Nottinghamshire and Nottingham Local Aggregates Assessment

Containing 2023 sales data

October 2024

Contents

Summary

The Nottinghamshire and Nottingham Local Aggregates Assessment (LAA) is a document produced under the requirements set out in the National Planning Policy Framework (NPPF) and covers the geographical area of Nottinghamshire, including the Nottingham City unitary authority area. It monitors annual sales data for aggregate minerals as well as identifying other relevant local information to enable the Mineral Planning Authorities to plan for a steady and adequate supply of minerals.

Aggregate minerals in Nottinghamshire are made up of sand and gravel, Sherwood Sandstone and crushed rock and are used in the construction industry. Their main uses include concrete, mortar, asphalt, railway ballast and bulk fill.

The LAA sets out:

- Summaries of past aggregate sales, number of active quarries and the distribution of the extracted mineral.

- The latest 10-year and 3-year average sales data and a comparison to the previous average sales data; and;

- The key issues that could affect the future demand for aggregates over the next plan period.

This LAA details the annual sales data for 2023.

Whilst aggregate mineral resources are present in the Nottingham City area, the opportunities to work these minerals are limited due to the built-up nature of the area. As a result, the majority of aggregates consumed in the City are supplied from either Nottinghamshire or further afield.

The Nottingham City Land and Planning Policies document contains policies against which any proposal for minerals development within the City boundary would be assessed, including a Minerals Safeguarding Policy, however it does not include demand forecasts for aggregate minerals.

Key Findings

Nottinghamshire is an important producer of sand and gravel and Sherwood Sandstone and has a large export market, particularly to South Yorkshire and the wider East Midlands. Crushed rock production is currently at zero with most imported from Derbyshire and Leicestershire.

Sales of aggregate minerals in Nottinghamshire have continued to fluctuate. Sales for sand and gravel and Sherwood Sandstone fell to a low of 0.97 million tonnes in 2020 due to the effects of the COVID-19 pandemic and issues with flooding along the River Trent.

In 2023, total sales of aggregates amounted to 1.10 million tonnes compared to 1.52 million tonnes in 2022. Sand and gravel sales were 0.87 million tonnes in 2023, compared to 1.34

million tonnes in 2022. However, sales of Sherwood Sandstone increased slightly to 0.23 million tonnes, compared to 0.18 million tonnes in 2022.

The 10-year and 3-year average sales figures for both sand and gravel and Sherwood Sandstone have decreased slightly compared to previous years, continuing the trend of subdued sales since the 2007 recession. The latest 10-year average sales figure for sand and gravel is 1.29 million tonnes**,** and the 3-year average is 1.16 million tonnes. For Sherwood Sandstone, the 10-year average is 0.30 million tonnes**,** and the 3-year average is 0.20 million tonnes**.**

The sand and gravel landbank has gradually increased and stands at 16.02 years, which is well above the NPPF minimum 7-year requirement. The Sherwood Sandstone landbank is still substantial, standing at 23.33 years**,** which is also significantly above the NPPF requirement.

Whilst the county does have a permitted site to extract crushed rock (limestone), this site has been inactive since 2007, and so sales have remained at zero. The total permitted reserves for crushed rock remain at 3.34 million tonnes.

Table 1: Sales and landbank figures as of December 2023

Aggregate	Sales in 2023 (million tonnes)	Change in sales from previous year	10 year sales average (million tonnes)	3 year sales average (million tonnes)	Sales Trend (10 years)	LAA annual provision rate (million tonnes)	Permitted reserves at 31 December 2023 (million tonnes)	Change in permitted reserves from previous year	Landbank (years)	Change in Landbank from previous years
Land won Sand and Gravel	0.87	↓	1.29	1.16	↓	1.35	20.66	↑	16.02	↑
Sherwood Sandstone	0.23	↑	0.30	0.20	↑	0.31	6.7	↓	23.33	↑
Crushed Rock	0.00	→	0.00	0.00	→	0.00	3.34	→	N/A	N/A
Total Primary Aggregates	1.10	↓	1.56	1.36	↓					

Introduction

1.1 The requirement to prepare a Local Aggregate Assessment (LAA) was introduced in the National Planning Policy Framework (NPPF) in March 2012 and is a continued requirement within the latest 2023 version of the NPPF. The LAA should be based on the latest 10 years average sales data and take into account any important local considerations and an assessment of all supply options including secondary and recycled sources. The data contained in the LAA will then enable the Minerals Planning Authorities (MPAs) to make provision for a steady and adequate supply of aggregate minerals in their area over the life of the Minerals Local Plan.

1.2 The Planning Practice Guidance also sets out an additional requirement to identify the 3-year average sales figure in particular to identify the general trend of demand as part of the consideration of whether it might be appropriate to increase supply.

1.3 This LAA sets out the aggregate minerals found in the geographical area of Nottinghamshire including Nottingham City, the current situation in terms of annual sales, the number of active quarries and the amount of aggregate that will need to be provided over the plan period.

1.4 It is important to note that whilst aggregate mineral resources are present in the Nottingham City boundary, the opportunities to work these minerals are limited due to the built-up nature of the area. As a result, the majority of aggregates consumed in the City are supplied from either Nottinghamshire or further afield.

1.5 The Nottingham City Land and Planning Policies document contains policies against which any proposal for minerals development within the city boundary would be assessed against, including a Minerals Safeguarding Policy, however it does not include demand forecasts for aggregate minerals.

1.6 The information used in this LAA is based upon information retrieved from the 2023 Aggregate Monitoring (AM) survey returns relating to the period 1st January to 31st December 2023.

1.7 The LAA is informed by consultation with the East Midlands Aggregate Working Party. The Aggregates Working Party is made up of MPAs from across the region and industry representatives. Its role is to provide technical advice about the supply and demand for aggregates and it usually undertakes annual monitoring of aggregate production and levels of permitted reserves across the East Midlands. This information is then supplied to MPAs and to the National Aggregate Co-ordinating Group to inform national aggregate provision.

1.8 The LAA is required to be updated on an annual basis and will enable the County and City Councils to monitor ongoing patterns and trends in aggregate sales and ensure that adequate reserves are maintained over the plan period.

Aggregates in Nottinghamshire and Nottingham City

2.1 Aggregates account for around 90% of minerals used in construction and are essential in maintaining the physical framework of buildings and infrastructure on which our society depends. Aggregates are usually defined as hard granular materials and include sand and gravel, Sherwood Sandstone and limestone. Their main uses include concrete, mortar, Roadstone, asphalt, railway ballast, drainage courses and bulk fill. Alternative aggregates are also used within Nottinghamshire, which include secondary and recycled materials.

Primary aggregates

2.2 Plan 1 illustrates the following primary aggregates that are found in the geographical area of Nottinghamshire and Nottingham.

Sand and gravel

2.3 Important alluvial (river) sand and gravel deposits are found in the Trent and the Idle Valleys which have made Nottinghamshire an important producer of sand and gravel in the East Midlands. Limited extraction also occurs in glaciofluvial sand and gravel deposits near East Leake, south of Nottingham. Sand and gravel is mainly used in ready mixed concrete production, although Nottinghamshire's reserves are particularly valuable because they meet high strength concrete specifications as the gravel is made up of quartzite.

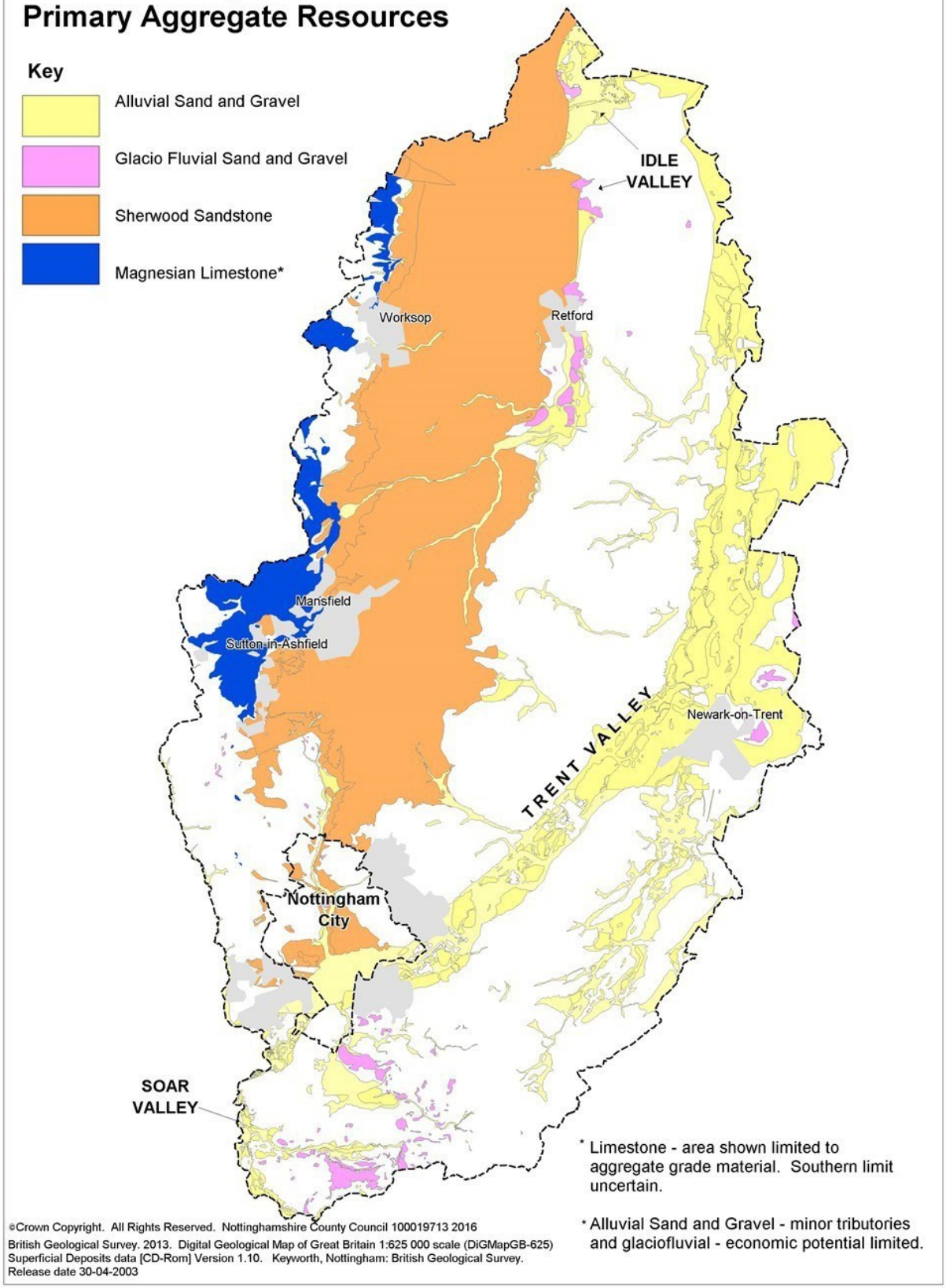
Sherwood Sandstone

2.4 Although defined as sandstone, this rock formation rapidly breaks down to sand when extracted. The sandstone occurs as a broad north-south belt stretching from the border with South Yorkshire, southwards to Nottingham. The mineral is mainly used to produce asphalting and mortar sand. There is relatively little overlap with the uses for which alluvial and glacial sand and gravels are suitable. Sherwood Sandstone is also used for non-aggregate industrial and other specialist end-uses.

Magnesian Limestone

2.5 This resource occurs as a relatively narrow belt to the west of the Sherwood Sandstone. This outcrop comprises the southernmost limits of the UK's second largest limestone resource that extends from the Durham coast through Yorkshire into Derbyshire and Nottinghamshire. Limestone suitable for use as an aggregate is only found in the Mansfield area and to the north where the mineral is used mainly as a road sub-base material although some mineral is of industrial grade quality. Production is relatively small scale and the lowest in the East Midlands. Around Linby the limestone is suitable for building and ornamental purposes, although aggregates can be produced as a by-product of utilising reject building stone.

Plan 1 - Nottinghamshire - Primary Aggregate Resources



* Limestone - area shown limited to aggregate grade material. Southern limit uncertain.

* Alluvial Sand and Gravel - minor tributories and glaciofluvial - economic potential limited.

British Geological Survey. 2013. Digital Geological Map of Great Britain 1:625 000 scale (DiGMapGB-625) Superficial Deposits data [CD-Rom] Version 1.10. Keyworth, Nottingham: British Geological Survey. Release date 30-04-2003

Alternative aggregates

2.6 Alternative aggregates comprise secondary and recycled materials, although these terms are often used interchangeably. Recycled aggregates are materials that have been used previously and include some types of construction and demolition waste, asphalt road planings and used railway ballast. Secondary aggregates are by-products of other processes that have not been previously used as aggregates. They include colliery spoil, China clay waste, slate waste, power station ashes, blast furnace and steel slag, incinerator ashes and foundry sands.

2.7 Alternative aggregates are currently most widely used in lower grade applications such as bulk fill. However, the range of uses is widening due to advances in technology and the increasing economic incentive to use them instead of primary aggregates.

2.8 In Nottinghamshire, sources of alternative aggregates include construction and demolition waste, power station ash, river dredgings, road planings and rail ballast.

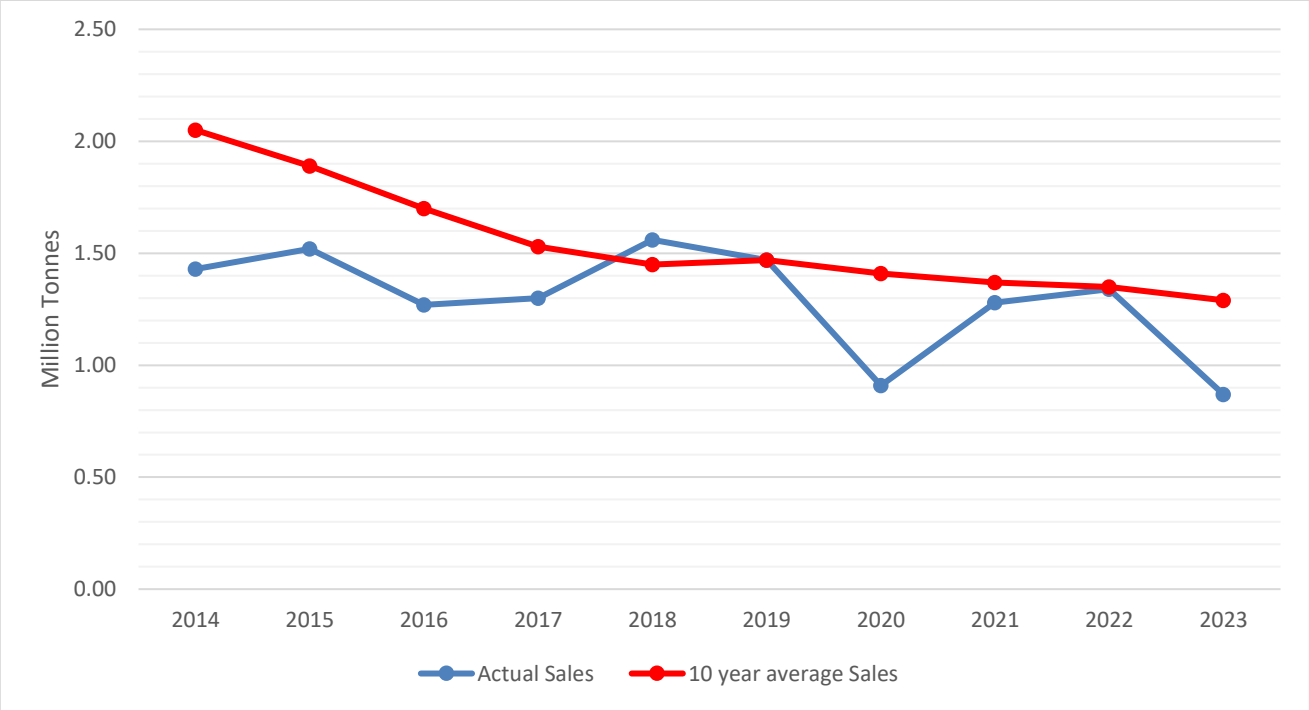
Local production

Sand and gravel

3.1 As shown in Figure 1, Sales of sand and gravel have shown relative stability over the past decade, fluctuating between 0.87 million tonnes and 1.56 million tonnes. A decline in 2020 saw sales drop to 0.91 million tonnes due to the COVID-19 pandemic and flooding along the river Trent. By 2022, sales had recovered to 1.34 million tonnes, similar to levels from 2017.

3.2 However, 2023 saw a decline in sales, with total sand and gravel sales falling to 0.87 million tonnes, with autumn flooding in the Trent Valley affecting production. Despite this drop, the 10-year average for sand and gravel is 1.29 million tonnes, reflecting the overall stability in production levels over the decade, although it is now below the earlier averages from before the recession.

Figure 1: Sales of sand and gravel 2014-2023 against the 10-year average sales figure.



Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sales (Million tonnes)	1.43	1.52	1.27	1.30	1.56	1.47	0.91	1.28	1.34	0.87

Resources and landbank

3.3 The landbank is calculated by dividing existing permitted reserves by the level of production based on the average sales over the last 10 years. This is in line with guidance set out in the National Planning Practice Guidance.

3.4 Permitted reserves currently total 20.66 million tonnes, with average sales over the last 10 years standing at 1.29 million tonnes per annum. Therefore, as of December 2023 the landbank stood at 16.02 years of production. This is above the minimum 7-year landbank requirement set out in the NPPF.

3.5 The sand and gravel landbank has been steadily increasing, this is caused by permitted reserves increasing due to a significant extension being granted at Langford Lowfield quarry and the 10-year average (which is used to calculate the landbank) falling since 2014 as higher pre-recession sales data was removed from the 10-year average.

3.6 There are eight permitted sand and gravel quarries in Nottinghamshire, although at present only six are in full production, with Girton only working existing stockpiles (see Table 2). The status of these quarries reflects ongoing site operations and market demand for aggregates.

3.7 In Table 2**,** Sturton Le Steeple is listed as inactive, as work had not commenced during the reporting period, which covers up until December 2023. However, it is important to note that operations at Sturton Le Steeple are understood to be commencing shortly, and future reports will reflect this activity. Additionally, Cromwell received new planning permission for continued extraction in 2024, further supporting Nottinghamshire's capacity to meet future aggregate demand.

Table 2: Permitted sand and gravel quarries in Nottinghamshire.

Site	Operator	Status	Permitted Reserves (MT)
Langford	TARMAC	Active	3.06
Besthorpe	TARMAC	Active	3.59
Girton	TARMAC	Inactive	3.75
Cromwell	CEMEX	Active	0.66
East Leake	CEMEX	Active	0.93
Sturton le Steeple	AGGREGATE INDUSTRIES	Inactive	7.40
Misson Bawtry Road	ROWLEY	Active	1.00
Scrooby Quarry	RSG (Rotherham Sand & Gravel)	Inactive	0.27
		TOTAL	**20.66**

Geographical spread of sand and gravel quarries

3.8 Historically a geographical spread of sand and gravel quarries has developed across Nottinghamshire, resulting in three geographic areas. This has occurred due to the location of sand and gravel reserves along the Trent and Idle Valley but also due to where key markets are within Nottinghamshire and neighbouring authorities. The spread of quarries with planning permission within these three geographic areas is set out in table 3.

Table 3: Location of existing permitted quarries in Nottinghamshire

Geographic Area	Total tonnage in the area (million tonnes)					Percentage of total reserves				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Idle Valley	7.8*	7.59*	8.749*	8.34*	8.67	41%	42%	41%	41%	42%
Newark	9.54	11.22	11.51	11.09	11.05	50%	50%	53%	54%	53%
Nottingham	1.6	1.41	1.23	1.08	0.93	9%	8%	6%	5%	4.5%

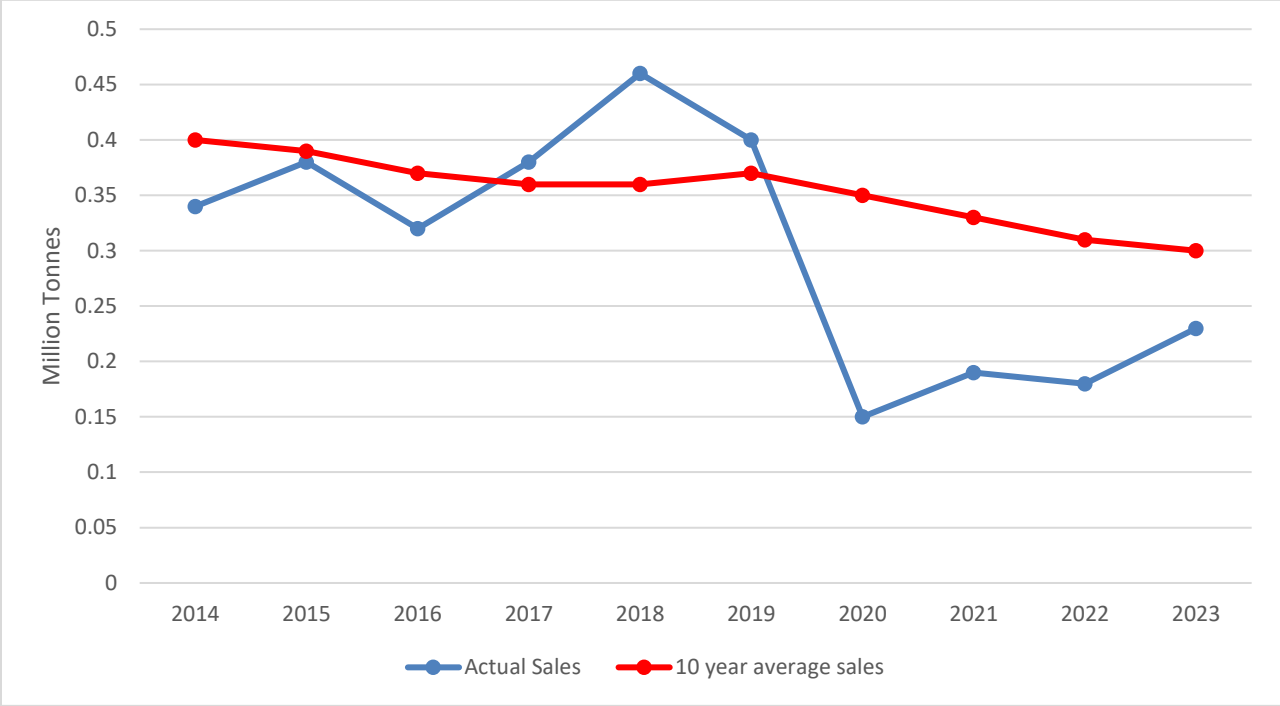
*Of the reserves in the Idle Valley, 7.9 million tonnes is contained in Sturton Le Steeple quarry, which is currently inactive.

3.9 Whilst this shows the current geographic spread of permitted quarries, it is important to note that over time, as reserves are worked and additional reserves are granted planning permission, this spread will change.

Sherwood Sandstone

3.10 Sherwood Sandstone sales have historically been lower than sand and gravel sales, reflecting its use in more specialised markets. In recent years, sales peaked at 0.46 million tonnes in 2018 but decreased to 0.40 million tonnes in 2019. The COVID-19 pandemic caused a significant drop in 2020, with sales falling to 0.15 million tonnes. Since then, sales have shown a gradual recovery, reaching 0.23 million tonnes in 2023. (See Figure 2 below).

Figure 2: Sales of Sherwood Sandstone, 2014-2023 against 10-year average sales figure. (Figures in million tonnes)



Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sales (million tonnes)	0.34	0.38	0.32	0.38	0.46	0.40	0.15	0.19	0.18	0.23

Resources and landbank

3.11 There are four permitted Sherwood Sandstone quarries in Nottinghamshire, with one of these currently inactive (see Table 4 below). Permitted aggregate reserves currently total 6.72 million tonnes, with average sales over the last 10 years standing at 0.30 million tonnes. Therefore, as of December 2023 the landbank stood at 23.33 years. This is above the minimum 7-year requirement. Whilst some sites include specialist sand reserves, these are not included within table 4 below.

3.12

Table 4: Permitted Sherwood Sandstone quarries in Nottinghamshire.

Site	Operator	Status	Permitted Reserves (mt)
Burntstump	Tarmac	Active	1.68
Bestwood 2	Tarmac	Active	2.09
Two Oaks Farm	Mansfield Sand Company	Active	2.44
Scrooby Top	Rotherham Sand & Gravel	Inactive	0.51*
		TOTAL	**6.72**

**Scrooby Top contains processing plant for all RSG operations.

Imports and exports of sand and gravel (including Sherwood Sandstone)

3.13 Imports and exports of aggregates have only been recorded as a one-year snapshot generally every four years through the National Survey of Aggregate Movements undertaken by the British Geological Survey. The surveys do not include a breakdown for Sherwood Sandstone; hence all sand and gravel import and export figures include Sherwood Sandstone. Import sales data is much more limited and is calculated using the median percentage range as supplied in the National Survey of Aggregates Movement. As such the data is an approximate figure.

3.14 The data is based on the survey undertaken in 2019, with the collation report published by the British Geological survey in August 2021. There has been a more recent survey undertaken but the results are yet to be published. Table 5 below shows the distribution of sand and gravel from Nottinghamshire to other regions.

Table 5: Sale of sand and gravel from Nottinghamshire to principal destination by sub region

Destination	Land won sand and gravel (000 tonnes)	MPA %
Nottinghamshire	679	38%
East Midlands	305	17%
Elsewhere	506	28%
Unallocated	315	17%
MPA total	**1804**	

From Table 9e of the Collation of the results of the 2019 Aggregate Minerals Survey for England and Wales

3.15 Table 5 shows that over half (62%) of the sand and gravel that originated in Nottinghamshire was exported outside the County, with most distributed to other regions

beyond the East Midlands. The 'AM2019 source of primary aggregates by sub-region percent categories' document indicates that the main 'elsewhere' region sand and gravel was distributed to was South Yorkshire and the Humber, with 50-60% of the sand and gravel consumed in South Yorkshire supplied from Nottinghamshire.

3.16 This reflects previous survey findings from 2009, 2014 and 2018 as shown in Table 6. Whilst the 2009 and 2014 data are from national surveys, the 2018 data was collected by the East Midlands Aggregate Working Party due to a delay in the national survey. Caution should be used when comparing the 2014 and 2018 sales data as the response rates between the two surveys may vary.

Table 6 Exports from Nottinghamshire.

Destination	2009 Survey ('000 tonnes)	2014 Survey ('000 tonnes)	2018 Survey ('000 tonnes)
Bedfordshire	0.02	0	0
East of England unknown	5	0	0
Cambridge and Peterborough	0.07	0	1
Essex	0.05	0	0
Derbyshire and Peak District	104	87	64
Leicestershire and Rutland	98	141	166
Lincolnshire	67	40	57
Northamptonshire	0	0.14	406
Nottinghamshire	760	499	126
East Midlands unknown	138	76	194
Durham	0	0.03	0
Cheshire	0.13	1	0.6
Greater Manchester, Merseyside, Halton & Warrington	0	0.02	0.2
Lancashire	0.04	0.02	0.1
Berkshire	0	0.11	0.1
Hampshire and the Isle of Wright			
Avon	0	0	0.2
Scotland	0.03	0	0
Shropshire	0	0.17	5
Buckinghamshire	5	0	0
Kent	0.2	0	0
Gloucester	0	0.06	0
Staffordshire	4	0.23	26
Warwickshire	3	25	17
Remainder of West Midlands	3	26	16

West Midlands unknown	0	0	14
Humber (East Riding, North Lincs and NE Lincs)	106	141	64
North Yorkshire, Yorkshire Dales and North York Moors	1	16	27
South Yorkshire	145	412	386
West Yorkshire	143	92	67
Yorks and the Humber Unknown			
North East Wales		0	0.5
South East Wales			
Unknown	-	210	375
TOTAL			**2010**

3.17 In relation to imports for sand and gravel, the 2019 survey found that 723,000 tonnes of sand and gravel was imported into the County. As table 5 shows 1,126,000 tonnes of sand and gravel was exported out of the County, Nottinghamshire therefore continues to be a net exporter of sand and gravel.

3.18 The AM2019 source of primary aggregates by sub-region percent categories provides what percentage of the total sand and gravel consumed in Nottinghamshire's came from other mineral planning authorities and so details where sand and gravel was being imported from. This information is displayed in Table 7 and shows that whilst Nottinghamshire supplied 40-50% of the total sand and gravel consumed with Nottinghamshire in 2019, 20-30% of the total amount consumed was imported from Lincolnshire. This reflects previous survey findings, as shown in Table 8.

Table 7: Percent of sand and gravel consumed in Nottinghamshire supplied by Mineral Planning Authorities

Source MPA	Percent
Cambridgeshire	<1%
Peterborough	1-10%
Derbyshire and Peak District	1-10%
Leicestershire and Rutland	1-10%
Lincolnshire	**20-30%**
Nottinghamshire	**40-50%**
Staffordshire	1-10%
Cumbria	<1%
Doncaster	<1%
Durham	1-10%

Table 8: Imports into Nottinghamshire

Origin	2014 survey ('000 tonnes)	2018 survey ('000 tonnes)
Cambridgeshire	5	N/A
Peterborough		
Derbyshire and Peak District	5	N/A
Leicestershire and Rutland	52	N/A
Lincolnshire	**299***	**246***
Staffordshire	**155**	N/A
Cumbria		
Doncaster	5	N/A
Durham		
TOTAL	**521**	**N/A**

*

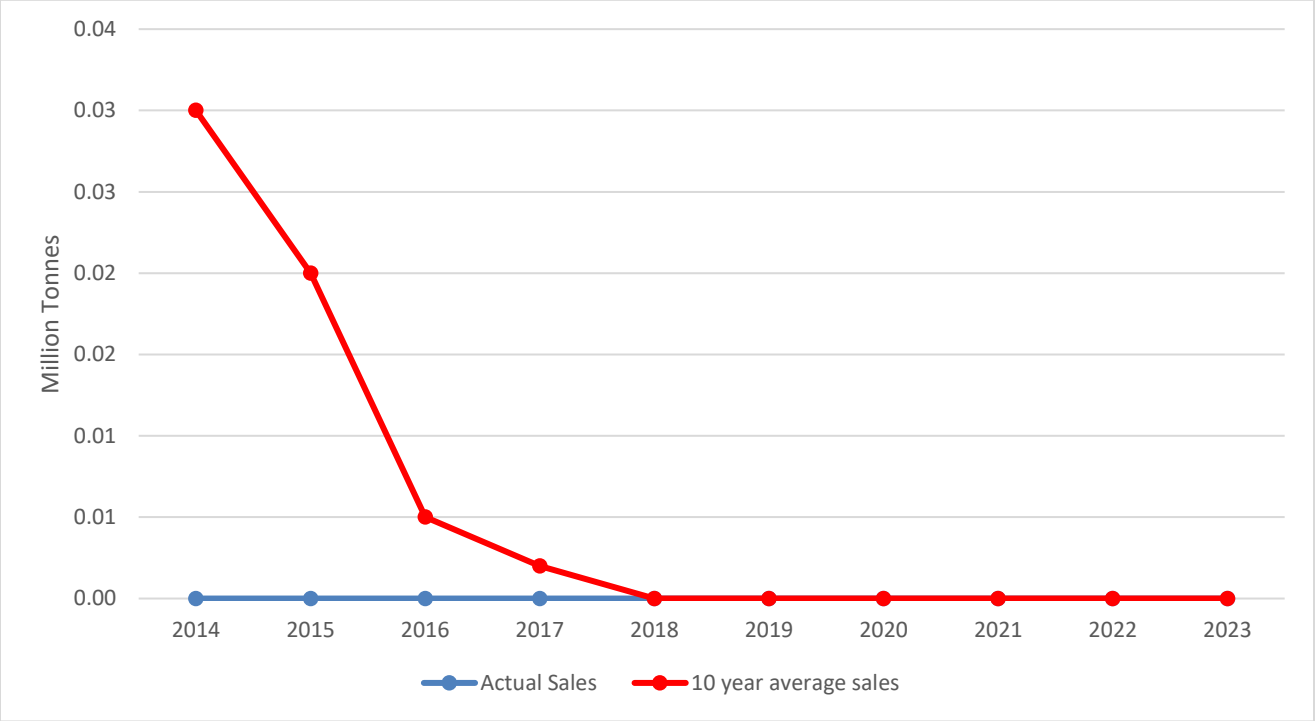
* based on data from Lincolnshire County Council

3.19 Given the relatively low value and bulky nature of aggregates, transport forms a major part of its cost. As a result, the distance minerals can be economically transported by road is relatively limited. National figures identify the average distance travelled in 2017 was 26.7 miles[1]. No data is available at the local level. It is noted that the markets will dictate whether it is economically viable for aggregates to travel further.

Crushed rock (including aggregate limestone)

3.20 Crushed rock sales (predominately aggregate limestone) in Nottinghamshire have stood at zero over the 10-year period as shown in Figure 3 below.

Figure 3: Sales of aggregate limestone, 2014 - 2023 against 10-year average sales figure. (Figures in million tonnes)



Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sales (million tonnes)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[1] Minerals Product Association

Resources and landbank

3.21 Nottinghamshire only has one dedicated aggregate limestone quarry (at Nether Langwith). The quarry was originally opened to supplement a much larger quarry in Derbyshire; however, it has been mothballed since 2007. Some aggregate is also produced from reject stone at a building stone quarry at Linby although this tonnage is small. Permitted reserves currently total 3.34 million tonnes, with average sales over the last 10 years standing at zero. Given that no aggregate is currently being worked, a landbank figure has not be calculated as it gives an unrealistically large figure

Imports and exports of crushed rock

3.22 Limestone resources in Nottinghamshire and Nottingham are relatively limited therefore all crushed rock is imported. The 2019 Aggregates Mineral Survey states that 1.19 million tonnes of crushed rock were imported into Nottinghamshire, whilst no mineral was exported. Table 9 details where the crushed rock consumed in Nottinghamshire was imported from.

Table 9: Percent of Nottinghamshire's total consumption of crushed rock by source Mineral Planning Authority

Source MPA	% Of Nottinghamshire's total consumption of crushed rock
Cambridgeshire	<1%
Derbyshire	30-40%
Leicestershire	20-30%
Lincolnshire	<1%
Peak District NP	1-10%
Shropshire	<1%
Staffordshire	1-10%
Telford and Wrekin	10-20%
Warwickshire	<1%
Cumbria	<1%
Doncaster	10-20%
Yorkshire Dales NP	<1%
Durham	<1%
Northumberland	1-10%
Northumberland NP	<1%
Powys	<1%
TOTAL CONSUMPTION	**1,194,000 tonnes**

3.23 The predominant sources of crushed rock were from Derbyshire, Leicestershire, Telford and Wrekin and Doncaster. This reflects the findings from the 2014 survey, with Table 10 providing the detail of the tonnage of crushed rock imports into Nottinghamshire.

3.24 The Leicestershire LAA (2023, containing 2022 sales data) states that Leicestershire has sufficient crushed rock reserves, with a landbank of approximately 23 years as of 2022, based on a 10-year sales average of 12.99 million tonnes and a 3-year average of 11.47

million tonnes**.** Notably, new permissions such as the Husbands Bosworth site for sand and gravel were granted in early 2023, and a potential extension for Mountsorrel Granite Quarry could add 75 million tonnes to extend its operation until 2058. These developments suggest a strong reserve position for crushed rock.
The Derbyshire LAA (2022, containing 2021 sales data) also states that adequate reserves remain available to meet expected future demand from outside Derbyshire. This takes into account the reduction in output from the Peak District National Park.
The Doncaster and Rotherham LAA (2022, containing 2021 sales data) identifies a 21.6-year landbank for crushed rock based on the 10-year sales average.

Table 10: Crushed rock imports into Nottinghamshire.

Origin	2014 ('000s tonnes)
Derbyshire and Peak District National Park	253
Leicestershire	822
Lincolnshire	
Doncaster	190
North Lincolnshire	63
Other (Gloucestershire, Cambridgeshire, Lincolnshire, Shropshire, Warwickshire, Cumbria, Yorkshire Dales, Durham, Northumberland)	60
TOTAL	**1.26***

*Due to the approximate figures used imports don't total exactly.

Alternative aggregates

3.25 Production figures for secondary and recycled aggregates are limited to national estimates. Since 1980 there has been a significant increase in annual alternative aggregate production in Great Britain (GB), rising from 20 million tonnes to a high of 71 million tonnes in 2007 (25% of total aggregates sales). Sales of recycled aggregates mirrored the fall of sales of primary aggregates nationally during the recession, however sales of both primary and recycled aggregates have been increasing since the recession. In 2020 sales of recycled aggregates stood at 74 million tonnes (30% of total aggregates sales)[2]. Britain is second in Europe for recycling aggregates, and it is estimated that alternative aggregates use in GB is around three times higher than the European average.

3.26 The British Geological Survey and Minerals Products Association acknowledge that further significant growth is likely to be limited due to the high levels that are already being recycled along with changing construction methods which are also likely to reduce the availability and quality of these materials in the future.

3.27 Local data for alternative aggregates is very limited however the main types of alternative

[2] Minerals Products Association – Profile of the UK Minerals Products Industry 2023 edition

aggregates in Nottinghamshire are set out below.

Power station ash

3.28 Fly ash and furnace bottom ash (FBA) from power stations can be used as alternatives to virgin aggregates in the manufacture of concrete, cement and other construction materials. Nottinghamshire did have three power stations which produced around 1.7 million tonnes of ash each year in 2014[3]. There is limited local information as to how much of the ash is sold, but nationally around 70 per cent of total fly ash and 100 per cent of FBA produced in 2014 was sold for use in construction products and engineering materials. The remaining material is often stored in stockpiles and can be sold at a later date[4].

3.29 In addition to Cottam Power Station closing in September 2019, the last remaining coal-fired power station in the United Kingdom, Ratcliffe-on-Soar stopped producing electricity on September 30 2024. This will further reduce the availability of power station ash used in aggregate materials, aligning with the UK government's plan to phase out coal by 2025.

Construction and demolition waste

3.30 Construction and demolition waste is made up of a range of materials including rubble, metals, glass, plastic and other construction materials.

3.31 Approximately 83% of construction and demolition waste has been re-used or recycled. Old concrete and rubble is often crushed on site using mobile processing plant and used in situ as bulk fill. The remainder of the materials such as metal is taken off site and sent to be processed elsewhere.

3.32 Data produced in association with the Nottinghamshire and Nottingham Waste Local Plan indicates that Construction, Demolition, and Excavation (CD&E) waste arisings have increased overall since 2010 reaching a high of 1.5 million tonnes per annum in 2015 but have since fluctuated between roughly 950,000 and 1.4 million tonnes per annum. Using Environment Agency data for 2021, it is estimated that just over 83% of CD & E waste is recycled, particularly C&D waste such as aggregates due to their high value or recovered with less than 20% disposed of to landfill.

3.33 There are currently 11 dedicated aggregates recycling facilities which have a maximum permitted capacity of 1.7 million tonnes. There are also 22 general transfer facilities which are able to handle construction and demolition waste but no separate data on capacity is available.

3.34 Worn out rail ballast is taken by rail to recycling centres for crushing into aggregate. As this material comprises high quality limestone or granite it can be re-processed for high-grade uses. There are approximately 7 rail ballast recycling sites across the country, with one of these located at Toton railway sidings in Stapleford within Broxtowe Borough.

3.35 Road planings produced as a result of highway resurfacing schemes can be used as a

[3] East Midlands Aggregate Working Party - Annual Survey and Report 2014
[4] UK Quality Ash Association

recycled aggregate to form a range of surfaces such as car parks, driveway or tracks. The availability of this material will vary depending on the level of highway maintenance being carried out at any given time.

3.36 No sales data exists for specific types of recycled or secondary aggregates. However, as these types of aggregates are available on the open market, their contribution is already taken into account when calculating future demand for primary aggregates.

3.37 Planning policies relating to recycled and secondary aggregates can be found in the Nottinghamshire & Nottingham Waste Core Strategy (adopted December 2013) and The Nottingham and Nottinghamshire emerging Waste Local plan.

Local production conclusion

3.38 Compared to historic (pre-2007) levels, sales of sand and gravel and Sherwood Sandstone have remained subdued throughout the majority of the last decade. The 2020 sales were particularly impacted by the COVID-19 pandemic and related lockdowns, resulting in a significant decline. While there has been some recovery in recent years, sales have yet to reach pre-pandemic levels. The figures also reflect the absence of new quarries becoming operational, which would have helped compensate for quarries that have been worked out.

3.39 At the end of 2023, Nottinghamshire's sand and gravel landbank remained above the 7-year minimum requirement**,** standing at 16.02 years**.** While the current landbank is sufficient, the adopted Nottinghamshire Minerals Local Plan (March 2021) highlights that further reserves will need to be released over the plan period, extending to 2036, to ensure a steady and adequate supply. The plan allocates sites to meet this demand, including five extensions to existing quarries and one new greenfield site as outlined in Policy MP2. The forecast of demand for sand and gravel was based on an annual production figure of 1.7 million tonnes (Policy MP1). With the current 10-year average sales at 1.35 million tonnes and the 3-year average sales at 1.16 million tonnes, the plan ensures that adequate provision will be made over the plan period.

3.40 Exports of both sand and gravel and Sherwood Sandstone continue to account for a significant proportion of total sales. This trend is expected to persist over the next plan period as sand and gravel resources in areas like Rotherham and Doncaster remain limited.

3.41 By the end of 2023, Nottinghamshire had sufficient permitted aggregate reserves of Sherwood Sandstone to meet the 7-year minimum landbank, standing at 23.33 years. However, additional reserves will need to be released over the life of the Nottinghamshire Minerals Local Plan (to 2036), as existing quarries are worked out. Allocation of new sites are included within Policy MP3. The forecast for demand for Sherwood Sandstone was based upon the production figure of 0.37 million tonnes required annually (Policy MP1), with the current 10-year sales average at 0.28 million tonnes and the 3 years sales average at 0.20 million tonnes, the plan still provides adequate provision for the foreseeable future.

3.42 Crushed rock sales remain at zero with the county's needs being met by imports from

adjoining counties. At the end of 2021, the landbank was technically well above the minimum 10-year landbank, however this figure should be treated with caution as sales have been at zero for a number of years.

3.43 Recycled and secondary aggregates continue to play a crucial role in meeting wider aggregate demand across Nottinghamshire. However, the extent to which recycled aggregates can replace primary aggregates will depend on various factors, such as their availability, cost, and the technical specifications required for particular end uses. Since recycled aggregates are readily available on the open market, their contribution has already been accounted for in calculations of future primary aggregate demand.

Future Aggregate Provision

4.1 In order to provide a steady and adequate supply of aggregates over the plan period, the NPPF states that a LAA should be prepared based on the last 10 years average sales data and taking into account any important local considerations and national and sub national guidelines.

National and Sub-National Aggregate Guidelines

4.2 Prior to the introduction of the NPPF, the supply of land-won aggregates in England was based on national and sub national guidelines for aggregates provision published by the Department for Communities and Local Government (DCLG). The most recent guidelines covering the period 2005-2020 were published in 2009.

4.3 The East Midlands Aggregate Working Party used these guidelines to produce draft apportionment figures for each MPA. The figures were then approved by the East Midlands Regional Assembly in 2010 and were to be incorporated into the Regional Plan via the review process. However, due to the abolition of the Regional Spatial Strategy the figures were never adopted.

4.4 The guidelines for the East Midlands stood at 174 million tonnes for sand and gravel and 500 million tonnes for crushed rock over the 2005-2020 period. For Nottinghamshire the guidelines were equivalent to 3.81 million tonnes per annum (a combined figure for sand and gravel and Sherwood Sandstone).

4.5 It was decided at the Aggregate Working Party meeting in February 2013 that the draft 2009 figures were considered out of date as they were only based on aggregate output from a period of economic growth, and should, therefore, not be taken into account when determining the new apportionment figures.

4.6 Long term demand for aggregates to be provided for in the Minerals Local Plan will be reviewed annually through the LAA using the 3 and 10-year sales averages as the key evidence base specifically monitoring trends. Annual monitoring of the Local Plan will also take place based on the updates to the LAA and if required early review may be necessary.

Sand and gravel provision

4.7 The biggest planning issue for Nottinghamshire and Nottingham is the long-term provision of sand and gravel over the plan period.

4.8 Based on the most recent data, the 10-year average figure stands at 1.29 million tonnes. This figure has steadily fallen since the first LAA was produced in 2013 and reflects the loss of higher pre-recession sales figures and the greater influence of lower sales figures since. The three-year average figure has also slowly fallen since the first LAA was produced, the latest figure stands at 1.16 million tonnes. Table 11 sets out the average production figures. More recently the Covid-19 pandemic has significantly impacted sales particularly the 3-year average.

Table 11: Sand and Gravel average sales figures

	2014 LAA	2015 LAA	2016 LAA	2017 LAA	2108 LAA	2019 LAA	2020 LAA	2021 LAA	2022 LAA	2023 LAA
10-year (million tonnes)	2.05	1.89	1.7	1.53	1.45	1.47	1.41	1.37	1.35	1.29
3-year (million tonnes)	1.46	1.45	1.4	1.36	1.38	1.44	1.31	1.22	1.18	1.16

Resource depletion in the Idle Valley and the north of the County

4.9 The Idle Valley, located in the north of the County, has a long history of sand and gravel extraction. Traditionally a large proportion of this, 30%, has supplied markets in Sheffield, Rotherham and Doncaster due to its close proximity and limited mineral reserves elsewhere.

4.10 Resource depletion is now starting to limit output, and since 2006 the number of active quarries has fallen from 8 to 2. This has seen production capacity and output fall, with some of the reduction in output due to the delay in implementing the permitted quarry at Sturton Le Steeple.

4.11 The impact of resource depletion in the Idle Valley on the Rotherham and Doncaster markets is discussed further in the following chapter.

Marine won sand and gravel

4.12 Marine won sand and gravel is not used in Nottinghamshire due to the availability of locally sourced land won material and the high costs involved in transporting the mineral long distances. It is therefore assumed that marine sources are not a significant issue for Nottinghamshire and will therefore not form part of this assessment.

Sherwood Sandstone provision

4.13 Sherwood Sandstone sales for aggregate purposes, are much lower than sand and gravel and historically have been in steady decline. Since 2017 the 10-year average has remained relatively stable, fluctuating between 0.39 and 0.30 and currently stands at 0.30 million tonnes. The latest 3-year average stands at 0.20 million tonnes. Although a slight increase on last year's LAA it is still lower than previous years LAAs due to the impact of the Covid 19 pandemic and lower sales in the past two years. Table 12 sets out the average sales figures.

Table 12: Sherwood Sandstone average sales figures

	2014 LAA	2015 LAA	2016 LAA	2017 LAA	2108 LAA	2019 LAA	2020 LAA	2021 LAA	2022 LAA	2023 LAA
10-year (million tonnes)	0.40	0.39	0.37	0.36	0.36	0.37	0.35	0.33	0.31	0.30
3-year (million tonnes)	0.35	0.35	0.35	0.36	0.39	0.41	0.34	0.25	0.17	0.20

4.14 No additional specific local factors have been identified when considering the future apportionment for Sherwood Sandstone .

Crushed rock (limestone) provision

4.15 Crushed rock (limestone) is only worked from one quarry in Nottinghamshire and production has been limited due to the seasonal working of the site and abundance of limestone worked in Derbyshire and Leicestershire.

4.16 The most recent 10 and 3-year average figures stand at zero tonnes (see Table 13).

Table 13: Crushed rock average sales figures

	2014 LAA	2015 LAA	2016 LAA	2017 LAA	2108 LAA	2019 LAA	2020 LAA	2021 LAA	2022 LAA	2023 LAA
10-year (million tonnes)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3-year (million tonnes)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Future provision

4.17 A pre-cast concrete factory was built near Worksop in 2009 and produces concrete structures on site for delivery and installation at construction sites. The factory uses crushed limestone as part of the production process.

4.18 No recent data on consumption is available however this was previously around 40,000 tonnes per annum. The factory is currently supplied by quarries in Derbyshire as the only limestone quarry in Nottinghamshire is mothballed.

Future aggregate provision conclusion

4.19 National guidance states that consideration should be given to the national and subnational demand forecasts, however these are now considered out of date as they were based purely on a period of economic growth over a shorter timescale than the 10-year sales average stated in the NPPF.

4.20 Prior to the Covid-19 pandemic the 10-year sales average for sand and gravel had begun to flatten out as higher pre-recession figures have fallen out of the data and current quarrying output in Nottinghamshire remains flat. The 3-year average sales figure highlights the impact of the pandemic and subsequent lockdowns have had on sales and has seen both the 10- and 3-year averages fall. However, there is currently no evidence to suggest that the higher demand forecast as set out in the adopted Minerals Local Plan needs to be reviewed.

4.21 The 10 years sales average for Sherwood Sandstone has slowly fallen. The 3-year average has remained generally flat but fell significantly in 2021 and 2022 with only a slight increase this year. The impact of the pandemic and subsequent

lockdown has significantly impacted on sales and has seen both the 10- and 3-year averages fall. However, there is currently no evidence to suggest that the demand forecast as set out in the adopted Minerals Local Plan needs to be reviewed.

4.1 Crushed rock sales remain at zero as the majority of material used in Nottinghamshire is imported from adjoining authorities. Based on the current sales data it is not considered necessary to identify additional reserves.

4.2 Resource depletion in the Idle Valley along with continued demand from Rotherham and Doncaster will remain a long-term issue, however in the short-term adequate reserves remain.

4.3 The potential use of marine sourced sand and gravel is not a significant issue for Nottinghamshire due to the availability of locally sourced land won mineral and the significant additional cost in transporting marine sourced minerals greater distance.

Future Growth

Infrastructure Projects identified for Nottinghamshire.

5.1 There are several potential infrastructure projects planned in Nottinghamshire which could impact local aggregate demand. However several of these are uncertain in terms of actual dates for delivery owing to funding commitment from Government not being certain and the transfer of responsibility for prioritising projects to the East Midlands Mayoral Combined County Authority:

5.2 **A46 Newark Bypass**: This scheme will widen a 6.5km section of the A46, improving traffic flow and journey reliability on this strategic route. The bypass will connect Lincoln to Warwick, supporting the broader. It is expected to reduce congestion around Newark-on-Trent and currently being examined within the Nationally Significant Infrastructure Planning process.

5.3 **Newark Southern Link Road (SLR)**: This £100m project involves constructing a 4-mile single carriageway to the south of Newark, linking the A1 and A46. The road is being built in phases, with full completion expected by 2026.

5.4 **A614/A6097 Junction Improvements**: This major road scheme involves five junction improvements along the A614 and A6097 corridor. A decision on funding this scheme has been delayed by Government

5.5 **A52 Nottingham Junctions**: Improvement works on the A52, including the Nottingham Knight and Wheatcroft roundabouts, are planned. These junctions currently experience high traffic volumes, and the upgrades are designed to manage congestion more effectively.

5.6 These schemes could indicate an increase in demand for aggregates, particularly for the construction and road infrastructure sectors, as Nottinghamshire continues to expand its transport network and housing developments. However, given the current lack of detail, the amount of minerals required is uncertain. Future LAAs will continue to monitor progress on these schemes and update the LAA as necessary.

Minerals Production Statistics

5.7 The mineral production statistics are now primarily sourced from the latest ProdCom survey, which provides detailed information on mining and quarrying activities across Great Britain. This survey offers comprehensive data on the production and sales of various minerals.

5.8 The latest ProdCom survey results, released in September 2024, indicate significant sales trends for various minerals. In 2023, national sales of Sherwood Sandstone showed a positive upward trajectory, contributing to a broader increase in mineral sales across the country. National sales of sand and gravel reached approximately 58.2 million tonnes, reflecting a consistent rise from previous years. Similarly, crushed rock sales increased to about 110.5 million tonnes, marking a significant recovery since their low in 2012. This upward trend in mineral sales highlights a growing demand within the construction and related sectors, underscoring the vital role of these materials in bolstering economic activity.[5]

[5] UK manufacturers' sales by product Statistical bulletins - Office for National Statistics (ons.gov.uk)

East Midlands Aggregates Working Party – Annual Monitoring Report 2023

5.9 The MAWP Annual Monitoring Report collates data relating to aggregates sales for each Minerals Planning Authority in the East Midlands. (The sales data for Nottinghamshire has been used in this report). In recent years, Nottinghamshire has seen a steady increase in aggregates sales, with 2022 recording a total of 7.39 million tonnes. This upward trend reflects the region's growing demand for aggregates.

5.10 While Nottinghamshire has limited crushed rock production, monitoring sales across the East Midlands remains essential as an indicator of overall demand. In 2022, the East Midlands recorded aggregate sales of 30.87 million tonnes, showcasing a robust recovery from previous years. This trend highlights the region's resilience and increasing requirements for mineral resources.

National Aggregate Minerals Survey

5.11 The four yearly national aggregate minerals survey provides information on the national and regional sales, inter-regional flows, transportation, consumption and permitted reserves of primary aggregates in England. The surveys cover both land won and marine dredged aggregates. The survey is used to inform government on the production, movement and consumption of aggregates in order to monitor and revise the aggregates guidelines, which support the National Planning Policy Framework, and to monitor and develop planning policies for the managed supply of aggregates in England. The last survey was based on 2019 data and the survey for 2023 is still being finalised prior to publication. It is expected to inform new aggregates guidelines and therefore have future implications for the role and purpose of Local Aggregate Assessments. We will report further on this in next years Local Aggregate Assessment.

Population forecasts

5.12 The population of Nottinghamshire (the geographic County, including Nottingham City) is expected to grow from approximately 1.26 million in 2023 to around 1.36 million by 2036, based on the latest Office for National Statistics data. This growth is anticipated to be concentrated in the major urban areas of the Nottingham conurbation, Newark, and Mansfield. However, it remains challenging to make direct comparisons between population growth and minerals use.

House building

5.13 The new government has a key objective to ensure an adequate provision of housing across the country to address the ongoing housing crisis. Recent policy changes include the introduction of a new housing supply framework aimed at increasing the pace of housing delivery and promoting affordable housing options. Within Nottinghamshire, the seven District and Borough councils, along with Nottingham City Council, are now required to align their Local Plans and core strategies with these new directives to ensure that identified local housing needs are being met and anticipated future demands are effectively planned for. This includes a focus on sustainable development and integration

of infrastructure to support new housing developments.

5.14 Based on the most recent housing trajectory data available from the districts and boroughs (Table 14), house building rates in Nottingham and Nottinghamshire are forecasted to peak between 2024 and 2025 at 8,369 dwellings completed per annum in 2024/25 before falling slightly and fluctuating between 7,526 and 3,949 until 2033.

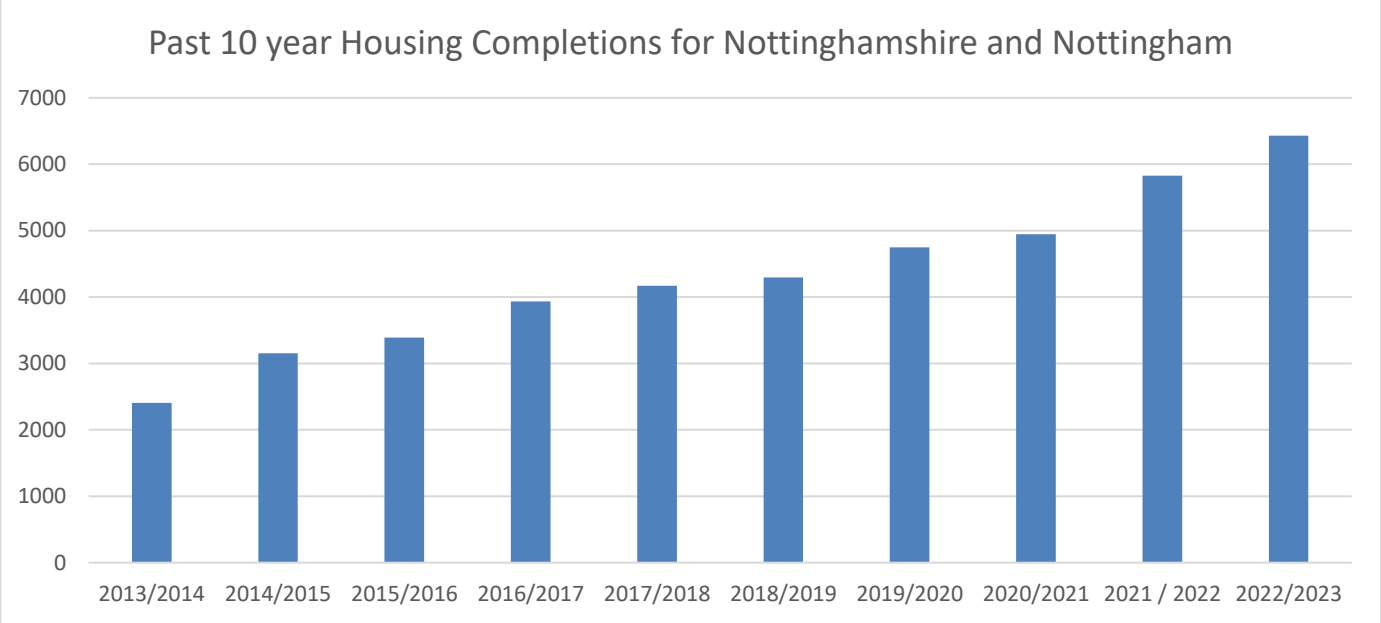
5.15 Forecasting 8,369 dwellings for 2024/25 is ambitious, especially in light of recent completion trends. Over the past three years, housing completions have averaged approximately 6,430 dwellings per annum, indicating a steady increase each year and demonstrating a recovery following the pandemic. This rising trend aligns with the government's efforts to address the housing crisis and ramp up construction activity to meet growing demand.

5.16 The year-on-year increase in completions reflects improving local economic conditions and proactive planning measures. These figures will be closely monitored against the established 10-year trajectories to ensure that housing supply remains responsive to ongoing demand.

Table 14: Housing trajectory per district

HOUSING TRAJECTORY PER DISTRICT										
	23/24	**24/25**	**25/26**	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**31/32**	**32/33**
Ashfield	155	448	305	202	554	284	196	129	114	95
Bassetlaw	1124	1036	805	622	687	674	591	511	409	392
Broxtowe	682	844	832	729	811	616	616	616	616	486
Gedling	887	704	760	687	519	427	363	272	254	254
Mansfield	504	616	697	655	616	554	559	416	290	232
Newark	544	558	586	575	732	892	941	861	842	732
Nottingham city	3348	2941	1868	1387	2421	2046	1811	1890	1151	882
Rushcliffe	1124	1222	1358	1135	1186	1056	826	729	729	876
TOTAL	**8368**	**8369**	**7211**	**5992**	**7526**	**6549**	**5903**	**5424**	**4405**	**3949**

Figure 4: Housing completions in Nottinghamshire



5.17 During the construction of new houses, a range of aggregate minerals will be consumed including sand and gravel for uses such as concrete, Sherwood Sandstone for mortar, clay for bricks and tiles along with crushed rock for more general construction uses. Data from the Minerals Products Association estimates that a typical new house uses up to 50 tonnes of aggregates, although the actual quantities for each type of aggregate are unclear. It is also worth noting that the Minerals Products Association estimate that new house building only accounts for around 20% of overall aggregate consumption.

Future demand from the Rotherham and Doncaster markets

5.18 The Rotherham and Doncaster Local Aggregates Assessment 2023 (2022 sales data) reports that although its sand and gravel landbank remains at 16.7 years, sharp sand reserves are limited. Consequently, the region will continue to rely on imports of sand and gravel from Nottinghamshire and neighbouring authorities.

5.19 Given that Nottinghamshire has traditionally supplied a large proportion of sand and gravel to the Rotherham and Doncaster markets from the Idle Valley and North Nottinghamshire, their future requirements are unlikely to be completely new demand, and this has been taken into account as part of the 10-year average sales figures. It is likely that in the short term, output from the Idle Valley and north Nottinghamshire will be maintained at current levels from existing permitted reserves.

5.20 A planning permission at Sturton Le Steeple with an estimated output of 500,000 tonnes per annum was initially implemented in 2017. Aggregate Industries acquired the mineral rights to extract sand and gravel at quarry in June 2023 and have since progressed the development of the quarry in consultation with key stakeholders. This site will provide a valuable long-term source of sand and gravel to supply North Nottinghamshire and the Rotherham and Doncaster markets for approximately 20 years.

Future demand from Leicestershire

5.21 The 2023 Leicestershire LAA, containing 2022 sales, states that the existing sites have a total potential production capacity of around 800,000 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. Given sand and gravel landbank currently stands at 2 years additional sand and gravel may need to be sourced from reserves outside the county.

5.22 Some sand and gravel is already exported from Nottinghamshire to Leicestershire and in 2019 10-20% of the total sand and gravel consumed in Leicestershire was supplied from Nottinghamshire.

5.23 In the future additional sand and gravel from Nottinghamshire could potentially serve Leicestershire, however at this stage it is difficult to quantify the amount as it will depend on the actual shortfall in the future and the amount of sand and gravel being supplied by other Mineral Planning Authorities such as Lincolnshire and Derbyshire.

Future growth conclusion

5.24 National sales of aggregates have shown a consistent upward trend since the lows experienced in 2012, with the East Midlands also reflecting this growth up to 2023. However, in Nottinghamshire, sales have remained relatively flat since 2012, indicating unique local factors influencing demand. The reasons for this trend have been discussed in earlier sections of the report.

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5.25 The identified infrastructure projects in Nottinghamshire are somewhat uncertain and consequently it is not possible to conclude there will be increase in aggregate demand;

5.26 Nottinghamshire's population is projected to grow steadily throughout the plan period, which could increase the demand for aggregates. Planned housing construction rates are expected to rise but the trajectories compared to historic rates are ambitious and there is no firm indication that they will be achieved. Continuous monitoring of actual housing completions is essential, as these figures provide a more accurate reflection of economic health and construction demand. While house building will contribute to overall aggregate demand, it is only one of several factors to consider.

5.27 Demand for sand and gravel from Rotherham and Doncaster is likely to persist, given the limited resources available in those areas. Remaining reserves in the Idle Valley are projected to meet short-term needs; however, as these resources are depleted, sourcing sand and gravel may necessitate transportation from greater distances.

5.28 Future demand for sand and gravel from Leicestershire may rise, but current data does not provide clarity on the specific quantities required or the timelines involved. Economic

conditions will play a significant role in shaping this demand.

5.29 Based on the information currently available, it is concluded that evidence suggests no immediate necessity to identify additional aggregate reserves to accommodate future growth throughout the plan period beyond the rolling 10 year average sales levels.

Conclusion

6.1 The provision of sand and gravel is the biggest issue for Nottinghamshire and Nottingham over the plan period. The 10-year sales average has fallen from 2.05 million tonnes in the LAA published in 2014 to 1.29 million tonnes in this LAA. This decline is largely attributed to the impact of the recession in 2007, followed by a slow recovery in construction activity and changing market demands. Despite the presence of significant sand and gravel resources in the Trent Valley, ongoing economic uncertainties and shifts towards alternative materials in construction continue to suppress sales figures.

6.2 Additional reserves will be needed over the plan period to 2036 to replace existing quarries as they are worked out. The adopted Minerals Local Plan allocates a mix of extensions to existing permitted quarries and one new quarry. The expected commencement of quarrying at the large Sturton le Steeple quarry is welcomed.

6.3 Several significant infrastructure projects are planned in Nottinghamshire, but implementation is uncertain caused by changes to public sector funding arrangements. Whilst an increase in housing development is forecast, housing completion rates may remain unpredictable due to economic conditions.

6.4 Resource depletion in the Idle Valley is likely to be offset by the expected working of Sturton le Steeple quarry which will influence future exports to South Yorkshire. The extent of the impact will depend on the level of demand, due to economic conditions, and the increasing trend of replacing sharp sand with crushed rock in concreting products.

6.5 Demand for additional sand and gravel from Leicestershire may increase in the future however at present its unclear as to the quantities that maybe needed and the timescales for this. To a certain extent demand will also depend on future economic conditions. As a result, this will be monitored through annual sales and future Aggregate Working Party full survey minerals movement data.

6.6 Sherwood Sandstone sales are much lower than sand and gravel sales, with sales significantly lower in the past three years below any previous years. Additional reserves will be needed over the plan period and as part of the adopted Mineral plan allocates extensions to the existing permitted quarries.

6.7 The importation of crushed rock from adjoining areas to meet the County's needs is set to continue as limestone sales from Nottinghamshire remain at zero. The permitted but mothballed quarry at Nether Langwith contains permitted reserves and could be re-opened by the operator to meet additional demand in the future.

6.8 Recycled and secondary aggregates continue to play an important role in meeting wider aggregate demand, however the ability of recycled aggregates to replace primary aggregates will be dependent on a range of issues such as availability, cost, and the technical specifications required for specific end uses. As these types of aggregates are available on the open market, their contribution is already considered when calculating future demand for primary aggregates.

6.9 The LAA will be reviewed annually taking account of the most recent aggregate sales data and any other relevant local data. This will ensure that there is an adequate and steady supply of aggregate minerals provided over the plan period and that any fluctuations in future requirements can be addressed.