

OXFORDSHIRE LOCAL AGGREGATE ASSESSMENT

(Calendar year 2021)

January 2023

Prepared by Oxfordshire County Council
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Consulting Limited)

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1.Oxfordshire Summary of Key Data 2021

| Summary – Oxfordshire County Council 2021 (million tonnes) | | | | | | | | | |
|--|-------------------------|-------------------------------|------------------------------|--|--------------|------------------|---------------------|-----------------|---|
| Quarry Sales | 2021 Sales (Mt) & Trend | Average (10-yr) Sales & Trend | Average (3-yr) Sales & Trend | Annual Provision Rate (APR) (Mt ²) | Reserve (Mt) | Landbank (years) | Allocations (years) | Capacity (Mtpa) | Comments |
| Soft Sand | ↑ .264 | ↑ .224 | 0.243 | 0.243 | ↓ 3.824 | 15.74 | N/A | 0.325 | LAA rate remains at 0.243mtpa Landbank above 7-year requirement |
| Sharp Sand & Gravel | ↑ 1.157 | ↑ .750 | 0.994 | 1.015 | ↓ 10.586 | 10.4 | N/A | 1.755 | LAA rate remains at 1.015mtpa Landbank above 7-year requirement |
| Crushed Rock | ↑ 1.254 | ↑ 0.824 | 1.061 | 0.824 | ↓ 6.455 | 7.83 | N/A | 1.579 | LAA rate changed to 0.824 (10 year average) Landbank remains below 10-year requirement |
| Recycled / Secondary Aggregates | ↓ .416 | .420 | 0.409 | 0.926 | N/A | N/A | N/A | 1.534 | Calculated using SEEAWP Methodology. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rail Depot Sales (Sand & Gravel) | c | c | c | c | c | c | c | C | Due to confidentiality due to two operators of the four sites, we are unable to share these figures |
| Rail Depot Sales (Crushed Rock) | c | c | c | c | c | c | c | C | Due to confidentiality, we are unable to share these figures |

General Comments

2021 saw a significant increase in all land won aggregate sales. This could be due to work that was delayed by COVID in 2020 recommencing and large infrastructure projects such as East West Rail and HS2 being delivered.

An extension to a quarry at Hatford was approved in 2021 which added additional reserves to Soft Sand, Sharp Sand and Gravel and Crushed Rock. There has been a further drop in the recorded Recycled and Secondary Aggregates sales, but this could be due more to lack of responses from operators and the new methodology for estimating Recycled Aggregate from the region. Capacity for the production of Recycled Aggregate has increased due to two planning applications (1 extension, 1 new site) in 2021, which could indicate demand for this material is there. There is management capacity of 1.579mt currently available within Oxfordshire.

The LAA Aggregates Provision Rate of 1.015mt for Sharp Sand and Gravel as set in the LAA2014 and each subsequent LAA, and also contained within the Oxfordshire Minerals and Waste Local Plan Part 1: Core Strategy, has been maintained for this LAA as it is considered this reflects the level of future demand and the current sales figures.

The LAA Aggregates Provision Rate for Soft Sand of 0.243mpta has also been maintained within this LAA, as sales increased again, following the drop in 2020.

The LAA Aggregates Provision Rate for Crushed Rock has been increased within this LAA to the 10-year average. This is due to the continued increase in sales, believed to be partly due to HS2 and its current proximity to Oxfordshire. There has been a borrow pit application submitted for approximately 2.7million tonnes of limestone that has yet to be determined. Sales will be kept under review in future LAA's, in particular as the development of HS2 moves further away from Oxfordshire and following the decision on the borrow pit. In addition, further work is required to ascertain how much of Oxfordshires Crushed Rock is being exported outside of the County to meet other Authorities requirements along with the impact of rising inflation.

Using the Crushed Rock LAA Rate, we are still below the required 10-year landbank for the fourth consecutive year. This issue will be considered within the preparation of the Minerals and Waste Local Plan

2.Executive Summary

- 2.1 The National Planning Policy Framework, July 2021 (NPPF) states that mineral planning authorities should prepare an annual Local Aggregate Assessment (LAA)
- 2.2 The LAA is required to:
- Forecast the demand for aggregates based on average 10 years' sales data and other relevant local information;
 - analyse all aggregate supply options and;
 - assess the balance between demand and supply.
- 2.3 This is the tenth LAA for Oxfordshire and includes the 2021 aggregate sales and reserves data for the County. The 10-year period covered by this LAA is 2012 up to 2021 and the three-year period is 2019 – 2021.
- 2.4 The primary aggregate figures within this LAA are taken from the 2021 Aggregates Minerals (AM2021) undertaken by the County Council on behalf of South East England Aggregate Working Party.

Demand

Sand and Gravel

- 2.5 Sales of Sharp Sand and Gravel increased in 2021 to 1.157mt. This is a 39% increase on 2020. There was an 9.8% increase in the 10-year sales average (0.750mt from 0.683mt). The 3-year sales average of Sharp Sand and Gravel increased by 13.8% to 0.994mt and is higher than the 10-year average. Both are still below the LAA Aggregate Provision Figure (APR).
- 2.6 Having considered the sales trends, other relevant information contained within this report, it is not considered necessary to change the Aggregates Provision Rate or Sharp Sand and Gravel and it will remain at 1.015mtpa.
- 2.7 Sales of Soft Sand in 2021 increased to 0.264mt and are the highest levels since 2011. The 10-year sales average increased 2.8% to 0.224mt, above the Core Strategy provision figure of 0.189mtpa, however it is below the current LAA APR of 0.243mtpa. The 3-year sales average increased 1.5% on the previous year and is now the same as the current LAA APR (0.243mtpa).
- 2.8 Having considered the sales trends, other relevant information contained within this, is not considered necessary to change the current Aggregate Provision Rate for Soft Sand and it will remain at 0.243mtpa.

Crushed Rock

- 2.9 Sales of Crushed Rock increased 15% in 2021 to 1.254mt which in turn saw the 10-year sales average increase of 12.8% to 0.824mtpa. This is above the Core Strategy provision figure of 0.584mtpa, and above the LAA APR of 0.778. The 3-year sales average rose by 18% to 1.061mt on the previous 3-year period and is now higher than the current LAA APR.
- 2.10 Having considered the sales trends, the requirements of the NPPF and other relevant information contained within this report, it is therefore considered necessary to change the latest LAA APR for Crushed Rock to the 10 year average and it will now be 0.824mtpa.

Rail Depots

- 2.11 In 2021, there were no returns from operators on sales from Rail Depots. However, due to a number of recent planning decisions, Oxfordshire has increased its rail depot capacity to over 3.5million. It is known that the increased capacity at Hennef Way Banbury is temporary to provide material for HS2, and Appleford Sidings has added two more rail sidings. This site now has a planning condition limiting it to 1.5million tonnes per annum.

Recycled and Secondary Aggregates

- 2.12 Due to another poor response from operators (19%); to try ensure a more accurate picture of the sales of secondary and recycled aggregates, this LAA uses the methodology provided by the South East Aggregates Working Party. This uses real data from the AM Survey if received, and then an estimate calculated from the Environment Agency's Waste Data Interrogator and figures received by sites in Oxfordshire.
- 2.13 2021 therefore has recorded sales in Recycled and Secondary Aggregate of 0.416mt.
- 2.14 Having considered the sales trends and other relevant information contained within this report, the LAA APR figure for recycled and secondary aggregate should be maintained as the provision figure set in the Oxfordshire Minerals and Waste Local Plan: Part 1 – Core Strategy 2017, Policy M3 which is 0.926mtpa.

Supply

Sand and gravel

- 2.15 At the end of 2021, Oxfordshire had 12 sand and gravel quarries within Oxfordshire, one not yet commenced and two currently inactive and one in suspension. One planning permission was granted in 2021 for 225,000 tonnes of Sharp Sand and Gravel at Hatford, and there were three Sharp Sand and Gravel planning applications outstanding.
- 2.16 Total permitted reserves of Sharp Sand and Gravel in Oxfordshire at the end of 2021 were 10.586mt. Using the Core Strategy/LAA2021 Aggregates Provision Rate figures of 1.015mtpa, this gives a landbank of 10.4years.
- 2.17 In terms of the plan period, the provision figure for Sharp Sand and Gravel of 1.015mtpa multiplied by the plan period of 18 years, gives a total provision requirement of 18.27mt for the period 2014 to 2031.
- 2.18 Taking into account sales in 2014 – 2021 (total 6.538mt), and reserves that are expected to be worked during the plan period (10.586mt), the remaining requirement for the Plan period to 2031 is 2.296mt. However, it should be noted that the requirements for the Plan period will be explored further as we undertake the new Minerals and Waste Local Plan.

Soft Sand

- 2.19 In Oxfordshire, at the end of 2021, there are 8 sites with planning permission for Soft Sand extraction, with 1 currently inactive. One planning application for 130,000tonnes of Soft Sand at an extension at Hatford was granted in 2021.

- 2.20 Total permitted reserves for Soft Sand in Oxfordshire at the end of 2021 were 3.824mt. Using the latest LAA Aggregates Provision Rate this gives a landbank of 15.74 years.
- 2.21 If we are to meet the Core Strategy Requirement of 3.402 million tonnes over the Plan period, there is no further requirement for Soft Sand over the Plan Period.
- 2.22 However if we are to meet the LAA requirements and maintain a steady and adequate supply of mineral over the Plan period, we have used the LAA 2014-2018 figure of 0.189mtpa, up until it was increased to .243mpa through the LAA2019, giving a total requirement over the Plan period of 4.104 million tonnes.
- 2.23 Taking into account sales in 2014 – 2021 (total 1.921mt), and reserves that are expected to be worked during the plan period (2.065 mt), there is a requirement for an additional 0.118mt of Soft Sand over the Plan Period. However, it should be noted that the requirements for the Plan period will be explored further as we undertake the new Minerals and Waste Local Plan.

Crushed Rock

- 2.24 At the end of 2021, there are 15 sites with planning permission for Crushed Rock extraction. There are 12 active sites and 3 closed sites. A planning permission was granted in 2021 for 520,000 tonnes of Crushed Rock at Hatford. There are also two planning applications for Crushed Rock outstanding at the end of 2021.
- 2.25 Total permitted reserves for Crushed Rock in Oxfordshire at the end of 2021 were 6.455mt. Using the latest LAA Aggregates Provision Rate of 0.824 mtpa this gives a landbank of years 7.84 years which is below the 10 years required by the NPPF.
- 2.26 If we are to meet the Core Strategy Requirement of 10.512million tonnes over the Plan period, then there is no further requirement for Crushed Rock over the Plan Period.
- 2.27 However to meet the LAA requirements and maintain a steady and adequate supply of mineral over the Plan period, we have used the LAA 2014-2018 figure of 0.584mtpa from 2014-2018, the Aggregate Provision figure of 0.778mtpa between 2019 and 2021 and the revised APR of 0.834tpa up until the end of the Plan period giving a total requirement over the Plan period of 13.492million tonnes.
- 2.28 Taking into account sales in 2014 – 2021 (total 7.492), and reserves that are expected to be worked over the plan period (5.279mt), the remaining requirement for the period to 2031 is 0.723mt. However, it should be noted that the requirements for the Plan period will be explored further as we undertake the new Minerals and Waste Local Plan.
- 2.29 To meet the Core Strategy Requirements, we will need to identify sites within the Site Allocations Plan to meet the following need:

- **Sand and Gravel – 2.296mt million tonnes**
- **Soft Sand - 0 million tonnes**

- **Crushed Rock - 0 million tonnes**

- 2.30 However only identifying sites to meet the Core Strategy requirement will not address us falling below our required 10-year landbank for Crushed Rock.
- 2.31 This issue will be addressed as we progress work on our Minerals and Waste Local Plan.
- 2.35 This LAA shows that, based on the Aggregates Provision Rate requirements identified within this LAA, over the Plan period we will need to meet the following:
- **Sand and Gravel – 2.296 million tonnes**
 - **Soft Sand - 0.118mt million tonnes**
 - **Crushed Rock – 0.723 million tonnes**

Recycled and secondary material sites

- 2.36 At the end of 2021, Oxfordshire's capacity to produce recycled and secondary aggregate as recorded for the SEEAWP survey was approximately 0.416mt, due to low returns and estimates using the Environment Agency's Waste Data Interrogator. Permitted Capacity taken from planning decisions, application statements and previous survey findings at the end of 2021 was 1.534 million tonnes.

Rail Depots

- 2.37 Oxfordshire has four permitted rail depots, three of which are operational. No returns for the sales from the Depots were returned in 2021.

Relationships with other MPA's

- 2.38 Every county in the UK has to import aggregates because none possess the geology necessary to produce all the types of aggregate required. All sales which reflect supply and demand are tracked in the four (six) yearly national aggregate surveys.
- 2.39 The most recent is the 2019 Aggregates Minerals Survey for England and Wales (AM2019) was undertaken by British Geological Survey (BGS) under a contract with the then Ministry of Housing, Communities and Local Government (MHCLG). The AM2019 sets out aggregate movements at a sub-regional level. This was discussed within the LAA2020 but it highlighted that Oxfordshire is a net exporter of all Land Won Sand and Gravel and Crushed Rock.

Factors affecting supply and demand

- 2.40 2021 has seen an increase in sales of all land won sand and gravel compared to 2020. For Sharp Sand and Gravel and Crushed Rock, the increases have been significant.
- 2.41 2020 saw a global pandemic (Covid). As businesses and development started again after lockdowns, this increase could have been caused by a surge in building and construction to move planned projects forward as quickly as possible.

2.42 There are major infrastructure projects as well as local housing and transport projects planned to take place during the Plan period. These projects are both within and outside of the County, and they could significantly affect demand for aggregate.

Executive Summary Conclusion

2.43 The purpose of an annual Local Aggregates Assessment is to review the latest information available, in order to forecast future demand as well as analysing all aggregate supply options and assessing the balance between supply and demand.

2.44 To ensure that supply continues to meet demand, the **Aggregates Provision Rate (APR)** will be as follows for 2022 onwards:

- **Sand and Gravel – 1.015mtpa**
- **Soft Sand – 0.243mtpa**
- **Crushed Rock – 0.824mtpa**
- **Recycled and Secondary Aggregates- 0.926mtpa**

2.45 Using these APRs and the Oxfordshire reserves at the end of 2021, the Landbank can be calculated as:

- Sand and Gravel – 10.4 years
- Soft Sand – 15.74 years
- Crushed Rock – 7.8 years

2.46 To meet the Core Strategy requirements, we will only need to identify Sharp Sand and Gravel sites to meet the following mineral requirements over the Plan Period. There would be no further need to identify any further Soft Sand and Crushed Rock

- **Sand and Gravel- 2.296 million tonnes.**

2.47 However to meet our latest Local Aggregate Assessment requirements, we will need to be able to meet the following mineral requirements over the Plan Period.

- **Sand and Gravel – 2.296 million tonnes.**
- **Soft Sand – 0.188million tonnes**
- **Crushed Rock – 0.723 million tonnes**

3. Demand

Land Won Aggregate

Sharp Sand and Gravel Past Sales

- 3.1 Sales of Sharp Sand and Gravel from quarries in Oxfordshire for the period 2012 – 2021 are shown in Table 3.1. These figures are taken from two sources: The annual Aggregates Minerals Survey for England and Wales undertaken by Oxfordshire County Council on behalf of SEEAWP and the historic four/five yearly British Geological Survey (BGS) under a contract with the then Ministry of Housing, Communities and Local Government (MHCLG).

| 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 10-year average | Last 3-year average |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|---------------------|
| 0.559 | 0.401 | 0.639 | 0.768 | 0.651 | 0.703 | 0.796 | 0.994 | 0.830 | 1.157 | 0.750 | 0.994 |

Table 3.1: Sales of Sharp Sand and Gravel 2012 – 2021 (million tonnes) (Sources: SEEAWP Aggregates Monitoring Surveys)

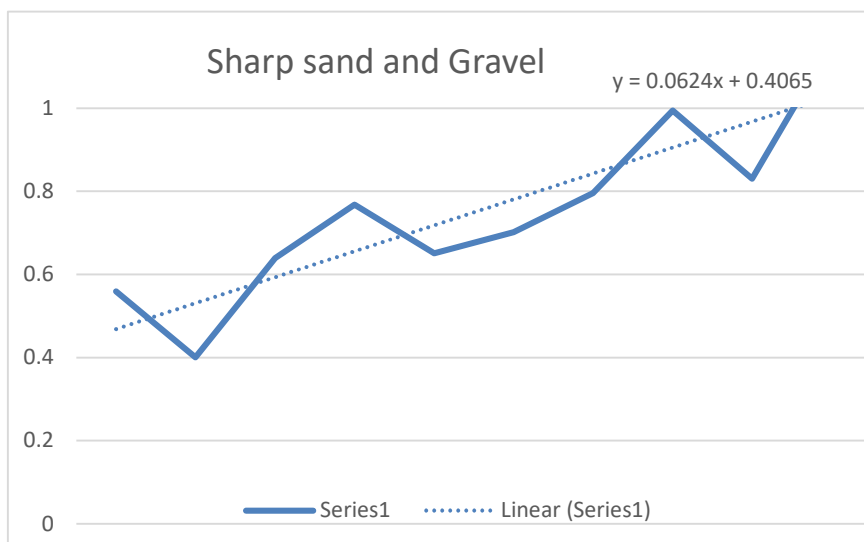
- 3.2 Sales of Sharp Sand and Gravel increased in 2021, with the highest sales in the last 10 years. This was a 39% increase on the year before. This is significantly higher than the Mineral Products Associations (MPA) findings of 13.3%¹
- 3.3 Sales between 2012 and 2013 show the effects of the economic recession and the closure of Caversham Quarry during 2013. This closure was due to exhaustion of reserves in 2012, pending grant of permission for an extension which was approved in August 2014 but not commenced until 2017. The recession and the quarry closure are likely to have affected the total sales in 2013.
- 3.4 There was also a 15% fall in sales of Sharp Sand and Gravel from quarries in Oxfordshire from 2015 to 2016. Most of this decrease was accounted for by sales at one quarry - Bridge Farm, Sutton Courtenay. The fall in sales at this quarry in 2016 was caused primarily by a break in production whilst the determination and issue of the planning permission to work the full depth of gravel in Phase 4b at Bridge Farm was awaited; the permission was issued on 17 May 2016.
- 3.5 The shortfall in supply from Bridge Farm during this time was made up by imports of marine dredged material, delivered by rail from East London into Appleford Sidings, Sutton Courtenay Depot. Crushed Rock (limestone) was

¹ [Concern over slowdown in mineral products sales](#) – Table 1. MPA Sales volumes in GB: Change on the previous period.

also imported by rail into this depot, from Somerset, and used to substitute sand and gravel. In 2017 sales of sand and gravel extracted from Bridge Farm, Sutton Courtenay Quarry returned to the 2015 level; and overall sales of Sharp Sand and Gravel in Oxfordshire increased again. All these factors have had implications for the 10-year average.

- 3.6 However, since 2016 there has been a steady increase in Sharp Sand and Gravel sales. In 2020 there was a slight decrease in sales, possibly due to covid and lockdowns, but it was still a relatively high figure. A number of sites were also coming to the end of their reserve, which may have caused a slow in production in 2020.
- 3.7 However, the still high figures were expected with the significant amount of residential and commercial growth taking place within and around Oxfordshire.
- 3.8 In 2021, developments and strategic projects both in Oxfordshire and neighbouring Authorities commenced again following the lockdowns of 2020. Also, production at the relatively new permission at New Barn Farm became established and there was a new permission for an extension at Hatford that enable production on the site to continue in 2021.
- 3.9 Based on linear trend analysis shown in Figure 3.1, the average rate of increase over the period 2012 to 2021 in Oxfordshire was 0.0624mtpa, giving a total increase of 0.624mtpa over the 10-year period with 3 intervals of decline. The periods of decline are discussed in 3.3-3.6.
- 3.10 There has been an 9.8% increase in the 10-year period and a 13.8% increase in the 3-year period². The 3-year sales average of Sharp Sand and Gravel is 33% higher than the 10-year average.

Figure 3.1 Linear trend analysis - Sharp Sand and Gravel sales (mtpa)



² Oxfordshire County Council LAA2021

Soft Sand Past Sales

3.11 Sales of Soft Sand from quarries in Oxfordshire 2012–2021 are shown in Table 3.2. These figures are taken from the 2021 Aggregates Minerals Survey undertaken by the County Council on behalf of the SEEAWP and the BGS Survey.

| 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 10 year average | 3 year average |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|-----------------|----------------|
| 0.155 | 0.165 | 0.230 | 0.233 | 0.227 | 0.251 | 0.252 | 0.254 | 0.210 | 0.264 | 0.224 | 0.243 |

Table 3.2: Sales of Soft Sand 2012 – 2021 (million tonnes) (Sources: SEEAWP Aggregates Monitoring Surveys)

3.12 The sales for 2021 increased from 2020 and were the highest since pre-2012.

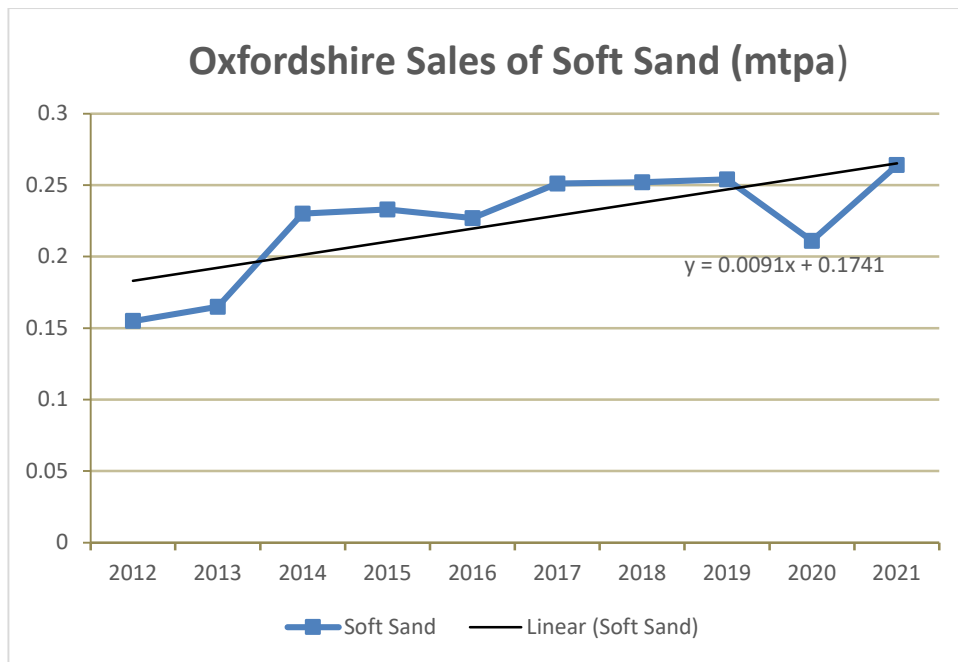
3.13 Hatford quarry gained permission in 2021, which enabled production to continue on site and planning permission for Shellingford was issued at end of 2020 and production resumed on site in 2021. These would have had an impact on sales within the County.

3.14 Despite the drop in sales in 2020 (which could have been due to Covid), there has been an overall steady increase in the sales of Soft Sand in Oxfordshire over the last 10 years. Linear trend analysis (Figure 3.2) over the period 2012 to 2021 reveals an average rate of increase of 0.0091mtpa for Oxfordshire, representing a total of 0.091mt (with two periods of decline) over the baseline period.

3.15 The Sales still saw a 2.8% increase in the 10-year period, and a 1.5% increase over the 3-year period dropped. However, the 3-year average is still 8% higher than the 10-year baseline period³.

³ Appendix 1

Figure 3.2 Linear trend analysis – Soft Sand sales



Crushed Rock Past Sales

3.16 Sales of Crushed Rock from quarries in Oxfordshire for the period 2012– 2021 are shown in Table 3.3. These figures are taken from the Aggregates Monitoring Survey by SEEAWP and the BGS Survey.

| 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 10 year average | 3 year average |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|-----------------|----------------|
| 0.242 | 0.502 | 1.061 | 0.914 | 0.715 | 0.867 | 0.751 | 0.843 | 1.087 | 1.254 | 0.824 | 1.061 |

Table 3.3: Sales of Sharp Crushed Rock 2012- 2021 (million tonnes) (Sources: SEEAWP Aggregates Monitoring Surveys)

3.17 The sales for 2021 increased significantly and were the highest levels since 2003.

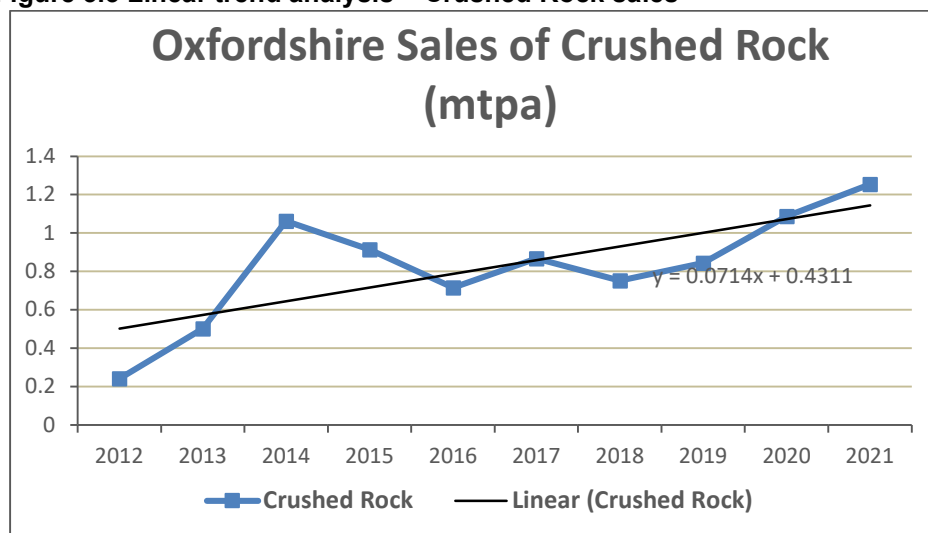
3.18 Historic records show that the 2014 LAA identified that the impact of the prolonged recession on Crushed Rock sales was more pronounced in Oxfordshire between 2010 and 2013. This was attributed to the fact that Oxfordshire’s Crushed Rock is generally suitable only for relatively low specification works, and might therefore have been less resilient to the economic downturn than the higher specification rock types found in other parts of the country.

3.19 In the last year there has been a 15.3% increase in Crushed Rock sales. This is similar to that recorded by MPA who saw a 16.7% increase on 2020.⁴

⁴ [Concern over slowdown in mineral products sales](#) Table 1. MPA Sales volumes in GB: Change on the previous period

- 3.20 The information we have received from Operators is that construction activity maintains to be high within Oxfordshire and also within areas surrounding the County, with particular focus on all the growth centres for both residential and commercial developments. This has meant that many of our quarries have increased production to meet demand.
- 3.21 It is also believed HS2 is also demanding significant mineral, as shown by the demand for increased capacity at Banbury Rail depot to bring in more material to meet this projects requirement. There is an outstanding application for 2.7 million tonnes of material at Finmere which is specifically for HS2. Construction of HS2 continues ahead of this determination which could be being met from our Crushed Rock quarries, impacting significantly on our sales.
- 3.22 On top of this, we have been informed that there has been the significant demand for aggregate from the second Phase of East -West Rail (not Crossrail).
- 3.23 Since 2014, Crushed Rock sales have been consistently higher that those at the start of the 10-year baseline period. In 2021 there was a 12.8% increase on the previous 10-year period. The three-year average rose with an 18% increase on the previous 3-year period.
- 3.24 Linear trend analysis of Crushed Rock sales (Figure 3.3) over the period 2012 to 2021 reveals an average rate of increase of 0.0714mtpa for Oxfordshire. The resulting overall increase over that period is 0.714mt (3 periods of decline).

Figure 3.3 Linear trend analysis – Crushed Rock sales



Secondary and Recycled Aggregate

- 3.25 Although reasonable data on recycling capacity is available for Oxfordshire, and whilst that may be indicative of increasing production and sophistication,

there is only partial information on the actual levels of production and use of these materials.

- 3.26 Past aggregates monitoring surveys, for example, have not produced a full response from secondary and recycled aggregates site operators.
- 3.27 2021, like the years previous, had a very poor response rate with only 18.5% of operators returning their figures for recycled and secondary aggregate facilities.
- 3.28 This is a recognised issue across the South East and to try and ensure a more accurate picture of the sales of recycled aggregates, it was decided by the South East Aggregates Working Party that Authorities could use the Environment Agency’s Waste Data Interrogator (WDI) to estimate material recycled, if returns were insufficient.
- 3.29 Where returns were provided by operators these were used, and where they were not, a 50% average of material received into a CDE recycling site was taken from the WDI.
- 3.30 For Secondary Aggregate sites, an estimate was made using averages from previous returns.
- 3.31 2021 therefore has recorded sales in Recycled and Secondary Aggregate, of 0.416mt.
- 3.32 It is likely that this estimated 2021 figures are significantly less than the total actual production. The surveys in the years 2013 and 2015 to 2017, particularly 2016, had significantly better response rates.

| 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 10 year average | 3 year average |
|-------|-------|-------|-------|-------|-------|-------|-------|--------------|--------------|-----------------|----------------|
| 0.466 | 0.422 | 0.271 | 0.453 | 0.534 | 0.417 | 0.406 | 0.372 | 0.439 | 0.416 | 0.420 | 0.409 |

Table 3.4: Sales of Secondary and Recycled Aggregate 2012-2021 (Sources: SEEAWP Aggregates Monitoring Surveys)

- 3.33 In a 2018 MPA⁵ Report, it was suggested that an alternative approach for considering secondary and recycled aggregate demand would be to assume 30% of all aggregates sales originate from recycled and secondary aggregate sites. This proportion has been assumed by industry for some years at the GB level. However, it is acknowledged there is lots of variation that depends on type of construction activity occurring and amount of hard demolition waste available.

⁵ Construction and Markets – South East MPA: Mineral Products Association - November 2018

- 3.34 If we were to apply this to Oxfordshire to all sand and gravel and Crushed Rock sales in 2021, this would give a recycled and secondary figure of 0.929 million tonnes, which is considerably higher than our survey returns.

Imports of Secondary Aggregates

- 3.35 No known secondary aggregates are currently transported into Oxfordshire. This is largely due to the costs of transporting the material, and because the exemptions from the aggregates levy, that gave secondary aggregates a cost advantage over primary aggregates were withdrawn in April 2014.
- 3.36 One potential exception to this is China Clay sand, produced as a by-product of China Clay (Kaolin) extraction in Cornwall and Devon. This commands prices high enough to justify the cost of long-distance sea or rail transport. These conditions do not, however, currently apply in Oxfordshire. There is no opportunity to transport by sea. Import by rail would be difficult both because of the need to double handle the material and because there is a current shortage of network capacity.

Rail Depots

- 3.37 There are three railhead depots in Oxfordshire used for importing aggregates, namely at Banbury, Kidlington and Sutton Courtenay, and these are safeguarded in the Oxfordshire Minerals and Waste Local Plan: Part 1 Core Strategy. These depots import Crushed Rock aggregates from the South West (Somerset) and the East Midlands (Leicestershire). There is planning permission for a further railhead aggregate depot at Shipton on Cherwell, but this has not yet been developed. There is also a depot at Hinksey Sidings, Oxford but this is used solely by the rail industry to bring in rail ballast for internal use on the rail network; it is currently operational but its use for the transshipment of rail ballast has been intermittent in the past.
- 3.38 Figures for imports of Crushed Rock by rail collected by Oxfordshire County Council are only available from 2007 onwards. Prior to that year only the regional totals were available.
- 3.39 In 2021, there were no returns from operators on sales from Rail Depots. Therefore, we are unable to report on sales for 2021.
- 3.40 However, to a number of recent planning decisions, Oxfordshire's rail depot capacity has increased to over 3.5million tonnes. It is known that the increased capacity at Hennef Way Banbury is temporary for 5 years to provide material for HS2, and Appleford Sidings has added two more rail sidings. This site now has a condition limiting it to 1.5million tonnes per annum.
- 3.41 Due to this demand for additional capacity, it can be considered that sales have risen significantly through Rail Depots in Oxfordshire.

Historic Rail Depot Sales

- 3.42 The rail depot figures prior to 2021 are confidential because they were derived from returns for only two companies. The figures for 2020 incorporated imports by rail from Somerset, Leicestershire and elsewhere, but also included significant quantities (from South Wales, South Gloucestershire and Kent) that were delivered to the rail depots by road; this distorted the true picture for rail transportation. It at least provides quantification of those road imports. The figures do not include imports of Crushed Rock to Hinksey Sidings, Oxford, which were brought in by rail and despatched by rail for use as rail ballast on the rail network (over a wider area than just Oxfordshire).
- 3.43 Although the raw data is confidential, in 2020 it was possible to report the variations over time (from 2007 onwards) in overall sales from the rail depots from the two reporting companies. Table 3.5 below, expresses the annual sales from rail depots for 2007 to 2020 as proportions of the sales figure for 2007.

| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|------|------|------|------|------|------|------|------|------|------|------|------|-----------|------|
| 1.0 | 1.1 | 0.7 | 0.9 | 1.2 | 1.0 | 1.0 | 2.4 | 2.2 | 2.4 | 2.5 | 2.5 | No return | 2 |

Table 3.5: Pattern of sales from Oxfordshire rail depots 2007-2020 (Source: Oxfordshire County Council Aggregates Monitoring Survey)

- 3.44 Table 3.5 shows that the figures vary from one year to another but that up to 2013 the fluctuation was less marked than those for sales of sand & gravel. Since 2013, the situation has changed, with annual rail imports for 2014 to 2018 being consistently around two and a half times that imported in 2007. However, this dropped to around 2 times in 2020. This could be due to Covid and lockdown and will need to be reviewed in the 2021 LAA
- 3.45 The combined sales from the three railhead depots that were operational in 2020 represented 74% of the total throughput permitted capacity of these three depots at this time, indicating that there was currently little headroom for further increase in imports of Crushed Rock by rail.
- 3.46 There is now significantly more capacity at two of the sites within Oxfordshire therefore it could be considered that sales will have also significantly increased.

Consumption

- 3.47 In 2019 the BGS survey undertook the Aggregates Survey and their findings set out imports and exports of minerals between Mineral Planning Authorities which are explored in detail in Chapter 6. This sets out how much mineral Oxfordshire imports and how much we export.

- 3.48 The final report also sets out how much Oxfordshire Land Won Aggregate Oxfordshire consumed in 2019, which is an indicator of the quantity of each mineral type Oxfordshire requires. Sharp Sand and Gravel and Soft Sand are combined within the BGS Survey.
- 3.49 The full summary is shown in Appendix 2. The consumption figures have been summarised in Table 3.6. This also includes the information for the comparative years of 2009 and 2014.

| | Sand and Gravel 2009 | Crushed Rock 2009 | All Oxfordshire Aggregate 2009 | Sand and Gravel 2014 | Crushed Rock 2009 | All Oxfordshire Aggregate 2014 | Sand and Gravel 2019 | Crushed Rock 2019 | All Oxfordshire Aggregate 2019 |
|---|----------------------|-------------------|--------------------------------|----------------------|-------------------|--------------------------------|----------------------|-------------------|--------------------------------|
| Total Consumed within Oxfordshire (Mt) | 0.757 | 0.625 | 1.383 | 0.765 | 1.501 | 2.266 | 0.900 | 0.617 | 1.517 |

Table 3.6: Mineral consumed within Oxfordshire, 2009, 2014 and 2019 (BGS Surveys)

- 3.50 The table shows that in 2019, Oxfordshire consumed 0.900mt of sand and gravel, an increase of 17.5% from 2014, and an increase of 18.9% on 2009.
- 3.51 For crushed rock, Oxfordshire consumed 0.617mt in 2019. This is a decrease of 58.5% from 2014, and a decrease of 1.3% on 2009.
- 3.52 It should be noted that for some minerals within the survey it is not clear where they were consumed. These minerals are identified as sold within the South East or Unallocated. The consumption rates within Oxfordshire do not include any of the quantities from these two categories.

4. Factors affecting demand

- 4.1 Although the NPPF requires that the level of future provision within the LAA should be based, in part, on the rolling average of 10 years' sales figures. It also requires "other relevant local information" to be taken into account.
- 4.2 We need to consider whether or not the historical 10-year average for land-won primary aggregate production can be relied upon as a guide to future levels of provision, or whether this needs to be changed in order to reflect other factors which may influence either the supply (availability) and/or the demand for aggregates produced within Oxfordshire, in future year.

Economic Forecasts

- 4.3 In considering Economic growth on the supply and demand of aggregates, several national forecasts have been considered. To consider economic forecasts this section considers Gross Domestic Product (GDP) and construction rates.
- 4.4 The Gross Domestic Product (GDP) is only available at UK level, but it does provide a background indicator as to the relative changes in economic activity likely to be experienced in Oxfordshire over time. Table 4.16 below shows the annual GDP year on year growth for the UK as a whole for the 10-year baseline period. The average rate of growth in the UK over the period 2012 to 2021 has been 1.5% a year.

| 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|------|------|------|------|------|------|------|------|-------|------|
| 1.5% | 1.9% | 3% | 2.6% | 2.3% | 2.1% | 1.7% | 1.7% | -9.4% | 7.5% |

Table 4.1: Changes in UK Real GDP over the baseline period (ONS)

- 4.5 The growth forecasts are set out in Table 4.2 from the Office of Budget as at March 2022⁶. These have altered significantly from previous years estimates due to the impact of Covid in 2020/21 along with the invasion on the Ukraine, international sanctions, energy price rises⁷ and rising inflation. Rising inflation could raise costs for raw materials, energy and labour which could negatively impact the minerals sector.⁸ In these very uncertain times, these estimates and their implications will need to be monitored in future LAA's, as this could potentially reduce mineral sales, and consequently production.

⁶ [Gross Domestic Product: Year on Year growth: CVM SA % - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk)

⁷ obr.uk/efo/economic-and-fiscal-outlook-march-2022/

⁸ [Concern over slowdown in mineral products sales](#)

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2026 - 2029 | 2020-2026 average |
|----|-------|------|------|------|------|------|------|------------------|-------------------|
| UK | -9.4% | 7.5% | 3.8% | 1.8% | 2.1% | 1.8% | 1.5% | Not yet forecast | 1.33% |

Table 4.2: Growth Forecasts

- 4.6 However, there are more recent assumptions for GDP Growth⁹ which is taken from a range of independent predictions. 2022 as 3.6% and 2023 as 1.3%
- 4.7 In 2017 the MPA published¹⁰ regional profiles with the intention of keeping them regularly updated. Within this report the regional construction outlook for the South East indicated an annual growth rate of 1.1% for the five years 2018-2022. This was equivalent to 5.5% and 11.45% growth over five and ten years respectively.
- 4.8 However, since this report was published many unexpected events have occurred, including the global Covid pandemic, the invasion of Ukraine, sharply rising energy prices along with growing inflation. These impacts on future projections for construction will need to be kept under close review and explored in future LAAs. In a recent article from the Mineral Product Association, they were raising concerns over slowdown in Mineral sales as a result on these events, though they acknowledge that current construction activity and a robust pipeline of new projects, primarily driven by large infrastructure projects and housebuilding, should continue to support buoyant sales volume¹¹
- 4.9 It would be beneficial if consideration could be given to any indicators of more local economic growth. Unfortunately, no quantitative information is available on this, though it can be said that Oxfordshire does have a growth agenda, as set out in the current Oxfordshire Strategic Economic Plan and in the Oxfordshire Growth Board's Oxfordshire Infrastructure Strategy (OXIS).

Economic Forecast Conclusion

- 4.10 At this stage it could be considered that there is more uncertainty in regards growth compared with previous years, however it is anticipated that growth will at least be in line with the indications given by National GDP projections. Therefore, without further information at this stage, we should consider that future levels of economic growth activity and thus demand for construction aggregate, are likely continue at a similar rate in the future. Though it should be acknowledged that growth could slow down if inflation continues to rise. This will be kept under close review in future LAA's

⁹ <https://www.gov.uk/government/collections/data-forecasts>

¹⁰ Construction & Markets – South East (MPA)

¹¹ [Concern over slowdown in mineral products sales](#)

Major Infrastructure Projects/Key Development

4.11 Major infrastructure projects, including those at the national scale, and key developments throughout Oxfordshire should be considered alongside housing and associated infrastructure development in terms of their likely influence on the future demand for construction aggregates. In assessing the overall impact of major infrastructure projects/key development and the justification for departure from the historical sales average, the number of new homes to be developed in Oxfordshire, as outlined below, has not been considered here as they have been considered within the Housing chapter later in this LAA. Housing figures have been included here solely for completeness. Oxfordshire's Local Industrial Strategy¹² 2020 highlights that the Infrastructure projects within Oxfordshire that are critical to the Investment Plan total £1,117.5million. The OXIS¹³ identifies a range of infrastructure development required to support population and housing growth.

4.12 Across Oxfordshire these include

- West Oxfordshire A40 strategies
- Various highways improvements throughout Oxfordshire
- The National Infrastructure Delivery Plan – For Oxfordshire projects such as HS2 and National Satellite Test Facility at Harwell
- Oxfordshire Housing and Growth Deal¹⁴ : Provides £60m for affordable housing and £150m for infrastructure improvements, including road and rail. Supports the ambition of building 100,000 new homes across Oxfordshire between 2011 and 2031 to address the county's severe housing shortage and expected economic growth.
- The Oxford-Cambridge Arc.
- The National Infrastructure Commission – East West Rail Project (though most of the work is outside the County)
- Oxfordshire Knowledge Spine, which includes Science Vale Oxford¹⁵, Bicester and Oxford¹⁶.
- Science Vale Oxford. It is the largest concentration of research and development in Europe: 20,000 new jobs and around 20,000 new homes.
- Considerable growth in Bicester.

4.13 It is difficult to assess the overall impact of these infrastructure and major development proposals, in terms of their demand for construction aggregates. At the very least, however, there appears to be no evidence to suggest that this element of demand is likely to reduce at this time.

¹² [The Oxfordshire Investment Plan - August 2020.pdf \(oxfordshirelep.com\)](#)

¹³ [Infrastructure Strategy \(OXIS\) | OxLEP \(oxfordshirelep.com\)](#)

¹⁴ <https://www.gov.uk/government/publications/oxfordshire-housing-deal>

¹⁵ A global hot spot for enterprise and innovation in science, high technology and the application of knowledge - <http://www.sciencevale.com/>

¹⁶ Oxfordshire LEP (2014) Strategic Economic Plan: Driving Economic Growth Through Innovation.

Major Infrastructure Projects/Key Development Conclusion

4.14 Whilst it is difficult to quantify, there are clear indications that planned infrastructure and major development both within the and outside the County will continue during the Plan and with some of the larger identified infrastructure projects having now commenced or still waiting to begin it would therefore be prudent to anticipate at least a modest increase in demand for construction aggregates from this sector.

Population and Housing Growth

4.15 In considering the future projections we also need to consider population growth and local authority housing forecasts.

4.16 OXIS¹⁷ (2017) forecasts that in the period 2016-2040, 123,500 additional homes will be built in Oxfordshire, the equivalent of 5,100 homes being built per year; and that population will increase by 39% from 688,000 to approximately 956,000.

4.17 Adopted Local Plans in the Oxfordshire indicate the major sites for new homes

- Cherwell – concentrated around Bicester, Banbury and the former RAF site at Upper Heyford, plus growth around Begbroke, Kidlington and Yarnton to meet Oxford’s unmet need.
- Oxford City – concentrated at Barton Park, Northern Gateway and Oxpens.
- South Oxfordshire – concentrated around Chalgrove Airfield and the Didcot Garden Town in conjunction with Vale of White Horse, with further strategic land at the edge of Oxford
- Vale of White Horse – concentrated around the Didcot Garden Town, Wantage and Abingdon (the Science Vale)
- West Oxfordshire - concentrated at Cotswold Garden Village Eynsham, North Witney and Chipping Norton.

4.18 Population figures are published by the Office of National Statistics¹⁸(ONS) There has been a steady population increase between 2011 and 2020. ONS have not published 2021 updates due to them needing to be rebased due to the national Census.

4.19 Unlike aggregate sales there was not a dip in population at the start of the baseline period, at least not at a county level, or on the scale associated with year-on-year variations. It is hard to draw a correlation between population figures and aggregate demand.

4.20 Over the 10-year period to 2020 there was an overall growth in the population of Oxfordshire of 42,089 people (+6.4%) (an average of 0.8% per year). This will be updated in the next LAA, once ONS release the data.

¹⁷ [Infrastructure Strategy \(OxIS\) | OxLEP \(oxfordshirelep.com\)](#)

¹⁸ www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/

- 4.21 Looking to the future, Oxfordshire County Council population forecasts (2021) predict a total population in Oxfordshire of 836,402 by 2029¹⁹. Whereas the ONS have population forecast of 722,729 by 2029. (Appendix 4).
- 4.22 Whilst there is no statistical justification for assuming that rates of population growth will correlate with changes in demand for aggregates, they do at least provide a mechanism for looking further ahead than the current economic forecasts. They suggest that there will be continued pressure for new housing and associated infrastructure development which is likely to be reflected in an increase in the demand for construction aggregates.
- 4.23 This is echoed in the Oxfordshire Strategic Economic Plan which states that “Our vision is Oxfordshire as a vibrant, sustainable, inclusive, world leading economy, driven by innovation, enterprise and research excellence”; and also, that “Both activity and employment rates are higher than the regional average – and substantially higher than the national average”.
- 4.24 This can be examined further by considering data on rates of house construction (Appendix 4).
- 4.25 For the 10-year baseline period (2012-2021) the average housing completion rate in Oxfordshire was 3573 homes, which was up 7% from 3320 homes per year (2011-2020)²⁰
- 4.26 However, if we took the last 3 years average as a baseline period (2019-2021), the housing completion rate in Oxfordshire is 4934 homes which is a 2% decrease on the previous 3-year baseline of 5018 homes (2018-2020). With Covid in 2020 and the associated lockdowns this slight decrease could be expected as builds were held up in 2020, which could have had implications for completions in 2021.
- 4.27 Looking forward, the projections for housing growth can be seen in Appendix 4. The average over the 10-year period equates to around 6, 238 homes per annum. Whilst there is considerable uncertainty in Oxfordshire about the deliverability of these figures, it would suggest a continued trend in the associated demand for construction aggregates.
- 4.28 In March 2018, the six Oxfordshire authorities signed the Oxfordshire Housing and Growth Deal. It committed the authorities to collectively delivering 100,000 homes and infrastructure across the county between 2011 and 2031.

Population and Housing Growth Conclusion

- 4.29 It is clear that we need to continue consider the implications of population and housing growth on the minerals provision over the plan period.

¹⁹ insight.oxfordshire.gov.uk/cms/future-population

²⁰ Oxfordshire County Council.

Conclusion

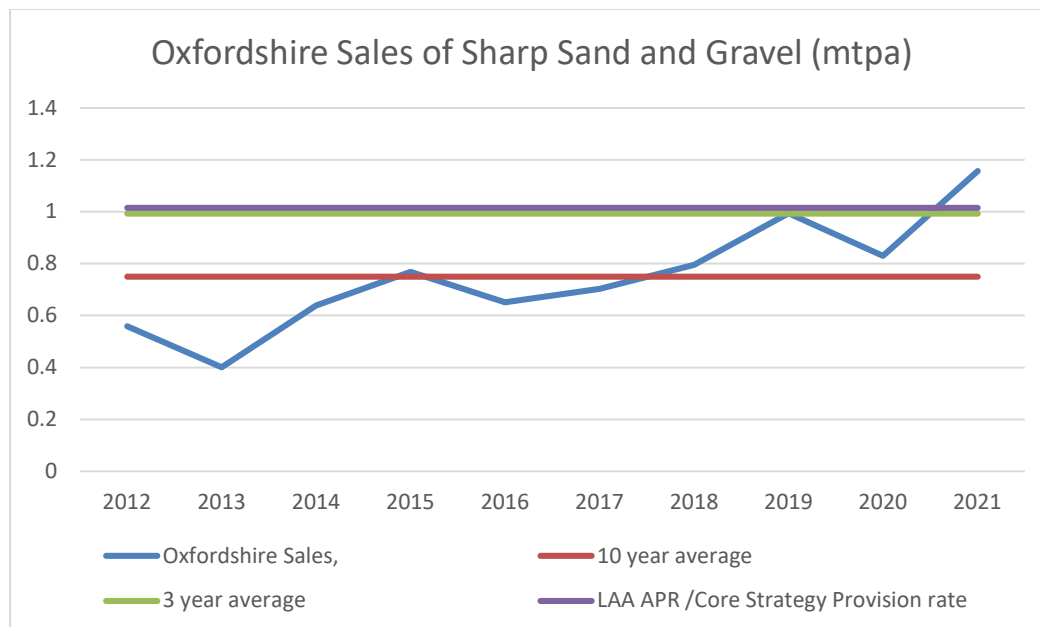
- 4.30 The evidence available suggests that Economic Forecasts, Major Infrastructure Projects/Key Development and Population Growth and Housing are all expecting some form of growth over the plan period and that recent demand would continue for the foreseeable future. The impact of Covid and Brexit, inflation and the energy crisis will continue to be explored in future LAA's.

5. Aggregate Provision Rates

Sharp Sand and Gravel

- 5.1 For sharp sand and gravel, there was an increase in sales compared with 2020 to 1.157mt. This is now higher than the 1.015mtpa Aggregates Provision Rate. The 3-year sales average (0.994mtpa) increased by 13% compared to the previous 3-year sales average (0.873mtpa), and there was a 9.8% increase in the 10-year sales average (from 0.683mtpa to 0.750mtpa). The 3-year sales average is still higher than the 10-year average. These are both below the LAA provision rate of 1.015mtpa
- 5.2 Considering available evidence in terms of economy, population, infrastructure and housing projections indicates that demand is likely to continue.
- 5.3 Taking into account sales and consumption alongside this evidence, in conclusion, at this time there is no justification for a change in the Aggregates Provision Rate figure from the current level of 1.015mtpa and this will continue to apply as the Aggregates Provision Rate for 2022.
- 5.4 Figure 5.1 Actual Sharp Sand and Gravel sales compared with the average sales (mtpa) and the Aggregates Provision Rate.

Figure 5.1 Comparison of actual sharp sand and gravel sales compared with the average sales and the LAA APR and Core Strategy Provision levels (mtpa).

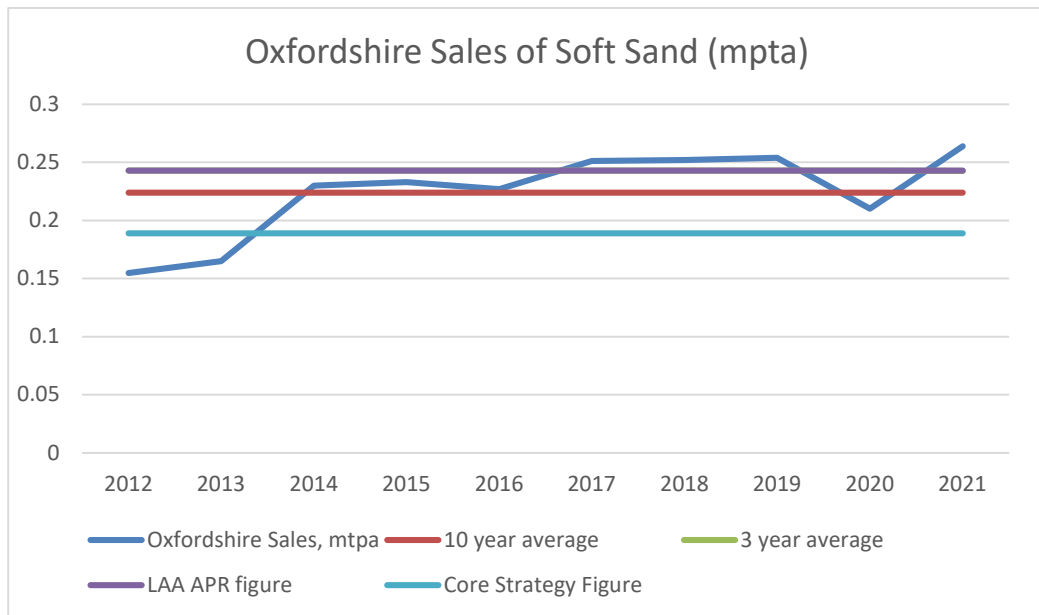


Soft Sand

- 5.5 For soft sand, the Core Strategy includes a provision figure of 0.189mtpa, which was set in the LAA 2014 on the basis of the 10-year sales average at that time.

- 5.6 Since 2014, except for 2020 where there was a slight decrease in sales, sales of Soft Sand have continued to rise above the Core Strategy and LAA 2014 provision figures.
- 5.7 In 2018 there had been 5 years (2014 – 2018) of sales of Soft Sand consistently at levels significantly above pre-2014 sales levels and above the LAA figure. This 5-year period of sales at a consistently higher level which, when considered alongside other relevant information, was sufficient for it to be concluded that this reflected an increased level of demand for Soft Sand that is likely to continue for the foreseeable future. It was therefore considered appropriate to increase the LAA Aggregates Provision Rate for Soft Sand to the 2016-2019 3-year sales average of 0.243mtpa within the LAA2019.
- 5.8 Sales in 2021 increased from 0.210mt in 2020 to 0.264mt in 2021, a 26% increase. The 3-year sales average (0.243mtpa) was 1.5% higher than the previous 3-year sales average (0.218mtpa), and there was a 2.8% increase in the 10-year sales average (from 0.239mtpa to 0.224mtpa). The 3-year sales average is 8% higher than the 10-year sales average and it is now the same as the LAA Aggregate Provision Rate 2021.
- 5.9 Available evidence, in term of population, planned infrastructure and housing projections, indicates that demand is likely to continue.
- 5.10 Taking into account sales and consumption alongside this evidence, at this time there is no justification for a change in the Aggregates Provision Rate from the current level of 0.243mtpa. This will continue to apply for 2022 onwards.

Figure 5.2 Comparison of actual Soft Sand sales compared with the average sales and the LAA APR and Core Strategy Provision levels (mtpa).

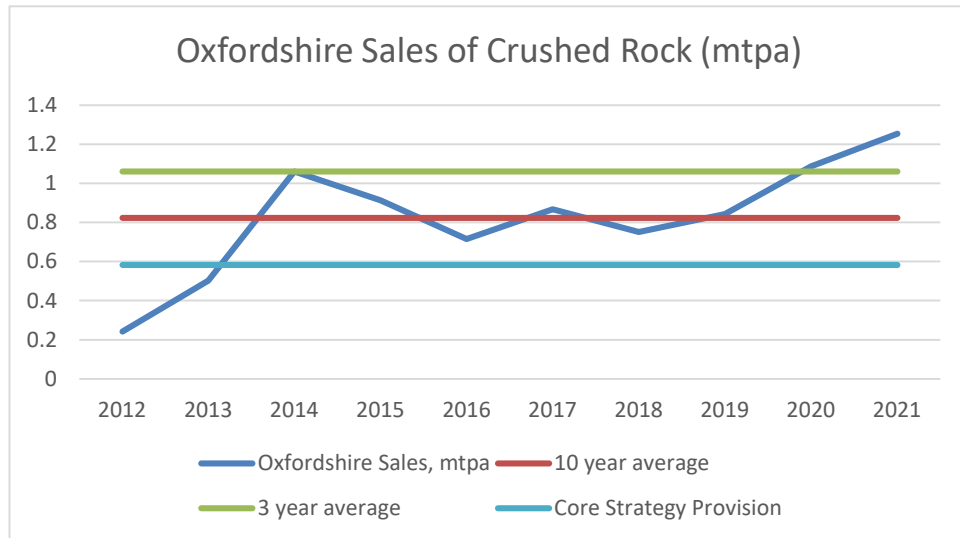


Crushed Rock

- 5.11 In the case of crushed rock, the Core Strategy provision level figure of 0.584mtpa was set in the LAA 2014 on the basis of an upward adjustment of the 10-year sales average at that time.
- 5.12 In 2018, there had been 5 years (2014 – 2018) of sales of Crushed Rock consistently at levels significantly above pre-2014 sales levels and above the LAA2014 figure. This 5-year period of sales at a consistently higher level which, when considered alongside other relevant information, was sufficient for it to be considered that an increased level of demand for Crushed Rock that is likely to continue for the foreseeable future, see Figure 4.3. Therefore, it was appropriate to increase the LAA Aggregates Provision Rate for Crushed Rock to the 2016-2019 3-year sales average of 0.778mtpa.
- 5.13 Sales in 2021 saw a 15% increase on 2020 sales as the upward trend in sales continued. The 3-year sales average (1.061mtpa) was 18.7% higher the previous 3-year sales average (0.894mtpa) over the baseline period and there was a 12.8% increase in the 10-year sales average (from 0.730mtpa to 0.824mtpa). The 3-year and 10-year sales average is now higher than the LAA 2021 annual provision rate.
- 5.14 Available evidence, in terms of economy, population, infrastructure and housing projections, indicates that demand is likely to continue. However, this significant increase in one year's sales requires monitoring to see if it continues as a trend or is an isolated occurrence due to HS2 demands on local resources.

- 5.15 Therefore, alongside this evidence, taking into account sales, Oxfordshire’s consumption and exports, it is considered that at this time, there is justification for a change in the Aggregates Provision Rate to the 10-year sales average.
- 5.16 The Aggregates Provision Rate will therefore be increased from the current level of 0.778mtpa to the 10-year average of 0.826mtpa.

Figure 5.3 Comparison of actual Crushed Rock sales compared with the Aggregates Provision Rate/10 year average, 3 year average and Core Strategy Provision levels (mtpa).



Recycled and Secondary Aggregate & Rail Depots

- 5.17 In addition to setting provision level figures for local land-won aggregates, the LAA should also include provision levels for other relevant sources of aggregates supply to ensure that future demands are met. In the case of Oxfordshire these are recycled and secondary aggregates and aggregate rail depots.
- 5.18 In the case of recycled and secondary aggregates, the appropriate figure to maintain in this LAA is the provision rate set in the Oxfordshire Minerals & Waste Local Plan: Part 1 – Core Strategy (2017) policy M3. This is 0.926mtpa.
- 5.19 In the case of aggregate rail depots, due to confidentiality, we are unable to provide a LAA provision figure at this stage.

Conclusion for LAA provision figures

| | | |
|---|------------------|----------------------------|
| Sharp Sand and Gravel | 1.015mtpa | Unchanged from 2021 |
| Soft Sand | 0.243mtpa | Unchanged from 2021 |
| Crushed Rock | 0.824mtpa | Changed from 2021 |
| Recycles and Secondary Aggregate | 0.926mtpa | Unchanged from 2021 |

6. Supply

Oxfordshire Supply

- 6.1 Oxfordshire is rich in mineral resources. Those which are used for primary aggregate production comprise: extensive alluvial sand and gravel resources along the River Thames and its tributaries; smaller deposits of glacio-fluvial sand and gravels in the north east of the county; deposits of Soft Sand mainly in the south west; and extensive areas of limestone in the north west and of ironstone in the north.
- 6.2 Oxfordshire also produces some secondary aggregates and a wide range of recycled aggregate materials. Further detailed information of the geological resources of Oxfordshire can be found in the LAA2014 (LUC and Cuesta Consulting Limited).

Recycled and Secondary Aggregate

- 6.3 2021, like the years previous had a very poor response with only 18.5% of operators returning their figures for recycled and secondary aggregate facilities.
- 6.4 This is a recognised issue across the South East and to try and ensure a more accurate picture of the sales of recycled aggregates, it was decided by the South East Aggregates Working Party to use the Environment Agency's Waste Data Interrogator (WDI) as a way to estimate material recycled at Oxfordshire's recycling sites.
- 6.5 Where returns were provided by operators were received these were used, and where they were not, a 50% average of material received into a CDE recycling site was taken from the WDI. This produced a figure of 0.416mtpa of recycled and secondary aggregate sales in 2021.
- 6.6 Therefore, the actual capacity figures are likely to be significantly higher than the recorded figures.
- 6.7 Table 6.1 below presents a fuller picture, showing the estimated²¹ capacity for the production of recycled and secondary aggregates at each site at the end of 2021, sub-divided between operational and non-operational sites.
- 6.8 Of a total capacity of approximately 1.534mtpa: 1.518mtpa is at operational facilities and 0.015mtpa is currently non-operational. Of the operational capacity, that which is at sites with planning permission to the end of the plan period (2031) or beyond is 1.001mtpa, whereas the capacity of sites with permissions that expire before the end of 2031 is 0.518mtpa

²¹ Taken from Survey responses, Planning Decisions and Planning Application Statements.

6.9 In addition, at the end of 2021 there were two applications outstanding. One at Dix Pit (MW.0059/19) for an additional 0.040tpa until 2028, and one at Finmere (MW.0031/19) for 0.038mtpa of recycled aggregate. An additional 0.078mtpa of recycling capacity.

| Facility Name | Operator | Planning Life | Production Capacity (tpa) |
|---|---|---------------|---------------------------|
| Operational Recycled Aggregate Production Facilities with Permanent consent or Time Limited Consent to end of Plan Period (2031) | | | |
| Drayton | Oxfordshire Highways | Permanent | 75000 |
| Ferris Hill Farm | Banbury Plant and Skip Hire (incorporating NL Matthews) | Permanent | 24999 |
| Grove Industrial Park | Aasvogel | Permanent | 40000 |
| Hundridge Farm | G.D. Parker Instant Skip Hire | Permanent | 5000 |
| Lakeside Industrial Park | Micks Skips and Recycling Ltd. | Permanent | 2000 |
| NW Corner of TW Depot | Clancy Docwra | Permanent | 20000 |
| New Barn Farm | Grundon | 2039 | 10000 |
| New Wintles Farm | O Malley Haulage | Permanent | 170000 |
| Newlands Farm | Smiths of Bloxham | Permanent | 32000 |
| Playhatch Quarry | Grabloader Ltd. | Permanent | 70000 |
| Rear of Cemex Batching Plant (Hardwick) | Fergal Contracting | Permanent | 20000 |
| Rumbolds Pit | Richard Hazel (Hazel & Jefferies) | Permanent | 20000 |
| Sandfields Farm | K J Millard Ltd. | Permanent | 9600 |
| Shipton Hill | Hickman Bros | Permanent | 12600 |
| Stonepitt Barn | S.Belcher | Permanent | 75000 |
| Worton Farm (Cresswell Field) | M&M Skip Hire | Permanent | 48000 |
| Swannybrook | NAP Grabhire | Permanent | 80280 |
| Gill Mill | Smith and Sons (Bletchington) Ltd. | 2040 | 175000 |
| Wroxton | Earthline Ltd | 2042 | 10000 |

| | | | |
|---|--------------------------|------|----------------|
| Ewelme No. 2 | Grundon Waste Management | 2032 | 12000 |
| Total Operational Production Capacity at Recycled Aggregate Production Facilities available through the Plan Period. | | | 911,479 |

| Operational Recycled Aggregate Facilities with Time-Limited Consent ending before end of Plan Period (2031) | | | |
|---|---|------|----------------|
| Chilton Waste Transfer Site/Prospect Farm | Raymond Brown Minerals and Recycling Ltd. | 2022 | 75000 |
| Dix Pit Complex | Sheehan's | 2028 | 175000 |
| Enstone Shooting Range | Markham Farms | 2021 | 20000 |
| Shellingford Quarry | Earthline Ltd. | 2019 | 60000 |
| Shipton Quarry | Earthline Ltd. | 2025 | 75000 |
| Total Operation Production Capacity at Recycled Aggregate Facilities with Time limited consent ending before end of Plan Period (2031) | | | 405,000 |

| Facility Name | Operator | Planning Life | Production Capacity (tpa) |
|---|---|----------------------|----------------------------------|
| Operational Secondary Aggregate Facilities with Permanent or Time-Limited Consent to end of Plan Period (2031) | | | |
| Ardley ERF (IBAA) Facility | Raymond Brown Minerals and Recycling | 2049 | 90000 |
| Operational Secondary Aggregate Facilities with Time Limited Consent ending before end of Plan Period (2031) | | | |
| Sutton Courtenay Block Recycling | Hanson (reject building blocks & Concrete used in block making) | 2030 | 62500 |
| Sutton Courtenay Asphalt Recycling Plant | Hanson | 2030 | 50000 |
| Total Operational Secondary Aggregate Capacity | | | 205,200 |

| | |
|--|------------------|
| Overall Total Operational Capacity at 'Permanent' Facilities (facilities available throughout the Plan Period) | 1,001,479 |
| Overall Total Operational Capacity at Time Limited Facilities (facilities with consent ending before end of 2031) | 517500 |
| Overall Total Operational Capacity | 1,518,699 |

Non Operational Facilities

| Facility Name | Operator | Planning Life | Production Capacity (tpa) |
|---------------------------------------|----------------------------|----------------------|----------------------------------|
| Upwood Quarry | Hills Quarry Products Ltd. | 2029 | 15000 |
| Total Non Operational Capacity | | | 15000 |

Operational and Non-Operational Facilities

| | |
|--|------------------|
| Total Operational and Non-Operational Capacity 2021 (tpa) | 1,533,979 |
|--|------------------|

Table 6.1 Recycled and Secondary Aggregates Permissions at end of 2021

Imports and Exports

- 6.10 Every county in the UK has to import aggregates from elsewhere because the geology means that no single county area produces exactly the profile of different types of aggregate in the exact amounts or proportions consumed therein. As part of the Local Aggregate Assessment, we should consider demand and supply factors from other MPAs.
- 6.11 All sales of aggregate are the result of commercial decisions by both buyers and sellers and the resulting movements reflect the relative locations of supply and demand. Where these movements cross a county boundary, they are tracked in the four (or five) yearly national aggregates monitoring surveys (AM Survey), these have been 2005, 2009, 2014 and most recently 2019. This survey is known as AM2019.
- 6.12 The 2019 Aggregates Minerals Survey for England and Wales was published in August 2021. The figures within this Imports and Exports section of the LAA 2020 were taken from the AM2019 which shows movement of minerals at a sub-regional and Minerals Planning Authority level. These are set out in detail in Appendix 2.
- 6.13 The most recent AM2019 stated that overall Sand and Gravel sales in England have decreased by 4% between 2014 and 2019, whilst Crushed Rock sales increased 18% between 2014 and 2019.
- 6.14 Oxfordshire however, has increased in Land won Sand and Gravel sales by 44% since 2014, though sales in Crushed Rock have decreased by 20%.
- 6.15 Total primary aggregate sales within Oxfordshire have increased by 8% since 2014, however the South East as a whole has seen an overall decrease of 7% in total primary aggregate sales.
- 6.16 Some neighbouring MPAs have limited resources of their own. These authorities therefore rely on Oxfordshire to supply some of their needs. Other MPAs have traditionally supplied aggregates into Oxfordshire Somerset, South Gloucestershire and Leicestershire have previously provided Crushed Rock to supplement the County's own production and to cater for higher specification requirements from harder rock resources
- 6.17 The AM2019 sets out the sales of primary aggregates by MPA and principal destination sub region in 2019. These findings are shown in Table 6.2. As the table shows Oxfordshire were responsible for 20% of the South East Regions Land Won Sand and Gravel Sales and 42% of the Crushed Rock sales in 2019. This does not include that mineral that was unallocated or went elsewhere. They are also set out in Appendix 2.

(thousand tonnes)

| Destination | Land won sand and gravel | MPA% | AWP% | Crushed Rock | MPA | AWP% |
|-------------|--------------------------|-------------------|------|--------------|------|------|
| Oxfordshire | 772 | 62% | | 260 | 31% | |
| South East | 369 | 30% ²² | | 404 | 48% | |
| Elsewhere | 43 | 3% | | 178 | 21% | |
| Unallocated | 64 | 5% | | | | |
| | 1248 | 100% | 20% | 843 | 100% | 42% |

Table 6.2 Sales of primary aggregates and principal sub regions 2019 (Exports)

- 6.18 The AM2019 also sets out Oxfordshire’s imports in 2019. A summary of the import findings is shown in Table 6.3. The table also shows as a percentage, of the South East total, Oxfordshire’s imports.

(thousand tonnes)

| Total Imports | Land won Sand and Gravel | Marine Sand and Gravel | Total Sand and Gravel | Crushed Rock | Total Primary Aggregate |
|------------------|--------------------------|------------------------|-----------------------|--------------|-------------------------|
| Oxfordshire | 128 | 7 | 136 | 356 | 491 ²³ |
| South East Total | 2268(6%) | 1962(0.3%) | 3950(3%) | 58084 (0.6%) | 9754(5%) |

Table 6.3 Imports of primary aggregates and its relationship with the South East Imports Total

- 6.19 The AM Survey 2019 (Tables 6.2, 6.3 and Appendix 2) shows that Oxfordshire is now a net exporter of both Land won Sand and Gravel and Crushed Rock.

Sharp Sand and Gravel

- 6.20 The AM2019 does not differentiate between Soft Sand and Sharp Sand and Gravel. They are combined into Land won Sand and Gravel.

- 6.21 Comparison of the AM2009, AM2014 and AM2019 results show that Oxfordshire continues to be a net exporter of sand and gravel since 2014.

Exports

- 6.22 Exports have significantly increased since 2009. From 140,000 in 2009, doubling to 221,000 tonnes in 2014, and in 2019 doubling again to 476,000 tonnes.

²² There appears to be a print error in the AM2019 survey as has this figure as 60% but doesn't reflect 369,000 tonnes as a total 1,248,000 tonnes. Recalculated for this LAA as 30%

²³ This should be 492 as 136 add 356 is not 491

- 6.23 Oxfordshire consumed 62% of the sand and gravel produced in the County. Exports make up approximately 38%²⁴ of Oxfordshire's total sand and gravel sales. The majority of exports were within the South East (30%) whilst 3% went elsewhere and 5% was unallocated on the Survey returns. There is the potential for some of this to have been used in Oxfordshire.
- 6.24 As set out in Appendix 2 the figures from the AM2019 show that Hampshire and the Isle of Wight were one of the main Authorities that Oxfordshire exported Sand and Gravel to, along with, Buckinghamshire & Milton Keynes. Hampshire and Isle of Wights imports from Oxfordshire made up between 10 and 20% of their own total sand and gravel consumption.

Imports

- 6.25 Whilst we exported 476,000 tonnes of Land won Sand and Gravel, Oxfordshire imported 128,000 tonnes, up slightly from 117,000 tonnes in 2014. This was mainly from Cambridgeshire, Lincolnshire, Staffordshire and Wiltshire as Oxfordshire imported between 1% and 10% of the total consumed from each of these Authorities.
- 6.26 In total Oxfordshire made up 6.3% of the Sand and Gravel imports into the South East Region.

Crushed Rock

Exports

- 6.27 Appendix 2 shows that Oxfordshire changed from a net importer of Crushed Rock in 2014 to a net exporter. Oxfordshire exported 0.582mt of its total 0.843mt of Crushed Rock in 2019, compared with importing 0.356mt from outside the County. This is a change from 2014 where OCC was a net importer. 0.440mt was imported, compared 0.347mt exported.
- 6.28 Table 6.3 shows that exports make up approximately 69% of Oxfordshire's total sales. The majority of exports were to destinations within the South East (48%) whilst 21% went elsewhere.
- 6.29 As set out in Appendix 2 the figures from the AM2019 show that Northamptonshire was one of the main Authorities that Oxfordshire exported Crushed Rock to, along with, Buckinghamshire & Milton Keynes. Warwickshire and Berkshire. Imports of Crushed Rock from Oxfordshire made up between 1 and 20% of their own total Crushed Rock consumption.
- 6.30 Imports and in particular exports, in light of the quantity of minerals exported in 2019 will therefore need to be given great consideration in planning for future provision.

²⁴ The figures include the 5% that was unallocated and some of these sales may have stayed within Oxfordshire.

6.31 These shall be monitored under Duty to Cooperate and, if necessary, Statements of Common Ground between Authorities will be entered into.

7.Quarries

Sharp sand and gravel

- 7.1 On Oxfordshire, at the end of 2021, there are 12 sites with planning permission for Sharp Sand and Gravel extraction, 8 of which are active. 3 are inactive, 1 not yet commenced. Information on these sites is summarised in Table 7.1, including the operator and a summary of the current status of each site. Sharp Sand and Gravel

| Quarry Site | Operator | Current Status at December 2021 |
|------------------------------------|------------------------|---|
| Cassington | Hanson Aggregates | Inactive. |
| Caversham | Lafarge Tarmac | Active: extension of 1.86 million tonnes permitted August 2014; commenced August 2017. |
| Finmere | AT Contracting | Inactive: Intermittent small scale past working; reserve remaining. |
| Gill Mill, Ducklington | Smiths of Bletchington | Active: biggest quarry in county; extension of 5.0 million tonnes permitted June 2015; large reserve remaining. |
| Hatford | Earthline | Active: Permitted for SSG, SS and CR in 2021. 225,000tonnes of S&G |
| Stanton Harcourt (Stonehenge Farm) | Hanson Aggregates | Inactive: original quarry worked out; extension of 1.55 million tonnes permitted on appeal October 2010; permission commenced but reserve remains Permission for extraction ends Dec 2023. |
| Sutton Courtenay (Bridge Farm) | Hanson Aggregates | Active: fully operational extension of 0.5 million tonnes permitted June 2018. |
| Sutton Wick | H Tuckwell & Sons | Active: small output site; small reserve remaining beneath the plant site; extension of 0.35 million tonnes permitted March 2016. Application MW.0104/20 outstanding. |
| Thrupp Lane, Radley | H Tuckwell & Sons | Inactive: Estimated 0.925 million tonnes confirmed as a permitted reserve but under ROMP procedure has gone into suspension and cannot be worked until new conditions have been approved; therefore not currently included as part of permitted reserve or landbank. It was determined that mineral working has permanently ceased, and so the County Council is now under a duty to serve a prohibition notice on this site. |

| Quarry Site | Operator | Current Status at December 2021 |
|------------------------|-----------------------|---|
| Faringdon Quarry | Grundon Sand & Gravel | Active: new quarry permitted June 2013 (formerly regarded as extension to Wicklesham Quarry). |
| New Barn Farm, Cholsey | Grundon | Active: Permitted for 2.500,000tonnes in November 2018. Extraction commenced in 2020 |
| Shellingford | Multi Agg Ltd | Active. Also has SS and CR deposits on site. |

Table 7.1 Active and Permitted Sharp Sand and Gravel Extraction Sites in Oxfordshire, including Operators and Current Status (Source: OCC)

- 7.2 Total permitted reserves of Sharp Sand and Gravel in Oxfordshire at the end of 2021 were 10.586 mt, as shown in Table 7.2 below. This is taken from the AM2021 survey calculated using annual operator returns. The actual operator returns for individual quarries cannot be presented due to confidentiality.
- 7.3 Production capacity is also relevant, as a large amount of reserve in a quarry with only a low production rate will make a smaller contribution to annual supply than equivalent reserves in a high producing quarry. Production capacity at the end of 2021 was 1.755mtpa

| Sharp Sand and Gravel Permitted Reserves at 31/12/21 (million tonnes) |
|---|
| 10.586mt |

Table 7.2: Sharp Sand and Gravel Permitted Reserves at 31/12/21 (million tonnes)

Soft Sand

- 7.4 In Oxfordshire, at the end of 2021, there were 8 sites with planning permission for Soft Sand extraction, with 1 currently inactive. One planning application for 130,000 tonnes of Soft Sand at an extension at Hatford was granted in 2021.

| Quarry Site | Operator | Current Status at December 2021 |
|------------------------------|--------------------------------|---|
| Bowling Green / Chinham Farm | Hills Quarry Products | Active: sand & limestone; extension of 1.6 million tonnes sand permitted June 2017; large remaining reserve. |
| Duns Tew | Smiths Bletchington | Active: extension of 0.415 million tonnes permitted June 2017 and this is anticipated to commence operation in 2019. |
| Hatford | Hatford Quarry Ltd (Earthline) | Active: sand & limestone. Application outstanding at end of 2019 for extension (MW.0066/19) Limestone 0.520mt, Sharp Sand 0.225mt tonnes, Soft Sand 0.130mt |

| | | |
|--------------------------------|---------------------------|---|
| Shellingford | Multi-Agg Ltd (Earthline) | Active: sand & limestone; permissions granted April 2011 for deepening and eastern extension, total 1.05 million tonnes sand, requires extraction to end by 31.12.20 in eastern extension and 31.12.28 in existing quarry. Application granted at end of 2019 for 1.8mt of Soft Sand and 1mt of crushed rock. |
| Upwood | Hills Quarry Products | Active: sand & limestone; large remaining reserve. |
| Faringdon | Grundon Sand & Gravel | Active: sharp sand & gravel and soft sand; new quarry permitted June 2013 (replaced Wicklesham Quarry). |
| Finmere | AT Contracting | Intermittent small scale past working; reserve remaining. Application outstanding |
| Sutton Courtenay (Bridge Farm) | Hanson Aggregates | Active: fully operational after periods of mothballing and spasmodic working but production has fluctuated for operational reasons; extension of 0.5 million tonnes permitted June 2018. |

Table 7.3 Active and Permitted Soft Sand Extraction Sites in Oxfordshire, including Operators and Current Status

7.5 Total permitted reserves of Soft Sand in Oxfordshire at the end of 2021 were 3.824mt, as shown in Table 7.4 below. This is taken from AM2021 survey, calculated using annual operator returns. The actual operator returns for individual quarries cannot be presented due to confidentiality.

7.6 However, total production capacity is also relevant, as a large amount of reserve in a quarry with only a low production rate will make smaller contribution to annual supply than equivalent reserves in a high producing quarry. The current reserves are spread across a number of operators rather than one main one and production capacity is 0.325mtpa.

| |
|---|
| Soft Sand Permitted Reserves at 31/12/21(million tonnes) |
| 3.824 mt |

Table 7.4: Soft Sand Permitted Reserves at 31/12/21 million tonnes)²⁵

²⁵ SEEAWP Aggregates Monitoring Survey 2021

Crushed Rock

- 7.7 In Oxfordshire at the end of 2021, there are 15 sites with planning permission for Crushed Rock extraction. There are 11 active sites and 2 inactive. The operator and current status of each site is provided in Table 7.5. There are also two applications for Crushed Rock outstanding at the end of 2021.

| Quarry Site | Operator | Current Status at December 2021 |
|------------------------------|--------------------------------|---|
| Dewars Farm | Smiths Bletchington | Active; limestone |
| Burford | Smiths Bletchington | Active; limestone |
| Castle Barn (Sarsden Quarry) | Great Tew Partnership | Inactive in 2019; small site |
| Chinham Farm (Bowling Green) | Hills Quarry Products | Active; sand and limestone |
| Duns Tew | Smiths Bletchington | Active; sand with small amounts of limestone |
| Faringdon Quarry | Grundon Sand and Gravel | Active; sand & gravel with small amounts of limestone |
| Hatford | Hatford Quarry Ltd (Earthline) | Active; sand and limestone. Application outstanding at end of 2019 for extension (MW.0066/19) Limestone 0.520mt, Sharp Sand 0.225mt tonnes, Soft Sand 0.130mt |
| Rollright Quarry Phase 1 | Hanson Aggregates | Active; limestone. Limited production capacity by lorry movements |
| Rollright Quarry Phase 2 | Smiths Bletchington | Inactive; limestone |
| Shellingford | Multi-Agg Ltd (Earthline) | Active; sand and limestone; Application granted in 2020 (MW.0104/18) for 1.8mt of Soft Sand and 1mt of crushed rock. |
| Shipton on Cherwell | Earthline | Planning permission expired 30th September 2019. Appeal outstanding for extension to site MW.0046/18 |

| Quarry Site | Operator | Current Status at December 2021 |
|-------------|-----------------------|---------------------------------|
| Upwood | Hills Quarry Products | Active; sand and limestone |
| Whitehill | Smiths Bletchington | Active; limestone |
| Wroxton | Earthline | Active; ironstone |

Table 7.5 Active and Permitted Crushed Rock Extraction Sites in Oxfordshire, including Operators and Current Status

- 7.8 Total permitted reserves of Crushed Rock in Oxfordshire at the end of 2021 were 6.455 mt, as shown in Table 7.6 below. This is taken from the AM2021 Survey, calculated using annual operator returns. The actual operator returns for individual quarries cannot be presented due to confidentiality.
- 7.9 However, total production capacity is also relevant, as a large amount of reserve in a quarry with only a low production rate will make smaller contribution to annual supply than equivalent reserves in a high producing quarry. Production capacity as at the end of 2021 was 1.579mtpa.
- 7.10 Permitted reserves of Crushed Rock in Oxfordshire, as reported in the SEEAWP Aggregates Monitoring Survey 2021, are shown in Table 7.6 below.

| Crushed Rock Permitted Reserves at 31/12/21(million tonnes) |
|---|
| 6.455mt |

Table 7.6: Crushed Rock Permitted Reserves at 31/12/21(million tonnes)²⁶

Rail Depots

- 7.11 In 2021, there were no returns from operators on sales from Rail Depots.
- 7.12 However, to a number of recent planning decisions, Oxfordshire has increased Oxfordshire's rail depot capacity from to over 3.5million. It is known that the increased capacity at Hennef Way Banbury is temporary to provide material for HS2, and Appleford Sidings has added two more rail sidings. This site now has a condition limiting it to 1.5million tonnes per annum.

Landbanks

- 7.13 Based on the Aggregates Provision Rates that have been determined for this LAA and the permitted reserves as at 31 December 2021, as set out above, the landbanks at the end of 2021 can be seen below in Table 7.7.

²⁶ AM2019 Survey

| Permitted Reserves at 31.12.2021 by mineral type | Landbank (LAA Aggregates Provision Rate) |
|---|---|
| Soft Sand 3.824 m. tonnes | 15.74 years at 0.243mtpa |
| Sharp Sand & Gravel 10.586m. tonnes | 10.4 years at 1.015mtpa |
| Crushed Rock 6.455 m. tonnes | 7.83 years at 0.824mtpa |

Table 7.7 Oxfordshire Landbank at 31/12/2021

0.824 As can be seen the Landbanks for Sharp Sand and Gravel and Soft Sand have the 7 years required however the Crushed Rock landbank falls below the 10-year requirement for the fourth consecutive year.

8. Conclusion

8.1 In concluding this year's Oxfordshire's LAA, based upon consideration of all the available evidence, the Aggregates Provision Rates are:

- **Sand and Gravel – 1.015mtpa**
- **Soft Sand – 0.243mtpa**
- **Crushed Rock – 0.824mtpa**
- **Recycled and Secondary Aggregates- 0.926mtpa**

8.2 To ensure we maintain a steady and adequate supply over the Plan Period, we need to consider these LAA Provision Rates with the permitted reserves as of 31 December 2021²⁷ and the implications for the Authorities landbank

8.3 Our landbank for Soft Sand and Sharp Sand and Gravel are both above the 7-year requirement. However, for Crushed Rock the landbank is at 7.83 years, below the NPPFs 10-year requirement.

8.4 This is being addressed as we progress our Minerals and Waste Local Plan.

8.5 Therefore, for clarity, this LAA sets out both the Core Strategy requirement and the LAA requirements to maintain a steady and adequate supply of minerals.

Sand and Gravel

Sand and Gravel Core Strategy/LAA Requirements

8.6 The Core Strategy/LAA Annual Provision Rate of 1.015mtpa multiplied by 18 years, gives a total provision requirement of 18.27 million tonnes for the period 2014 to 2031.

8.7 Taking into account sales in 2014 – 21 (total 6.538million tonnes), and reserves that are expected to be worked during the plan period (9.436million tonnes), the remaining requirement for the period to 2031 is 2.296 million tonnes.

Soft Sand

8.8 The LAA figure for Soft Sand changed in the LAA2019 and therefore there two scenarios to set out. One for the Core Strategy Requirements and one of the LAA requirements

Soft Sand Core Strategy Requirements

²⁷ Appendix 2

- 8.9 The Core Strategy provision level figure is 0.189mtpa multiplied by 18 years, gives a total provision requirement of 3.402 million tonnes for the period 2014 to 2031.
- 8.10 Taking into account sales in 2014 – 2021 (total 1.921 million tonnes), and reserves that are expected to be worked during the plan period (2.065million tonnes), there are no more requirements for additional Soft Sand over the Plan Period.

Soft Sand LAA requirements

- 8.11 However, if we apply the LAA2014-2018 rate to 2018 (5 years) and the updated provision figure from the LAA2019 rate for the rest of the Plan period (13 years) this gives a total provision requirement of 4.104 million tonnes for the period 2014 to 2031
- 8.12 Taking into account sales in 2014 – 2021 (total 1.921million tonnes), and reserves that are now expected to be worked during the plan period (2.06million tonnes), there is a requirement of 0.118mt additional Soft Sand over the remaining Plan Period.

Crushed Rock

- 8.13 The LAA figure for Crushed Rock changed in the LAA2019 as well as the proposed change this year and therefore there two scenarios to set out.

Crushed Rock Core Strategy Requirements

- 8.14 The Core Strategy provision level figure is 0.584mtpa multiplied by 18 years, gives a total provision requirement of 10.512 million tonnes for the period 2014 to 2031.
- 8.15 Taking into account sales in 2014 – 2021 (total 7.492 million tonnes), and reserves that are expected to be worked during the plan period (5.279 million tonnes), there are no more requirements for additional Crushed Rock over the Plan Period.

Crushed Rock LAA requirements

- 8.16 However, if we apply the LAA 2014-2018 rate to 2018 (5 years) and the LAA2019 rate (0.788mtpa) from 2019 to 2021 and the latest LAA APR (0.824mt) for the rest of the Plan period (10 years) this gives a total provision requirement of 13.494million tonnes for the period 2014 to 2031
- 8.17 Taking into account sales in 2014 – 2021 (total 7.492 million tonnes), and reserves that are expected to be worked during the plan period (5.279 million tonnes), there is a requirement for an additional 0.723mt tonnes of Crushed Rock over the remaining Plan Period.

Conclusion

8.18 To meet the Core Strategy Requirements, we will need to identify sites to meet the following need:

- **Sand and Gravel – 2.296 million tonnes**
- **Soft Sand - 0 million tonnes**
- **Crushed Rock - 0 million tonnes**

8.19 However, to maintain our landbank requirements based on our most recent Local Aggregates Assessment, we need to meet the following requirements:

- **Sand and Gravel – 2.296million tonnes.**
- **Soft Sand – 0.118 million tonnes**
- **Crushed Rock – 0.723 million tonnes**

9. List of Definitions and Acronyms

The Local Aggregate Assessment uses the following terminology throughout this report:

- **Alternative aggregates** - A general term which can be used to refer to anything other than primary, land-won aggregates. It can include secondary, recycled and sometimes marine aggregates.
- **Landbank** - Landbank is a measure of the stock of permitted reserves expressed in terms of the number of years that these would allow production for at a given average rate of extraction. It is a theoretical measure of the life of the reserves if these were to be worked at a consistent annual rate.
- **Land-won aggregates** - Primary aggregates extracted from land.
- **Marine aggregates** - Primary aggregates dredged from the sea, almost exclusively sand and gravel.
- **Primary aggregates** - These are aggregates produced from naturally occurring mineral deposits, extracted specifically for use as aggregate and used for the first time. They are produced either from rock formations that are crushed to produce 'crushed rock' aggregates, from naturally occurring sand and gravel deposits, or solid formations to produce soft sand.
- **Aggregate Provision Rate (APR)** - the quantity of aggregate for which provision needs to be made in plans within each Mineral Planning Authority in order both to satisfy local needs and to contribute fairly towards National expectations of future demand
- **Recycled aggregates** - Aggregate materials recovered from construction and demolition processes and from excavation waste on construction sites.
- **Secondary aggregates** - Aggregates derived as a by-product of other quarrying and mining operations or industrial processes, including colliery spoil, china clay waste, slate waste; power station ashes, incinerator bottom ashes and similar products.
- **Sharp Sand and Gravel** - Sharp sand tends to be relatively coarse and the component grains are more angular than soft sand (see below). Such sands are typically deposited within river channels, rather than in oceans, and are generally found, as part of a sequence of mixed sand & gravel, within river floodplains, river terraces, and (in areas which have been glaciated) within other types of deposit. As the name implies they have a sharper texture than soft sands and, although they can be used as building sand, they are generally not preferred for that purpose because they produce less 'workable' mortars, unless special additives are included in the mix, adding to the cost. They are better suited to use within concrete products, not least because they usually occur in conjunction with gravels which provide the coarse aggregate component of the concrete mix.
- **Soft Sand** - Soft Sand is generally fine-grained sand in which the individual grains are well-rounded, imparting a relatively soft texture and free-flowing nature to the sand. Such sands are commonly deposited in marine environments, where constant movement by the sea results in the rounding,

polishing and sorting of the grains. The characteristics of such sands lend themselves especially to products which are required to 'flow' or be easily 'workable' by hand when they are being used - particularly mortars, but also plaster, in the case of very fine grained sand. These are collectively known as 'building sand'. Soft Sand may also be used in asphalt products where it is used to stiffen the bitumen binder, and in concrete products - although sharp sand is more commonly used for that purpose.

The Local Aggregates Assessment uses the following acronyms throughout this report:

- **AMRI** – Annual Minerals Raised Inquiry Surveys
- **APR** – Aggregate Provision Rate
- **AWP** – Aggregate Working Party
- **BGS** – British Geological Survey
- **CLG** – Communities and Local Government (See MHCLG below)
- **GDP** – Gross Domestic Product
- **LAA** – Local Aggregates Assessment
- **MASS** – Managed Aggregates Supply System
- **MPAs** – Mineral Planning Authorities
- **Mt** – Million tonnes
- **mtpa** – Million tonnes per annum
 - **MHCLG** – Ministry of Housing, Communities and Local Government (now rebranded as DLUHC – Department of Levelling Up, Housing and Communities)
- **MWLP** – Minerals and Waste Local Plan
- **NPPF** – National Planning Policy Framework
- **OCC** – Oxfordshire County Council
- **PPG** – Planning Practice Guidance
- **RAWP** – Regional Aggregate Working Parties
- **ROMP** – Review of Old Mineral Permissions
- **SEEAWP** – South East of England Aggregate Working Party
 - **SHMA** – Strategic Housing Market Assessment

Appendix 1

Total Oxfordshire Sand and Gravel Sales (including Soft Sand)

(Source: AM Surveys and SEEAWP Surveys)

The AM2019 did not include a separate England total for Soft Sand for 2019, therefore for comparative purposes we have combined the historical records for Sharp Sand and Gravel and Soft Sand to be able to compare the 2019 figure with previous years.

| | Oxfordshire Sharp Sand & Gravel Sales (million tonnes) ²⁸ | Oxfordshire Soft Sand Sales (million tonnes) ²⁹ | Total Oxfordshire Land won Sand and Gravel (million tonnes) | England Total Land Won Sand and Gravel (million tonnes) | Oxfordshire's sales as a percentage of England's sales ³⁰ |
|-------------|--|--|---|---|--|
| 2003 | 1.372 | 0.234 | 1.479 | 59.974 | 2.47% |
| 2004 | 1.184 | 0.295 | 1.289 | 62.735 | 2.05% |
| 2005 | 1.090 | 0.199 | 1.166 | 58.926 | 1.98% |
| 2006 | 0.983 | 0.183 | 1.059 | 56.148 | 1.89% |
| 2007 | 0.893 | 0.166 | 0.78 | 54.512 | 1.43% |
| 2008 | 0.629 | 0.151 | 0.627 | 50.134 | 1.25% |
| 2009 | 0.462 | 0.165 | 0.597 | 37.81 | 1.58% |
| 2010 | 0.455 | 0.142 | 0.69 | 36.723 | 1.88% |
| 2011 | 0.489 | 0.201 | 0.714 | 36.589 | 1.95% |
| 2012 | 0.559 | 0.155 | 0.566 | 33.229 | 1.79% |
| 2013 | 0.401 | 0.165 | 0.869 | 35.855 | 2.42% |
| 2014 | 0.639 | 0.230 | 1.001 | 38.785 | 2.58% |
| 2015 | 0.768 | 0.233 | 0.878 | 2015 figures not available | n/a |
| 2016 | 0.651 | 0.227 | 0.954 | 2016 figures not available | n/a |

²⁸ Source: SEEAWP Aggregates Monitoring Surveys

²⁹ SEEAWP Aggregates Monitoring Surveys

³⁰ Figures include data for marine dredged material. This data is allocated to the county in which the port of landing is situation.

| | Oxfordshire Sharp Sand & Gravel Sales (million tonnes)²⁸ | Oxfordshire Soft Sand Sales (million tonnes)²⁹ | Total Oxfordshire Land won Sand and Gravel (million tonnes) | England Total Land Won Sand and Gravel (million tonnes) | Oxfordshire's sales as a percentage of England's sales³⁰ |
|--|--|--|--|--|--|
| 2017 | 0.703 | 0.251 | 1.048 | 2017 figures not available | n/a |
| 2018 | 0.796 | 0.252 | 1.133 | 2018 figures not available | n/a |
| 2019 | 0.994 | 0.254 | 1.248 | 39.708 | 3.14% |
| 2020 | 0.830 | 0.210 | 1.040 | 2020 figures not available | n/a |
| 2021 | 1.157 | .264 | 1.421 | 2021 Figures not available | n/a |
| Rolling 10 year annual average, 2003 - 2012 | 0.812 | 0.182 | 0.891 | 40.433 | 2.01% |
| Rolling 10 year annual average, 2004 - 2013 | 0.715 | 0.176 | 0.839 | 38.629 | 1.85% |
| Rolling 10 year annual average, 2005 - 2014 | 0.660 | 0.179 | 0.812 | 36.853 | 1.79% |
| Rolling 10 year annual average, 2006 – 2015 | 0.628 | 0.184 | 0.787 | n/a | n/a |
| Rolling 10 year annual average, | 0.595 | 0.192 | 0.778 | n/a | n/a |

| | Oxfordshire Sharp Sand & Gravel Sales (million tonnes)²⁸ | Oxfordshire Soft Sand Sales (million tonnes)²⁹ | Total Oxfordshire Land won Sand and Gravel (million tonnes) | England Total Land Won Sand and Gravel (million tonnes) | Oxfordshire's sales as a percentage of England's sales³⁰ |
|---|--|--|--|--|--|
| 2007 – 2016 | | | | | |
| Rolling 10 year annual average, 2008 – 2017* | 0.576 | 0.202 | 0.822 | n/a | n/a |
| Rolling 10 year average 2009 – 2018 | 0.592 | 0.230 | 0.923 | n/a | n/a |
| Rolling 10 year average 2010 – 2019 | 0.646 | 0.211 | 0.857 | n/a | n/a |
| Rolling 10 year average 2011 – 2020 | 0.683 | 0.218 | 0.901 | n/a | n/a |
| Rolling 10 year average 2012 – 2021 | 0.750 | 0.224 | 1.016 | n/a | n/a |
| Average of last 3 years 2014 – 2016 | 0.686 | 0.230 | 0.95 | n/a | n/a |
| Average of last 3 years 2015 – 2017 | 0.707 | 0.237 | 0.717 | n/a | n/a |
| Average of last 3 years 2016 - 2018 | 0.717 | .243 | 0.96 | n/a | n/a |

| | Oxfordshire Sharp Sand & Gravel Sales (million tonnes)²⁸ | Oxfordshire Soft Sand Sales (million tonnes)²⁹ | Total Oxfordshire Land won Sand and Gravel (million tonnes) | England Total Land Won Sand and Gravel (million tonnes) | Oxfordshire's sales as a percentage of England's sales³⁰ |
|---|--|--|--|--|--|
| Average of last 3 years 2017- 2019 | 0.831 | .252 | 1.083 | n/a | n/a |
| Average of last 3 years 2018- 2020 | 0.873 | .239 | 1.112 | n/a | n/a |
| Average of last 3 years 2019- 2021 | .994 | 0.243 | 1.237 | n/a | n/a |

**Oxfordshire's Historical Mineral Sales
Sharp Sand and Gravel 2003-2021 (million tonnes)**

(Sources: SEEAWP Aggregates Monitoring Surveys, and AMRI Surveys)

| | Oxfordshire Sharp Sand & Gravel Sales (million tonnes)³¹ | England Sharp Sand & Gravel Sales (million tonnes)³² | Oxfordshire's sales as a percentage of England's sales³³ |
|-------------|--|--|--|
| 2003 | 1.372 | 48.674 | 2.82% |
| 2004 | 1.184 | 51.591 | 2.29% |
| 2005 | 1.090 | 48.109 | 2.27% |
| 2006 | 0.983 | 46.316 | 2.12% |
| 2007 | 0.893 | 44.52 | 2.01% |
| 2008 | 0.629 | 41.527 | 1.51% |
| 2009 | 0.462 | 31.705 | 1.46% |

³¹ Source: SEEAWP Aggregates Monitoring Surveys

³² Source: Mineral Extraction in Great Britain survey, Table 2 "Sand and Gravel for Construction". Please note that 2014 is the most recent published report.

³³ Figures include data for marine dredged material. This data is allocated to the county in which the port of landing is situation.

| | Oxfordshire Sharp Sand & Gravel Sales (million tonnes)³¹ | England Sharp Sand & Gravel Sales (million tonnes)³² | Oxfordshire's sales as a percentage of England's sales ³³ |
|--|--|--|---|
| 2010 | 0.455 | 31.794 | 1.43% |
| 2011 | 0.489 | 31.392 | 1.56% |
| 2012 | 0.559 | 28.702 | 1.95% |
| 2013 | 0.401 | 30.634 | 1.31% |
| 2014 | 0.639 | 33.831 | 1.89% |
| 2015 | 0.768 | <i>2015 figures not available</i> | n/a |
| 2016 | 0.651 | <i>2016 figures not available</i> | n/a |
| 2017 | 0.703 | <i>2017 figures not available</i> | n/a |
| 2018 | 0.796 | <i>2018 figures not available</i> | n/a |
| 2019 | 0.994 | 2019 figures not available | n/a |
| 2020 | 0.83 | 2020 figures not available | n/a |
| 2021 | 1.157 | 2021 figures not available | n/a |
| Rolling 10 year annual average, 2003 - 2012 | 0.812 | 40.433 | 2.01% |
| Rolling 10 year annual average, 2004 - 2013 | 0.715 | 38.629 | 1.85% |
| Rolling 10 year annual average, 2005 - 2014 | 0.660 | 36.853 | 1.79% |
| Rolling 10 year annual average, 2006 – 2015 | 0.628 | n/a | n/a |

| | Oxfordshire Sharp Sand & Gravel Sales (million tonnes)³¹ | England Sharp Sand & Gravel Sales (million tonnes)³² | Oxfordshire's sales as a percentage of England's sales ³³ |
|---|--|--|---|
| Rolling 10 year annual average, 2007 – 2016 | 0.595 | n/a | n/a |
| Rolling 10 year annual average, 2008 – 2017* | 0.576 | n/a | n/a |
| Rolling 10 year average 2009 – 2018 | 0.592 | n/a | n/a |
| Rolling 10 year average 2010 – 2019 | 0.646 | n/a | n/a |
| Rolling 10 year average 2011– 2020 | 0.683 | n/a | n/a |
| Rolling 10 year average 2012– 2021 | 0.750 | n/a | n/a |
| Average of last 3 years 2014 – 2016 | 0.686 | n/a | n/a |
| Average of last 3 years 2015 – 2017 | 0.707 | n/a | n/a |
| Average of last 3 years 2016 - 2018 | 0.717 | n/a | n/a |
| Average of last 3 years 2017 - 2019 | 0.831 | n/a | n/a |
| Average of last 3 years 2018 - 2020 | 0.873 | n/a | n/a |
| Average of last 3 years 2019- 2021 | 0.994 | n/a | n/a |

Sales of Soft Sand 2003–2021 (million tonnes)
(Sources: SEEAWP Aggregates Monitoring Surveys, and AMRI Surveys)

| | Oxfordshire Soft Sand Sales (million tonnes)³⁴ | England Soft Sand Sales (million tonnes)³⁵ | Oxfordshire's sales as a percentage of England's sales. |
|-------------|--|--|--|
| 2003 | 0.234 | 11.300 | 2.07% |
| 2004 | 0.295 | 11.144 | 2.65% |
| 2005 | 0.199 | 10.817 | 1.84% |
| 2006 | 0.183 | 9.832 | 1.86% |
| 2007 | 0.166 | 9.992 | 1.66% |
| 2008 | 0.151 | 8.607 | 1.75% |
| 2009 | 0.165 | 6.105 | 2.70% |
| 2010 | 0.142 | 4.929 | 2.88% |
| 2011 | 0.201 | 5.197 | 3.87% |
| 2012 | 0.155 | 4.527 | 3.42% |
| 2013 | 0.165 | 5.221 | 3.16% |
| 2014 | 0.230 | 4.954 | 4.64% |
| 2015 | 0.233 | <i>2015 figures not available</i> | n/a |
| 2016 | 0.227 | <i>2016 figures not available</i> | n/a |
| 2017 | 0.251 | <i>2017 figures not available</i> | n/a |
| 2018 | 0.252 | <i>2018 figures not available</i> | n/a |
| 2019 | 0.254 | 2019 figure not available | n/a |
| 2020 | 0.21 | 2020 figure not available | n/a |
| 2021 | 0.264 | 2020 figure not available | n/a |

³⁴ SEEAWP Aggregates Monitoring Surveys

³⁵ Source: Mineral Extraction in Great Britain survey, Table 2 "Sand and Gravel for Construction". Please note that 2014 is the most recent published report.

| | Oxfordshire Soft Sand Sales (million tonnes)³⁴ | England Soft Sand Sales (million tonnes)³⁵ | Oxfordshire's sales as a percentage of England's sales. |
|---|--|--|--|
| Rolling 10 year annual average (2003 – 2012) | 0.189 | 8.246 | 2.34% |
| Rolling 10 year annual average (2004 – 2013) | 0.182 | 7.637 | 2.38% |
| Rolling 10 year annual average (2005 – 2014) | 0.176 | 7.018 | 2.51% |
| Rolling 10 year annual average (2006 - 2015) | 0.179 | n/a | n/a |
| Rolling 10 year annual average (2007 - 2016) | 0.184 | n/a | n/a |
| Rolling 10 year annual average (2008 – 2017) * | 0.192 | n/a | n/a |
| Rolling 10 year annual average (2009 – 2018) | 0.202 | n/a | n/a |
| Rolling 10 year annual average (2010– 2019) | 0.211 | n/a | n/a |
| Rolling 10 year annual average (2011– 2020) | 0.218 | n/a | n/a |
| Rolling 10 year annual average (2012– 2021) | 0.224 | n/a | n/a |
| Average of last 3 years 2014 – 2016 | 0.230 | n/a | n/a |
| Average of last 3 years 2015 – 2017 | 0.237 | n/a | n/a |
| Average of last 3 years 2016 – 2018 | .243 | n/a | n/a |
| Average of last 3 years 2017 - 2019 | .252 | n/a | n/a |
| Average of last 3 years 2018 - 2020 | .239 | n/a | n/a |
| Average of last 3 years 2019 - 2020 | .243 | n/a | n/a |

Sales of Crushed Rock 2003 – 2021 (million tonnes)

(Sources: SEEAWP Aggregates Monitoring Surveys, and AMRI Surveys)

| | Oxfordshire Crushed Rock Sales (million tonnes)³⁶ | England Crushed Rock Sales (million tonnes)³⁷ | Oxfordshire's sales as a percentage of England's sales. |
|-------------|---|---|--|
| 2003 | 0.629 | 83.957 | 0.75% |
| 2004 | 0.557 | 85.653 | 0.65% |
| 2005 | 0.564 | 80.593 | 0.70% |
| 2006 | 0.495 | 83.722 | 0.59% |
| 2007 | 0.717 | 82.922 | 0.86% |
| 2008 | 0.543 | 75.179 | 0.72% |
| 2009 | 0.363 | 59.666 | 0.61% |
| 2010 | 0.272 | 50.115 | 0.54% |
| 2011 | 0.322 | 57.744 | 0.56% |
| 2012 | 0.242 | 52.980 | 0.46% |
| 2013 | 0.502 | 53.417 | 0.94% |
| 2014 | 1.061 | 63.835 | 1.66% |
| 2015 | 0.914 | <i>2015 figures not available</i> | n/a |
| 2016 | 0.715 | <i>2016 figures not available</i> | n/a |
| 2017 | 0.867 | <i>2017 figures not available</i> | n/a |
| 2018 | 0.751 | <i>2018 figures not available</i> | n/a |
| 2019 | 0.843 | 83.015 | 1.02% |

³⁶ SEEAWP Aggregates Monitoring Surveys

³⁷ Source: BGS 2014 and 2019 survey

| | Oxfordshire Crushed Rock Sales (million tonnes)³⁶ | England Crushed Rock Sales (million tonnes)³⁷ | Oxfordshire's sales as a percentage of England's sales. |
|---|---|---|--|
| 2020 | 1.087 | 2020 figures not available | n/a |
| 2021 | 1.254 | 2021 figures not available | n/a |
| Rolling 10 year annual average 2003 - 2012 | 0.470 | 71.253 | 0.66% |
| Rolling 10 year annual average 2004 - 2013 | 0.458 | 68.199 | 0.67% |
| Rolling 10 year annual average 2005 - 2014 | 0.508 | 66.017 | 0.77% |
| Rolling 10 year annual average 2006 - 2015 | 0.543 | n/a | n/a |
| Rolling 10 year annual average 2007 - 2016 | 0.565 | n/a | n/a |
| Rolling 10 year annual average 2008 – 2017 | 0.580 | n/a | n/a |
| Rolling 10 year annual average 2009 – 2018 | 0.601 | n/a | n/a |
| Rolling 10 year annual average 2010 – 2019 | 0.649 | n/a | n/a |
| Rolling 10 year annual average 2011 – 2020 | 0.730 | n/a | n/a |
| Rolling 10 year annual average 2012 – 2021 | 0.824 | n/a | n/a |
| Average of last 3 years 2014 – 2016 | 0.897 | n/a | n/a |

| | Oxfordshire Crushed Rock Sales (million tonnes)³⁶ | England Crushed Rock Sales (million tonnes)³⁷ | Oxfordshire's sales as a percentage of England's sales. |
|--|---|---|--|
| Average of last 3 years 2015 – 2017 | 0.832 | n/a | n/a |
| Average of last 3 years 2016 – 2018 | 0.778 | n/a | n/a |
| Average of last 3 years 2017 – 2019 | 0.820 | n/a | n/a |
| Average of last 3 years 2018 – 2020 | 0.894 | n/a | n/a |
| Average of last 3 years 2019 – 2021 | 1.061 | n/a | n/a |

Appendix 2

Imports and Exports

Imports, Exports and Consumption of Primary Aggregates in Oxfordshire

2009, 2014, 2020 (millions of tonnes) (Source: Collation of the Results of the 2019 Aggregates Minerals Survey for England and Wales, MHCLG, August 2021 and Collation of the Results of the 2014 Aggregates Minerals Survey for England and Wales, DCLG, October 2016, Collation of the Results of the 2019 Aggregates Minerals Survey for England and Wales, DCLG, October 2011)

| | Sand and Gravel 2009 | Crushed Rock 2009 | All Primary Aggregates 2009 | Sand and Gravel 2014 | Crushed Rock 2014 | All Primary Aggregates 2014 | Sand and Gravel 2019 | Crushed Rock 2019 | All Primary Aggregates 2019 |
|---|----------------------|-------------------|-----------------------------|----------------------|-------------------|-----------------------------|----------------------|-------------------|-----------------------------|
| A. Production / Sales in Oxfordshire | 0.628 | 0.363 | 0.991 | 0.869 | 1.061 | 1.93 | 1.248 | .843 | 2.091 |
| B. Exported out of Oxfordshire | 0.140 | 0.179 | 0.319 | 0.221 | 0.347 | 0.568 | 0.476 | .582 | 1.058 ³⁸ |
| C. Produced and consumed in Oxfordshire (A – B) | 0.487 | 0.184 | 0.672 | 0.648 | 0.714 | 1.362 | 0.772 | 0.261 | 1.033 |
| D. Imported into Oxfordshire | 0.270 | 0.441 | 0.711 | 0.117 | 0.787 | 0.904 | .128 | .356 | 0.484 |

³⁸ This included the unallocated. It should be noted that some of this may have been consumed in Oxfordshire.

| | Sand and Gravel 2009 | Crushed Rock 2009 | All Primary Aggregates 2009 | Sand and Gravel 2014 | Crushed Rock 2014 | All Primary Aggregates 2014 | Sand and Gravel 2019 | Crushed Rock 2019 | All Primary Aggregates 2019 |
|---|-----------------------------|--------------------------|------------------------------------|-----------------------------|--------------------------|------------------------------------|-----------------------------|--------------------------|------------------------------------|
| E. Total Consumption in Oxfordshire (C + D) | 0.757 | 0.625 | 1.383 | 0.765 | 1.501 | 2.266 | 0.900 | 0.617 | 1.517 |

The equivalent figures for 2005 are not available because Oxfordshire was grouped with Buckinghamshire and Berkshire in the AM2005 Report.

No equivalent information can be derived from the earlier AM2001 Survey report, because all results are presented on a regional basis and there are no local figures.

Destinations

Destinations of Sand & Gravel Produced in Oxfordshire 2009 and 2014

(Source: Oxfordshire County Council Aggregates Monitoring Survey 2009 and 2014)

| Destination | 2009 Sand and Gravel (including soft sand) Tonnes | 2009 Sand and Gravel (including soft sand) % | 2014 Sand and Gravel (including soft sand) Tonnes | 2014 Sand and Gravel (including soft sand) % |
|--------------------------------------|--|---|--|---|
| Oxfordshire | 487,260 | 77.6 | 648,282 | 74.60 |
| Berkshire | 20,785 | 3.3 | 99,259 | 11.42 |
| Buckinghamshire & Milton Keynes | 13,663 | 2.2 | 9,712 | 1.11 |
| Rest of South East & London | 15,565 | 2.5 | 4,642 | 0.81 |
| Wiltshire, Swindon & Gloucestershire | 68,203 | 10.9 | 95,089 | 10.94 |
| Northamptonshire & Warwickshire | 4,993 | 0.8 | 9,674 | 1.11 |
| TOTAL | 627,783 | 100 | 866,658 | 100 |

Destinations of Crushed Rock Produced in Oxfordshire 2009 and 2014

(Source: Oxfordshire County Council Aggregates Monitoring Survey 2009 and 2014)

| Destination | 2009 Crushed Rock Tonnes | 2009 Crushed Rock % | 2014 Crushed Rock Tonnes | 2014 Crushed Rock % |
|---|---------------------------------|----------------------------|---------------------------------|----------------------------|
| Oxfordshire | 180,867 | 49.8 | 663,463 | 62.56 |
| Berkshire & Buckinghamshire & Milton Keynes | 23,081 | 6.4 | 254,223 | 23.97 |
| Rest of South East & London | 0 | 0 | 5,755 | 0.55 |

| Destination | 2009 Crushed Rock Tonnes | 2009 Crushed Rock % | 2014 Crushed Rock Tonnes | 2014 Crushed Rock % |
|--------------------------------------|---|--|---|--|
| Wiltshire, Swindon & Gloucestershire | 29,694 | 8.2 | 14,308 | 1.35 |
| Northamptonshire & Warwickshire | 118,788 | 32.7 | 121,258 | 11.43 |
| TOTAL | 362,839 | 100 | 1,060,573 | 99.86 |

The AM2005 survey report combined figures for the destinations of aggregates sold in Oxfordshire with the destinations of sales in Berkshire and Buckinghamshire. It is therefore not possible to derive equivalent figures for 2005.

Destinations of Sand & Gravel Produced in Oxfordshire 2019

(Source: BGS/MHCLG AM2019 Survey)

For 2019, we do not currently have the exact amounts of mineral produced in Oxfordshire that were consumed by other areas.

The AM2019 set out the % of the amount of sand and gravel consumed in each destination that was produced from Oxfordshire in relation to the Authorities own total demand of sand and gravel. The table then indicates the lowest and maximum amount of sand and gravel produced from Oxfordshire based on these percentages.

Destination of Oxfordshire's produced Land won Sand and Gravel (Including soft sand) in 2019 (1.248mt)

| Destination | Proportion | Range* of tonnages produced in Oxfordshire (millions of tonnes) |
|-----------------------------------|--|---|
| Oxfordshire | 62% of total sand and gravel consumed in Oxfordshire | 0.772mt** |
| Hampshire and Isle of Wight | Between 10% and 20% of total sand and gravel consumed in Hampshire and Isle of Wight | Between 0.095mt and 0.189mt came from Oxfordshire |
| Buckinghamshire and Milton Keynes | Between 1% and 10% of total sand and gravel consumed in Berkshire | Between 0.014mt and 0.138mt came from Oxfordshire |

| Destination | Proportion | Range* of tonnages produced in Oxfordshire (millions of tonnes) |
|--|---|--|
| Berkshire | Between 1% and 10% of total sand and gravel consumed in Berkshire | Between 0.007mt and 0.074mt came from Oxfordshire |
| Wiltshire and Swindon | Between 1% and 10% of total sand and gravel consumed in Wiltshire and Swindon | Between 0.005mt and 0.052mt came from Oxfordshire |
| West of England (Avon) | Between 10% and 20% of total sand and gravel consumed in West of England | Between 0.002mt and 0.006mt came from Oxfordshire |
| Surrey, Dorset, Gloucestershire, Northamptonshire, Somerset and Exmoor National Park, Warwickshire, Worcestershire, Scotland and West London | Less than 1% of each MPAs total sand and gravel was sourced from Oxfordshire | Max .043mt came from Oxfordshire |
| Unknown in the South East | Between 40 and 50% sand and gravel consumed in the South East | Between 0.172mt and 0.216mt came from Oxfordshire |
| Unknown Destination | Between 1%-10% of the total sand and gravel consumed that went to unknown destinations. | Between 0.014mt and 0.142mt came from Oxfordshire |

*This is the highest and lowest percentage of sand and gravel from Oxfordshire taken from the importing Authorities total Sand and Gravel consumed. (Other than Oxfordshire)

** Known figure from AM2019

Destinations of Crushed Produced in Oxfordshire 2019

(Source: BGS/MHCLG AM2019 Survey)

The AM2019 set out the % of the amount of Crushed Rock consumed in each destination that was produced from Oxfordshire, in relation to the Authorities own total demand of sand and gravel. The table then indicates the lowest and maximum amount of sand and gravel produced from Oxfordshire based on these percentages.

Total Crushed Rock exported destinations in 2019 (0.582mt)

| Source | Proportion | Range* (millions of tonnes) |
|---|---|---|
| Oxfordshire | 31% of total Consumed Crushed Rock in Oxfordshire | 0.261mt* |
| Northamptonshire | Between 1% and 10% of total Crushed Rock consumed in Northamptonshire | Between 0.017mt and 0.165mt came from Oxfordshire |
| Buckinghamshire and Milton Keynes | Between 10% and 20% of total Crushed Rock consumed in Buckinghamshire and Milton Keynes | Between 0.070 and 0.141mt came from Oxfordshire |
| Warwickshire | Between 1% and 10% of total Crushed Rock consumed in Warwickshire | Between 0.011mt and 0.107mt came from Oxfordshire |
| Berkshire | Between 1% and 10% of total Crushed Rock consumed in Berkshire | Between 0.009mt and 0.089mt came from Oxfordshire |
| Unknown somewhere in the South East | Between 50% and 60% of total Crushed Rock destination in the South East unknown | 0.256mt and 0.307mt came from Oxfordshire |
| Bedfordshire, Gloucestershire, Hampshire and Isle of Wight, Hertfordshire, Surrey | Less than 1% of each MPAs total Crushed Rock was sourced from Oxfordshire | Max 0.043mt came from Oxfordshire |

*This is the highest and lowest percentage of sand and gravel from Oxfordshire taken from the importing Authorities total Crushed Rock consumed. (Other than Oxfordshire)

** Known figure from AM2019

Destinations of Sand and Gravel Produced in Oxfordshire 2005, 2009 and 2014
(Source: AM2005, and AM2009, 2014)

| Destination (Source MPA – Oxfordshire) | Sand and gravel (millions of tonnes) 2005 | Sand and gravel (millions of tonnes) 2009 | Sand and gravel (millions of tonnes) 2014 |
|---|--|--|--|
| Berkshire, Oxfordshire and Buckinghamshire | 0.304 | 0.520 of which 0.487 in Oxfordshire | 0.757 of which 0.648 in Oxfordshire |
| Elsewhere in South East | 0.418 | 0.015 | 0.012 |
| Elsewhere | 0.550 | 0.090 | 0.100 |
| Unallocated | 0.017 | 0 | 0 |
| Total | 1.289* | 0.627* | 0.869* |

*Totals may not match sub totals due to varying categories

Destinations of Crushed Rock Produced in Oxfordshire 2005 and 2009

| Destination (Source MPA – Oxfordshire) | Crushed Rock (millions of tonnes) 2005 | Crushed Rock (millions of tonnes) 2009 | Crushed Rock (millions of tonnes) 2014 |
|---|---|---|---|
| Berkshire, Oxfordshire and Buckinghamshire | 0.277 | 0.184 all in Oxfordshire | 0.919 |
| Elsewhere in South East | 0.134 | 0.025 incl. Berkshire & Buckinghamshire | 0.010 |
| Elsewhere | 0.152 | 0.154 | 0.130 |
| Total | 0.564* | 0.363 | 1.061 |

*May not match sub totals due to varying categories.

This data comparison is not currently available for AM2019.

Sources

Sources of Sand and Gravel consumed in Oxfordshire 2009

(Source: BGS)

| Source | Proportion | Tonnage where known (millions of tonnes) |
|--|----------------------------------|--|
| Oxfordshire | 64% | 0.474 |
| Gloucestershire | 25%-20% | 0.145- 0.185 |
| Warwickshire, Bristol (marine), Hampshire, Berkshire and Leicestershire (in descending order) | Between 5% and 1% from each area | n/a |
| Milton Keynes, Central Bedfordshire (includes Bedford Borough), Kent, Cambridgeshire, Staffordshire, Buckinghamshire, Dorset, Wiltshire, Solihull (includes Walsall) and Hertfordshire (in descending order) | Less than 1% from each area | n/a |

Sources of Crushed Rock consumed in Oxfordshire 2009

(Source: BGS)

| Source | Proportion | Tonnage where known (millions of tonnes) |
|--|----------------------------------|--|
| Oxfordshire | 29% | 0.181 |
| South Gloucestershire | 30%-25% | 0.187- 0.156 |
| Somerset | 25% - 20% | 0.156- 0.125 |
| Leicestershire | 15%-10% | 0.093- 0.063 |
| Rhondda, Cynon, Taf (Taff), Gloucestershire and Powys (in descending order) | Between 5% and 1% from each area | n/a |
| Shropshire, North Somerset and Caerphilly/Merthyr Tydfil (merged for confidentiality) and Derbyshire (in descending order) | Less than 1% from each area | n/a |

Sources of Sand and Gravel consumed in Oxfordshire 2014

(Source: BGS)

| Source | Proportion | Tonnage where known (millions of tonnes) |
|---|------------|--|
| Oxfordshire | 80-90% | 0.612 - 0.6885 |
| Wiltshire, Windsor & Maidenhead, Cambridgeshire, Leicestershire | 1-10% | 0.00765 – 0.0765 |
| Devon, Gloucestershire, Hampshire, West Berkshire, Central Bedfordshire, Essex, Hertfordshire, Northamptonshire, Staffordshire, Worcestershire. | <1% | <0.00765 |

Sources of Crushed Rock consumed in Oxfordshire 2014

(Source: BGS)

| Source | Proportion | Tonnage where known (millions of tonnes) |
|--|------------|--|
| Oxfordshire | 40-50% | 0.6 – 0.75 |
| Somerset | 30-40% | 0.45 – 0.6 |
| Leicestershire | 10-20% | 0.15 – 0.3 |
| Gloucestershire | 1-10% | 0.015 – 0.15 |
| North Somerset, South Gloucestershire, Cambridgeshire, Shropshire, Powys | <1% | <0.015 |

Sources of Sand and Gravel consumed in Oxfordshire 2019

(Source: BGS)

Total Land won Sand and Gravel (Including soft sand) consumed in Oxfordshire in 2019 (0.900mt)

| Source | Proportion | Tonnage where known (millions of tonnes) |
|---|-----------------------------------|--|
| Oxfordshire | 80-90% | 0.772mt* |
| Cambridgeshire, Lincolnshire, Staffordshire and Wiltshire | Between 1% and 10% from each area | Between 0.036mt and 0.363mt** |

| Source | Proportion | Tonnage where known (millions of tonnes) |
|---|--------------------------------------|--|
| | of total consumed within Oxfordshire | |
| Leicestershire, Buckinghamshire Bristol City, Central Bedfordshire, Gloucestershire, Hampshire, Hertfordshire and Portsmouth | Less than 1% from each area | Max .081mt*** |

* Exact figure taken from AM Survey 2019

** The lower number represents 1% of total consumed and the higher represents 10% of total consumed.

*** A maximum of 1% was taken for each Authority that exported Minerals to Oxfordshire

Sources of Crushed Rock Gravel consumed in Oxfordshire 2019

(Source: BGS)

Total Crushed Rock consumed in Oxfordshire in 2019 (0.617mt)

| Source | Proportion | Tonnage Estimates (millions of tonnes) |
|--|--|--|
| Oxfordshire | 40-50% | 0.261mt* |
| Gloucestershire, Leicestershire, Somerset | 10-20% | Between 0.185 and 0.370** |
| North Somerset, Powys, Rhondda Cynon Taf (Taff), Shropshire, South Gloucestershire | Between 1% and 10% from each area of total consumed within Oxfordshire | Between 0.031mt and 0.308mt*** |
| Cambridgeshire, Derbyshire, Warwickshire | Less than 1% from each area | Max .024mt**** |

* Exact figure taken from AM Survey 2019

** The lower number represents 10% of total consumed and the higher represents 20% of total consumed.

*** The lower number represents 10% of total consumed and the higher represents 20% of total consumed.

**** A maximum of 1% was taken for each Authority that exported Minerals to Oxfordshire

Appendix 3

Mineral provision requirements over the Plan period.

This section sets out the requirements to meet the Core Strategy Provision and also the requirements to meet the latest LAA

Sand and Gravel Provision required over plan period 2014 – 2031

(As at Dec 2021)

| | Sharp Sand & Gravel (million tonnes) |
|---|---|
| A. Annual Provision (from policy M2 / LAA) | 1.015 |
| B. Requirement 2014 – 2031 (policy M2) (A x 18 years) | 18.270 |
| C. Sales in 2014 – 2021 | 6.538 |
| D. Remaining requirement (B – C) | 11.732 |
| E. Permitted Reserves at end 2021 | 10.586 |
| F. Estimated permitted reserves available to be worked during remainder of plan period (from beginning 2022 to end 2031) | 9.436 |
| G. Remaining requirement to be provided for in Plan (D – F) | 2.296 |

Notes:

1. Permitted Reserves at end 2021 (Row E) do not include approximately 1.0 million tonnes of Sharp Sand and Gravel at Thrupp Farm Quarry, Radley (South), which were previously included. Under 'ROMP' procedure the planning permission for this site has gone into suspension, and is currently dormant, and the site cannot be

worked until there has been a review of the planning conditions attached to the planning permission. Consequently, in accordance with national Planning Practice Guidance, the 'reserves' at this site should not currently be included as permitted reserves and they do not form part of the landbank.

2. The site at Stonehenge Farm has not extracted any sand and gravel during 2021. This site has an end date of 2023 and the Planning Statement states that extraction would be at a rate of 300000tpa, whilst the Inspectors report gave 200,000tpa. If an extraction rate of 300,000tpa is taken, then there now is only 600,000 tonnes could now be extracted over the Plan period before the permission expires. This has impacted on total mineral available to be worked over the Plan period.
3. A number of sites have limited production capacity and at these current rates, will not be able to extract all the mineral required by the end of the planning permission.

Soft Sand provision required over the Plan period 2014-2031

(As at Dec 2021)

| | Soft Sand Core Strategy Requirement (Million Tonnes) | Soft Sand Core Strategy 2014- 2018/ LAA 2019 onwards Provision Rate (Million Tonnes) |
|---|--|--|
| A Annual Provision | 0.189 (Policy M2) | 5years x 0.189 13years x 0.243 |
| B. Requirement 2014 – 2031 | 3.402 | 4.104 (0.945+3.159) |
| C. Sales in 2014 – 2021 | 1.921 | 1.921 |
| D. Remaining requirement (B – C) | 1.481 | 2.183 |
| E. Permitted Reserves at end 2021 | 3.915 | 3.824 |
| F. Estimated permitted reserves available to be worked during remainder of plan period (from beginning 2021 to end 2031) | 2.06 | 2.06 |
| G. Remaining requirement to be provided for in Plan (D – F) | 0 | 0.118 |

Notes:

1. The planning application for an extension to Bowling Green Farm Quarry submitted in 2016 and permitted in June 2017 is for the working of a total of 1.6 million tonnes of soft sand. Information in the application indicates this will be worked over 19 years

from 2018 to 2036 at an average rate of working of approximately 0.08 million tonnes per annum. Mineral working at Bowling Green Farm Quarry is therefore expected to extend beyond the end of the plan period (2031); of the total of 1.6 million tonnes, it is estimated approximately 1.1 million tonnes will be worked within the plan period and approximately 0.5 million tonnes will remain to be worked after 2031.

2. The planning application for an extension to Duns Tew Quarry submitted in 2014 and permitted in May 2017 is for the working of a total of 0.415 million tonnes of soft sand. Information in the application indicates this will be worked over 16/17 years from 2017 to 2033/34 at an average rate of working of approximately 0.025 million tonnes per annum. Mineral working at Duns Tew Quarry is therefore expected to extend beyond the end of the plan period (2031).
3. The planning application at Shellingford for 1.8mt of Soft Sand was permitted at the end of 2020 and has an extraction rate of 100,000tpa, therefore only 1.1mt will be extracted over the Plan period.
4. One of the operators returns has shown a reduced production capacity at one of the sites for soft sand, which has consequently reduced the amount of mineral available to be worked over the Plan Period. Production capacity will be explored as we consult on the new Minerals and Waste Local Plan.

Crushed Rock provision required over the Plan period 2014-2031

(As at December 2021)

| | Core Strategy Requirement | Aggregates Provision Rate 2014-2018 0.584 2019 -2021 0.778 2022-2031 0.824 (Million Tonnes) |
|--|----------------------------------|---|
| A. Annual Provision (from policy M2 / LAA) | 0.584 | 5 x 0.584mt 3 x 0.778mt 10 x 0.824mt |
| B. Requirement 2014 – 2031 (policy M2) (A x 18 years) | 10.512 | 13.494 |
| C. Sales in 2014 – 2021 | 7.492 | 7.492 |
| D. Remaining requirement | 3.020 | 6.002 |

| | | |
|---|----------|--------------|
| (B – C) | | |
| E. Permitted Reserves at end 2021 | 6.455 | 6.455 |
| F. Estimated permitted reserves available to be worked during remainder of plan period (from beginning 2022 to end 2031) | 5.279 | 5.279 |
| G. Remaining requirement to be provided for in Plan (D-F) | 0 | 0.723 |

Appendix 4

Population

The table below presents the population figures for Oxfordshire for the 10-year baseline period (2011 to 2020). Unfortunately, at time of writing the 2021 update has not been published by the Office of National Statistics due to the National census

Table 1: Oxfordshire population figures for the 10-year baseline period (2011 to 2020) ³⁹

| Year | Population |
|------|------------|
| 2011 | 654,791 |
| 2012 | 660,009 |
| 2013 | 663,998 |
| 2014 | 669,377 |
| 2015 | 673,590 |
| 2016 | 678,484 |
| 2017 | 682,444 |
| 2018 | 687,524 |
| 2019 | 691,667 |
| 2020 | 696,880 |

Population forecasts for Oxfordshire up to 2029

| Year | Population Forecast ⁴⁰ (ONS) | Population Forecast ⁴¹ (OCC) |
|------|--|--|
| 2021 | 699,594 | 708,105 |
| 2022 | 703,002 | 721,423 |
| 2023 | 706,188 | 731,090 |
| 2024 | 709,180 | 742,638 |

³⁹ www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections

⁴⁰ www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections

⁴¹ insight.oxfordshire.gov.uk/cms/future-population

| Year | Population Forecast ⁴⁰ (ONS) | Population Forecast ⁴¹ (OCC) |
|------|--|--|
| 2025 | 712023 | 755,803 |
| 2026 | 714,785 | 769,797 |
| 2027 | 717,536 | 784,018 |
| 2028 | 720,204 | 799,634 |
| 2029 | 722,729 | 836,402 |

Housing Completion Figures

Housing completions by year in Oxfordshire⁴²

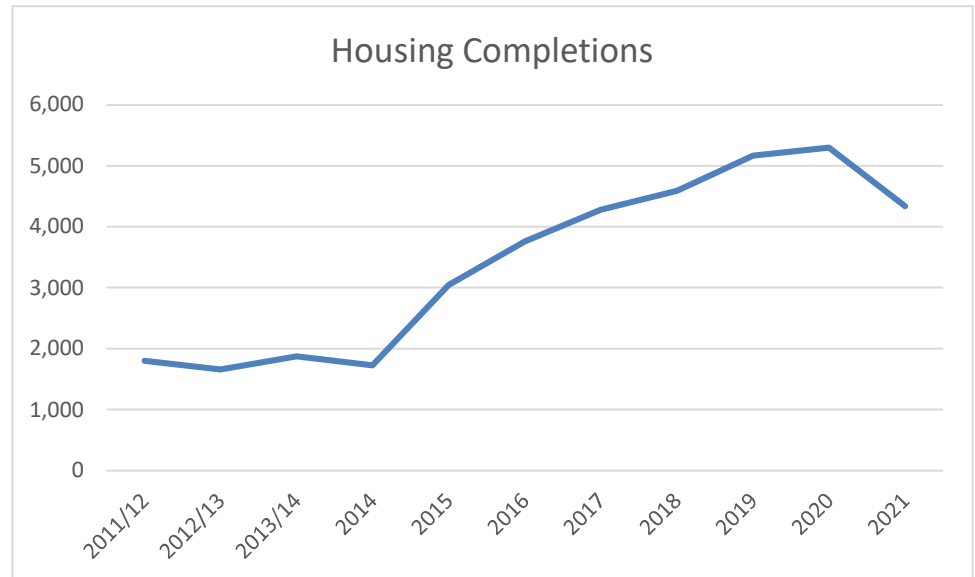
| Year | Housing Completions |
|---------|---------------------|
| 2011/12 | 1,799 |
| 2012/13 | 1,661 |
| 2013/14 | 1,873 |
| 2014 | 1726 |
| 2015 | 3044 |
| 2016 | 3761 |
| 2017 | 4277 |
| 2018 | 4589 |
| 2019 | 5164 |
| 2020 | 5301 |
| 2021 | 4336 |

⁴² [LT_100.ods \(live.com\)](#) (accessed Sept 2022)

Notes

(a) completions figures in differ slightly from those in the OGNA, due to differences in when a house is deemed 'completed'.

(b) note that ONS data is by calendar year, whereas district data is by financial year. Since 2014 we have now used District Data.



Projected housebuilding⁴³

| Year | Planned housebuilding |
|---------|-----------------------|
| 2021/22 | 5316 |
| 2022/23 | 5610 |
| 2023/24 | 5703 |
| 2024/25 | 6574 |
| 2025/26 | 6176 |
| 2026/27 | 7078 |
| 2027/28 | 6999 |
| 2028/29 | 6910 |

⁴³ District local plans, District Planning Officers, Oxfordshire County Council Data Team

| | |
|---------|------|
| 2029/30 | 6082 |
| 2030/31 | 5938 |

