

# LOCAL AGGREGATE ASSESSMENT

January 2020



# **Leicestershire County Council**

## **Local Aggregate Assessment**

**January 2020**

**(Data covering the period up to 31/12/2018)**

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### Executive summary

The National Planning Policy Framework (NPPF) requires Mineral Planning Authorities (MPAs) to plan for a steady and adequate supply of aggregates by preparing a Local Aggregates Assessment (LAA). 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.

Planning Policy Guidance states that MPAs should also look at average sales over the last three years in particular to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase supply.

This is the seventh LAA for Leicestershire which includes the most recent (2018) aggregate sales and reserves data for the County. The 10-year period covered by this LAA is 2009 up to 2018. Summary sales figures for the period 01/01/2018 – 31/12/2018 are displayed in Table 1 below. The main facts and figures from the report (by aggregate type) are set out below:

#### *Sand and gravel*

Leicestershire currently has five active sand and gravel quarries, which have a total potential production capacity of around 1.59 million tonnes. The average sales for sand and gravel for the most recent 10-year rolling period (2009 – 2018), and most recent three-year rolling period (2016 – 2018), are 1.17 Mtpa and 1.38 Mtpa respectively. Sales in 2018 were 1.18 million tonnes, which was 20% lower than that experienced in 2017. Estimated permitted reserves as at 31<sup>st</sup> December 2018 were 2.9 million tonnes. This will provide sufficient reserves for 2.5 years, based on average sales over the 10-year rolling period (2009-2018).

#### *Crushed rock*

Leicestershire currently has four active igneous rock quarries, all of which are rail-linked, together with two active limestone quarries. These quarries have a total potential production capacity of around 15.5 million tonnes. The average sales for crushed rock for the most recent 10-year rolling period (2009 – 2018), and most recent three-year rolling period (2016 – 2018), are 12.87 Mtpa and 13.62 Mtpa respectively. Sales of crushed rock within the County in 2018 were 12.49 million tonnes, which was 13% lower than in 2017. Whilst sales since 2013 have shown signs of significant improvement compared to the years of economic recession, they still remain below the level of sales in 2009 and sales continue to fluctuate. Estimated permitted reserves as at 31<sup>st</sup> December 2018 were

## *Introduction*

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376 million tonnes. Based on the 10-year provision rate (Table 13), there are currently sufficient permitted reserves for 29 years. This is more than sufficient to maintain the government's requirement for a landbank of at least ten years.



### *Secondary and recycled aggregate*

There are 23 operational construction and demolition (C&D) recycling sites within Leicestershire. The total capacity of these sites is estimated to be around 860,000 tonnes. There are currently no industrial processes in Leicestershire which are known to produce 'secondary' aggregates.

### *Future provision*

The production guideline identified by this Local Aggregates Assessment is 1.17 million tonnes per annum for sand and gravel and 13.6 million tonnes per annum for crushed rock (See Tables 12 and 13). There will be a potential shortfall of sand and gravel reserves within Leicestershire over the period to 2031 of some 11.14 million tonnes based on the production guideline. The Leicestershire Minerals and Waste Local Plan (up to 2031) which was adopted on the 25<sup>th</sup> September 2019 includes proposals for the extraction of 7.2 million tonnes of potential sand and gravel reserves (namely 1.1 Mt at Brooksby, 1.8 Mt at Cadeby, 0.3 Mt at Husbands Bosworth, and 4 Mt at Shawell). The Plan allows for additional provision to be made from unallocated areas provided certain criteria are met. There are sufficient permitted crushed rock reserves to meet requirements up to 2031.

Table 1. Summary sales figures for the period 01/01/2018 – 31/12/2018

|   | <b>2018 Sales</b><br>(million tonnes) | <b>10-year Sales Average</b><br>(million tonnes) | <b>3-year Sales Average</b><br>(million tonnes) | <b>Change in sales</b><br>(since 2017)  | <b>LAA calculated annual requirement</b><br>(million tonnes) | <b>Reserves</b><br>(million tonnes) | <b>Landbank</b><br>(in remaining years) | <b>Theoretical Capacity</b><br>(million tonnes per annum) | <b>Comments</b>   |
|---|---------------------------------------|--|---|---|--|-------------------------------------|---|---|---|
| <b>Sand and gravel</b>                    | 1.18                                  | 1.17   | 1.38  |  | 1.17   | 2.9                                 | 2.5                                     | 1.59  | Sales were 20% lower than in 2017. They were level with the 10-year sales average.          |
| <b>Crushed rock</b>                       | 12.49                                 | 12.87  | 13.6  |  | 13.6   | 375.91                              | 29.2                                    | 15.5<br>(excluding inactive sites)                        | Sales were 12% lower than in 2017. They were slightly lower than the 10-year sales average. |
| <b>Recycled &amp; secondary aggregate</b> |                                       |  |   |   |  |                                     |   | 0.73  |   |

### **1. Introduction**

- 1.1 The National Planning Policy Framework (NPPF) requires an annual Local Aggregate Assessment (LAA) to be produced by Mineral Planning Authorities to plan for a steady and adequate supply of aggregates. Aggregates are materials used in the construction industry for building purposes, including asphalt and concrete.
- 1.2 This document is the seventh Local Aggregate Assessment for the County of Leicestershire. The LAA sets out the current supply of and demand for aggregates in the County and indicates the provision that will be needed to ensure that Leicestershire continues to make an appropriate contribution to the steady and adequate supply of aggregates. Revised Local Aggregate Assessments will be produced annually as part of the Local Plan monitoring procedures.
- 1.3 The Leicestershire Minerals and Waste Local Plan (Up to 2031) was adopted by Leicestershire County Council on 25<sup>th</sup> September 2019.
- 1.4 Policy M1 (Supply of Sand and Gravel Aggregate) of the Plan indicates the level of provision to be made for sand and gravel aggregate within Leicestershire over the period 2015 to 2031, is 19 million tonnes, with an annual requirement of 1.12 million tonnes.
- 1.5 Policy M4 (Crushed Rock) of the Plan indicates the level of provision to be made for crushed rock for aggregate purposes within Leicestershire over the plan period, is some 231 million tonnes, with an annual requirement of 13.6 million tonnes.



## **2. Types of aggregate produced in Leicestershire**

### *Sand and Gravel*

- 2.1 In Leicestershire, sand and gravel for aggregate use has usually been obtained from two distinct types of deposit, namely sub-alluvial and river terrace; and glaciofluvial.
- 2.2 The main sources of sub-alluvial and river terrace deposits in Leicestershire are Quaternary and Recent age deposits in the valleys of the Rivers Trent, Soar and Wreake. Similar, but smaller areas, of sand and gravel are also associated with the River Sence and the Rivers Avon and Welland along the southern borders of Leicestershire.
- 2.3 A series of isolated Glaciofluvial deposits occurs in areas to the south and west of Leicester. The full extent of this resource is unknown, however, as areas of wholly concealed bodies of sand and gravel may occur under spreads of till and other drift deposits. The extensive boulder clay and other drift deposits which cover central and eastern parts of Leicestershire may conceal potential deposits.
- 2.4 Deposits of solid sand and gravel sources in the form of the Triassic Bunter Pebble Beds occur in two areas in the north-west of Leicestershire, around Measham and Castle Donington. Blown sand deposits resulting from aeolian reworking of river and glacial deposits and bare Triassic bedrock occur in the Vale of Belvoir.
- 2.5 The deposits will be considered collectively under the term "sand and gravel" in the rest of this report.

### *Igneous Rock*

- 2.6 Small outcrops of Precambrian/Cambrian igneous rocks occur in Charnwood Forest and in south Leicestershire. Within Charnwood Forest, the intrusions form two main groups: a southern group around Markfield, Bradgate and Groby; and a northern group, which extends towards Shepshed. Volcanic lavas of Precambrian origin occur in exposed masses around Bardon Hill, High Sharpley and Pedlar Tor. Igneous rock intrusions also occur around Mountsorrel, and at locations to the south-west of Leicester, including Enderby, Earl Shilton, Huncote, Stoney Stanton and Sapcote.

*Limestone*

- 2.7 In north-west Leicestershire, Carboniferous limestones crop out in several small isolated inliers which locally form prominent hills above the surrounding Triassic rocks near to the Leicestershire/Derbyshire border. The inliers between Breedon and Thringstone consist mainly of pinkish-yellow, bedded and massive dolomite (dolostone).
- 2.8 Lincolnshire Limestone of Jurassic age occurs in North East Leicestershire. The various limestone units making up the Lincolnshire Limestone form a relatively thick and persistent formation which is capable of lower quality aggregates, such as fill and sub-base roadstone.

### **3. Current Situation regarding Land won Aggregates in Leicestershire**

#### *Introduction*

- 3.1 Production and Sales data for aggregate minerals is collected on an annual basis, through an aggregate survey undertaken on behalf of the East Midlands Aggregates Working Party (EMAWP). Annually published EMAWP reports present data on production and reserves for the County back to the early 1990s. The most recent Aggregates Monitoring (AM) survey provides data for 2018.
- 3.2 Every fourth year Aggregate Working Parties conduct a major in-depth survey. This includes the collection of data on the distribution of sales. However, such data was last collected in 2014.

#### *Land-won sand and gravel*

- 3.3 There are 5 sites currently active in Leicestershire, at Brooksby, Cadeby, Husbands Bosworth, Lockington, and Shawell (see Table 2 below). Two of these sites involve the working of alluvial and river terrace deposits, whilst the remainder work glacial deposits.

Table 2. List of Current Sand & Gravel Sites, 2018

| <b>Site</b>              | <b>District</b>           |
|--------------------------|---------------------------|
| Husbands Bosworth Quarry | Harborough                |
| Shawell Quarry           | Harborough                |
| Cadeby Quarry            | Hinckley                  |
| Brooksby Quarry          | Melton                    |
| Lockington Quarry        | North West Leicestershire |

#### *Sales*

- 3.4 Sales of aggregate from sand and gravel operations within Leicestershire over the last 10 years are shown in Table 3 below. Sales for the period 2009 to 2013 show the effects of the economic recession as production slowed. During this period, sales of sand and gravel averaged 0.93 million tonnes per annum. Sales between 2014 and 2017 averaged 1.45 million tonnes per annum, around 56% higher than that experienced between 2009 and 2013, reflecting improvements in the economy and levels of construction. However, there was a downturn in sales in 2018 and sales were 20% lower than in 2017.

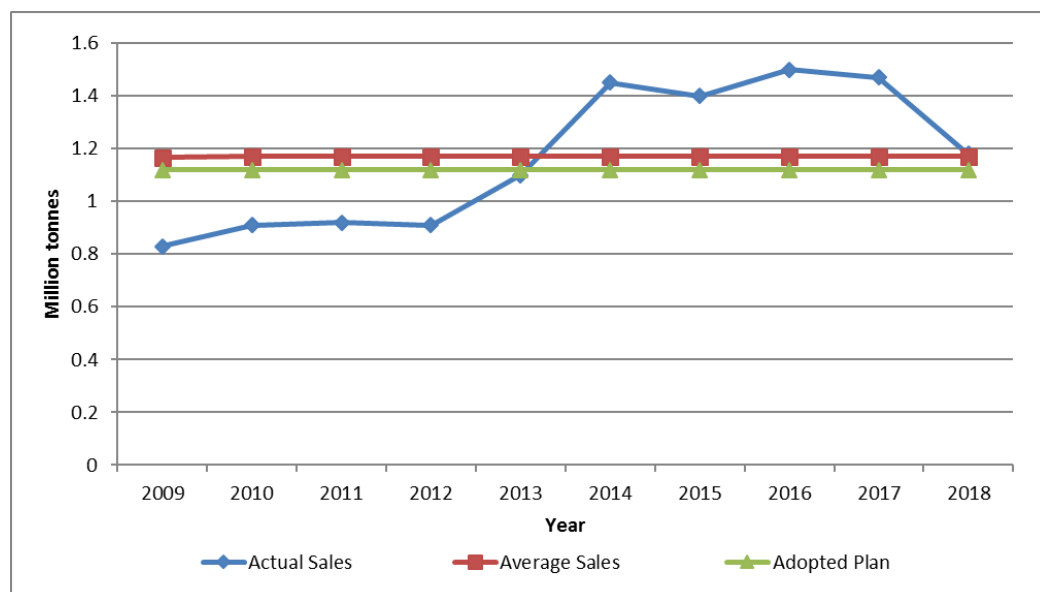
Table 3. Sales of Sand and Gravel 2009-2018

| Year           | Sales (Million tonnes) |
|----------------|------------------------|
| 2009           | 0.83                   |
| 2010           | 0.91                   |
| 2011           | 0.92                   |
| 2012           | 0.91                   |
| 2013           | 1.1                    |
| 2014           | 1.45                   |
| 2015           | 1.4                    |
| 2016           | 1.5                    |
| 2017           | 1.47                   |
| 2018           | 1.18                   |
| <b>Average</b> | <b>1.17</b>            |

Source: EMRAWP Surveys

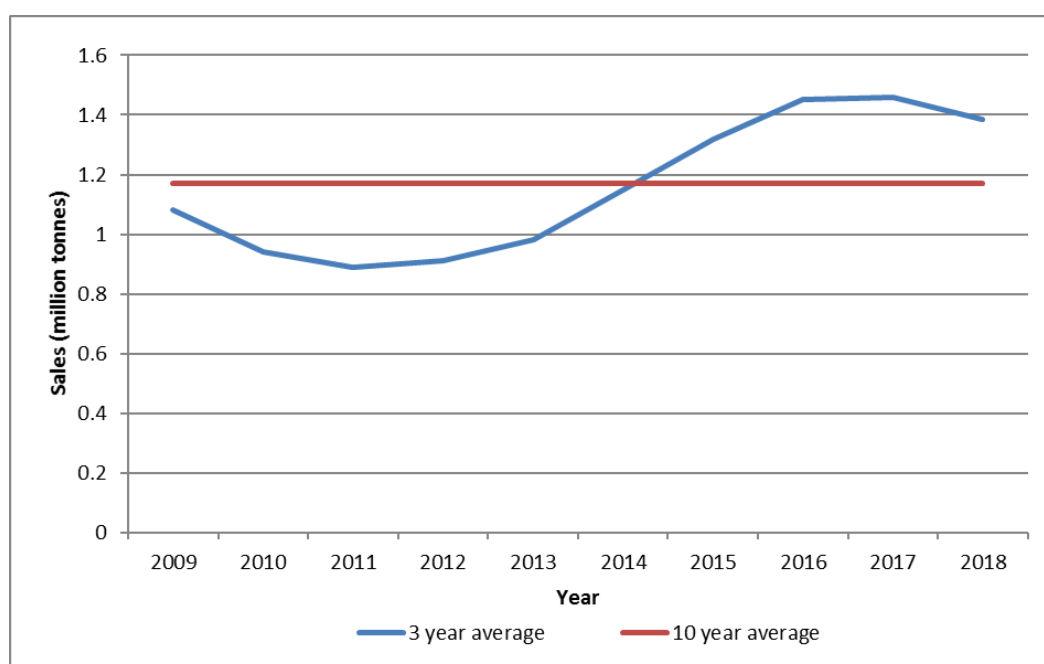
- 3.5 Average sand and gravel sales over the last 10 years were 1.17 million tonnes per annum. Recent sales have slightly exceeded the annual requirement set out in the adopted Leicestershire Minerals and Waste Local Plan 2019 (1.12 Mtpa) (see Figure 1 below).

Figure 1. Sales of Sand and Gravel 2009-2018



- 3.6 Average sand and gravel sales over the last 3 years were 1.38 million tonnes per annum, 15% higher than the 10-year average (1.17). The trend in sales based on 3-year averages since 2009 is shown in Figure 2. This indicates falling sales from 2009 to 2011. Sales then rose significantly up to 2016, before levelling off in 2017. A downturn in sales in 2018 has caused the 3-year average to fall from 1.46 in 2017 to 1.38 in 2018. Subsequent monitoring iterations will identify whether sales will continue to fall.

Figure 2. Trend in Sales of Sand and Gravel 2009-2018



### Landbank

- 3.7 Estimated permitted reserves of sand and gravel in Leicestershire at the end of 2018 were 2.9 million tonnes. The reserves will provide sufficient permitted material to last about 2.6 years based on the annual provision identified in the adopted Leicestershire Minerals and Waste Local Plan 2019, and 2.5 years based on the average rate of sales over the last 10 years (Table 12). Additional reserves were permitted during the year at Cadeby Quarry. One planning application was submitted for the extension of sand and gravel working at Shawell Quarry, but this application remained undetermined at the end of the year. One planning application from 2018 for additional reserves at Brooksby Quarry remained undetermined at the end of 2018 and has since been permitted (planning permission reference 2018/0917/06).

*Production Capacity*

- 3.8 The existing sites have a total potential production capacity of around 1.59 million tonnes per annum, which means that they would be capable of producing sufficient material to satisfy the level of provision identified in the adopted Minerals and Waste Local Plan. The sites would not however be able to meet the County's future requirements without the benefit of extensions to their permitted operations. It should be noted that an extension to Brooksby Quarry which provides for an additional 1.4 Mt of reserves was recommended for approval in May 2019, however the decision notice is waiting to be issued pending a legal agreement (2018/0917/06). Therefore, the figures from 2017 have been carried forward for Brooksby. This data will be included in the next LAA which will review the reserves permitted as of the 31<sup>st</sup> December 2019. Table 4 below provides information on the productive capacity, potential reserves and permission end dates for sand and gravel sites with Leicestershire.

Table 4. Production Capacity of Sand and Gravel Sites

| Site              | Status | Production Capacity (tonnes p.a.) | Permitted Reserves**  | Permission End Date |
|-------------------|--------|-----------------------------------|---|---------------------|
| Husbands Bosworth | Active | 180,000**                         | 300,000 (2010) Additional reserves permitted in 2010: 925,000   | 31-07-2020          |
| Shawell           | Active | 600,000**                         | Up to 1.8Mt (2015) Additional reserves permitted in 2015: 1Mt   | 31-12-2044          |
| Cadeby            | Active | 160,000**                         | Approximately 140,000   | 09-02-2022          |
| Brooksby          | Active | 250,000*                          | Estimated to be exhausted by mid 2019.<br><br><i>N.B. Planning application 2018/CM/0123/LCC has been approved in 2019 for an additional 1.4 Mt of reserves. These reserves will be included in the next LAA, reviewing data from the year 2019.</i> | 31-12-2026          |
| Lockington        | Active | 400,000**                         | 1.29 Mt (2007). Additional reserves permitted in 2008: 3.9 Mt   | 02-12-2025          |
| <b>Total</b>      |        | 1.59 Mt                           |   |                     |

\* Publicly available information (Sourced from the latest planning application documents for each site at the end of 2018).

\*\* Information provided by operator

# date of reserves information given in brackets.

*Exports and imports*

- 3.9 The Authority requested distribution data for 2018 from all mineral operators working within Leicestershire to provide an up to date understanding of the role that Leicestershire plays in supplying aggregates since the last national aggregate minerals survey was undertaken in 2014, over four years ago. However, as there is only one sand and gravel operator in the County it is not considered appropriate to publish this commercially sensitive information. Therefore, the data from the last national survey is used within this section.
- 3.10 The distribution of sand and gravel from the County in 2014 is set out in Table 5 below. In 2014, sand and gravel operations within Leicestershire tended to serve local markets. 57.8% of sales were within Leicestershire/Rutland. The remaining material generally travelled to neighbouring counties and regions from sites located close to the County boundary. The main destinations for material exported beyond the County were the West Midlands (12.8%), and Northamptonshire (8.7%), see Figure 3 below. All the material was transported by road.

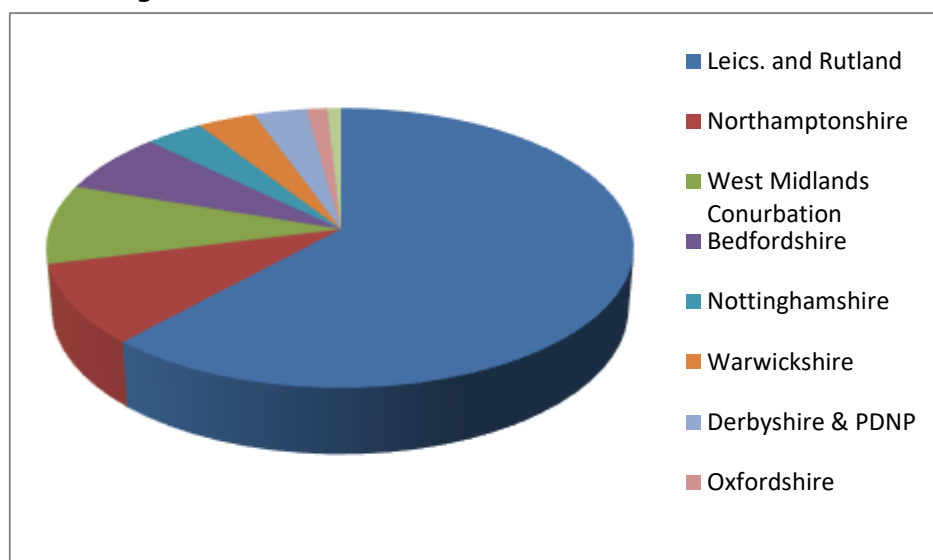
Table 5. Distribution of Sand and Gravel 2014 (Destinations receiving over 10,000 tonnes)

| <b>Destination</b>         | <b>tonnes</b> | <b>%</b> |
|----------------------------|---------------|----------|
| Derbyshire & PDNP          | 44701         | 3.1      |
| Nottinghamshire            | 50088         | 3.4      |
| Leics. and Rutland         | 837440        | 57.8     |
| Northamptonshire           | 126193        | 8.7      |
| Staffordshire              | 11367         | 0.8      |
| Warwickshire               | 48822         | 3.4      |
| West Midlands Conurbation* | 124597        | 8.6      |
| Bedfordshire               | 95764         | 6.6      |
| Oxfordshire                | 16697         | 1.2      |

\*This means the seven West Midlands metropolitan authorities of Birmingham, Coventry, Dudley, Sandwell, Solihull, Walsall and Wolverhampton Source: Aggregates Minerals Survey 2014



Figure 3. Distribution of Sand and Gravel 2014



- 3.11 Information on consumption by sub-region, as provided by BGS from the results of the AM2014, indicate that Leicestershire/Rutland consumed 1,410,000 tonnes of sand and gravel in 2014 (Separate figures for Leicestershire and Rutland are not provided). The main sources of supply were Leicestershire (50-60%), Staffordshire (10-20%), Peterborough, Derbyshire, Lincolnshire and Nottinghamshire (1-10% each). Imports of sand and gravel into Leicestershire and Rutland totalled 573,000 tonnes, making Leicestershire/Rutland a net exporter of some 44,919<sup>i</sup> tonnes of sand and gravel.

#### *Crushed Rock*

#### Production sites (active and inactive)

- 3.12 Igneous rock extraction within Leicestershire is currently taking place at 4 sites, namely Bardon; Cliffe Hill; Croft; and Mountsorrel (see Table 6 below). Whitwick and Groby quarries are currently inactive, although coating and concrete plants are maintained at Groby. Two carboniferous limestone quarries are operational within Leicestershire at Breedon on the Hill and Cloud Hill.

Table 6. List of Active Crushed Rock Sites, 2018

| Site               | District                  | Mineral      |
|--------------------|---------------------------|--------------|
| Croft Quarry       | Blaby                     | Igneous Rock |
| Mountsorrel Quarry | Charnwood                 | Igneous Rock |
| Cliffe Hill Quarry | Hinckley                  | Igneous Rock |
| Bardon Quarry      | North West Leicestershire | Igneous Rock |
| Breedon Quarry     | North West Leicestershire | Limestone    |
| Cloud Hill Quarry  | North West Leicestershire | Limestone    |

## Sales

- 3.13 Sales of aggregate from crushed rock quarries within Leicestershire over the last 10 years are shown in Table 7 below. Sales of rock aggregate within the County in 2009 were 11.66 million tonnes, fluctuating until 2012 as a result of the economic recession. Sales from 2012 generally rose up to a maximum of 14.34 million tonnes of sales in 2017. Since then, sales have once again fluctuated, with sales falling by 12.9% in 2018.

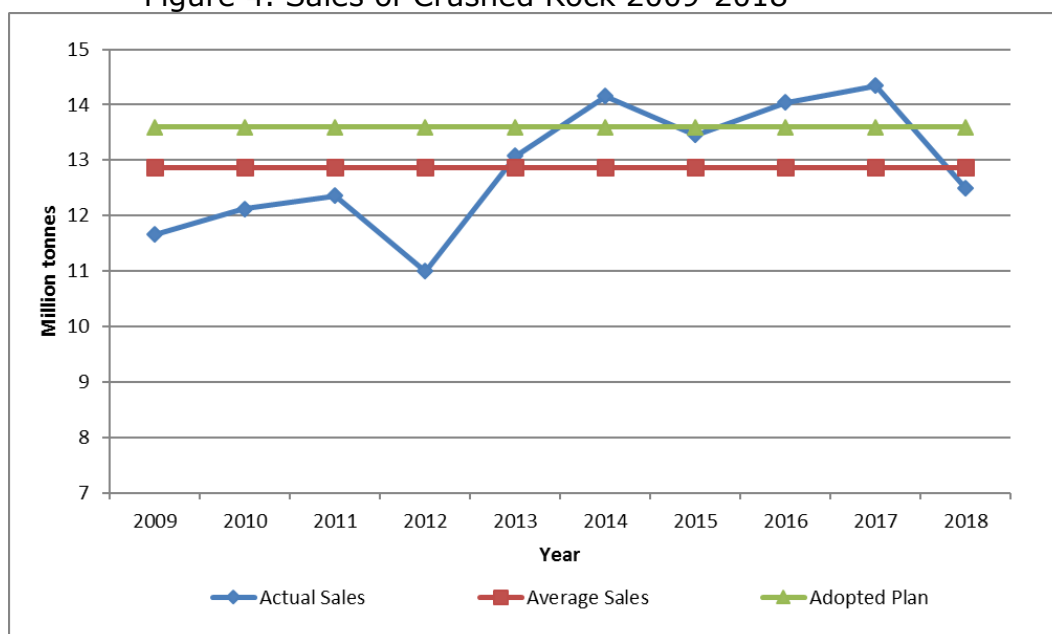
Table 7. Sales of Crushed Rock 2009-2018

| <b>Year</b> | <b>Sales (million tonnes)</b> |
|-------------|-------------------------------|
| 2009        | 11.66                         |
| 2010        | 12.12                         |
| 2011        | 12.36                         |
| 2012        | 11                            |
| 2013        | 13.08                         |
| 2014        | 14.15                         |
| 2015        | 13.45                         |
| 2016        | 14                            |
| 2017        | 14.34                         |
| 2018        | 12.49                         |
| Average     | 12.87                         |

Source: EMRAWP Surveys

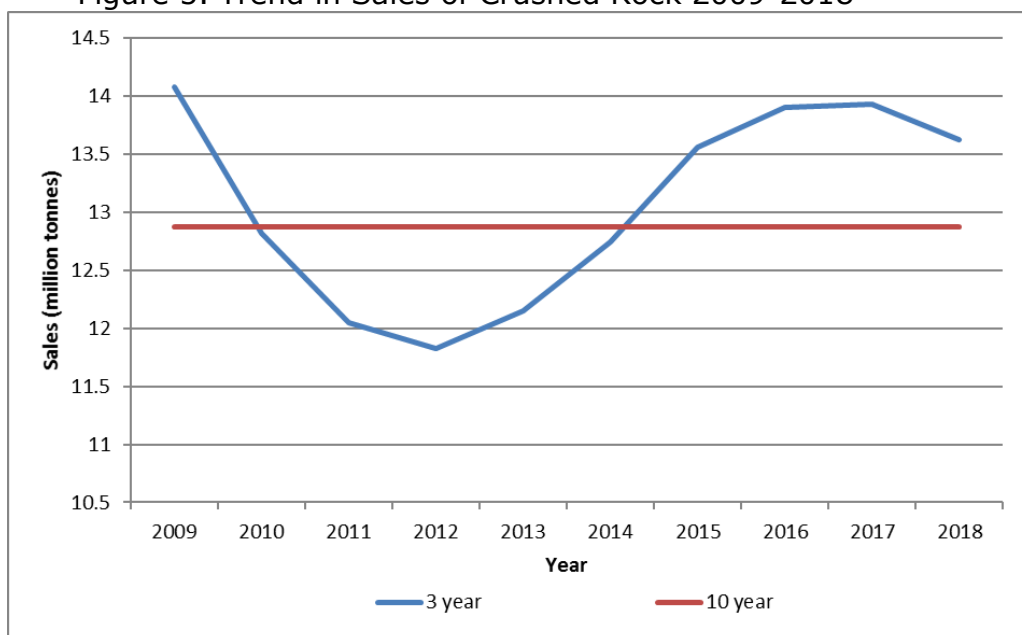
- 3.14 Average crushed rock sales were 12.87 million tonnes over the last 10 years. Crushed rock sales from Leicestershire in 2018 have been lower than the annual requirement set out in the recently adopted Plan (13.6 million tonnes) (see Figure 4 below).

Figure 4. Sales of Crushed Rock 2009-2018



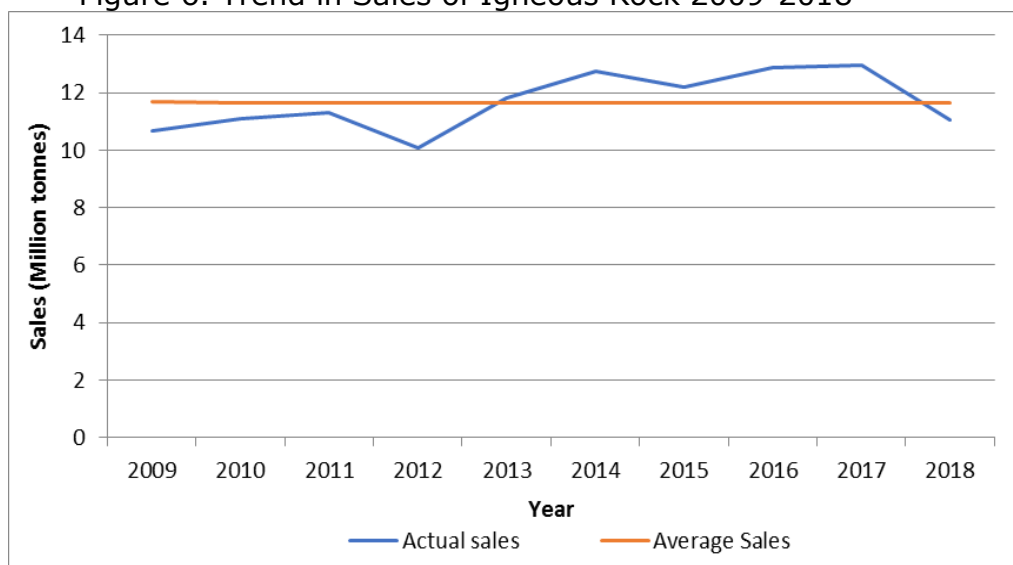
3.15 Average crushed rock sales over the last 3 years were 5.5% higher than the 10-year average at 13.62 million tonnes. The trend in sales based on 3-year averages since 2009 is shown in Figure 5. This indicates falling sales from 2009 to 2012. Since then, sales continue to fluctuate, with sales dropping again in 2018 following a rise in sales which was seen in 2016 and 2017. Subsequent monitoring iterations will identify whether this trend will continue.

Figure 5. Trend in Sales of Crushed Rock 2009-2018



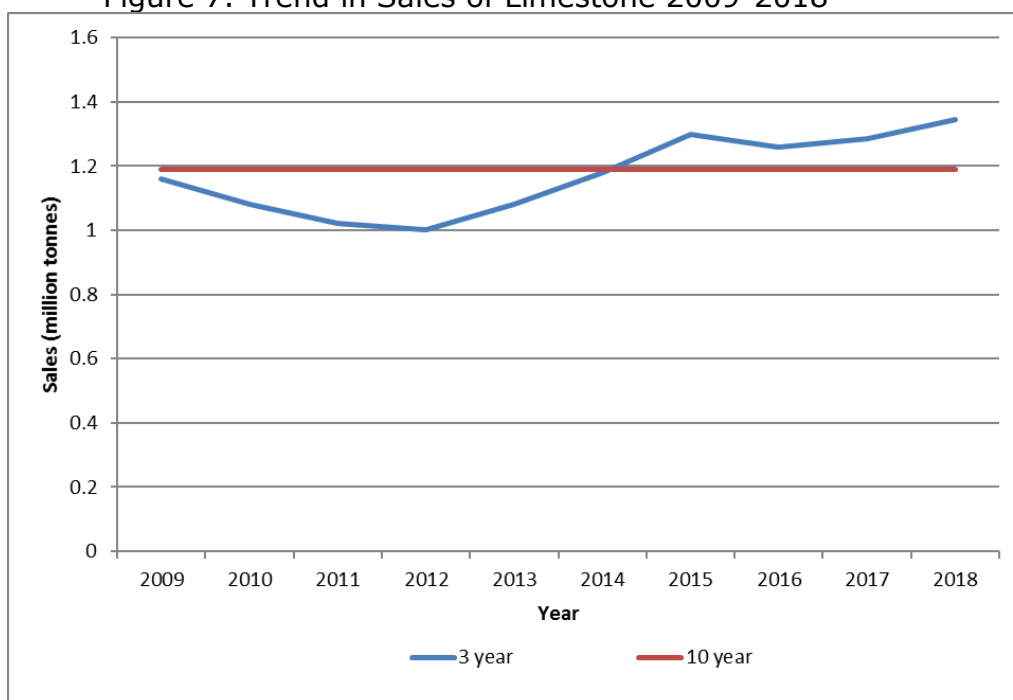
- 3.16 The four active igneous rock quarries together account for around 65% of the igneous rock output in England. These quarries supply crushed rock aggregate of varying types, ranging from general purpose aggregate suitable for a wide range of end-uses including concrete production, to higher specification end-uses such as rail ballast and high PSV (Polished Stone Value) aggregate that is capable of being used in skid-resistant road surfacing applications. There are relatively few alternative sources of such High Specification Aggregate in England.
- 3.17 Average igneous rock sales from Leicestershire were 11.7 million tonnes per annum over the last 10 years and 12.3 million tonnes per annum over the last 3 years. Figure 6 below shows the general trend of sales of igneous rock within Leicestershire based on 3-year averages over the period 2009 to 2018. Sales fell between 2009 and 2012 but subsequently rose up until 2017. In 2018 sales dropped to around 2013 levels. Overall, sales in igneous rock have fluctuated over the 10-year period.

Figure 6. Trend in Sales of Igneous Rock 2009-2018



3.18 Average limestone sales within Leicestershire were 1.19 million tonnes per annum for the last 10-year period and 1.34 million tonnes per annum for the last three-year period. Figure 7 below shows the general trend of sales of limestone aggregate within Leicestershire based on 3-year averages over the period 2009 to 2018. Sales fell between 2009 and 2012 but have subsequently risen above the 10-year average. Sales were highest at 1.45 Mt in 2017 and remained similar at 1.43 Mt in 2018. Continued monitoring will determine if sales will remain approximately level or if they may rise gradually.

Figure 7. Trend in Sales of Limestone 2009-2018



### Landbank

- 3.19 Estimated permitted reserves of crushed rock in Leicestershire as at the end of 2018 were around 376 million tonnes. This is sufficient permitted material to last about 28 years based on the annual provision identified in the adopted Plan (13.6 Mtpa), and about 29 years based the average rate of sales over the last 10 years.
- 3.20 Arithmetically, the level of permitted reserves for crushed rock in Leicestershire is therefore well in excess of the 10-year minimum landbank for rock required by the NPPF. A significant proportion of the permitted reserves, however, are at inactive sites (37%), all for igneous rock.
- 3.21 Estimated permitted reserves of igneous rock in Leicestershire as at the end of 2018 were around 336 million tonnes. This is sufficient permitted material to last about 29 years based the average rate of production over the last 10 years.
- 3.22 As at the end of 2018, the four active igneous rock quarries (which are all rail connected) had total reserves of some 236 million tonnes, a collective life of some 20 years based on the average rate of sales over the last 10 years.
- 3.23 Estimated permitted reserves of limestone in Leicestershire as at the end of 2018 were around 40 million tonnes. This is sufficient permitted material to last about 33.6 years based on the average rate of sales over the last 10 years.

### Production Capacity

- 3.24 The existing active sites have the potential to produce around 15.5 million tonnes per annum, based on information contained in recent planning applications. Existing rail-linked quarries have a capacity of around 13.5 million tonnes per annum. This suggests that existing sites would be capable of producing sufficient material to satisfy the average rate of production over the last 10 years, but this would be just below the level of provision identified in the adopted Minerals and Waste Local Plan (13.6 Mt per annum). Not all of the sites would however be able to continue contributing to future requirements without the benefit of extensions to their currently permitted operations. Table 8 below provides information on the productive capacity, potential reserves and permission end dates for crushed rock sites within Leicestershire (N.B. The 'production capacity' figures are only indicative and do not necessarily represent a maximum limit. Annual sales at some sites have exceeded that identified in planning applications).

Table 8. Production Capacity of Crushed Rock Sites

| Site        | Mineral      | Operator                | Status   | Production capacity*<br>(tonnes p.a.) | Reserves**  | Permission End Date |
|-------------|--------------|-------------------------|----------|---------------------------------------|---|---------------------|
| Croft       | Igneous Rock | Aggregate Industries    | Active   | 2 million                             | 33 Mt (2008)  | 31-12-2029          |
| Mountsorrel | Igneous Rock | Tarmac                  | Active   | 4.5 million                           | 87 Mt (2014)<br>Additional reserves permitted in 2015: 20Mt   | 31-12-2040          |
| Cliffe Hill | Igneous Rock | Midland Quarry Products | Active   | 4 million                             | 60 Mt (2007)<br>Additional reserves permitted in 2016: 2.6Mt  | 31-12-2032          |
| Bardon      | Igneous Rock | Aggregate Industries    | Active   | 3 million                             | 45 Mt (2009). Additional reserves permitted in 2011: 132 Mt   | 31-12-2051          |
| Groby       | Igneous Rock | Midland Quarry Products | Inactive | Inactive                              | 90 Mt (1995)  | 31-12-2038          |
| Whitwick    | Igneous Rock | Midland Quarry Products | Inactive | Inactive                              | 8 Mt (2010)   | 21-02-2042          |
| Breedon     | Limestone    | Breedon Aggregates      | Active   | up to 0.5 million                     | 3.1 Mt (2003).<br>Additional reserves permitted in 2006: 17Mt | 31-12-2042          |
| Cloud Hill  | Limestone    | Breedon Aggregates      | Active   | 1.5 million                           | 12 Mt (2009). Additional reserves permitted in 2010: 4.3 Mt   | 31-12-2025          |
|             |              |                         |          | Total 15.5 million                    |   |                     |

\* Publicly available information (Sourced from the latest planning application documents for each site at the end of 2018).

# date of reserves information given in brackets

Exports and imports

- 3.25 The Authority requested distribution data from 2018 from all mineral operators working within Leicestershire to provide an up to date understanding of the role that Leicestershire plays in supplying aggregates since the last national aggregate minerals survey was undertaken in 2014, over four years ago. Unfortunately, the Authority were not able to obtain all of the sales by destination distribution data for crushed rock from the operators as some of the operators did not have the systems in place to obtain the information requested. Without obtaining the distribution data from all the operators, the data which has been collected is therefore not representative and is not considered suitable for publication in the LAA. Therefore, the most recent data from the latest aggregate minerals survey in 2014 is used below.
- 3.26 The distribution of crushed rock from Leicestershire in 2014 is set out in Table 9 below. A significant quantity (61.6%) of crushed rock was exported from the county. Thirteen per cent of material was distributed to other authorities within the East Midlands. The main destinations for material exported beyond the East Midlands were the East of England (17.3% of total sales); London and the South East (11.9%); and the West Midlands (10.6%), see Figure 8.

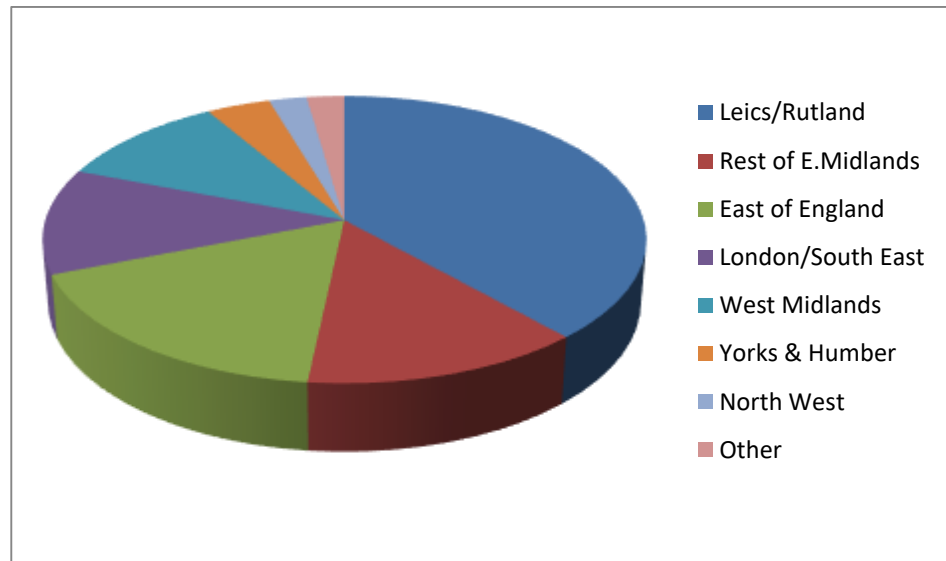
Table 9. Distribution of Crushed Rock 2014

| Destination            | All             |      | By Rail        |             |
|------------------------|-----------------|------|----------------|-------------|
|                        | tonnes          | %    | tonnes         | %           |
| Derbyshire & PDNP      | 316694          | 2.2  |                |             |
| Nottinghamshire        | 772556          | 5.5  | 150279         | 3.6         |
| Lincolnshire           | 158225          | 1.1  |                |             |
| Leics. and Rutland     | 5428259         | 38.4 | 14180          | 0.3         |
| Northants              | 631452          | 4.5  |                |             |
| North West             | 324776          | 2.3  | 292129         | 7.0         |
| Yorkshire & Humberside | 551888          | 3.9  | 454330         | 10.9        |
| West Midlands          | 1493265         | 10.6 | 140800         | 3.4         |
| East of England        | 2447314         | 17.3 | 1673253        | 40.3        |
| London                 | 889583          | 6.3  | 605872         | 14.6        |
| South East             | 792355          | 5.6  | 558007         | 13.5        |
| South West             | 159231          | 1.1  | 140800         | 3.4         |
| North East             | 153451          | 1.1  | 121511         | 2.9         |
| Wales                  | 24838           | 0.2  |                |             |
| <b>Total Rock</b>      | <b>14145069</b> |      | <b>4149161</b> | <b>29.3</b> |

Source: Aggregates Minerals Survey 2014

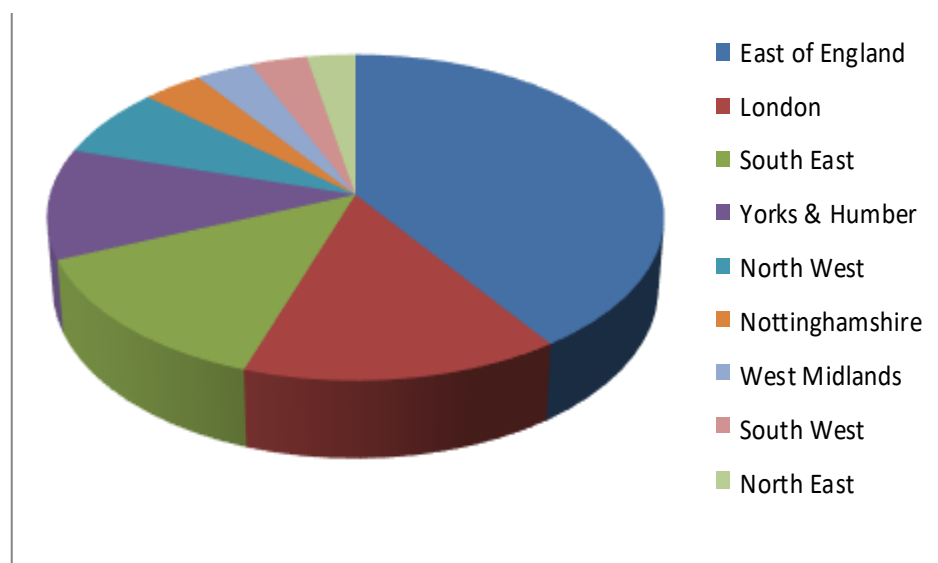


Figure 8. Distribution of Crushed Rock 2014



3.26 In 2014, the amount of crushed rock transported by rail was 29.3%, around 4.1Mt. The main destinations for material exported by rail were the East of England (40% of rail-borne sales) and London and the South East (28%) – see Table 8 and Figure 9. All the material exported by rail came from the four active igneous rock quarries.

Figure 9. Distribution of Crushed Rock by rail 2014



- 3.27 Information on consumption by sub-region, as provided by BGS from the results of the AM2014, indicate that Leicestershire/Rutland consumed 5,766,000 tonnes of crushed rock in 2014 (Separate figures for Leicestershire and Rutland are not provided). The main sources of supply were Leicestershire (90-100%), Rutland and Shropshire (1-10% each). Imports of crushed rock into Leicestershire were thus relatively insignificant, meaning that the County was a significant net exporter of crushed rock.

## **4. Recycled/Secondary Aggregate**

- 4.1 Despite difficulties in obtaining reliable data (even for a single year, let alone an historic series), the National and Regional Guidelines for Aggregates Provision have set figures for “Alternative Aggregates” (aggregate materials other than land or marine won) which regions should aim to achieve. The latest Guidelines propose that the East Midlands provide some 110 million tonnes of alternative aggregates for the period 2005–2020.
- 4.2 A number of national surveys have been conducted to measure and gain an understanding of the extent to which recycled and secondary materials have been used. The most recent study, undertaken by Capita Symonds for 2005 arisings, was published in February 2007. The survey methodology was very similar to that used in earlier surveys undertaken for 2001 and 2003.
- 4.3 Lessons learned during the earlier surveys mean that the findings of the 2005 survey were considerably more robust at regional level. However, at sub-regional level they remained unreliable. The estimate for production of recycled aggregate in Leicestershire and Rutland in 2005 was 697,252 tonnes. In addition, 60,194 tonnes of recycled soil (excluding topsoil) was produced and re-used.
- 4.4 There is currently no audited data available to the Council with regards to tonnages of construction demolition and excavation (CD&E) waste arising in the Leicestershire. A large proportion of construction and demolition waste is recycled on construction sites using mobile processing plant. Operational stand-alone permanent construction and demolition (C&D) recycling sites within Leicestershire are set out in Table 10 below. Existing recycling capacity for C&D waste in Leicestershire is estimated to be around 860,000 tonnes. There are currently no industrial processes in Leicestershire which are known to produce ‘secondary’ aggregates.
- 4.5 The lack of data will make it difficult to monitor the use of secondary and recycled materials at the local level, but available evidence does not suggest that there will be any significant alteration to the proportion of supply from these sources.

Table 10. List of Operational C&amp;D Recycling Sites

| Site                           | District            |
|--------------------------------|---------------------|
| Granite Close, Enderby         | Blaby               |
| Enderby Road, Whetstone        | Blaby               |
| Huncote Quarry                 | Blaby               |
| Granite Way, Mountsorrel       | Charnwood           |
| Ingleberry Road, Shepshed      | Charnwood           |
| Mountsorrel Quarry             | Charnwood           |
| Wanlip Plant Site, A46, Syston | Charnwood           |
| Gilmorton Lodge Farm           | Harborough          |
| Shawell Quarry                 | Harborough          |
| Cliffe Hill Quarry             | Hinckley & Bosworth |
| Glebe Farm, Sibson             | Hinckley & Bosworth |
| Groby Quarry                   | Hinckley & Bosworth |
| Lynden Lea, Hinckley           | Hinckley & Bosworth |
| Orston Lane, Bottesford        | Melton              |
| Harrison Close, Wigston        | Oadby & Wigston     |
| Bardon Quarry                  | North West Leics.   |
| Beveridge Lane, Ellistown      | North West Leics.   |
| Ellistown Quarry               | North West Leics.   |
| Lockington Quarry              | North West Leics.   |
| Wood Road, Battram             | North West Leics.   |

- 4.6 Whilst the data currently available is not considered to be suitably robust to enable a recycling target to be set for Leicestershire, the recently adopted Leicestershire Minerals and Waste Local Plan demonstrates a strong support by the Council for aggregate recycling. Thus, the adopted Leicestershire Minerals and Waste Local Plan also indicates that the County Council will support proposals for the recycling and reprocessing of materials for use as aggregates in appropriate locations.
- 4.7 The general trend in respect of inert recovery is for decreasing disposals of CD&E waste to landfills, quarries and exempt facilities and an increasing diversion of waste, especially through recycling. This will lead to a greater provision of CD&E waste as recycled aggregate assisting the Council in working towards future recycled aggregate production requirements, and achieving a reduction in the demand for primary aggregate.

## 5. Future Provision

- 5.1 The Leicestershire Minerals and Waste Local Plan 2018 (Adopted 2019) provides an indication of the likely future provision up until 2031 (see paragraphs 1.4 and 1.5 above).
- 5.2 The starting point for setting a production guideline for aggregates in the LAA is to estimate demand on the basis of a rolling average of 10 years sales data (the 10-year average) before considering other relevant local information. The 10-year average is 1.17 million tonnes per annum for sand and gravel and 12.87 million tonnes per annum for crushed rock.

### *Sub regional apportionment*

- 5.3 An indicator to be taken into account in identifying the level of future provision is the sub-regional apportionment derived from the National and regional guidelines for aggregates provision in England. The latest guidelines were produced to cover the period for 2005-2020 and set out the level of provision which should be made by each Region.
- 5.4 An annual "sub-regional apportionment" was produced from the 2005-2020 Guidelines by the East Midlands Aggregates Working Party (EMAWP). For Leicestershire, this was 1.51 million tonnes of sand and gravel and 16.6 million tonnes of crushed rock. This sub-regional apportionment is 24.5% higher than the 2018 sand and gravel sales figure and 28% higher than the 2018 crushed rock sales figure. The sales for both sand and gravel and crushed rock in 2018 have both fallen since the end of 2017. It should be noted that the level of production outlined by the sub-regional apportionment has not been achieved in Leicestershire during the last 10 years.
- 5.5 At the meeting of the East Midlands Aggregates Working Party in February 2013, doubts were expressed about the validity of the apportionment guidelines. It was considered that the figures were out of date, as they were based on aggregate output from a period of economic growth, and that they should consequently not be taken into account in identifying future levels of provision. It was agreed that future levels of provision be based on a rolling average of 10 years sales data and other relevant local information, in accordance with the NPPF.

- 5.6 In the Inspector's Report on the partial review of the Northamptonshire Minerals and Waste Local Plan, the Inspector stated "as they (the national guidelines) were based on production before the recession and within a different policy context, it would not be prudent to accord them very significant weight." This suggests that it would not be appropriate to base the production guideline in this LAA on the National and regional guidelines or the sub-regional apportionment.
- 5.7 The Inspectors report noted that the use of average sales over a 10-year period to quantify the amount of sand and gravel required over the Plan period is suitable and consistent with the approach set out in the NPPF provided that it is also based on the average of 10-year sales in addition to other relevant local information.
- 5.8 In addition, the more recent increase in sales may not necessarily be reflective of an upturn in construction within the County as evidence indicates a slight downturn in housing completions from 2015/16 to 2016/17. Additionally, more than 40% of sand and gravel production annually is exported out of the County. Therefore, sales may not necessarily correlate with economic activity within Leicestershire. Consequently, it is not considered necessary to depart from 10 years sales data when forecasting future aggregate provision.

*Comment on providing a landbank*

- 5.9 The NPPF identifies that provision should be made for a landbank of at least seven years for sand and gravel and at least 10 years for crushed rock. National guidance does not state that plans have to allocate sites to account for a landbank at the end of the plan period. Acceptable alternative approaches are to have an enabling policy that allows unallocated sites to come forward to ensure an adequate supply is maintained should the landbank be likely to reduce below the seven or 10-year periods or to undertake a review of the plan. The landbank position would be monitored annually through the AMR.
- 5.10 Policies M1 and M4 identify the Council's intention to maintain at least the seven and 10-year landbanks. Policies M3 and M4 allow for new proposals for sand and gravel and crushed rock where, amongst other things, they are required to maintain the landbank. Therefore, adequate provision is made in the Plan, in particular by Policies M3 and M4, and subject to a statutory required review of the Plan, pursuant to the requirements of The Town and Country Planning (Local Planning) (England) (Amendment) Regulations 2017, or as considered necessary as a consequence of the AMR.

### *Recent trends*

- 5.11 An average of the last three years sales gives an indication of the most recent sales trends to identify the general trend of demand.
- 5.12 Average sand and gravel sales over the last three years were 1.38 million tonnes per annum, 15% higher than the 10-year average (1.17). The trend highlighted by the three-year average for sand and gravel warrants consideration of whether it would be appropriate to alter the production guideline from the 10-year average.
- 5.13 Average crushed rock sales over the last three years were 13.62 million tonnes, about 5.5% higher than the 10-year average (12.87). However, the recent downturn in sales seen in 2018 suggests that it is not significant enough to indicate that it would be appropriate to alter the production guideline from the 10-year average.

### *Local Factors*

- 5.17 The NPPF states that the annual Local Aggregate Assessment should be based on a rolling average of 10 years' sales data and *other relevant local information*. In respect of the latter, the following issues have been addressed: population forecasts; household projections; future house building; local economic objectives; and major infrastructure projects. The bulk of the analysis in this section focuses on Leicestershire and Leicester.
- 5.18 Table 11 below shows population and household projections from 2011 to 2036 in Leicester & Leicestershire, the East Midlands and England from the ONS/CLG 2014-based Population and Household Projections. The data shows that the population of Leicester & Leicestershire is projected to grow by 19.5%, which is above that projected across the region (16%) and for England as a whole (17.5%). Households within Leicester & Leicestershire are expected to grow by 20.7%, which is faster than the growth expected across the region (17.2%) and nationally (19.9%).

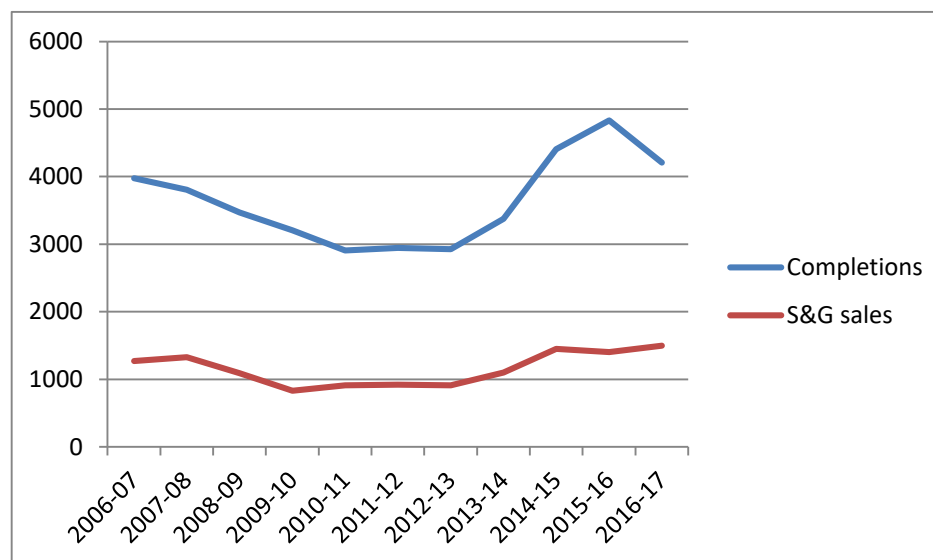
Table 11. Population and Household Projections (2011-2036)

|                               | Population<br>2011 | Population<br>Growth<br>2011-36 | %<br>population<br>growth | Change in<br>households | %<br>Household<br>Growth |
|-------------------------------|--------------------|---------------------------------|---------------------------|-------------------------|--------------------------|
| Leicester<br>& Leicestershire | 980,806            | 191,562                         | 19.5%                     | 80,778                  | 20.7%                    |
| East<br>Midlands              | 4,537,448          | 733,508                         | 16.2%                     | 335,623                 | 17.7%                    |
| England                       | 53,107,169         | 9,296,778                       | 17.5%                     | 4,394,788               | 19.9%                    |

- 5.19 A steady and adequate supply of aggregates will be crucial to enabling the level of planned housing development to be delivered. The Mineral Products Association states that the construction of a typical new house uses up to 50 tonnes of aggregates from the foundations through to the roof tiles. This is a generalisation which should be treated with a degree of caution and does not distinguish between use of sand and gravel and crushed rock and does not include any requirements for infrastructure supporting housing development or the significant amount used in maintaining or refurbishing existing housing stock. There are no figures available to indicate the level of demand other types of development might create.
- 5.20 Considering levels of planned housing development could still provide an indication of whether demand for aggregates is likely to significantly increase or decrease. A comparison of sand and gravel sales against housing completions in the county since 2006/07 is shown in Figure 11 below. Any relationship should be treated with some caution given the amount of mineral that is exported out of the County (see paragraph 3.9 above). It would be prudent however to continue to examine trends in sand and gravel sales and housing completions in future LAAs.



Figure 10. Comparison of Sand and Gravel Sales



- 5.21 In February 2016 GL Hearn along with Justin Gardner Consulting and Oxford Economics were appointed by the local authorities and the local enterprise partnership in Leicester and Leicestershire to undertake a Housing and Economic Development Needs Assessment (HEDNA) for the area to replace the 2014 Strategic Housing Market Assessment and the 2013 Leicester & Leicestershire Employment Land Study.
- 5.22 The HEDNA report was published on 27th January 2017. The report identifies an Objectively Assessed Need for Leicester and Leicestershire, based on demographic analysis, of some 96,580 dwellings for the period 2011-31 (4,829 dwellings per annum). For the period, 2011-2036, the figure is some 117,900 dwellings (4,716 dwellings per annum).
- 5.23 The nine local authorities and the LLEP jointly agreed a Strategic Growth Plan, a non-statutory strategic plan looking forward to 2050. The final Strategic Growth Plan was approved in December 2019. This includes an estimate of the likely scale of growth for the period 2031-50, an estimated 90,516 dwellings (4,764 dwellings per annum).
- 5.24 The HEDNA also included detailed work to interrogate future economic growth potential in Leicester and Leicestershire. GL Hearn and Oxford Economics have interrogated the area's economic structure and past performance, assessed baseline econometric forecasts from Oxford Economics Local Authority District Forecasting Model and overlaid local economic drivers and planned investment on this to derive a Planned Growth Scenario.

- 5.25 The Planned Growth Scenario sees employment growth in Leicester and Leicestershire of 99,200 between 2011 and 2036, representing growth of 0.7% pa, matching that expected nationally and exceeding regional performance. This significantly exceeds the historical growth rate of 0.4% pa (1993-2010).
- 5.26 The Leicester & Leicestershire Enterprise Partnership's (LLEP) Strategic Economic Plan sets out strategic objectives, priorities and actions for the period 2011 to 2031/2036 and also the period 2031/36-2050 although it is recognised that future forecasting will require further research for accurate forecasting.
- 5.27 The Midlands Engine Strategy was published in March 2017. This sets out Local Growth Fund investment of £392 million for skills, connectivity and local growth in the region, of which £25.87 million is allocated to the Leicester and Leicestershire LEP. Specific projects include £14 million to develop a global space technologies hub in Leicester, and £12 million to improve transport connections in and around Loughborough.
- 5.28 In January 2012, the Government announced its decision to proceed with a £32.7 billion national High-Speed Rail network (High Speed Two) from London to Birmingham, continuing onto Manchester and Leeds. The preferred route for HS2 phase two published in July 2017 lies partly within Leicestershire. Main construction work on Phase 1 between London and the West Midlands is due to start in late 2019. Construction of Phase 2 from the West Midlands to Manchester and Leeds is scheduled to begin in 2023.
- 5.29 In March 2016, the Government published its strategy for delivering key infrastructure projects from 2016 until 2021. The plan brings together the Government's plans for economic infrastructure over the next 5 years with those to support delivery of housing and social infrastructure. The Government's is committed to invest over £100 billion by 2020-21 in infrastructure, alongside private investment.

### *Conclusion*

- 5.30 Recent trends in production for sand and gravel, together with the local factors referred to above, suggest that there may be demand for sand and gravel from Leicestershire operations over and above the average experienced during the last 10-year period (2009 to 2018). Despite this, there has been a fall in sales in 2018 and it is not known whether this will continue as a trend. This will need monitoring in the next LAA.

- 5.31 On the other hand, there are increasing signs of problems regarding the provision of further sand and gravel resources, as witnessed by the low landbank, the low number of new applications being submitted, the limited number of sites allocated in the newly adopted Leicestershire Minerals and Waste Local Plan which resulted from a lack of sites being put forward by industry during the Submission stage. Future sales may consequently be influenced by mineral reserve continuity at individual quarry sites. In the circumstances, it is considered appropriate for the production guidelines identified by this Local Aggregates Assessment to reflect the 10-year sales average, namely 1.17 million tonnes per annum.
- 5.32 The importance and current distribution of Leicestershire's crushed rock means that it is likely that the County's rock quarries will continue to supply major infrastructure both in the East Midlands and elsewhere in England. The scale of any potential increase in demand is uncertain and will largely depend on the rate of future growth in the national and local economy. Whilst 2018 has seen a drop in annual sales, there is no evidence to suggest that that demand for crushed rock is likely to decrease. Overall, it is not considered there is sufficient robust evidence to support a specific level of production above the 10-year average of sales. The production guidelines identified by this Local Aggregates Assessment therefore reflect the 10-year sales average, namely 13.6 million tonnes per annum.

#### *Sand and Gravel Provision*

- 5.33 Table 12 below provides revised calculations of the potential future requirement for sand and gravel within Leicestershire based on average sales over the last 10 years. The calculations are based on making provision for the period up to 2031. The calculations take account of the level of permitted reserves as at 31<sup>st</sup> December 2018.

Table 12. Calculation of Sand and Gravel Provision 2019 – 2031

| Calculation |  | Million Tonnes |
|-------------|--|----------------|
| A           | Annual Requirement                     | 1.17           |
| B           | Total Requirement 2019-2031*           | 14.04          |
| C           | Total permitted reserves at 31/12/2018 | 2.9            |
| D (C-B)     | Shortfall 2019 – 2031                  | 11.14          |

\*Total Requirement = **A** x 12 years

- 5.34 The table indicates that there will be a shortfall of sand and gravel reserves over the period to 2031 of some 11.14 million tonnes. The Leicestershire Minerals and Waste Local Plan includes proposals for the extension of four of the active sand and gravel operations in the County, which would release some 7.2 million tonnes of potential reserves if permissions were granted.
- 5.35 The Plan also provides for planning permission to be granted for sand and gravel outside unallocated areas under Policy M3: Sand and Gravel Extraction (Unallocated Areas).
- 5.36 Planning permission was granted in 2015 for a new wash plant facility at Mountsorrel Quarry. It is estimated that the plant will produce around 310,000 tonnes of washed quarry fines per annum, which will be comparable with washed concrete sand produced at sand and gravel sites elsewhere. This product will reduce the need to import equivalent materials to supply ancillary production at the quarry (i.e. ready-mix and precast concrete plant).

#### *Crushed Rock Provision*

- 5.37 The Leicestershire Minerals and Waste Local Plan 2018 indicates there would be more than sufficient crushed rock reserves to meet requirements over the period to 2021. It was not therefore considered necessary to make specific provision for future rock extraction.
- 5.38 Table 13 below provides updated calculations of the potential future requirement for crushed rock from Leicestershire based on average sales over the last 10 years. The calculations are based on making provision for the period up to 2031. The calculations take account of the level of permitted reserves as at 31<sup>st</sup> December 2018.

Table 13. Calculation of Crushed Rock (Aggregate) Provision 2019-2031

| Calculation |  | Million Tonnes |
|-------------|--|----------------|
| A           | Annual Requirement   | 13.6           |
| B           | Total Requirement 2019-2031*   | 163.2          |
| C           | Total permitted reserves, excluding reserves in dormant sites, at 31/12/2018 | 376            |
| D (C-B)     | Surplus 2019 – 2031  | 212.8          |

\*Total Requirement = **A** x 12 years

- 5.39 The table indicates that there will be more than sufficient crushed rock reserves to meet requirements up to 2031. The current level of permitted reserves is also sufficient to maintain a landbank of 10 years throughout the period to 2031.
- 5.40 Whilst the theoretical permitted reserves of igneous rock appear to be adequate, technical considerations led the East Midlands Aggregates Working Party (EMAWP) to express concern in 2018 regarding the medium to long term ability of Leicestershire to supply crushed rock, at existing levels, particularly to areas like the South East and London. The EMAWP advocated that action be taken to address concerns over medium to long term future supplies of igneous rock from Leicestershire, bearing in mind the nationally strategic and uncertain nature of the Leicestershire resources beyond the existing permissions.
- 5.41 This situation has also been recognised in a report from the British Geological Survey ('An evidence-based approach to predicting the future supply of aggregate resources in England' 2011) which concluded that "by far the most important foreseeable shortfall in the medium- to long-term is amongst the four rail-connected igneous quarries in Leicestershire."
- 5.42 The current strategy for aggregate minerals, is set out in Policy M4 (Crushed Rock) of the Leicestershire Minerals and Waste Local Plan 2018, is to ensure a steady and adequate supply of crushed rock for aggregate purposes by giving priority to proposals for extraction to be worked as extensions to existing rail-linked site operations where they are required to ensure sustainable supply and allowing proposals for new extraction sites where it has been demonstrated that the landbank and production capacity cannot be maintained from existing permitted sites.
- 5.43 In August 2011, Leicestershire County Council granted planning permission for the extraction of 132 million tonnes of mineral from an area adjacent to Bardon Hill Quarry. This has extended the life of the quarry by around 40 years. The stone extracted at the quarry has a high PSV (60), enabling the aggregates to be used more extensively in road surfacing applications, as well as in other asphalt products, concrete and other uses.
- 5.44 Planning permission was granted in October 2015 for the extraction of an additional 20 million tonnes of mineral from an extension to Mountsorrel Quarry. This has extended the life of the quarry to 2040.

- 5.45 Planning permission at the two other rail-linked sites at Croft and Cliffe Hill currently expire at the end of 2029 and 2032 respectively. However, the amount of remaining permitted reserves at these quarries suggests that they currently have less than five years and around 10 years life left respectively.
- 5.46 The nature of working is such that the costs of extraction rise considerably as these active quarries approach their planned maximum working depths. Other future constraints might include changing safe slope criteria or unforeseen geological factors which could reduce recovery of reserves.
- 5.47 If production at any of the existing active sites cannot be maintained, it may be possible to use production capacity at sites that are currently inactive in order to maintain the level of provision from quarries within Leicestershire. However, neither of the inactive sites in the County however are rail-connected nor have they any realistic prospect of being linked by rail.

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<sup>i</sup> Please note that this figure was previously published as 81,000 tonnes which was incorrectly calculated from a typographical error. Previously, the figure for imports of sand and gravel into Leicestershire and Rutland was incorrectly identified as 537,000 tonnes when the correct figure was 573,000 tonnes.