Bournemouth, Dorset and Poole

Local Aggregate Assessment 2008 - 2017

Incorporating data up to and including 2017

Dorset Council

Bournemouth, Christchurch & Poole Council

July 2019

Contents

Summary

E.1. In Dorset, Bournemouth, Christchurch and Poole, total sales of all types of aggregate in 2017 were 1.9 million tonnes (mt), a decrease of some 90,000 tonnes from the 2016 figure of 2 mt. The total sales figures for 2016 and 2017, broken down by aggregate type, are set out in Table 1 below.

Table 1 – 2016/2017 Comparison

	2016			2017		
Type of Aggregate	**Sales (tonnes)**	**10 year average****	**3 year average****	**Sales (tonnes)**	**10 year average****	**3 year average****
Recycled	346,157* (17%)	0.29	0.33	365,800* (19%)	0.30	0.35
Marine Dredged	82,750 (4%)	0.09	0.09	71,400 (4%)	0.09	0.08
Crushed Rock – Local Land-won	197,873 (10%)	0.23	0.24	219,700 (11%)	0.22	0.22
Land-won Sand and Gravel	1,386,099 (69%)	1.51	1.54	1,265,731 (66%)	1.48	1.39
Totals	**2,012,879 (100%)**	**2.12**	**2.20**	**1,922,631 (100%)**	**2.09**	**2.04**

***** Partly estimated due to lack of returns from some operators
** million tonnes

Table 1A – Landbank and Reserves

	2017	
Type of Aggregate	**Landbank (Years)**	**Reserves at end of 2017 (tonnes)**
Crushed Rock – Local Land-won	c. 55/60 years	c. 12,000,000
Land-won Sand and Gravel	8.52	12,607,012

Recycled aggregate

E.2. In 2017 recycled aggregate sales increased. Sales are actually likely to be higher than is indicated by recording output from permitted sites. Permitted capacity is far in excess of this, 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 2017, the wharf at Poole imported 71,400 tonnes of aggregate, a slight decrease from 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 of more than an additional 30,000 tonnes per annum. Supply is available.

Crushed rock – land-won

E.4. In 2017, 219,700 tonnes of crushed rock were produced. For crushed rock, the 10 year average sales level is approximately 220,000 tonnes per annum. The highest level of annual sales since 1999 was 440,000 in 2001. This indicates there is capacity to increase sales by approximately 200,000 tonnes per annum. 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 imported

E.5. In 2017, the Hamworthy rail depot reopened and around 83,000 tonnes were imported by rail from Somerset or elsewhere. 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, was some 90,000 tonnes per annum. Indications are that there is capacity to import at least 90,000 tonnes per annum and this could increase provided demand existed and subject to other constraints.

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, particularly Poole Formation sand, 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 2016 and 2017 as shown in Table 1. At 1.27 mt, sales in 2017 were below both the ten year average figure of 1.48 mt and the three year average figure of 1.39 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. There are no other projects likely to lead to sharp, sudden changes in demand.

E.9. Future sales will be met from existing permitted reserves together with the sites allocated through the emerging Mineral Sites Plan. Since sales have shown 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 for the Local Aggregates Assessment 2018.

E.10. 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 emerging Mineral Sites Plan allocates adequate new sites for sand and gravel to maintain production and sales and allow for flexibility in the market. The Mineral Planning Authority has reasonable confidence that sites will be allocated and permitted to maintain supply 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.11. **It is therefore considered that it is appropriate at this time to continue to use the 10 year average figure of 1.48 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.12. **Similarly, it is considered appropriate to continue to use the 10 year average figure of 0.22mtpa to establish the size of the landbank and level of provision for crushed rock.**

1. Preparation of the Local Aggregate Assessment 2017

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 (specifically excavated or dredged for aggregate use), secondary (produced as a by-product of some other process or excavation) or recycled from some appropriate waste material.

1.2. Land-won or primary aggregates, in Dorset, are either quarried from limestone deposits and crushed to various sizes (crushed rock) or quarried from sand/gravel formations, both bedrock or superficial, processed and sold. Marine aggregates are dredged from the sea bed. Sand is produced alongside ball clay but 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 207 of the National Planning Policy Framework (MHCLG 2019) requires Mineral Planning Authorities (MPAs) to *'plan for a steady and adequate supply of aggregates by:*

- *preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with another or other mineral planning authorities, 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[1]. It also considers likely future demand for and feasibility of supply of aggregates for the future. The LAA includes data collected up to and including 2017. The most recent extended monitoring survey was in 2014. This collected data on aggregate movements between MPAs and gave a picture of relative levels of consumption nationally and regionally. The outcomes of that survey are used in this LAA, including information on flows of aggregate to and from Dorset.

1.5. The LAA is intended to provide an annually-updated evidence base, contributing to monitoring of aggregate provision and informing MPAs' 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;

[1] 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.

- 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. This is a joint LAA, prepared by Dorset Council on behalf of Bournemouth, Christchurch and Poole Council and covering the administrative areas of the two unitary authorities. Unless specifically stated, references to the Mineral Planning Authority, or to 'Dorset', include both authorities. Local minerals policy is set by the Bournemouth, Dorset and Poole Minerals Strategy, which was adopted by Dorset County Council, Bournemouth Borough Council and Borough of Poole[2] in May 2014. It sets out the strategy for the supply of minerals, including aggregates, up to 2028. Work is in progress on a Mineral Sites Plan (MSP) for Bournemouth, Dorset and Poole (BDP) to identify the sites that will deliver the various mineral needs set out in the Minerals Strategy. The MSP is at an advanced stage of preparation, having undergone examination.

[2] As of 1 April 2019, these three authorities ceased to exist. Dorset Council and Bournemouth, Christchurch and Poole Council formed to create unitary authorities covering the whole of the Bournemouth, Dorset and Poole geographic area.

2. The Resource

2.1. Dorset's varied geology makes it a mineral rich county with a diverse range of resources. Mineral extraction is tightly constrained by landscape and nature conservation interests. Much of the sand and gravel bearing areas coincide with important landscapes and 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 sand and gravel and underlying Poole Formation sands, and is also a low/moderate producer of crushed rock, 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.

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, around 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.

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. Threats to continued crushed rock sales also include alternative restoration options for the quarries on Portland, where various uses have been proposed (e.g. Jurassica[3] in Broadcroft Quarry). 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 are and will remain available for extraction and sales. Most recently crushed rock has been produced in two quarries on Portland.

2.9. 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.

2.10. The only crushed rock aggregate quarry outside Portland is Swanworth Quarry, near Worth Matravers in Purbeck. It produces crushed rock (although not from the cherty series) from Portland Beds. Swanworth Quarry is situated within the AONB and the Heritage Coast.

2.11. Crushed rock is also imported from elsewhere, principally Somerset, both by road and rail. This is much harder Carboniferous limestone suitable for road and other construction uses.

[3] A planned visitor attraction in a disused quarry on the Isle of Portland, southern England. It is based on the Jurassic Coast, a World Heritage Site, and as a subterranean geological park, will largely present the prehistoric world.

3. 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. All extraction is in the county of Dorset.

Figure 1 – The Sand and Gravel Resource with Aggregate Quarries Operational in 2017

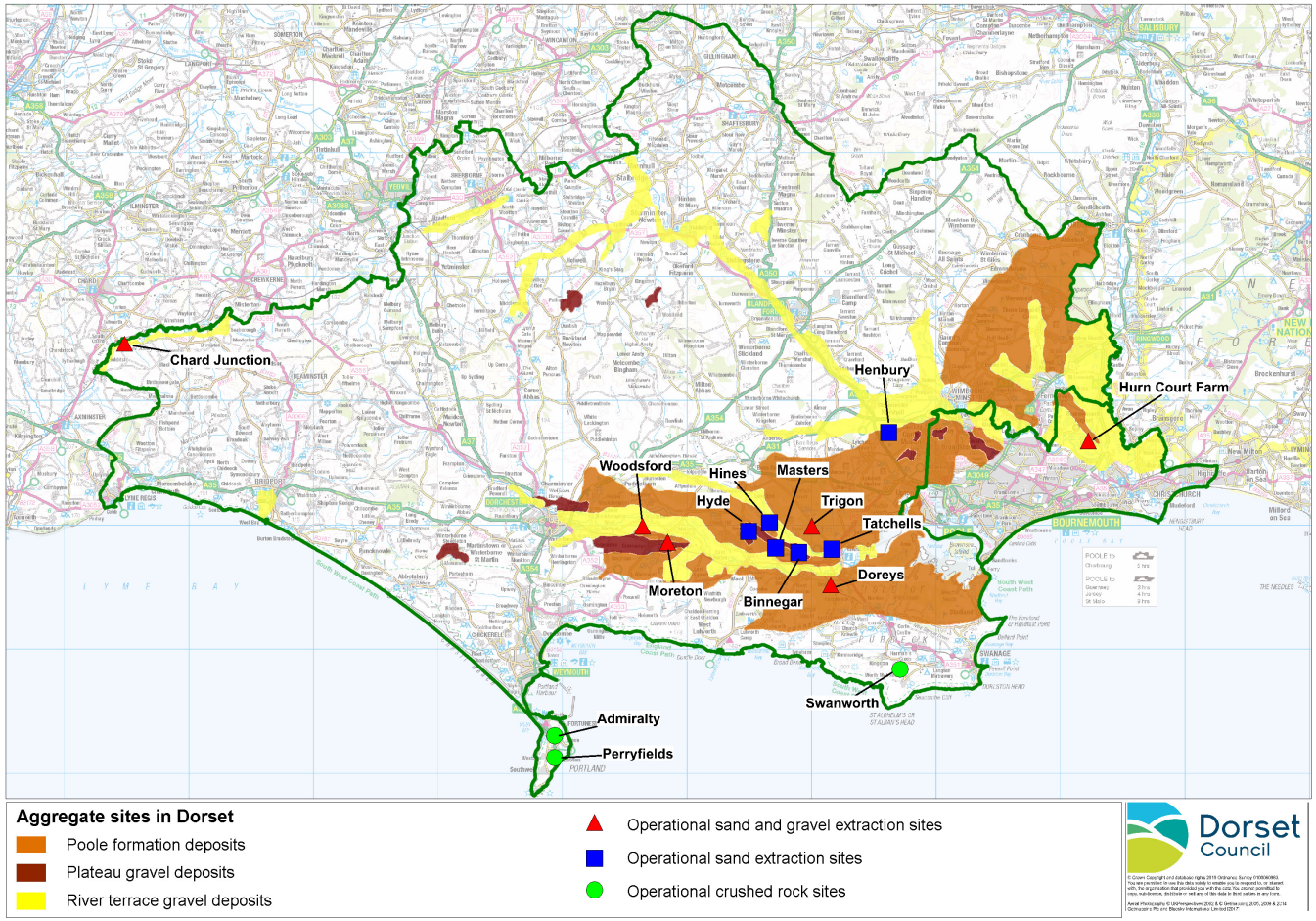


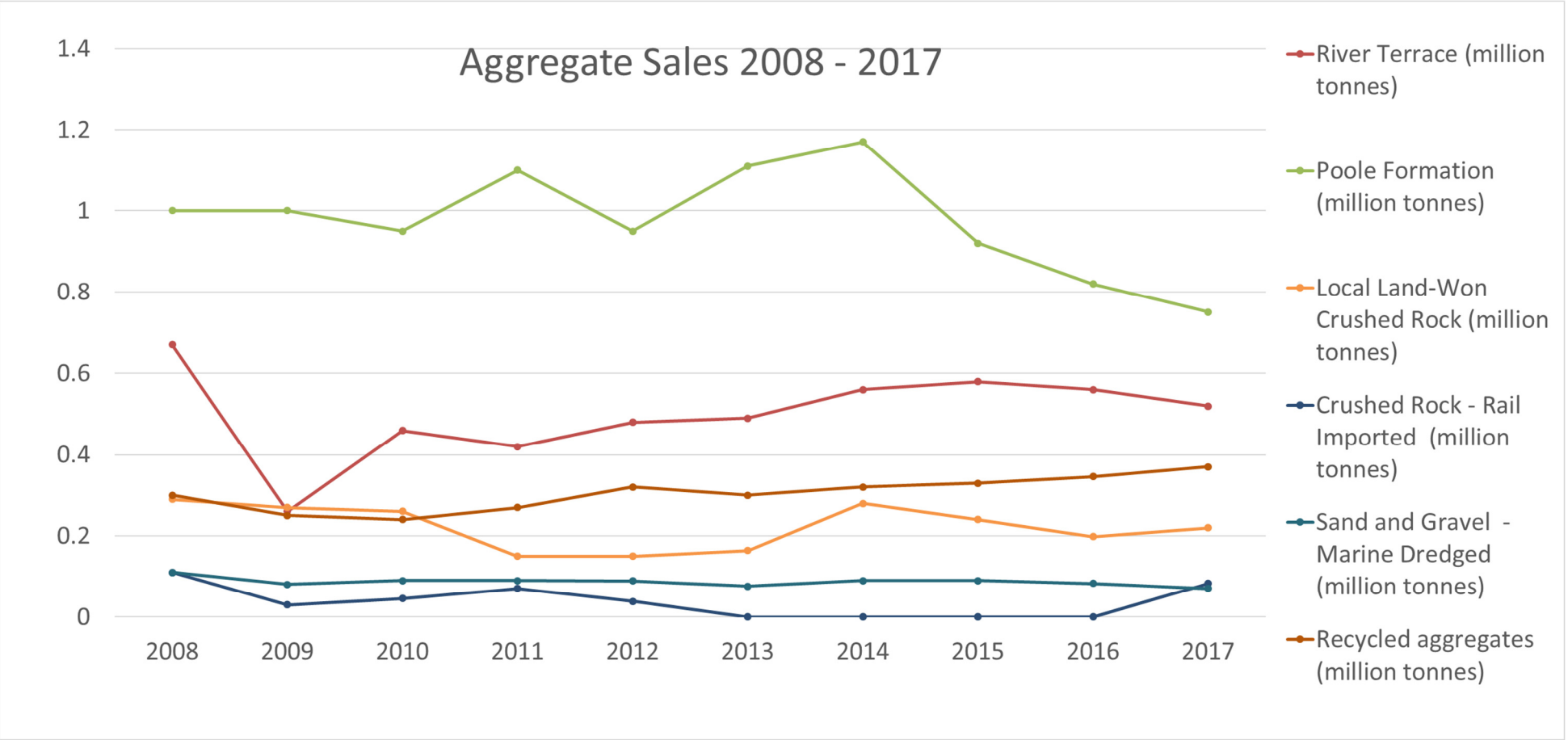
Table 2 – Aggregate Sales 2008 – 2017 (million tonnes)

Aggregate types	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10 YEAR AVERAGE	3 YEAR AVERAGE
River Terrace	0.67	0.26	0.46	0.42	0.48	0.49	0.56	0.58	0.56	0.52	**0.50**	**0.55**
Poole Formation	1.00	1.00	0.95	1.1	0.95	1.11	1.17	0.92	0.82	0.75	**0.98**	**0.83**
Total Land-Won Sand and Gravel	1.67	1.26	1.41	1.52	1.43	1.60	1.73	1.50	1.39	1.27	**1.48**	**1.39**
Land-Won Crushed Rock	0.29	0.27	0.26	0.15	0.15	0.16	0.28	0.24	0.20	0.22	**0.22**	**0.22**
Rail Imported Crushed Rock	0.11	0.03	0.05	0.07	0.04	0.00	0.00	0.00	0.00	0.08	**0.04**	**0.03**
Marine Dredged Sand and Gravel	0.11	0.08	0.09	0.09	0.09	0.08	0.09	0.09	0.08	0.07	**0.09**	**0.08**
Recycled aggregates	0.3	0.25	0.24	0.27	0.32	0.30	0.32	0.33	0.35	0.37	**0.30**	**0.35**
Total production	2.48	1.89	2.05	2.1	2.03	2.14	2.42	2.16	2.02	2.76	**2.20**	**2.31**

Table 2/Figure 2 - Notes

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

Figure 2 – Aggregate Sales 2008 – 2017



3.2Table 2 and Figure 2 indicate:

- Sales of crushed rock show a steady decline, although sales increased significantly between 2013 and 2014 and have risen in 2017.

- Poole Formation sales remained relatively flat, with fluctuations since 2010 and steady decline since 2014.
- River Terrace aggregate has shown an increase in sales since 2009, with a slight decline from 2015 to 2017.
- Table 2 shows a 10 year average of **1.48 mt per annum (mtpa) for land won sand and gravel** (Poole Formation and River Terrace combined) and **0.22 mtpa for crushed rock**.
- In addition to the 10 year average, paragraph 064 of national 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 2017, average sales of sand and gravel (Poole Formation and River Terrace combined) were **1.39 mtpa**, which is slightly lower than the 10 year average. The 3 year average for crushed rock is **0.22 mtpa**, the same as the 10 year 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.

4.2. The estimated reserve for crushed rock, incorporating that on Portland and at Swanworth Quarry, is approximately 12,185,000 tonnes. The 10 year average of sales (2008 to 2017), set out in Table 2, is 220,000 tpa. If this figure is applied to the estimated reserve (**see Table 3**), this gives the following result:

Crushed rock landbank: 12.19 mt / 0.22 mtpa = c. 55 years

4.3. The crushed rock landbank is therefore calculated as 55 years supply. This is well in excess of the required 10 years, and also far in excess of the timescale of the adopted Bournemouth, Dorset and Poole Minerals Strategy (2014-2028) and the emerging Draft Mineral Sites Plan (2019-2034).

4.4. It should however be noted that it is very difficult to determine the crushed rock landbank with accuracy. 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. The permission is for the quarrying of stone - the crushed rock element is from crushing of waste and off cuts and the deeper cherty layer. 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 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. These factors have been taken into account in assessing the current estimated reserve wherever possible, however the reserve could be further reduced as more situations such as these occur.

4.5. The Mineral Sites Plan Pre-Submission Draft (which is currently undergoing examination) does not propose any new open-cast quarries on Portland, in line with the policy stance of the 2014 Minerals Strategy. No permissions for crushed rock quarries were issued in 2017.

4.6. Swanworth Quarry is the largest producer of crushed rock in Dorset, producing approximately half of the total annual output. With less than 5 years of reserves remaining, its closure would impact strongly on sales of crushed rock. The Mineral Sites Plan Pre-Submission Draft includes a proposed extension to Swanworth Quarry in Purbeck. Swanworth and its proposed extension are located in the Dorset Area of Outstanding Natural Beauty and there is some uncertainty regarding the potential landscape impact of the proposed extension. If the proposed 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.

Importation of Crushed Granite

4.7. 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

4.8. 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.

4.9. 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 call for sites carried out as part of production of the Mineral Sites Plan.

4.10. 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

4.11. 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[4] 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.

4.12. The Somerset Local Aggregate Assessment Fourth Edition, incorporating data from 2006 to 2015, notes that the county had estimated permitted reserves for crushed rock at the end of 2015 of approximately 380 mt, which is estimated to last for 28.4 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.

[4] 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.

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 2017 was approximately 12,607,000 tonnes. The 10 year average of sales (2008 to 2017), set out in Table 2, is 1.48 mtpa. If this figure is applied to the estimated reserve (**see Table 3**), this gives the following result:

Sand and gravel landbank: 12.6 mt / 1.48 mtpa = 8.52 years

5.3. As noted above, land won sand and gravel in Dorset comprises 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 2017 was 8.52 years, in excess of the required 7 years.

5.4. At this time the Mineral Planning Authority is 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, existing reserves are not enough to maintain sales during the life of the emerging Mineral Sites Plan and additional sites will need to be developed during the plan period.

5.5. The Plan identifies sufficient sites to meet Policy AS1 of the the Minerals Strategy and it is expected to be adopted during 2019. The permitted reserve figure will have changed by the time of adoption as sales continue and reserves fall.

5.6. It is estimated that sales of sand and gravel during the period from the end of December 2017 to the end of June 2019 will be approximately 1.89 million tonnes (assuming sales in 2018 and 2019 remain generally in line with those for 2017), giving an estimated permitted reserve of sand and gravel **at the end of June 2019** of approximately 11.51 million tonnes (taking into account new permissions issued in 2018).

5.7. Using this estimated figure, along with an end date for the plan period of 2034 (15 years from adoption) and the most recent ten year average of sand and gravel supply (2008-2017) of 1.48 million tonnes per annum, the amount of sand and gravel to be provided for will be:

1.48 million tonnes = 22.2 million tonnes – 11.51 million tonnes (existing permitted reserve) = 10.69 million tonnes

5.8. Therefore, to meet the provision of sand and gravel from 2019 to 2034, at least **10.69 million tonnes** will have to be provided for through new allocations. It is estimated that the sites proposed for allocation in the Mineral Sites Plan provide for approximately 17 million tonnes. In addition to the estimated permitted reserves figure at the end of June 2019 of approximately 11.51 million tonnes, this will provide a total supply of some 28.5 million tonnes over the plan period.

5.9. This amount, along with a policy enabling unallocated sites to be considered, is considered to adequately meet the need for sand and gravel over the life of the Plan and will meet the requirement for a steady and adequate supply of sand and gravel in accordance with Policy AS1 of the Minerals Strategy.

5.10. No new sand and gravel permissions were issued in 2017.

6. **Current Supply of Land Won Aggregate – 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. These quarries have permitted stocks of reserves, and the level of reserves at 31st December 2017 is shown in Table 4 below.

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

- Poole Formation sales continue to fall since, however reserves rose in 2016 due to the permission issued in May 2016 for an extension to the Binnegar Quarry site at Puddletown Road, operated by Raymond Brown. The permission was for 2.27 mt of sand and 0.27 mt of gravel. The Poole Formation landbank rose to above 7 years again in 2016 but has now dropped just below this.
- River Terrace sales have fallen, as have reserves, but the landbank remains well above 7 years.
- The combined River Terrace and Poole Formation landbank has decreased slightly but remains above 7 years.
- 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 proposed through the Bournemouth, Dorset and Poole Mineral Sites Plan, which is currently undergoing examination.

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

	2015	2016	2017
Poole Formation Sales (tonnes)	**917,191**	**823,081**	**745,942**
Remaining Poole Formation Reserve (tonnes)	**7,105,020**	**7,562,949**	**6,676,012**
Poole Formation Landbank in years (based on 10 year average)	**6.90**	**7.56**	**6.81**
Poole Formation Landbank in years (based on 3 year average)	**6.64**	**7.80**	**8.04**
River Terrace Sales (tonnes)	**583,840**	**563,018**	**519,789**
Remaining River Terrace Reserve (tonnes)	**6,722,000**	**5,985,000**	**5,931,000**
River Terrace Landbank in years (based on 10 year average)	**12.9**	**11.97**	**11.86**
River Terrace Landbank in years (based on 3 year average)	**12**	**10.50**	**10.78**
Total (River Terrace and Poole Formation) Aggregate Sales (tonnes)	**1,501,031**	**1,386,099**	**1,265,731**
Remaining (River Terrace and Poole Formation) Reserve (tonnes)	**13,827,020**	**13,547,949**	**12,607,012**
Combined Landbank in years (based on 10 year average)	**8.92**	**8.97**	**8.52**
Combined Landbank in years (based on 3 year average)	**8.59**	**8.80**	**9.07**
Land-Won Crushed Rock Sales (tonnes)	**239,517**	**197,873**	**219,703**
Remaining Reserve[5] (tonnes)	**19,460,567**	**12,200,000**	**12,185,000**
Crushed rock Landbank in years (based on 10 year average)	**c. 80**	**c. 53**	**c. 55**
Crushed rock Landbank in years (based on 3 year average)	**c. 80**	**c. 51**	**c.55**

[5] The estimated remaining reserve was reassessed in 2016 to account for areas where the permission on Portland had been relinquished.

7. Crushed rock landbank

7.1 As set out in Table 3 above, the crushed rock landbank increased slightly between 2016 and 2017. There was a significant drop in the landbank from 2015 to 2016.

7.2 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 aside from one which now solely produces crushed rock. The main business of the two stone companies operating on Portland is dimension stone. Material such as unwanted stone offcuts and quarry/mining waste is crushed and sold as aggregate or armourstone. In addition, a layer of cherty underlying the dimension stone is extracted and crushed and sold as aggregate from some sites.

7.3 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.

7.4 The 2016 and 2017 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. This is why there appears to be a drop in the landbank from 2015 to 2016.

7.5 The only other crushed rock quarry in Dorset is Swanworth Quarry in Purbeck, which has around a 5 year life remaining – a relatively small reserve. As discussed above, an extension is proposed through the Mineral Sites Plan.

8. Monitoring Separate Sand and Gravel Landbanks

8.1 Although the two types of land-won aggregate are to some extent interchangeable, as required by Policy AS2 of the 2014 Minerals Strategy the Mineral Planning Authority seeks to maintain and monitor separate landbanks for Poole Formation and River Terrace. This is done through monitoring sales from quarries which produce primarily one type of aggregate or the other.

8.2 As shown in Table 3 above, at the end of 2017, reserves of Poole Formation were 6.7 mt and River Terrace were 5.9 mt. However, the levels of sales are different, with approximately 0.75 mt of Poole Formation (59%) sold compared with approximately 0.52 mt of River Terrace (41%) in 2017.

8.3 The ten year average sales figures from 2008 to 2017 are 0.98 mtpa for Poole Formation and 0.50 mtpa for River Terrace. If these sales figures are applied to the reserve figures, they **indicate** that the separate landbanks are around:

Poole Formation: 6.7 mt (reserves) / 0.98 mt (10 year average to 2017) = 6.81 years

River Terrace: 5.9 mt (reserves) / 0.50 mt (10 year average to 2017) = 11.86 years

8.4 The Poole Formation landbank is just under 7 years, down from 2016 when it was above 7. The River Terrace landbank is almost 12 years, just down from the previous year.

Supply from other Mineral Planning Authorities

8.5 The Aggregates Monitoring 2014 survey indicated that Dorset (Bournemouth, Dorset and Poole) consumed approximately 730,000 tonnes of sand and gravel6, 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.

8.6 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) being immediately adjacent to Dorset. An application for the Hampshire Roeshot site is still under consideration but is expected to be determined in 2019. As these sites are developed, it is expected that they will provide a significant local supply of aggregate to Dorset.

Quarries in Dorset

8.7 Table 4 below lists the sand and gravel quarries in Dorset, showing the end-dates for the permissions.

[6] Information provided by the British Geological Survey.

Table 4 – Status of Permitted Sand and Gravel Quarries in 2017

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
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.
Trigon Hill	Landowner	Poole Formation sand	31.01.2021
Tatchell's Quarry	Aggregate Industries	Poole Formation sand	21/02/2042
Henbury Pit	M B Wilkes	Poole Formation sand	21.02.2042
Redbridge Road Quarry	G Crook & Sons	River Terrace sand and gravel	30.06.2020
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
Woodsford Quarry	Hills Quarry Products	River Terrace sand and gravel	2028

Name of Quarry	Operator	(Predominant) Aggregate Type	End of Permission
Avon Common *(Permission implemented, extraction not started)*	Tarmac	River Terrace sand and gravel	11 years from commencement of sales of sand and gravel – which has not yet begun although permission is implemented

9. Other Sources of Aggregate Supply for Dorset

9.1 As is the case with many other Mineral Planning Authorities, there are other sources of aggregate that Dorset can rely on, in addition to land-won aggregate. These include:

- **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
- **secondary aggregates** - materials produced as industrial by-products, such as foundry sand or crushed glass. In the past spent foundry sand has been imported into Poole for use at the asphalt plant there, but these secondary aggregates were not imported in 2017. They 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.

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

10. Marine Dredged Aggregate

10.1 Marine dredged sand and gravel is extracted from the sea bed from licensed 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 5 – Summary of Marine Dredged Sales (mt)

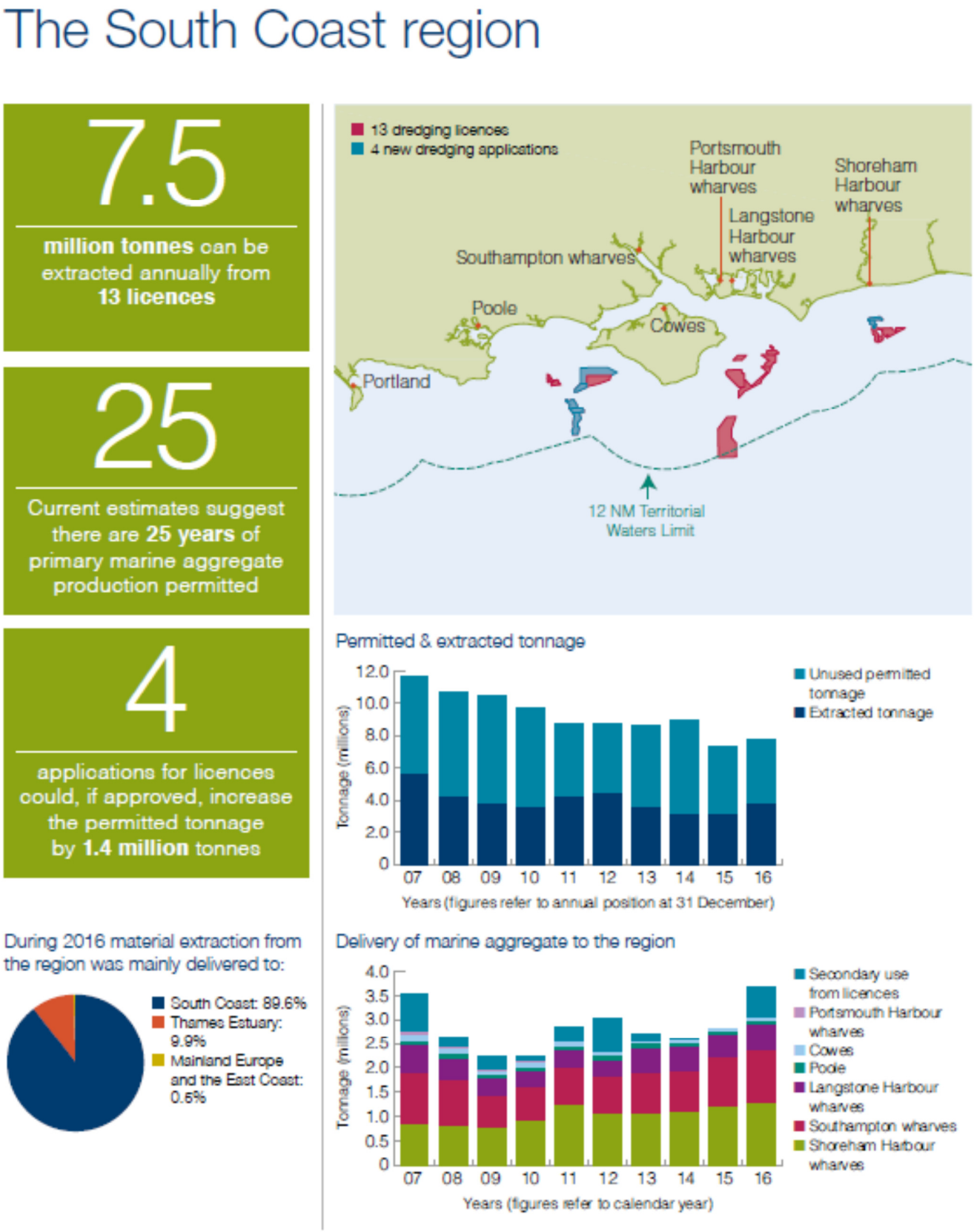
Aggregate types	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10 YEAR AVERAGE	3 YEAR AVERAGE
Marine Dredged Sand and Gravel	0.11	0.08	0.09	0.09	0.09	0.08	0.09	0.09	0.08	0.07	**0.09**	**0.08**

Poole Wharf

10.2 The only wharf currently landing marine dredged aggregates is Poole Wharf, operated by CEMEX in the Port of Poole. Landings have been relatively constant at around 90,000 tonnes per annum, although this has decreased slightly over the last two years. Tonnages are shown in Table 5. In 2017, 71,400 tonnes were landed at Poole Wharf. The ten year average of marine aggregate landings at Poole Wharf is approximately 90,000 tonnes, and the three year average is slightly lower at approximately 80,000 tonnes. Both of these figures are rounded in Table 5 above. Marine aggregate makes a relatively small contribution to the supply of aggregate in Dorset (approximately 3.5% in 2017) and much of what is landed is likely to be used within Poole and Bournemouth. In 2014, approximately 70% of marine dredged sand and gravel landed was consumed within Dorset (including Poole/Bournemouth).

10.3 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 5** illustrates where the marine dredged aggregate is taken to, and **Figure 6** shows the resource and licenced dredging areas closest to Dorset. For the South Coast, that extracted tonnage is significantly less than was extracted historically.

Figure 5: Marine Dredged Aggregate – South Coast Region[7]



[7] *Marine Aggregates – Capability and Portfolio Report*: Crown Estate 2017

Figure 6 – Reserves and Reserve Life[8]

Region	Total current primary reserves	10 year average annual offtake	3 year average annual offtake	Peak average offtake during 10 year period	Annual permitted offtake (as at 31.03.2017)	Regional reserve life @ 10 year average annual offtake
		Primary (construction aggregate)				
Humber	57.82	2.09	1.41	3.19	5.60	27.69
East Coast	85.20	5.09	4.50	7.72	8.45	16.74
Thames Estuary	17.20	1.02	1.35	1.94	2.35	16.91
East English Channel	75.99	3.23	3.97	4.65	10.30	23.55
South Coast	89.47	3.57	3.04	4.75	7.53	25.08
South West	8.63	1.16	1.14	1.77	1.70	7.41
North West	15.26	0.38	0.27	0.74	1.30	40.48
TOTAL	349.57	16.53	15.68	21.10	37.23	21.15

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

[8] *Marine Aggregates – Capability and Portfolio Report*: Crown Estate 2017

Constraints and Future Supply

10.4 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 a relatively small wharf, capacity is limited. The wharf at Poole Port is safeguarded through the Bournemouth, Dorset and Poole Minerals Strategy (2014) 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.

10.5 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.

10.6 As shown in **Figure 6**, the Marine Aggregates Capability and Portfolio Report 2017 (Crown Estate) indicates that for the South Coast, the total current primary reserves (the current licensed production areas) are 89.47 mt, with a 10-year annual average offtake of 3.57 mt. This equates to a land bank of over 20 years, indicating that a continuation of supply (or even an increase, should the need arise) is expected to be possible from this source.

11. Recycled Aggregates

11.1 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 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.

11.2 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.

11.3 Although information on recycled aggregate sales is limited, ten years of survey data in Dorset is now available (see Table 6 and Figure 4). Some estimates have been used due to a lack of response from operators. In 2017 there were 13 known fixed aggregate recycling sites, plus a rail depot, as illustrated in Figure 7 and Table 7. Sales in 2017 were approximately 365,800 tonnes. The ten year average of sales is approximately 290,000 tonnes per annum and the three year average is approximately 330,000 tonnes. In 2013, recycled aggregate sales fell, but have risen annually since then. Some returns for 2014 - 2017 are estimated, due to lack of returns from some operators.

Table 6 – Summary of Recycled Aggregate Sales (mt)

Aggregate types	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10 YEAR AVERAGE	3 YEAR AVERAGE
Recycled aggregates	0.3	0.25	0.24	0.27	0.32	0.29	0.30	0.33	0.35	0.37	**0.29**	**0.33**

11.4 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[9] suggests that of the total sales of recycled aggregate, some 80% is derived from fixed sites with an additional 20% from construction sites. 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 estimated 2017 sales volumes, actual production in 2017 could have been around 439,000 tonnes.

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

Figure 7 – Fixed Recycling Facilities 2017

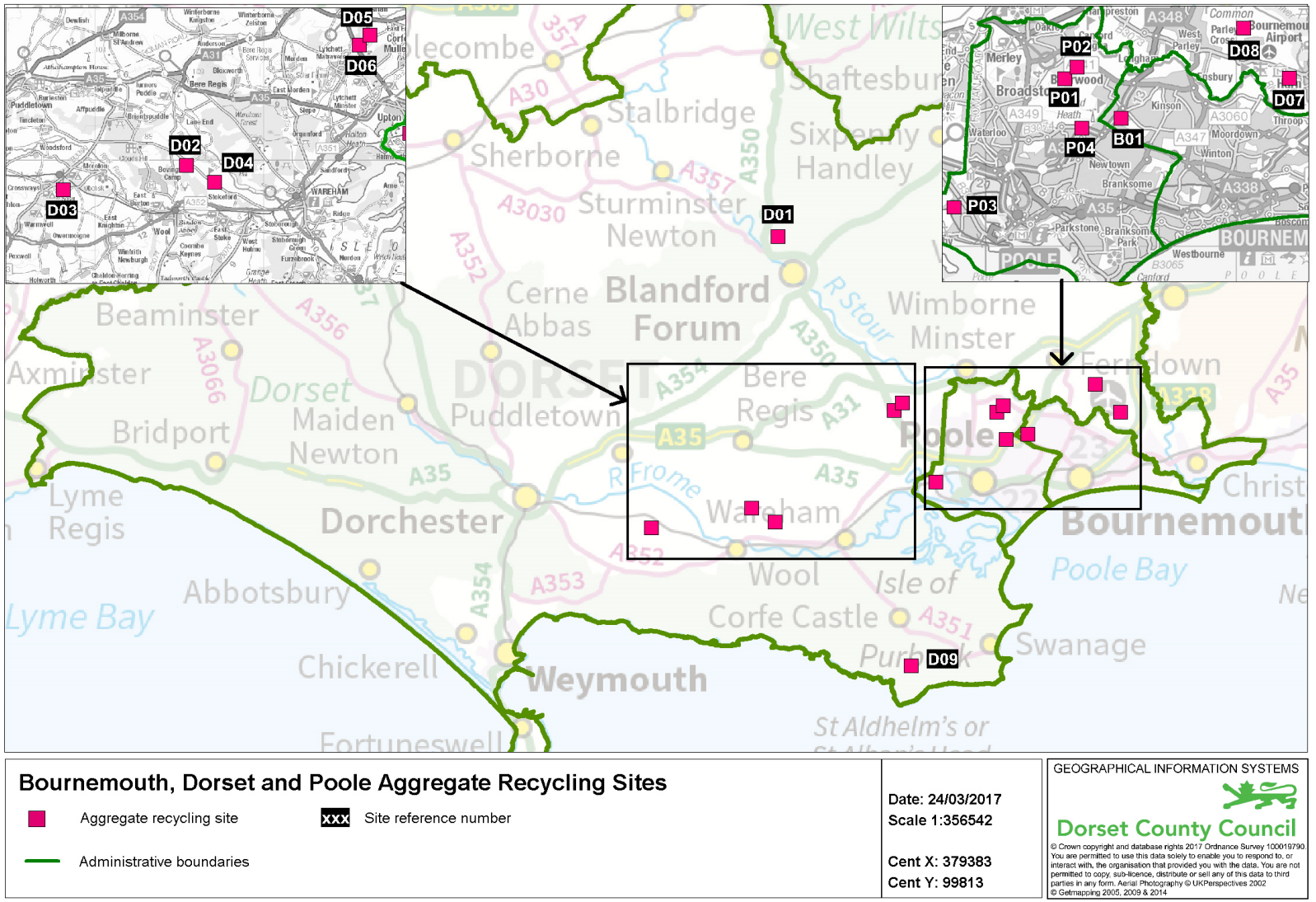


Table 7 - Recycled Aggregate Sites and Operators

Ref no	Site Name	Site Operator	MPA
D01	Downend Farm, Blandford Forum	Mark Farwell Plant Hire Ltd	Dorset
D02	Spratley Wood, Puddletown Road	Mr P Andrews	Dorset
D03	Redbridge Road Quarry, Moreton	G Crook & Sons	Dorset
D04	Masters Quarry, Puddletown Road	New Milton Sand & Ballast	Dorset
D05	Henbury Quarry, Wimborne	MB Wilkes Ltd	Dorset
D06	Henbury road planings recycling site, Wimborne	W&S Recycling	Dorset
D07	Hurn Court Farm, Christchurch	New Milton Sand & Ballast	Dorset
D08	Chapel Lane, Parley, Christchurch	Eco Sustainable Solutions	Dorset
D09	Swanworth Quarry, Purbeck	J Suttle Transport	Dorset
P01	Whites Pit Landfill Recycling Site	Commercial Recycling Ltd	Poole
P02	Canford Recycled Aggregates Washing Plant	Commercial Recycling Ltd	Poole
P03	Dawkins Road Rail Head	Hanson	Poole
P04	Manning's Heath Depot, Manning's Heath	J Suttle Transport	Poole
B01	Elliott Road Industrial Estate, Bournemouth	New Milton Sand & Ballast	Bournemouth

Constraints and Future Supply

11.5 Planning permission was granted for a facility at Kings Stag Mill, Sturminster Newton in 2013, however production is yet to start. The total permitted capacity for aggregate recycling production is over 580,000 tonnes[10], 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
- loss of aggregate recycling sites through site closure or ending of temporary planning permission without renewal or being made permanent.

[10] Bournemouth, Dorset & Poole Minerals Strategy (2014)

11.6 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.

12. **Uses of Dorset's Aggregate Resource**

12.1 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.

12.2 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%)

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

13. **Exports from Dorset**

13.1 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.

13.2 Table 8 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.

13.3 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 8 – 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	1.74	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

13.4 The AM2014 report along with additional material made available by the British Geological Survey[11] 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.

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

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

14. Future Demand

14.1 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.

14.2 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[12] 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 in 2014 – 1,605,000 tonnes. 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.

14.3 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 9 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.

14.4 Across the area as a whole, some 3,186 new dwellings are planned per annum. This figure is likely to rise in coming years as Plans are reviewed in line with the requirements of the National Planning Policy Framework to meet the "objectively assessed need" for housing in the area. All of the adopted local plans/core strategies have reviews underway. Local government reorganisation has seen the creation of two unitary authorities in Dorset – Dorset Council and Bournemouth, Christchurch and Poole Council. Both councils intend to prepare new local plans for the new authority areas. Proposed housing and infrastructure requirements will be kept under review in relation to the local aggregates assessment.

Historic Levels of Development.

14.5 Table 10 shows the historic levels of housing/infrastructure development in Dorset over the 10 years 2007/8 – 2016/17. Over this 10 year period the average annual level of net dwelling completions across the three authorities is 2,110. A sharp divide can be seen in the level of development pre and post 2009 when the housing recession really began to bite in Dorset. 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

[12] 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.

there was a fall in 2016/17 to just over 2000. The three year average rate of completions for 2014/15-2016/17 is 2,2383 dwellings, above the 2,000 dwellings mark.

14.6 The higher rates of development seen in the earlier part of the decade indicate that, if the level of housing development does rise again in the future, the aggregate industry should be able to accommodate levels of 3,500 dwellings per annum over a period of several years as it has met demand at this level in the past. However, it will be important to keep monitoring the situation to initiate a plan review if necessary.

14.7 For comparison, figures for annual sand and gravel sales, from 2007 to 2016, have been added to Table 10. They demonstrate some level of correlation between housing completions and aggregate sales, although there is often a bit of a lag.

Table 9 - Proposed Housing Development in Local Plans / Development Plan Documents in Bournemouth, Dorset and Poole

Local Authority	Local Plan / DPD	Status	Plan period	Total Proposed dwellings	Annual average rate (dwells 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.

Table 10 - Net Annual Completions

Local Authority	2007 /08	2008 /09	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16	2016 /17	2007/ 08 - 2016/ 17	10 YR AV	3 YR AV
Christchurch	190	101	102	103	62	71	149	154	125	180	1,237	123	153
East Dorset	163	116	70	157	107	61	156	180	182	119	1,311	131	160
North Dorset	194	207	192	272	375	144	227	178	220	146	2,155	215	181
Purbeck	208	194	164	77	107	79	72	67	250	77	1,295	129	131
West Dorset	345	383	204	330	377	366	259	251	666	493	3,674	367	470
Weymouth and Portland	275	410	150	130	169	204	113	148	201	167	1,967	196	172
DORSET	**1,375**	**1,411**	**882**	**1069**	**1197**	**925**	**976**	**978**	1644	**1,182**	11,639	1163	1268
Bournemouth	1,534	1218	622	492	555	639	394	964	817	337	7,572	757	706
Poole	619	685	421	257	187	208	257	199	438	591	3,862	386	409
Totals	**3,528**	**3,314**	**1,925**	**1,818**	**1,939**	**1,772**	**1,627**	**2,141**	**2,899**	**2,110**	**23,073**	**2,307**	**2,383**
Sand and gravel sales (mt)	1.56	1.67	1.26	1.41	1.52	1.43	1.60	1.73	1.50	1.39*		1.48	1.39

Source: Dorset County Council, Economy and Enterprise - Residential Land Monitoring Records; District/Borough records. From 2016/17: 'New builds' from https://www.gov.uk/government/statistical-data-sets/live-tables-on-net-supply-of-housing
*2016

Projected Development beyond current Plan periods

14.8 It is not yet known with certainty what level of development will be built beyond the proposals in the current Local Plans. A key objective of national planning policy as set out in the National Planning Policy Framework is to "boost significantly the supply of

housing". Local authorities are required to use a 'standard methodology' taking into account growth and affordability to calculate housing need. Table 11 sets out the calculation for housing need across the former Dorset, Bournemouth and Poole areas, as of May 2019. The final column shows the calculated need.

14.9 The new Dorset Council and Bournemouth, Christchurch and Poole Councils are likely to begin preparation of new Local Plans in place of the existing Local Plans for the districts and boroughs. Housing requirements will need to be based on the standard methodology.

Table 11 – Projected housing need beyond current Local Plans *(May 2019)*

	Average annual household growth, 2019-2029	Household growth plus 40% (cap limit)	LP target (if adopted in last 5 years)	LP target plus 40% (cap limit)	Local Housing Need p.a., April 2019 (uncapped)	Local Housing Need p.a., (capped)
Bournemouth	1113	1558			1422	1422
Poole	603	844	710	994	801	801
Christchurch	249	349			388	349
East Dorset	316	442			474	442
North Dorset	266	372	285	399	355	355
Purbeck	131	183			179	179
West Dorset	396	554			569	-
Weymouth and Portland	187	261			241	-
West Dorset, Weymouth & Portland Plan Area	582	815	775	1085	811	811
BCP Area	**1965**	**2750**			**2612**	**2572**
Dorset Council Area	**1295**	**1812**			**1819**	**1787**

14.10 Considering the broad distribution of future development, it is likely that the main focus will be in and around Poole and Bournemouth. 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.

14.11 Elsewhere a major urban extension (1800 dwellings) is proposed in Gillingham in the north of the County and over 1200 dwellings in and around Wimborne in the east. In the west, Dorchester will be the main focus of development with around

1900 dwellings currently allocated and extensions on the edge of Weymouth will also boost that town's growth by around 1300 dwellings.

14.12 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;
- 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

15. Maintaining Supply

15.1 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 designations 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.

15.2 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, will be tested during the preparation of the Mineral Sites Plan. 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

15.3 Individual sites 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.

15.4 The landscape and environmental sensitivity of BDP 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.*

15.5 Environmental 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. This will become clearer as the sites identified for possible inclusion in the Mineral Sites Plan undergo sustainability appraisal.

16. **Final Comment**

16.1 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 emerging 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.

Appendix 1

A.1. Tables 12 to 16 below show the various aggregate producing/handling facilities in Bournemouth, Dorset and Poole, both active and inactive, in 2017.

Table 12 - Land Won Sand and Gravel Quarries – operational in 2017 (see Figure 1 for locations)			
MPA	Quarry	Site Operator	Mineral
DCC	Tatchell's Quarry	Aggregate Industries	Sand
DCC	Masters Pit	Holme Sand and Ballast	Sand
DCC	Dorey's Pit	Ball Clay site – worked by Imerys[13]	Gravel
DCC	Binnegar Quarry	Raymond Brown	Sand
DCC	Henbury Quarry	M B Wilkes	Sand
DCC	Trigon Pit	Ball Clay site – worked by Imerys[14]	Primarily Sand, some Gravel
DCC	Chard Junction Quarry	Aggregate Industries	Sand and Gravel
DCC	Woodsford Quarry	Hills Aggregates	Sand and Gravel
DCC	Hurn Court Farm	New Milton Sand and Ballast	Sand and Gravel
DCC	Redbridge Road Quarry	G Crook and Sons	Sand and Gravel

[13] Output is taken to Masters Pit (Holme Sand and Ballast) and processed there.

[14] Output is sold separately by landowner.

Table 13 - Land Won Sand and Gravel Quarries – inactive in 2017			
MPA	Quarry	Site Operator	Mineral Handed/Produced
DCC	Hyde Pit	Hanson Aggregate	Sand
DCC	Hines Pit	Hanson Aggregate	Sand
DCC	Avon Common	Tarmac	Sand and Gravel

Table 14 - Crushed Rock Quarries – operational in 2017 (see Figure 1 for locations)			
MPA	Quarry	Site Operator	Mineral Handled/Produced
DCC	Swanworth Quarry	Suttle Quarries	Crushed Rock, some dimension stone
DCC	Admiralty Quarry	Worked by G Crook and Sons	Crushed rock (cherty series)
DCC	Perryfield Quarry	Worked by Portland Stone Ltd	Crushed rock

Table 15 - Known Recycled Aggregate Facilities – operational in 2017		
MPA	Site	Site Operator
Borough of Poole	Canford Recycled Aggregates Washing Plant	Commercial Recycling Ltd
Borough of Poole	Whites Pit Landfill Recycling Site	
Borough of Poole	Dawkins Road Rail Head	Hanson
Dorset County Council	Downend Farm, Blandford Forum	Mark Farwell Plant Hire Ltd
Bournemouth Borough Council	Elliot Road Industrial Estate, Bournemouth	New Milton Sand & Ballast
Dorset County Council	Henbury Quarry, Wimborne	M B Wilkes Ltd
Dorset County Council	Redbridge Road Quarry, Moreton	G Crook & Sons
Dorset County Council	Chapel Lane, Christchurch	Eco-Sustainable Solutions
Dorset County Council	Hurn Court Farm, Christchurch	New Milton Sand & Ballast
Borough of Poole	Manning's Heath Depot, Manning's Heath	J Suttle Transport
Dorset County Council	Masters Quarry, Puddletown Road	New Milton Sand & Ballast
Dorset County Council	Spratley Wood, Puddletown Road	Mr P Andrews
Dorset County Council	Henbury road planning facility, Wimborne	Allasso
Dorset County Council	Swanworth Quarry	J Suttle Transport Ltd

Table 16 - Aggregate Wharves and Rail Depots			
MPA	Site	Site Operator	Mineral Handled/Produced
Borough of Poole	CEMEX Aggregates Wharf	CEMEX	Marine Dredged sand and gravel
Borough of Poole	Dawkins Road Rail Depot, Hamworthy, Poole	Hanson	Crushed Mendips rock
DCC	Wool Sidings, Wool[15]	Network Rail	Sand from Warmwell Quarry

[15] Site not operational in 2017.