year of stone reserves. As discussed above, an extension is allocated in the Mineral Sites Plan 2019, and an application is awaited.

Aggregate Supply from other Mineral Planning Authorities

9.1. 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.

9.2. 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 expected on the former) being immediately adjacent to Dorset. As these sites are developed, it is expected that they will provide a significant local supply of aggregate to Dorset.

Quarries in Dorset

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

[4] Information provided by the British Geological Survey.

Table 5 – Permitted Sand and Gravel Quarries in 2019

Name of Quarry	Operator	(Predominant) Aggregate Type	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 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
Trigon Hill	Landowner	Poole Formation sand	Area of working at Trigon Hill has been extended, along with end-date for working (15 years from start of further working) – this applies to ball clay only and aggregate extraction has ceased. Sales are now from stockpiled material.
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

Name of Quarry	Operator	(Predominant) Aggregate Type	End of Permission
Chard Junction Quarry	Aggregate Industries	River Terrace sand and gravel	31.03.2023
Hurn Court Farm	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	New Milton Sand & Ballast	River Terrace sand and gravel	2031
Woodsford Quarry	Hills Quarry Products	River Terrace sand and gravel	2028
Avon Common (Permission implemented, no further development to date)	Tarmac	River Terrace sand and gravel	11 years from commencement of sales of sand and gravel – not yet begun although permission has been implemented

Other Sources of Aggregate Supply for Dorset

11.1. In addition to land-won aggregate, there are other sources of aggregate that Dorset 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

11.2. Secondary aggregates, materials produced as industrial by-products such as foundry sand or crushed glass, are not currently an option in Dorset or BCP Council. In the past spent foundry sand has been imported into Poole for use at the asphalt plant there, but none was imported in 2019. 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.

11.3. The following analysis reviews recent levels of supply of these various types of aggregate and considers the likelihood of their supply being maintained.

Marine Dredged Aggregate

12.1. 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.

Table 6 – Summary of Marine Dredged Sales (mt)

Aggregate types	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	10 YEAR AVERAGE	3 YEAR AVERAGE
Marine Dredged Sand and Gravel	0.09	0.09	0.09	0.08	0.09	0.09	0.08	0.07	0.06	0.07	0.08	0.07

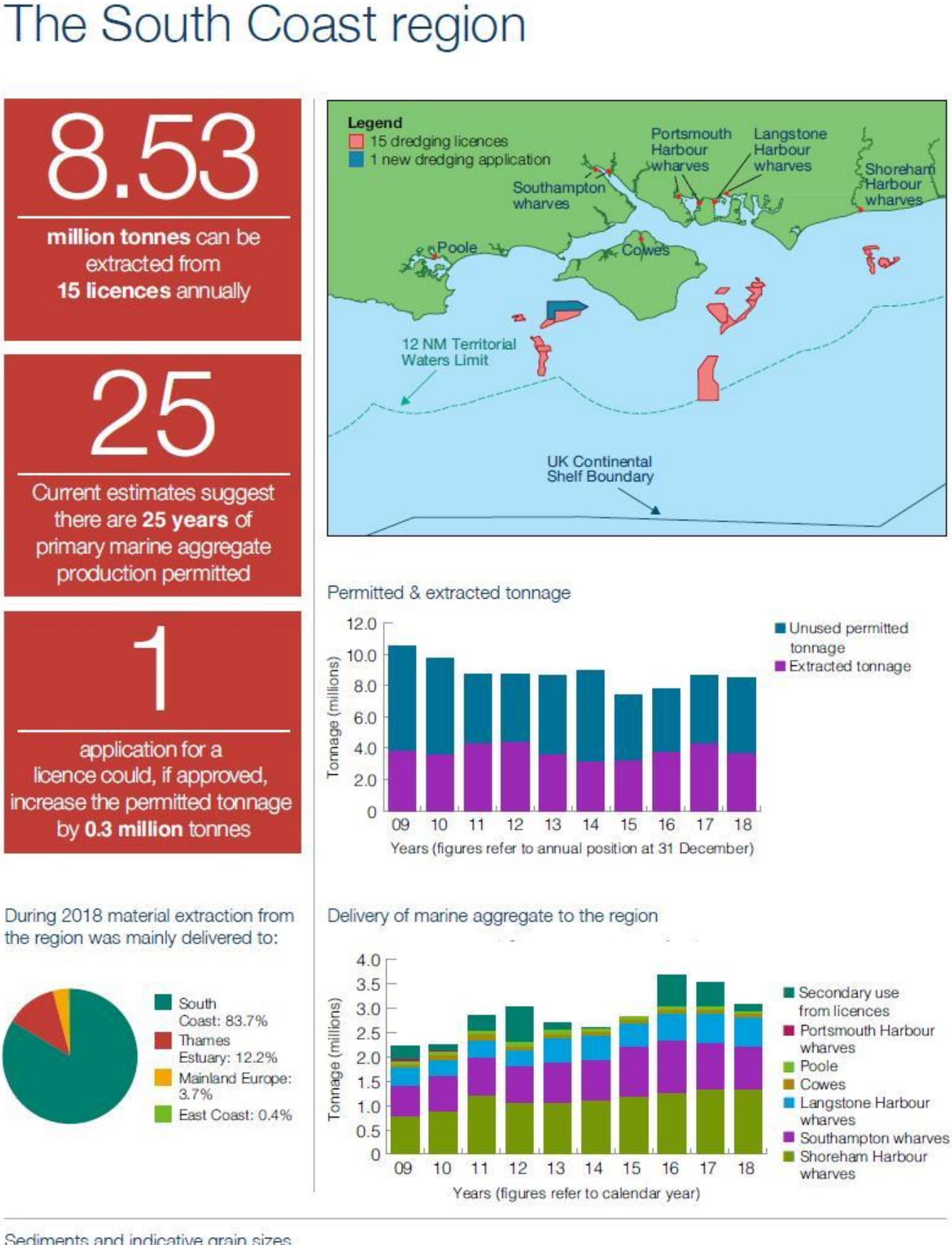
Poole Wharf

12.2. 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 around 90,000 tonnes per annum, but this has decreased recently. Tonnages are shown in Table 6. In 2019, 69,047 tonnes were landed at Poole Wharf. The ten year average of marine aggregate landings at Poole Wharf is approximately 80,000 tonnes per annum, and the three year average is slightly lower at approximately 70,000 tonnes per annum.

12.3. Marine aggregate makes a relatively small contribution to the supply of aggregate in Dorset (approximately 3% in 2019) 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).

12.4. Larger amounts of marine aggregate are landed at the wharves in Hampshire (particularly Southampton) but it is not known whether any of this aggregate is exported to Dorset. The marine aggregate landed at Poole Wharf is from the South Coast dredging region. The Crown Estate produces an annual capability and portfolio report. Figure 3 illustrates where the marine dredged aggregate is taken to, and Figure 4 shows the resource and licenced dredging areas closest to Dorset.

Figure 3 - Marine Dredged Aggregate – South Coast Region [5]



[5] *Marine Aggregates – Capability and Portfolio 2019*: Crown Estate 2019

Figure 4 – Reserves and Reserve Life [6]

Reserves and resources

Reserves and resources

The PERC code defines **"reserves"** as the proportion of a mineral **"resource"** that can be mined for economic purposes

22

Current national estimates suggest there are **22 years** of primary marine aggregate production permitted

347
million tonnes

Current national estimates suggest there are **347 million tonnes** of total current primary reserves

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 at July 2019)	Regional reserve life @ 10 year average annual offtake
		Primary (construction aggregate)				
Humber	55.23	1.92	2.01	2.78	6.50	28.77
East Coast	70.03	4.56	4.27	5.64	7.93	15.36
Thames Estuary	32.71	1.11	1.85	1.94	3.80	29.47
East English Channel	52.61	3.59	4.23	4.65	9.63	14.65
South Coast	86.11	3.42	3.44	3.92	8.33	25.18
South West	37.65	1.11	1.28	1.38	3.70	33.92
North West	12.87	0.31	0.31	0.38	1.30	41.52
TOTAL	**347.21**	**16.01**	**17.38**	**17.85**	**41.19**	**21.69**

All figures are in millions of tonnes

*Totals are national averages and peaks, not the sum of the regional figures

[6] *Marine Aggregates – Capability and Portfolio 2019*: Crown Estate 2019

Constraints and Future Supply

12.5. 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 at Poole Port is safeguarded through the Bournemouth, Dorset and Poole Minerals Strategy (2014) and the Bournemouth, Christchurch, Poole and Dorset Mineral Sites Plan, to protect its function. 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.

12.6. 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.

12.7. As shown in Figure 4, the Marine Aggregates Capability and Portfolio Report 2019 (Crown Estate) indicates that for the South Coast, the total current primary reserves (the current licensed production areas) are 86.11 mt, with a 10-year annual average offtake of 3.42 mt. This equates to a land bank of 25 years, indicating that a continuation of supply (or even an increase, should the need arise) is expected to be possible from this source.

Recycled Aggregates

13.1. 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 construction sites, where the demolition or extraction waste is processed and either re-used on site or sold.

13.2. 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.

13.3. Sales in 2019 were approximately 586,572 tonnes, a significant increase over the previous year. The ten year average of sales is approximately 310,000 tonnes per annum and the three year average is approximately 370,000 tonnes. Recycled aggregate sales have been rising steadily for some years now. Some figures for 2014 - 2017 are estimated, due to lack of returns from some operators.

Table 7 – Summary of Recycled Aggregate Sales (mt)

Aggregate types	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	10 YEAR AVERAGE	3 YEAR AVERAGE
Recycled aggregates	0.24	0.27	0.32	0.30	0.32	0.33	0.35	0.37	0.39	0.59	**0.35**	**0.45**

13.4. 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[7] suggests that of the total sales of recycled aggregate, some 80% is derived from fixed sites with an additional 20% from construction sites.

13.5. 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 2019 sales, actual production in 2019 could have been as high as approximately 730,000 tonnes.

13.6. Although information on recycled aggregate sales is limited, over ten years of survey data in Dorset is now available (Table 7). In 2019 there were 14 known fixed aggregate recycling sites, as illustrated in Figure 5 and Table 8.

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

Figure 5 – Fixed Recycling Facilities 2019

Table 8 - Recycled Aggregate Sites and Operators

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

Capacity, Constraints and Future Supply

13.7. The total permitted capacity for aggregate recycling production is over 580,000 tonnes[8], above the level of current or average sales. Existing recycling sites therefore 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 to be travelled by the material to be recycled
- distance to be travelled by the recycled aggregate, and

[8] 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.

13.8. 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.

Uses of Dorset's Aggregate Resource

14.1. Aggregates have a range of uses in construction, with Dorset's aggregates being primarily for concrete, road construction and road maintenance (including asphalt). 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.

14.2. 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%)

14.3. The marine dredged aggregate was primarily used as sand or gravel for concreting, mostly within Dorset but also elsewhere in the South-West.

Exports from Dorset

15.1. This section of the report considers movement of aggregates, including movements between Dorset and other mineral planning authorities, as informed by the 2014 Aggregates Monitoring survey.

15.2. Table 9 shows that of the 1.73 mt locally produced land-won sand and gravel sold in 2014, 0.86 mt (50.6%) were consumed in Dorset; 0.58 mt (34%) were exported to Dorset's immediate neighbours, 0.15 mt were exported to the rest of the south west and 0.15 mt (6.7%) were exported outside of the south-west (excluding Hampshire, which was included as one of Dorset's neighbours). This indicates that a relatively high proportion of land-won sand and gravel is exported from Dorset, primarily to its immediate neighbours, with a significant amount also going to SWE1, Avon.

15.3. For crushed rock and to a lesser extent marine dredged sand and gravel, a much higher proportion of what is produced in Dorset remains in Dorset. This is particularly true for crushed rock, with 97% 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 aggregates sold in Dorset in 2014 (AM 2014)

Aggregate Type		Total Sales	Dorset	Hampshire, Wiltshire, Somerset and Devon	Rest of South West	Outside South West (excluding Hampshire)
Land-won sand and gravel	mt	1.73	0.86	0.58	0.15	0.15
	%	100%	49.4%	33.6%	8.5%	8.5%
Crushed Rock	mt	0.28	0.27	0.008		
	%	100%	97.2%	2.8%		
Marine Dredged Aggregates	mt	0.93	0.67	0.02	0.26	0
	%	100%	72%	0.2%	28%	0

mt = million tonnes

Consumption within Dorset

15.4. The AM2014 report along with additional material made available by the British Geological Survey9 shows that in 2014, Dorset consumed 800,000 tonnes of land-won and marine dredged sand and gravel - not including aggregate sold for non-aggregate uses i.e. industrial, agricultural, sports uses. Some 80-90% (up to 720,000 tonnes) of this was produced within Dorset, with 10% to 20% (up to 144,000 tonnes) 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.

15.5. Similarly, in 2014 Dorset consumed 531,000 tonnes of crushed rock, of which approximately 51% was produced in Dorset and 49% came from Somerset

Future Demand

16.1. 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.

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

16.2. Dorset is affected by demand both within and outside of the Mineral Planning Authority - overall land-won sand and gravel sales for the south west sub-national area has declined from 5,604,000 tonnes in 2001[10] through 4,603,000 tonnes in 2005; 3,152,000 tonnes in 2009 and then increased to 3,278,000 tonnes in 2014. Comparative figures for Dorset are:

2001: 1,605,000 tonnes

2005: 1,684,000 tonnes

2009: 1,273,000 tonnes and

2014: 1,605,000 tonnes.

16.3. Sales have been more steady for Dorset itself. 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.

Built development

16.4. To help assess the future demand for aggregates this section looks at recent and proposed housing (with associated infrastructure) development and other major infrastructure proposed in the sub region. Housing, with associated infrastructure, is a significant user of the county's aggregates. This is likely to continue over the next decade. Table 10 below shows the levels of housing development that are planned for in the district/borough councils' adopted plans. Although the plans cover different time periods they give a good indication of the levels of housing development anticipated over the next 10 years at least.

[10] 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 and 2014 reports, though these were commissioned by Department for Communities and Local Government.

Table 10 - 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.

16.5. Table 11 shows the historic levels of housing completions in Dorset and Bournemouth/Poole over the 10 years 2009/10 – 2018/19. Over this period the average annual level of net dwelling completions across the three authorities was 2,129. There is 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. The three year average rate of completions for 2016/17-2018/19 is 2,389 dwellings, above the 2,000 dwellings mark.

16.6. The higher rates of development seen historically indicate that, if the level of housing development does rise again in the future, the aggregate industry can be expected to be able to meet demand as it has in the past. For comparison, figures for annual sand and gravel sales, from 2010 to 2019, have been added to Table 11. They demonstrate some level of correlation between housing completions and aggregate sales, although there is often a bit of a lag.

Table 11 - Net Annual Completions

Local Authority	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	Totals	10 YR AV	3 YR AV
Christchurch	102	103	62	71	149	154	125	180	100	187	**1,233**	123	156
East Dorset	70	157	107	61	149	163	236	148	319	289	**1,699**	170	252
North Dorset	192	272	375	144	227	178	220	142	159	223	**2,132**	213	175
Purbeck	164	77	107	79	72	67	232	86	122	73	**1,079**	108	94
West Dorset	202	330	376	364	258	251	465	603	421	640	**3,910**	391	555
Weymouth and Portland	150	126	169	205	112	148	201	169	212	289	**1,781**	178	223
DORSET	**882**	**1069**	**1197**	**925**	**976**	**978**	**1644**	**1,182**	**1,328**	**1,701**	**11,882**	1188	1404
Bournemouth	622	492	555	639	394	964	817	337	635	659	**6,114**	611	544
Poole	421	257	187	208	257	199	438	591	307	426	**3,291**	329	441
Totals	**1,925**	**1,818**	**1,939**	**1,772**	**1,627**	**2,141**	**2,899**	**2,110**	**2,270**	**2,786**	**21,287**	**2,129**	**2,389**
Sand and gravel sales (mt) 2010 - 2019	**1.41**	**1.52**	**1.43**	**1.6**	**1.73**	**1.5**	**1.39**	**1.27**	**1.2**	**1.42**	**14.5**	**1.4**	**1.3**

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

16.7. 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.

Projected development beyond current Plan periods

16.8. 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.

16.9. 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 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.

16.10. Across the area as a whole, some 3,186 new dwellings are currently planned per annum (Table 10). 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.

16.11. 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. BCP are not as advanced as this, and no projections of future housing requirements are published.

16.12. Dorset Council's figure is close to previous projections, however the Standard Methodology gives a significantly 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 10 (above) puts the current targets at 3,186 across Dorset/Bournemouth/Poole but the Standard Methodology gives a total figure of 4,359 so an increase of 1,173 or about one third. In terms of overall aggregate consumption for housing construction, a moderate increase is expected.

16.13. 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. The Dorset Local Enterprise Partnership's Strategic Economic Plan proposes major economic development at Aviation Park at Bournemouth Airport and mixed development in the regeneration of the Port of Poole. A major urban extension of almost 1,000 dwellings is also proposed at north Christchurch. These proposals together with development around the two Universities in Bournemouth and Poole will help to stimulate the urban economy.

16.14. 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.

16.15. There are no proposed major infrastructure proposals identified at this time within Dorset in the National Infrastructure Plan. 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 major infrastructure projects planned in the next five years:

- 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

Maintaining Supply

17.1. 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 European, 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) 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.

17.2. 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 then 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

17.3. 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.

17.4. 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.*

17.5. 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.

Final Comment

18.1. It is considered that all sources of aggregate demonstrate capacity for some increase in supply, should demand increase, and 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 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. 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.

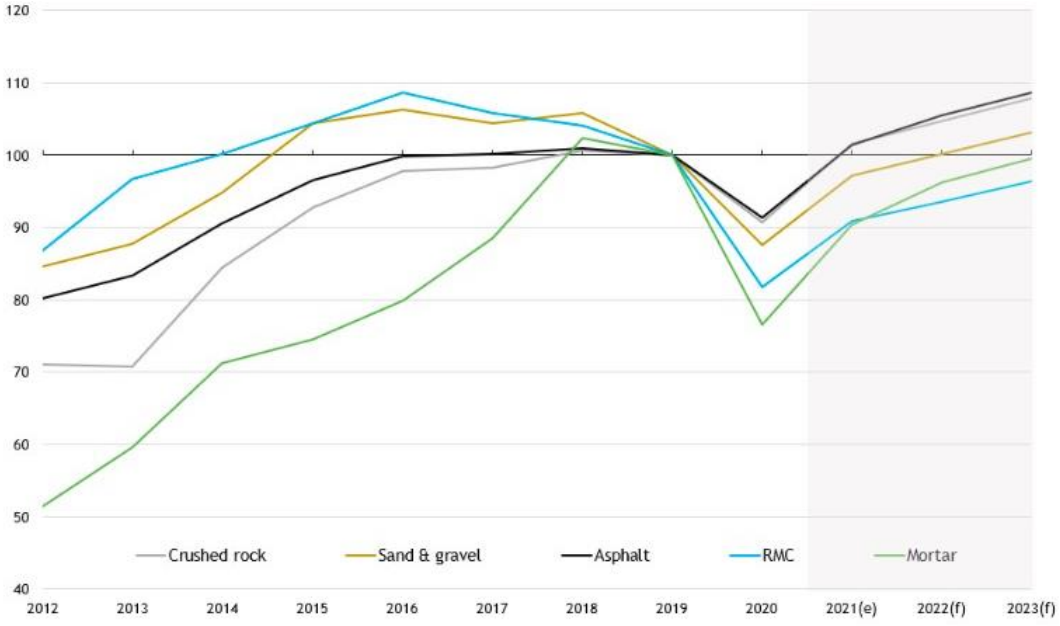
Addendum - 2021

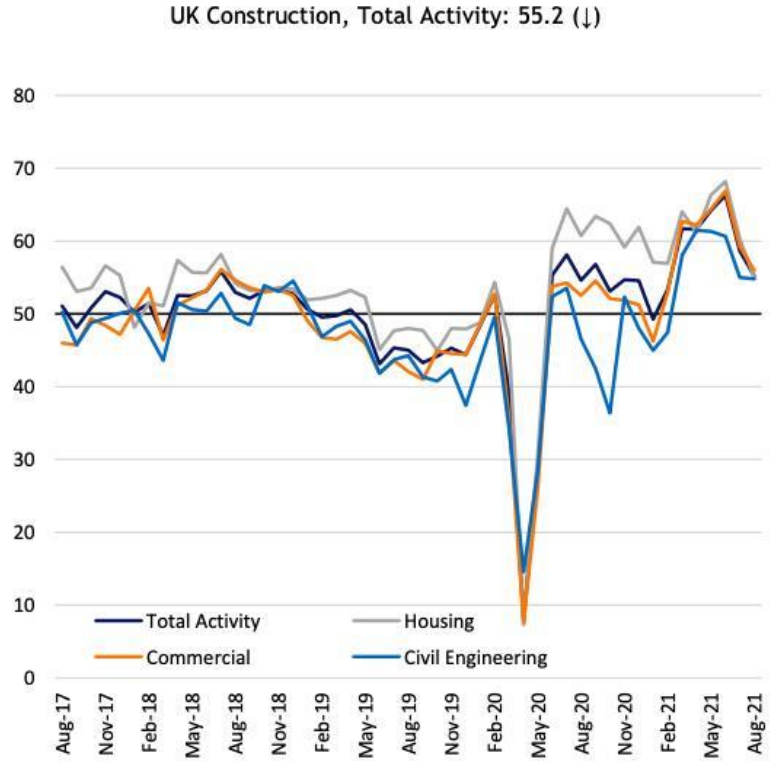
It should be noted that the period covered by the LAA is to the end of 2019, although the document was actually drafted in 2021.

It is known that there was a big decline in demand as a result of the first Covid lockdown in 2020 following which it is presumed that there was (if following national trends) a rapid and large re-bound when construction re-started (before many other industries/sectors) later in summer 2020. It is understood that the minerals industry is still struggling to meet demand and having to prioritise customers owing to the 'bounce back' effect on pent up/delayed demand.

The first graph below of 'construction activity' illustrates this, along with a more recent fall.

The second graph, showing **Mineral Products Sales Volumes – Outturn and Central Forecast** in Great Britain indicates continued growth in minerals sales (source MPA 'Economic Market Briefing' September 2021).





Appendix 1

A.1. **Tables 13 to 18** below show the various aggregate producing/handling facilities in Bournemouth, Dorset and Poole, both active and inactive, in 2019.

Table 12 - Land Won Sand and Gravel Quarries – operational in 2019 (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[11]	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[12]	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

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

[12] Aggregate output is sold separately by landowner.

MPA	Quarry	Site Operator	Mineral
Dorset Council	Hyde Pit (no extraction currently, processing plant is located here - some 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

Table 13 - Land Won Sand and Gravel Quarries – inactive in 2019

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

Table 14 - Crushed Rock Quarries – operational in 2019

MPA	Quarry	Site Operator	Mineral Handled/Produced
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 15 - Aggregate Wharf

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

Table 16 - Aggregate Rail Depots (both currently inactive)

MPA	Site	Site Operator	Mineral Handled/Produced
Bournemouth Christchurch and Poole Council	Dawkins Road Rail Depot, Hamworthy, Poole [13]	Hanson	Crushed Mendip limestone
Dorset Council	Wool Sidings, Wool [14]	Network Rail	Historically, sand from Warmwell Quarry (now closed)

[13] Site not operational in 2019.
[14] Site not operational in 2019.

Table 17 - Known Recycled Aggregate Facilities – operational in 2019

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
Dorset Council	Henbury Allasso (road planings), Wimborne	Allasso Recycling
Dorset Council	Swanworth Quarry, Purbeck	J Suttle Transport Ltd
Dorset Council	Kings Stag Mill, Sturminster Newton	R B Snook
Dorset Council	Rogers Concrete Yard, Puddletown Road	The Waste Group
Dorset Council	Broadcroft Quarry	Portland Stone Ltd