Table of Contents

1. Introduction ....................................................................................................................... 7
2. Land Won Aggregate ........................................................................................................... 8
   Geology of Hampshire........................................................................................................... 8
   Permitted Sites Producing Sand and Gravel in Hampshire ................................................. 9
   Sand and Gravel Production and Sales .............................................................................. 10
3. Recycled/Secondary Aggregates ....................................................................................... 13
4. Wharves (Marine-won Sand and Gravel) ......................................................................... 15
5. Crushed Rock .................................................................................................................... 17
6. Overview of Aggregate Sales .......................................................................................... 19
7. Future Aggregate Demand ................................................................................................ 20
   Landbank ............................................................................................................................ 21
   Capacity ............................................................................................................................... 23
8. Conclusions and review of the Local Aggregate Assessment ............................................. 26
Appendix A – Silica Sand ........................................................................................................ 27

Tables and Figures

Table 1: Permitted quarries in Hampshire, 2017 ................................................................. 10
Table 2: Land-won soft sand and sharp sand and gravel sales in Hampshire, 2008-2017 (Million tonnes, Mt) ................................................................. 11
Table 3: Hampshire reserves and landbank ....................................................................... 12
Table 4: Recycled and Secondary aggregate sales in Hampshire, 2008-2017 (Million tonnes, Mt) ........................................................................................................... 13
Table 5: Marine-won sand and gravel sales in Hampshire, 2008-2017 (Million tonnes, Mt) .................................................................................................................. 16
Table 6: Crushed rock sales from rail depots and wharves in Hampshire, 2008-2017 (Million tonnes, Mt) ........................................................................................................... 18
Table 7: Levels of delivered and planned infrastructure ......................................................... 18
Table 8: Allocated sites for land-won aggregates ................................................................ 21
Table 9: Adjusted Landbank figures with future applications and allocated sites ......... 22
Table 10: Total sales and estimated production capacity, 2017 (Million tonnes, Mt) 24
Figure 1: Location of active quarries in 2017 ................................................................. 20
Figure 2: Sales of land-won sand and gravel in Hampshire, 1996-2017 (Million tonnes, Mt) .......................................................................................................................... 11
Figure 3: Location map of active recycled and secondary aggregate sites in Hampshire, 2017 .......................................................... 14
Figure 4: Location map of active wharves in Hampshire, 2017 ......................... 15
Figure 5: Location map of active rail depots in Hampshire, 2017 ..................... 17
Figure 6: Overview of aggregate sales, 2008-2017 (Million tonnes, Mt) ............ 19
### Summary – Hampshire County Council 2018 (for the calendar year 2017)

<table>
<thead>
<tr>
<th></th>
<th>2017 Sales (Mt)</th>
<th>Average (10-yr) Sales (Mt)</th>
<th>Average (3-yr) Sales (Mt)</th>
<th>Trend (10-yr sales)</th>
<th>Trend (3-yr sales)</th>
<th>LAA Rate (Mt)</th>
<th>Reserve (Mt)</th>
<th>Landbank (years)</th>
<th>Capacity (Mtpa)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Sand</td>
<td>0.23</td>
<td>0.16</td>
<td>0.18</td>
<td><img src="green-arrow" alt="↑" /></td>
<td><img src="green-arrow" alt="↑" /></td>
<td>0.28</td>
<td>0.57</td>
<td>2.04</td>
<td>0.33</td>
<td>Sales are improving. However, landbank issues remain (below NPPF requirement).</td>
</tr>
<tr>
<td>Sharp Sand &amp; Gravel</td>
<td>0.73</td>
<td>0.78</td>
<td>0.73</td>
<td><img src="red-arrow" alt="↓" /></td>
<td><img src="green-arrow" alt="↑" /></td>
<td>1.28</td>
<td>7.35</td>
<td>5.74</td>
<td>1.15</td>
<td>Sales decreased marginally and there continues to be landbank issues (below NPPF requirement).</td>
</tr>
<tr>
<td>All Sand &amp; Gravel</td>
<td>0.96</td>
<td>0.94</td>
<td>0.91</td>
<td><img src="green-arrow" alt="↑" /></td>
<td><img src="green-arrow" alt="↑" /></td>
<td>1.56</td>
<td>7.92</td>
<td>5.08</td>
<td>1.47</td>
<td></td>
</tr>
<tr>
<td>Crushed Rock</td>
<td></td>
<td></td>
<td></td>
<td><img src="red-arrow" alt="↓" /></td>
<td><img src="red-arrow" alt="↓" /></td>
<td></td>
<td></td>
<td></td>
<td>2.3</td>
<td>Hampshire does not have an indigenous supply of crushed rock.</td>
</tr>
<tr>
<td>Recycled / Secondary Aggregates</td>
<td>0.76</td>
<td>0.84</td>
<td>0.86</td>
<td><img src="red-arrow" alt="↓" /></td>
<td><img src="red-arrow" alt="↓" /></td>
<td>0.8</td>
<td></td>
<td></td>
<td>2.3</td>
<td>Sales have reduced for the 3rd year running.</td>
</tr>
<tr>
<td>Marine Sand &amp; Gravel</td>
<td>1.52</td>
<td>1.33</td>
<td>1.54</td>
<td><img src="green-arrow" alt="↑" /></td>
<td><img src="red-arrow" alt="↓" /></td>
<td>1.4</td>
<td></td>
<td></td>
<td>1.79</td>
<td>Worth noting, only 1/6 sites responded to the capacity question. Therefore, remaining capacities were produced by sales/estimated capacity.</td>
</tr>
<tr>
<td>Rock Imports by Sea</td>
<td></td>
<td></td>
<td></td>
<td><img src="red-arrow" alt="↓" /></td>
<td><img src="red-arrow" alt="↓" /></td>
<td></td>
<td></td>
<td></td>
<td>1.79</td>
<td></td>
</tr>
<tr>
<td>Rail Depot Sales (Sand &amp; Gravel)</td>
<td>c</td>
<td></td>
<td></td>
<td><img src="red-arrow" alt="↓" /></td>
<td><img src="red-arrow" alt="↓" /></td>
<td>0.5</td>
<td></td>
<td>1.79</td>
<td>1.79</td>
<td>Rail depots are mainly used to import crushed rock to Hampshire. Import of some sand and gravel this year.</td>
</tr>
<tr>
<td>Rail Depot Sales (Crushed Rock)</td>
<td>0.57</td>
<td>0.43</td>
<td>0.53</td>
<td><img src="green-arrow" alt="↑" /></td>
<td><img src="green-arrow" alt="↑" /></td>
<td>0.5</td>
<td></td>
<td></td>
<td>1.79</td>
<td>A return was not received from the Kendalls operated Fareham Rail Depot as the company was sold this year. The sales for this depot have been estimated.</td>
</tr>
</tbody>
</table>

Hampshire Minerals & Waste Plan: Local Aggregate Assessment 2018
Sales of sand and gravel have increased which places pressure on the current permitted capacity. Permission was granted for a site (Forest Lodge Home Farm) but this was not operational in 2017. There are anticipated applications which will increase the landbank figure for Hampshire. A significant increase in planned infrastructure has been identified in the medium term. Trends are determined by same year sales comparisons.
Executive Summary

Introduction

This is the Local Aggregate Assessment (LAA) for Hampshire and covers the administrative areas of Hampshire County Council, the New Forest National Park Authority, the South Downs National Park Authority, and the Unitary Authorities of Southampton City Council and Portsmouth City Council.

The purpose of the LAA is to detail the current and predicted situation in Hampshire with respect to all aspects of aggregate supply.

Land-won Aggregate

Hampshire’s geology gives rise to sharp sand and gravel, soft sand, and silica sand. Aggregates are sourced from land-won resources, recycled aggregate and imports by rail.

There were nine active permitted quarries in 2017, with one currently inactive sharp sand and gravel site.

Soft sand resources are scarce and concentrated in a small number of areas, in comparison sharp sand and gravel resources are much more prolific and spread out within Hampshire. In 2017, there was an insufficient landbank for both aggregates. However, there are planning applications in the pipeline which, if permitted, would help rectify the shortfall.

Total sales of sand and gravel rose in 2017. The overall trajectory of the past 10 years shows a decrease in sales which is likely to be a result of the 2008 economic downturn. In comparison, the past three years, has seen an increase in sales.

Recycled & Secondary Aggregate

There was a reduction in sales of recycled and secondary aggregate in 2017 of 6% to 0.76Mt. Over the past ten years sales increased to a peak in 2014 of 1.1Mt at which point sales began to fall.

The total capacity for recycled or secondary aggregate processing in Hampshire is estimated to be greater than 2.38Mt.

Marine Sand and Gravel

Marine-won sand and gravel sales showed a slight drop in sales in 2017. However, a change in ownership prevented the collection of data for one of the active sites. The data was estimated from the previous year figures and as such, cannot be seen as a true representation of sales and instead only as an indication. Marine imports are received at six wharves within Hampshire. Evidence suggests that there is capacity to serve an increase in demand.
Crushed Rock

Hampshire has no crushed rock resources of its own and therefore relies on imports, predominantly from Somerset, who have confirmed that they cannot foresee any issues with ongoing supply.

Supply is imported to rail depots running along the east of Southampton. On occasion, a small percentage is imported into Hampshire’s Wharves. However, there were no crushed rock imports via wharves in 2017.

Future Aggregate Supply

There are a number of housing and transport projects planned between 2017 and 2021. This indicates growth which is expected to manufacture increased aggregate demand within Hampshire.

Current permitted reserves at 31st December 2017 (not including anticipated planning applications) total 7.92Mt with a landbank of 5.08 years.

To be able to meet this further demand Hampshire will greatly need to increase its land-won aggregate landbank. Should the applications in the pipeline be permitted, the landbank for Hampshire would increase to 7.68 years based upon the local requirements.

The Hampshire Minerals & Waste Plan was adopted in 2013. Government policy requires the Plan to be reviewed after 5 years of adoption to determine whether the policies need to be updated. A Review of the Hampshire Minerals & Waste Plan has been undertaken and will be published following approval by each of the partner Authorities.

Conclusions

Hampshire’s local aggregate provision will not impact the wider South East region as a whole and is in fact a net exporter of land-won sand and gravel to other mineral planning authorities. However, Hampshire is reliant on other mineral planning authorities for supplies of crushed rock and as such will need to ensure consideration is given to this in other mineral local plans (e.g. Somerset) through the duty to cooperate.
1. **Introduction**

1.1 The purpose of this Local Aggregate Assessment (LAA) report is to detail the current and predicted situation in Hampshire with respect to all aspects of aggregate supply.

1.2 The National Planning Policy Framework (NPPF)\(^1\) sets out the requirement for local authorities to produce an annual LAA, stating that ‘Minerals planning authorities should plan for a steady and adequate supply of aggregates by preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with other mineral planning authorities based on a rolling average of 10 years sales data’.

1.3 Hampshire County Council (HCC), Portsmouth City Council (PCC), Southampton City Council (SCC), the New Forest National Park Authority (NFNPA) and the South Downs National Park Authority (SDNPA) adopted the Hampshire Minerals & Waste Plan (HMWP) in October 2013 which was produced in partnership. The HMWP provides minerals (and waste) planning policy in Hampshire until 2030.

1.4 Since the adoption of the HMWP, this plan making partnership has come to an end and a new partnership has formed between HCC, PCC, SCC, and NFNPA, hereafter referred to as the Hampshire Authorities, to monitor and implement the Plan. A separate Service-Level Agreement (SLA) has been established between HCC and SDNPA for HCC to undertake the HMWP monitoring duties on behalf of the SDNPA.

1.5 This is the Local Aggregate Assessment (LAA) for Hampshire and covers the administrative areas of Hampshire County Council, Portsmouth City Council, Southampton City Council and the part of the South Downs National Park that is in Hampshire. The purpose of the LAA is to detail the current and predicted situation in Hampshire with respect to all aspects of aggregate supply, in particular with regard to the county’s land-won aggregate provision up to 2030.

1.6 It is important to note that the data used in the preparation of this report predominantly comes from the annual monitoring of aggregates sales by the Hampshire Authorities including the SDNPA on behalf of the South East England Aggregate Working Party (SEEAWP). The Aggregate Monitoring (AM)  

---

survey collects annual sales data from active mineral extraction sites, minerals wharves, minerals rail depots and recycled aggregate processing sites.

2. **Land Won Aggregate**

**Geology of Hampshire**

2.1 The geology of Hampshire is currently characterised by four main geological regions:
- Chalk Downlands – comprising Upper Chalk
- Hampshire Basin
- London Basin
- Wealden Edge

2.2 In terms of aggregates, Hampshire’s geology provides sharp sand and gravel and soft sand.

2.3 The geology of Hampshire also has sand with silica properties which has the potential for industrial uses. Whilst not an aggregate, the supply of silica sand is also considered within this Local Aggregate Assessment (see Appendix A).

2.4 Hampshire has the capability of supplying aggregates from a number of sources including:
- Land-won extraction;
- recycled and secondary aggregate;
- dredging sand and gravel from the sea bed (marine-won); and
- importing aggregate (via rail depots and wharves)².

2.5 Further information regarding the detailed geology within Hampshire can be found in the following reports which were produced to support the Hampshire Minerals & Waste Plan:
- Minerals in Hampshire: Background Study³; and

---

² Estimate of imports by road can be found in the AM 2014 National Collation.
³ Minerals in Hampshire: Background Study (V7), 2013:
  [http://documents.hants.gov.uk/mineralsandwaste/HMWP100bMineralsinHampshirev7-SubmissionRevisedFeb2013.pdf](http://documents.hants.gov.uk/mineralsandwaste/HMWP100bMineralsinHampshirev7-SubmissionRevisedFeb2013.pdf)
⁴ HMWP – Soft Sand Topic Paper:
Permitted Sites Producing Sand and Gravel in Hampshire

2.6 Historically much of Hampshire’s land-won aggregate production has come from south-west Hampshire. Figure 1 shows the location of the active quarries in Hampshire in 2017. An increasing number of smaller production areas have been located in north east Hampshire and south Hampshire.

Figure 1: Location of active quarries in 2017

2.7 Production in south Hampshire has fallen significantly in recent years, reflecting the depletion of available resources following the closures of extraction sites at Netley and Warsash. Increased availability of alternative sources of aggregate, such as rail and marine dredged imports and recycled aggregates has helped to address this fall of land-won production.

2.8 Production in south-west Hampshire has increased, which has traditionally supplied sand and gravel to west Hampshire, Bournemouth and Poole market areas.

2.9 Reserves of soft sand in Hampshire are very scarce and are concentrated in a small number of areas. This is highlighted in Table 1 by the clusters of quarries of soft sand. In contrast, sharp sand and gravel is more widely distributed.
throughout Hampshire. Table 1 provides details of the aggregate extracted at each permitted extraction site.

### Table 1: Permitted quarries in Hampshire, 2017

<table>
<thead>
<tr>
<th>Site</th>
<th>Operator</th>
<th>Aggregate</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badminston Farm, Fawley</td>
<td>Mid Hants Ltd</td>
<td>✓</td>
<td>Active</td>
</tr>
<tr>
<td>Blashford Quarry, Ringwood</td>
<td>Tarmac Ltd</td>
<td>✓</td>
<td>Active</td>
</tr>
<tr>
<td>Bleak Hill Quarry, Ringwood Forest</td>
<td>CEMEX</td>
<td>✓</td>
<td>Active</td>
</tr>
<tr>
<td>Bramshill Quarry (Warren Heath)</td>
<td>CEMEX</td>
<td>✓</td>
<td>Active</td>
</tr>
<tr>
<td>Downton Manor Farm, Milford on Sea</td>
<td>New Milton Sand and Ballast Sharp</td>
<td>✓</td>
<td>Active</td>
</tr>
<tr>
<td>Frith End Quarry</td>
<td>Grundon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kingsley Quarry</td>
<td>Tarmac Ltd</td>
<td></td>
<td>Active</td>
</tr>
<tr>
<td>Marchwood Quarry</td>
<td>Marchwood Aggregates</td>
<td>✓</td>
<td>Active</td>
</tr>
<tr>
<td>Roke Manor Quarry</td>
<td>Raymond Brown Aggregates</td>
<td>✓</td>
<td>Active</td>
</tr>
<tr>
<td>Forest Lodge Farm</td>
<td>TJ Transport Ltd</td>
<td>✓</td>
<td>NYC</td>
</tr>
</tbody>
</table>

### Sand and Gravel Production and Sales

2.10 The sales of land-won sand and gravel in Hampshire are shown in Table 2. The overall trend is of year on year decline. However, the figures have now begun to level out, with sales 24% lower in 2017 than in 2008. The difference in annual sales is more marked for sharp sand and gravel.

2.11 The sales of soft sand rose in 2017 from 0.2 to 0.23 Million tonnes (Mt). This is a 15% increase in sales and a similar rise in sales to the level of the past 8 years. Sales of soft sand rose in 2010 and 2012 but subsequent years experienced lower sales. There has been a slow increase in sales of soft sand from 2014 which suggests an ongoing trend. The sales in 2017 have had the effect of raising the 3-year average to 0.18Mt, which reflects this trend.

2.12 Sales of sharp sand and gravel decreased by 2% from 0.75Mt in 2016 to 0.73Mt in 2017. Whilst this level is significantly lower than that of 2008, there has been a general increase since 2012.
Table 2: Land-won soft sand and sharp sand and gravel sales in Hampshire, 2008-2017 (Million tonnes)

<table>
<thead>
<tr>
<th>Year (yr)</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Last 3-yr average</th>
<th>Last 10-yr average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Sand Sales *</td>
<td>0.29</td>
<td>0.1</td>
<td>0.14</td>
<td>0.12</td>
<td>0.16</td>
<td>0.12</td>
<td>0.11</td>
<td>0.12</td>
<td>0.2</td>
<td>0.23</td>
<td>0.16</td>
<td>0.18</td>
</tr>
<tr>
<td>Sharp Sand and Gravel Sales</td>
<td>0.98</td>
<td>0.95</td>
<td>0.84</td>
<td>0.71</td>
<td>0.58</td>
<td>0.73</td>
<td>0.78</td>
<td>0.71</td>
<td>0.75</td>
<td>0.73</td>
<td>0.78</td>
<td>0.73</td>
</tr>
<tr>
<td>Total Sales</td>
<td>1.27</td>
<td>1.05</td>
<td>0.98</td>
<td>0.83</td>
<td>0.75</td>
<td>0.85</td>
<td>0.88</td>
<td>0.83</td>
<td>0.95</td>
<td>0.96</td>
<td>0.94</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Footnotes
Source: Aggregate Monitoring Surveys, 2008-2017
*Please note soft sand figures before 2013 may include a small amount of silica sand (non-aggregate). Please see Appendix A for further information on Silica Sand.

2.13 Figure 2 shows the sales of land-won sand and gravel in Hampshire since 1996 to date. The overall trend of a steady decline in sales from 1996 is shown on the graph, until 2012 where sales have gradually risen year on year. This increase has however begun to slow in 2017 with the slight decrease in sharp sand and gravel sales.

Figure 2: Sales of land-won sand and gravel in Hampshire, 1996-2017 (Million tonnes, Mt)

2.14 An important point to note is that 63% of the current sand and gravel reserve in Hampshire is contained in one site: Blashford Quarry (Plumley Wood). This
could have implications for the future supply if any issues with extraction are encountered.

2.15 The land-won aggregate supply plan in Hampshire is based on sub-regional apportionment figures which have been retained as part of the Hampshire Minerals and Waste Plan. The apportionment figures represent the ‘Local Requirement’ and have been used to calculate the landbank for sand and gravel by dividing the permitted reserve of local land-won aggregate with the current apportionment figure.

2.16 Table 3 shows the total landbank for all land-won aggregate based on local requirement for Hampshire is 5.08 years. Hampshire currently has the lowest landbank in the South East England Region (Source: AM2017 survey). The landbank for soft sand is calculated at 2 years based on local requirements.

2.17 Using the 10- or 3-year average sales of sand and gravel as the determining figure sees a marginal increase for soft sand, ranging between 2.48 and 3.56 years. However, based on this calculation, the landbank for sharp sand and gravel increases significantly, ranging from 9.42 to 10.07 years.

2.18 However, the landbank figures are expected to increase as future planning applications come forward, and permitted sites commence work. Please see Section 6 for further information on the future of land-won aggregate and landbanks.

Table 3: Hampshire reserves and landbank

<table>
<thead>
<tr>
<th></th>
<th>Permitted Reserve (mt)</th>
<th>Landbank based upon Local Requirement (years)*</th>
<th>Landbank based upon 10-yr average sales between 2008-2017 (years)</th>
<th>Landbank based upon 3-yr average sale between 2015-2017 (years)</th>
<th>Landbank based upon 2017 sales (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Sand</td>
<td>0.57</td>
<td>2.04</td>
<td>3.56</td>
<td>3.17</td>
<td>2.48</td>
</tr>
<tr>
<td>Sharp Sand &amp; Gravel</td>
<td>7.35</td>
<td>5.74</td>
<td>9.42</td>
<td>10.07</td>
<td>10.07</td>
</tr>
<tr>
<td>Total**</td>
<td>7.92</td>
<td>5.08</td>
<td>8.43</td>
<td>8.70</td>
<td>8.25</td>
</tr>
</tbody>
</table>

Source: Aggregate Monitoring Surveys, 2008-2017
Please note: the silica sand landbank is incorporated into the soft sand landbank as the resources can be classed as either soft sand or silica
*Local Requirement for SS&G – 1.28, Soft Sand – 0.28, Total – 1.56 (mtpa)
**In some cases, operators were unable to quantify the individual sharp sand & gravel and soft sand reserves and only provide a total reserve. This has been assumed to be Sharp sand and gravel as the only two quarries which produce soft sand in Hampshire provided reserve figures
3. **Recycled/Secondary Aggregates**

3.1 Data pertaining to sales of recycled or secondary aggregates is collected yearly as part of the surveys carried out by mineral planning authorities. Figure 3 shows the location of all active recycled sites in operation in Hampshire during 2017 that were surveyed. It should be noted that whilst all sites were surveyed, not all responded. As such, the results should be used with caution to indicate a general trend of what is happening.

3.2 There are 30 sites which hold valid planning permission for the production of recycled and secondary aggregates in Hampshire. Of these sites, there was a response rate of 77% to the AM survey 2017, indicating a collective of capacity of 2.31Mt\(^5\). The total capacity for recycled or secondary aggregate processing in Hampshire is likely to be higher than 2.38Mt when accounting for those sites which did not respond to the survey, temporary sites permitted, as well as the potential for unauthorised operations.

3.3 The sales figures of the recycled and secondary aggregate in Hampshire for the most recent 10-year period, 2006-2016 are shown in Table 4. Sales had been increasing up to a peak in 2014, where sales started to decline. Initially the decrease in 2015 was by 10.8%, however there was a more marked decrease in 2016 with sales falling by 24.2% to 0.75Mt. 2017 saw sales decrease by a further 9.2% to the lowest level of sales of secondary and recycled aggregates since 2009/2010.

3.4 There were 654,174 tonnes of recycled aggregate sales in 2017 in comparison to 104,485 tonnes of secondary aggregate sales. This translates into split of 86% to 14% respectively for recycled and secondary aggregates sales.

<table>
<thead>
<tr>
<th>Year (yr)</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Last 10-yr average</th>
<th>Last 3-yr average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>0.64</td>
<td>0.6</td>
<td>0.79</td>
<td>0.93</td>
<td>0.81</td>
<td>0.93</td>
<td>1.11</td>
<td>0.99</td>
<td>0.83</td>
<td>0.76</td>
<td>0.84</td>
<td>0.86</td>
</tr>
</tbody>
</table>

**Footnotes**

Source: Aggregate Monitoring Surveys, 2008-2017

\(^5\) 30 sites were contacted. 23 responded but only 20 sites provided data on capacity.
Figure 3: Location map of active recycled and secondary aggregate sites in Hampshire, 2017
4. Wharves (Marine-won Sand and Gravel)

4.1 Hampshire has six existing wharves located on the south coast of Hampshire, the locations of which are shown in Figure 4. The mineral rights for marine sand and gravel are owned by the Crown Estate, up to the edge of the continental shelf. There are two dredging regions in proximity to Hampshire: South Coast (including Owers) and the East English Channel. It is understood that there is 99.43Mt of good quality permitted reserves suitable for primary (construction) aggregate uses in the ‘South Coast’ region, and 62.15Mt of good quality permitted reserves suitable in the ‘East English Channel’ region.

4.2 In 2017, Hampshire received 1,556,779 tonnes of its marine-won aggregates from the ‘South Coast’ region and this was 97.5% of the total dredged marine-won aggregate landed in this year for the county.

4.3 The Crown Estate has indicated that based upon the 10-year average annual extraction rate of 3.47mt and the licences within the South Coast region, the life expectancy of the good quality primary aggregate reserves, can be assessed as being over 25 years. In 2017, there was 3.77mt extracted from the South Coast region indicating reserves would last 26.3 years at that rate of extraction.

Figure 4: Location map of active wharves in Hampshire, 2017
4.4 The level of marine-won sand and gravel sales at wharves in Hampshire is shown in Table 5. In 2017 the level of sales recorded* was 1.52Mt which is above the 10 year but below the 3-year average sales. Please see section 6 for more information on future capacity and sales at wharves.

Table 5: Marine-won sand and gravel sales in Hampshire, 2008-2017 (Million tonnes, Mt)

<table>
<thead>
<tr>
<th>Year (yr)</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017*</th>
<th>Last 10-yr average</th>
<th>Last 3-yr average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1.44</td>
<td>1.08</td>
<td>1.12</td>
<td>1.17</td>
<td>1.1</td>
<td>1.43</td>
<td>1.36</td>
<td>1.55</td>
<td>1.55</td>
<td>1.52</td>
<td>1.33</td>
<td>1.54</td>
</tr>
</tbody>
</table>

Footnotes
Source: Aggregate monitoring surveys, 2008-2017

*2017 data includes an estimated sales figure for Kendalls Wharf as data was not received this year.
5. **Crushed Rock**

5.1 Hampshire does not have any natural hard rock resources and therefore relies on imports of crushed rock such as limestone and granite to meet demand for this type of aggregate.

5.2 Limestone is largely imported into Hampshire from quarries in Somerset by rail directly into three aggregate rail depots in the south of the county at Botley, Eastleigh and Fareham. In 2017, 412,610 tonnes of crushed rock imported from Somerset was sold at the rail depots. The location of the rail depots processing crushed rock imports is shown on the location map contained in Figure 5. In addition, crushed rock is imported into Hampshire by road.

**Figure 5: Location map of active rail depots in Hampshire, 2017**

5.3 The crushed rock sales (from rail and sea imports) in Hampshire recorded over the last 10 years are detailed in Table 6. It is important to note that whilst crushed rock sales are imported into Hampshire by road, data is only available for the years 2009 and 2014, so for the purposes of this report, imports by road are not included. The 2009 and 2014 data suggest that a similar amount of crushed rock is imported by road to that that imported by rail.
5.4 The crushed rock sales in 2017*** were recorded at 0.57Mt which is a substantial increase on the 10- and 3-year average sales and is close to the sales recorded in 2008, it should be noted that these are estimated sales as there was a lack of response from Fareham Rail Depot.

Table 6: Crushed rock sales from rail depots and wharves in Hampshire, 2008-2017 (Million tonnes, Mt)

<table>
<thead>
<tr>
<th>Year (yr)</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016***</th>
<th>2017***</th>
<th>Last 10-yr average</th>
<th>Last 3-yr average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>0.59</td>
<td>0.35</td>
<td>0.36</td>
<td>0.33</td>
<td>0.28</td>
<td>0.39</td>
<td>0.46</td>
<td>0.46</td>
<td>0.55</td>
<td>0.57</td>
<td>0.43</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Footnotes
Source: Aggregate Monitoring Surveys, 2008-2017, ‡ 2016 data has been updated to include data from Fareham Rail Depot, *** 2017 data includes estimates to account for the lack of response from Fareham Rail Depot.

5.5 In terms of exports of crushed rock, these are technically zero as Hampshire does not have its own source of crushed rock to export. However, it is understood that a small amount of rail imported crushed rock arrives at Hampshire rail depots, to then be sold on outside of Hampshire via road exports.

5.6 There is a substantial increase in 2016, which was concentrated through the two Aggregate Industries Rail depots, this increase has been maintained through to 2017. This can be assumed to be the result of the increased building of infrastructure and housing.

5.7 Somerset County Council confirmed that they have sufficient reserves to meet current needs and do not foresee any likely issues that would affect the future supply of crushed rock to the South East Region, which includes Hampshire. Should future demand increase, the issue lies with the capacity of the rail depots to manage a higher level of imports, rather than with future supply. Please see Section 6 for further information on capacity at rail depots.
6. Overview of Aggregate Sales

6.1 The sales of land-won sand and gravel, marine-won sand and gravel, crushed rock imports and recycled/secondary aggregates have been amalgamated and can be seen in Figure 6.

6.2 The sales of aggregates appear to follow the same overall trend, with the exception of recycled/secondary aggregates. All other sales decreased between 2007 and 2012, despite the overall trend being generally upward. Sales of Recycled and secondary aggregates however were increasing between 2007 and 2014, where upon sales have decreased year on year.

Figure 6: Overview of aggregate sales, 2008-2017 (Million tonnes, Mt)
7. **Future Aggregate Demand**

7.1 Infrastructure projects that are likely to place an additional demand of future aggregate demand in Hampshire relate to both housing and transport projects. There are in the region of 120,000 new homes planned within the Hampshire area over the next 15 years, of these some 6,000 homes are planned in the Welborne development in Fareham, 4,000 in the Whitehill & Bordon development in East Hampshire, and 3,850 in the Aldershot Urban Extension in Rushmoor.

7.2 There are a number of bypass projects planned as necessary transport infrastructure to accommodate the additional demand. In Fareham there is the £20 million Stubbington Bypass scheme in construction. In Eastleigh, Botley bypass is soon to start construction and is expected to cost an estimated at £20 million. There are significant upgrades to the M27 to convert the road into a smart motorway, M27 and M3 Junctions, and other strategic road network routes and a county council major schemes programme of a forecast investment of more than £160 million planned.

7.3 All of these projects are of significant scale to require the future demand to be accounted for in future aggregate supplies, over and above the annual infrastructure delivery programme. The Hampshire Strategic Infrastructure Statement (2018) is currently being produced and will contain more information on the level of future development planned for the area, which cumulatively will place additional pressure on aggregate supplies.

7.4 In order to meet future aggregate demand, including the infrastructure projects discussed above, Hampshire needs to have a sufficient aggregate landbank and capacity available to import aggregate at rail depots and wharves. Greater emphasis should be placed on recycled and secondary aggregate sites to supply future demand.

7.5 To establish what impact future planned development is likely to have on aggregate demand and supply in Hampshire, figures for planned infrastructure have been reviewed. Table 7 shows the infrastructure delivered between 2011 and 2016. This is compared with the quantum of development planned between 2017 and 2021. There appears to be a significant uplift in the level of development and therefore it should be anticipated that there will be an increase in the level of demand for aggregate.

7.6 Whilst there is some information available for the time period beyond 2021, this is not available for all infrastructure categories and over matching time periods. For this reason, it was considered appropriate to standardise the timeframe being reviewed for all infrastructure and provide a snapshot.
7.7 It should be noted that the figures contained within the years 2017 to 2021 are an estimate of future delivery and will be subject to potential changes in timescales as a result of external factors such as ‘Brexit’. The effect of Brexit on industry and development is yet to be realised, but the potential to influence the rate of infrastructure delivery is acknowledged in terms of labour. The Mineral Products Association recognises the uncertainty surrounding ‘Brexit’ needs resolution to prevent the current skills shortages from being exacerbated. The impact of skills shortages through a reduced labour force would likely reduce aggregate demand due to reduced infrastructure delivery.

Table 7: Levels of delivered and planned infrastructure

<table>
<thead>
<tr>
<th></th>
<th>2011-2016</th>
<th>2017-2021</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dwellings</td>
<td>24,627</td>
<td>88,353</td>
<td>+</td>
</tr>
<tr>
<td>Schools</td>
<td>5 Primary</td>
<td>7 Primary</td>
<td>+</td>
</tr>
<tr>
<td>Roads</td>
<td>£404,890,000</td>
<td>£422,618,000</td>
<td>+</td>
</tr>
</tbody>
</table>


7.8 The planned level of infrastructure construction appears to be significant uplift from the current build out rates and will require an increase in aggregate supply.

Landbank

7.9 As reported in section 2, Hampshire does not meet the minimum seven-year landbank as required by the NPPF. However, it should be noted that there are a number of forthcoming applications which, should they be permitted, would substantially change the projected landbank figures. These are as follows:

- Kingsley Quarry – current application for the extraction of 1Mt of soft sand.
- Roeshot – current application expected to be determined in 2018 for the extraction of 3Mt of sharp sand & gravel. It is worth noting that this is an allocated site.
- Frith End – current application for the recovery of soft sand from incidental earth movement works at nearby development projects. The site will not exceed processing over 15,000 tonnes a year over 3 years.

---

7 Hampshire School Places Plan 2017-2021
8 ETE Capital Programme Monitoring, Executive Member for Transport and Environment Report 19 January 2017

Hampshire Minerals & Waste Plan: Local Aggregate Assessment 2018
7.10 Policy 20 (Local land-won aggregates) of the Hampshire Minerals and Waste Plan identified sites for local land-won aggregates. Table 8 lists the allocated sites which have not had applications yet, but which if implemented could contribute to the land-won aggregate supply in Hampshire, demonstrating a future available supply.

Table 8: Allocated sites for land-won aggregates

<table>
<thead>
<tr>
<th>Site</th>
<th>Amount (Mt)</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleak Hill Quarry Extension</td>
<td>0.5</td>
<td>SS+G</td>
</tr>
<tr>
<td>Bramshill Quarry Extension</td>
<td>1.0</td>
<td>SS+G</td>
</tr>
<tr>
<td>Cutty Brown</td>
<td>1.0</td>
<td>SS+G</td>
</tr>
<tr>
<td>Hamble Airfield</td>
<td>1.5</td>
<td>SS+G</td>
</tr>
<tr>
<td>Purple Haze</td>
<td>4.0</td>
<td>SS and SS+G</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Footnotes
Source: Hampshire Minerals and Waste Plan 2013
Note: Roeshot is excluded from the allocated sites list as it is a current application
Key: SS+G = Sharp sand and gravel / SS = Soft sand.

7.11 If the anticipated applications for sand and gravel sites as listed in 7.9 were included in the available supply figure, the landbank for Hampshire would increase from 5.08 years to 7.68 years based on the local requirement. If the allocated sites listed in Table 8 were included in the reserve figure, the landbank would increase to 12.80 years based on the local requirement. Based on the 10-year sales average, the landbank figure increases to 21.24 years demonstrating that there is a future supply planned for Hampshire.

Table 9: Adjusted Landbank figures with future applications and allocated sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Permitted Reserve (mt)</th>
<th>Landbank based upon Local Requirement (years)*</th>
<th>Landbank based upon 10-yr average sales (years)</th>
<th>Landbank based upon 3-yr average sale (years)</th>
<th>Landbank based upon 2017 sales (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current SS+G Reserves</strong></td>
<td>7.92</td>
<td>5.08</td>
<td>8.43</td>
<td>8.70</td>
<td>8.25</td>
</tr>
<tr>
<td><strong>Current/Anticipated SS+G Applications</strong></td>
<td>4.05</td>
<td>2.60</td>
<td>4.31</td>
<td>4.45</td>
<td>4.22</td>
</tr>
<tr>
<td><strong>SS+G Allocated sites</strong></td>
<td>8.00</td>
<td>5.13</td>
<td>8.51</td>
<td>8.79</td>
<td>8.33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19.97</td>
<td>12.80</td>
<td>21.24</td>
<td>21.95</td>
<td>20.80</td>
</tr>
</tbody>
</table>

*Current/Anticipated Applications include Kingsley Quarry 1Mt, Roeshot 3Mt and Frith End 0.045Mt
Key: SS+G = Sharp sand and gravel / SS = Soft sand.
7.12 In addition, to support a steady future supply of aggregate in Hampshire, Policy 18 (Recycled and secondary aggregates development) of the Hampshire Minerals and Waste Plan states that the production of recycled and secondary aggregate production will be supported by encouraging investment and further infrastructure to maximise the availability of alternatives to marine-won and local land-won sand and gravel extraction. This will help to address the current landbank figures. However, whilst the market share of recycled and secondary aggregates has increased overall, the Mineral Products Association view\(^9\) is that the use of these aggregates may be nearing their full potential in Britain and that there will still be a reliance on land-won and marine-won aggregates. As such, there will be a need to plan for infrastructure to sustain the demand for recycled and secondary aggregates, as well as land-won and marine-won aggregates.

7.13 The Hampshire Minerals & Waste Plan was adopted in 2013. Government policy requires the Plan to be reviewed after 5 years of adoption to determine whether the policies need to be updated\(^10\). A Review of the Hampshire Minerals & Waste Plan has been undertaken and will be published following approval by each of the partner Authorities.

**Capacity**

7.14 This is the second year a site capacity question was included as part of the Aggregate Monitoring survey. By understanding current capability of sites, through capacity, it is hoped that this information can be used to assist planning for future demand. The results of this are shown in Table 10. As it is still only the second year that this data has been collected it is difficult to establish a trend.

7.15 Whilst it is not possible to determine trends in capacity this year, it is possible to compare sales with capacity to understand void production capacity in Hampshire currently. Table 10 indicates that for land-won aggregate, there is the potential for sales to be substantially higher than currently recorded, with sites currently producing at an average rate of 48% capacity. However, land-won sales are dictated by the needs of industry.

7.16 There is currently is capacity to accommodate an increase in demand, particularly on recycled and secondary aggregates which has the potential to provide almost an additional 1.6Mt over the current demand of 0.76Mt. In 2017, it is shown that there was additional capacity of 68% for managing recycled and secondary aggregate.

---


7.17 It is worth noting that not all operators returned information on capacity, and therefore the capacity data provided is not 100% accurate. This is stressed with wharf capacity, as with only 1/6 sites returning capacity information it appears that the wharves are already working at 85% capacity. However, due to the lack of information provided by the operators in the survey, this can be assumed to be incorrect. Sales figures have been used to estimate capacity where capacity data was not provided.

Table 10: Total sales and estimated production capacity, 2017 (Million tonnes, Mt)

<table>
<thead>
<tr>
<th></th>
<th>Sales</th>
<th>Capacity</th>
<th>% Sales/ Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land-won Aggregate</td>
<td>0.96</td>
<td>2.01</td>
<td>48%</td>
</tr>
<tr>
<td>SS</td>
<td>0.23</td>
<td>0.6</td>
<td>38%</td>
</tr>
<tr>
<td>SS+G</td>
<td>0.73</td>
<td>1.41</td>
<td>52%</td>
</tr>
<tr>
<td>R/S sites</td>
<td>0.76</td>
<td>2.38</td>
<td>32%</td>
</tr>
<tr>
<td>Wharves*</td>
<td>1.52</td>
<td>1.79</td>
<td>85%</td>
</tr>
<tr>
<td>Rail Depots*</td>
<td>0.57</td>
<td>1</td>
<td>57%</td>
</tr>
</tbody>
</table>

Footnotes
Source: Aggregate Monitoring Survey, 2017. Please note that capacity data collection is still in the early stages, and as such, results should be treated with caution. Where capacity data has not been made available sales have been used.

*Kendalls Wharf and Rail Depot did not provide data this year, this has therefore been estimated.

7.18 Capacity information will become increasingly important in future years, particularly pertaining to wharves and rail depots. A recent study\(^{11}\) by the Mineral Products Association suggested that a nationally, there could be a decrease in the demand for land-won aggregates over time, substituted instead by marine-won aggregate. Hampshire is considered to fit this scenario based on recent sales data, so it will be vital to ensure that the capacity of wharves and rail depots in Hampshire is able to keep pace with sales. Currently the rail depots would appear to have sufficient capacity to cope with an increase. However, based on the survey responses received, wharves do not appear to have the same tolerance.

7.19 The initial study work undertaken as part of the plan-making process indicated that there was sufficient capacity at wharves to accommodate a substantial increase in sales, as at the time of the study work sales at wharves had

\(^{11}\) Long-term aggregates demand & supply scenarios 2016-30, Mineral Products Association (2017)
dropped considerably lower than those of previous years. However, this recent survey indicates this is not the case. This places greater emphasis on the need to monitor the sales and capacity to ensure that the Hampshire Minerals and Waste Plan can respond positively to any changes in supply or demand. In doing so, there may be a potential need to identify new wharf infrastructure, as outlined in Policy 34 (Safeguarding potential minerals and waste wharf and rail depot infrastructure) of the Hampshire Minerals and Waste Plan to ensure a steady supply of aggregate.
8. Conclusions and review of the Local Aggregate Assessment

8.1 This LAA has shown that Hampshire's local aggregate provision will not impact on the wider South East region as a whole. This is a key issue as Hampshire is a net exporter of land-won sand and gravel but also imports and exports occur with neighbouring and non-neighbouring mineral planning authorities.

8.2 This document highlights that although there is generally a surplus in aggregate handling capacity there may be a need for additional infrastructure, particularly with regard to meeting Hampshire's needs for land-won mineral extraction and wharf capacity up to 2030 and beyond. The need for any additional infrastructure, such as the further requirement for land-won extraction, will be identified through the LAA and the HMWP monitoring indicators which will highlight any developing issues.
Appendix A – Silica Sand

Silica sand (also referred to as ‘industrial sand’) is used in industrial processes, not in the construction industry. For this reason, silica sand sales have been excluded from the assessment of land-won aggregates.

Table A lists the permitted sand and gravel quarries in Hampshire, with only two quarries providing Silica sand; Frith End Quarry and Kingsley Quarry. It is acknowledged that resources at Kingsley and Frith End quarries have properties with silica sand uses. Historical data identified the quarries as sources of soft sand only. This means that the sites are included in the data of previous years’ LAA reports for soft sand.

<table>
<thead>
<tr>
<th>Site</th>
<th>Operator</th>
<th>Aggregate</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frith End Quarry, Sleaford</td>
<td>Grundon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kingsley Quarry, Kingsley</td>
<td>Lafarge Tarmac</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Resources have been traditionally identified as soft sand. These resources can now be classified as silica sand as well as soft sand.

Source: Aggregates Monitoring Survey 2017

Paragraph 207 of the National Planning Policy Framework (NPPF) states that ‘Minerals planning authorities should plan for a steady and adequate supply of industrial minerals by:…c) maintaining a stock of permitted reserves to support the level of actual and proposed investment required for new or existing plant, and the maintenance and improvement of existing plant and equipment’. In terms of individual silica sand sites, the NPPF states that this should be for ‘at least 10 years’.

In addition, the Minerals National Planning Practice Guidance (2014) states that ‘The required stock of permitted reserves for each silica sand site should be based on the average of the previous 10 years sales. The calculations should have regard to the quality of sand and the use to which the material is put.’

On the basis of current national planning guidance outlined above, silica sand reserves for Hampshire have been calculated and are shown in Table B.

As only two sites provide sales data for silica sand, for reasons of commercial confidentiality, sales data can only be published as a 3-year average. For the period

---

12 NPPF (2018) Para. 2017(c) – footnote 68
2015-2017, the 3-year sales average for silica sand in Hampshire was 90,435 tonnes. This is an increase from the previous 3-year average (2014-2016) of 71,445 tonnes. An increase in non-aggregate sales at Frith End and Kingsley is likely to lead to a more rapid depletion of soft sand reserves as resources at these locations can be classed as both soft sand and silica sand. More information on soft sand and silica sand supply options is set out in the ‘Minerals in Hampshire’ Report\textsuperscript{14}.

Table B - Hampshire Permitted Reserve (years)

<table>
<thead>
<tr>
<th></th>
<th>Permitted Reserve (Mt)</th>
<th>Date (when permitted reserve recorded)</th>
<th>Reserve (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Based upon Local Requirement*</td>
</tr>
<tr>
<td>Silica Sand</td>
<td>c</td>
<td>31.12.2017</td>
<td>c</td>
</tr>
</tbody>
</table>

\textsuperscript{*}Please note that the Silica Sand permitted reserve is incorporated into the Soft Sand landbank as the resources can be classed as either Soft Sand or Silica.


\textsuperscript{14} HMWP – Minerals in Hampshire: http://documents.hants.gov.uk/mineralsandwaste/HMWP100bMineralsinHampshirev7-SubmissionRevisedFeb2013.pdf