Norfolk County Council

Norfolk Minerals and Waste Local Plan

Monitoring Report - Mineral Data
Local Aggregate Assessment
for calendar year 2020

December 2021

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Executive Summary

Summary of sand and gravel conclusions	Performance in 2020	In comparison with previous year (2019 data)
Land-won sand & gravel sales (million tonnes, Mt)	1.312	 - 0.017 (1.329)
Permitted reserves of sand & gravel (Mt)	14.511	 + 0.996 (13.515)
Annual production as a % of Apportionment figure	51%	 -1 (52%)
Landbank based on 10 years sales average (years)	10.6	 + 0.64 (9.96)
Landbank based on 3 years sales average (years)	10.49	 +1.37 (9.12)
Landbank based on Apportionment figure (years)	5.65	 + 0.4 (5.25)
Number of allocated sites without planning permission	17 (but 5 sites are unlikely to be delivered)	18 (but 5 sites are unlikely to be delivered)
Potential yield (Mt) from allocated sites without planning permission	15.24Mt (but 5 sites with 3.2Mt are unlikely to be delivered) The potential yield has been revised for six allocated sites.	18.85 Mt (but 5 sites with 3.2Mt are unlikely to be delivered)

E.1 There are two general mineral types which are extracted for aggregate use in Norfolk. These are sand and gravel and carstone, and key facts on the production of these minerals during the calendar year 2020 are shown below.

Sand and Gravel key facts

- Annual production was 1.312 million tonnes (mt) up to 31 December 2020.

  Annual production was 1.3% down on production in 2019 of 1.329mt
- The 10-year average of annual production was 1.369mt up to the end of 2020.
- The 10-year average for 2020 was 0.7% up on the 2019 figure of 1.359mt.
- The 3-year rolling average was 1.384mt up to 31 December 2020.

  The 3-year rolling average was 6.6% down on the 2019 figure of 1.482mt.
- Norfolk's apportionment of sand and gravel from sub-national guidelines is currently 2.57mt, having previously been 2.98mt until the end of 2010 and 3.4mt prior to 2003.

  The annual production for 2020 (1.312 mt) was 51% of the apportionment target; this was down by 1.3% on the annual production for 2019, which was 52% of the apportionment target.

Sand and gravel production in Norfolk has not reached the apportionment target in the last twenty years. The 20-year average of annual production is 1.755 mt.

- There were two planning permissions granted for additional sand and gravel extraction totalling 2,670,000 tonnes, in 2020.
- Reserves of sand and gravel at 31 December 2020 were 14,511,385 tonnes, an increase of 7.4% on the 2019 figure (13,515,491 tonnes).
- Based on the 10-year average production figure of 1.369mt, the remaining allocated sites in the Minerals Site Specific Allocations Plan (excluding sites in Shropham and Swardeston which are no longer expected to be delivered) would provide a further 8.8 years of sand and gravel resource (12.03 Mt).

Carstone key facts

- Annual production was 55,907 tonnes up to 31 December 2020.

  Annual production was 40.2% up on production in 2019 of 39,878 tonnes.
- The 10-year rolling average was 75,138 tonnes up to 31 December 2020.

  The 10-year rolling average was 0.3% down on the 2019 figure of 75,381 tonnes.
- The 3-year rolling average was 67,354 tonnes up to 31 December 2020.

  The 3-year rolling average was 17.1% down on the 2019 figure of 81,245 tonnes.
- Norfolk's apportionment of carstone from sub-national guidelines is currently 200,000 tonnes, having previously been 250,000 prior to 2003.

  The annual production for 2020 (55,907 tonnes) was 28% of the apportionment target; this was 8% higher than the 2019 figure.

  Carstone production in Norfolk has reached the apportionment target once in the last twenty years. The 20-year average of annual production is 110,432 tonnes.

Recycled and secondary aggregate key facts

Note: this data is for 2019 (2020 data is not yet available)

Please note that the data contains inert construction and demolition waste; some parts of this waste stream are unsuitable for use as recycled aggregate, however it is not possible to disaggregate these wastes from the totals.

- Annual production was approximately 632,000 tonnes up to 31 December 2019.

  Annual production was approximately 28% up on production in 2018/19 of 494,000 tonnes.

  However, the 2019 figures were produced using the Environment Agency's Waste Data Interrogator, whereas all previous years' figures were from the County Council's own survey of permitted waste management facilities and mineral workings. The Environment Agency's Waste Data Interrogator includes some sites that do not have planning permission from Norfolk County Council and therefore these sites had not been included in previous Norfolk County Council surveys.
- The 10-year rolling average was 434,600 tonnes up to 31 December 2019.

  The 10-year rolling average was approximately 5.5% up on the 2018/19 figure of 412,100 tonnes.

- The 3-year rolling average was 515,000 tonnes up to 31 December 2019.

  The 3-year rolling average was approximately 15% up on the 2018/19 figure of 449,000 tonnes. This may have been due to 2019 data having been produced for the first time using the Environment Agency's Waste Data Interrogator.

Conclusion

E.2 Norfolk's share of the sub-national guideline figures (the apportionment) for sand and gravel of 2.57 million tonnes per annum and carstone of 0.2 million tonnes per annum is higher than the 10-year, 3-year or 20-year average figures derived from local production. These higher figures were used in Core Strategy Policy CS1 as the basis for allocations to plan for the provision of a steady and adequate supply of aggregate and provide flexibility.

E.3 Average annual sales of 1.37 million tonnes for sand and gravel and 0.075 million tonnes for carstone (as at 31/12/20) have been derived from a ten-year sales-based assessment compliant with the NPPF and NPPG.

E.4 The emerging Minerals and Waste Local Plan is the most appropriate place to determine a revised target for Core Strategy Policy CS1, having regard to the data in this LAA. The aim of any revised target will be to achieve an adequate and steady supply of aggregate over the revised plan period to 2038, recognising that Norfolk has not met the apportionment figure for many years. Minerals sales figures for Norfolk will be used to determine the most appropriate production figure for site allocations to be based on, considering the need to balance flexibility in supply to meet growth targets, while ensuring the timely completion and restoration of aggregate extraction sites.

E.5 The Initial Consultation document proposed that the 20-year average would provide the best approach as this time period includes data from at least one complete economic cycle, alternatives such as the 10-year rolling average were also included in the consultation document. The 20-year average production contained in the Initial Consultation covered the period from 1997-2016 and was 1,980,000 tonnes per annum for sand and gravel and 126,500 tonnes per annum for carstone.

E.6 The six-week Preferred Options consultation on the Minerals and Waste Local Plan Review took place during September/October 2019. More recent minerals data was available, and the 20-year average production contained in the Preferred Options document covered the period from 1999-2018 and was 1,868,000 tonnes per annum for sand and gravel and 121,400 tonnes per annum for Carstone.

E.7 The Minerals Plan is up to date in relation to the supply of aggregate, and the County Council considers that sufficient sand and gravel allocations within the plan to meet the current adopted CS1 target, to 2026, are deliverable.

E.8 Norfolk County Council undertook a Single Issue Silica Sand Review of the Minerals Site Specific Allocations Plan. This was examined in March 2017 and found sound and legally compliant; and was adopted by the Council in December 2017. Silica sand is a nationally important industrial mineral and is not used for aggregate uses in Norfolk.

E.9 Secondary & Recycled Provision Allowance to 2026 – the locally derived data available on secondary and recycled aggregate is variable and not considered completely comprehensive because many operations, such as on-site recovery, are not recorded. The data contains inert and Construction/Demolition waste; some parts of this waste stream are unsuitable for use as recycled aggregate, however it is not possible to disaggregate these wastes from the totals. This makes it difficult for Norfolk County Council to reduce the level of land won aggregate provision on this basis. The work carried out to produce the aggregate apportionment figures

for the period 2005-2020 took account of the capacity of facilities to provide recycled and secondary aggregates i.e. the assumptions are built into the apportionment figure. Planned aggregate provision will be reviewed as part of the current Minerals and Waste Local Plan Review but it is not proposed to make any adjustments to the forecast mineral requirement figures based on secondary and recycling aggregate provision due to the quality of the data.

E.10 Marine Sources Requirement to 2026 – the total of less than 500 tonnes of marine sourced aggregate represents such a small percentage of the total aggregates used in Norfolk it is not proposed to make any adjustments to the mineral requirement figures based on marine sourced aggregates.

1. Introduction

1.1 This document is Norfolk's Local Aggregate Assessment. In order to provide information on all of Norfolk's mineral extraction in one place, data on non-aggregate minerals has been included in separate sections at the end of this LAA. The non-aggregate minerals worked in Norfolk are silica sand, clay and chalk.

1.2 Annual monitoring of aggregate production and reserves in Norfolk has been carried out since 1975. In 2020 almost all the active sites produced sand and gravel, although there are three carstone (a type of sandstone) workings in West Norfolk producing fill and aggregates. In addition, there is one clay working, three active chalk workings and one major silica sand operation in the County. These existing sites are listed in this document in sections 7 and 8.

1.3 The National Planning Policy Framework (NPPF) (July 2021) paragraph 213 requires Mineral Planning Authorities to plan for a steady and adequate supply of aggregates by determining their own levels of aggregate provision based on a rolling average of 10 years sales data and other relevant local information. The National Planning Practice Guidance (NPPG) contains current government guidance regarding Local Aggregate Assessments (LAA).

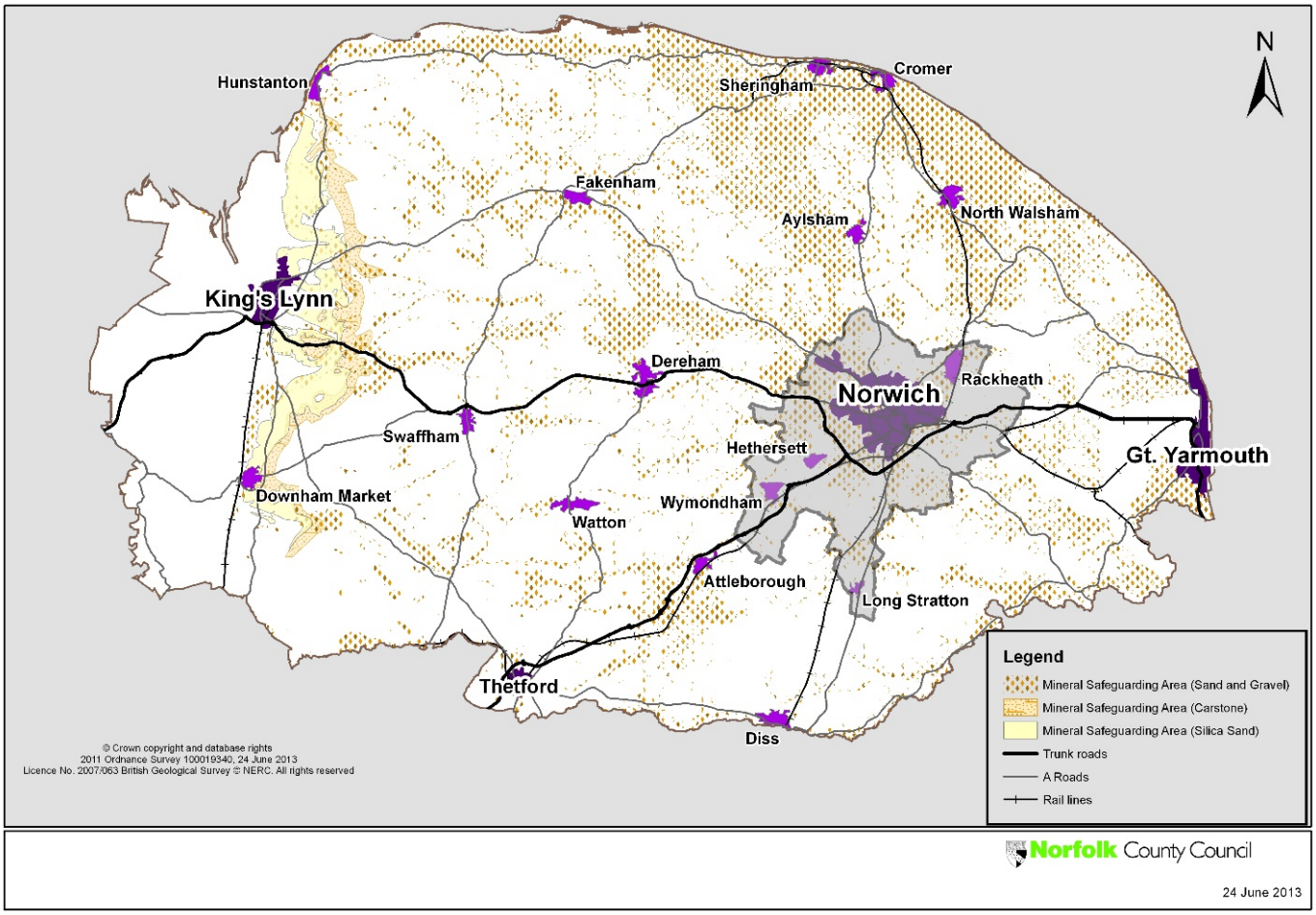
1.4 The NPPG contains similar requirements to the previous MASS guidance in relation to LAA's and states that LAAs are a monitoring report to provide "an annual assessment of the demand for and supply of aggregates in a mineral planning authority's area."

1.5 LAAs should include:

- a forecast of the demand for aggregates based on both the rolling average of ten-year sales data, and other relevant local information;
- an analysis of all aggregate supply options; this analysis should be informed by planning information, the aggregate industry and other bodies such as local enterprise partnerships; and,
- An assessment of the balance between demand and supply, and the economic and environmental opportunities and constraints that might influence the situation.

1.6 The rolling average of 10-years sales data will inform the targets for mineral extraction requirements. The LAA is a part of the evidence base and will inform the Mineral and Waste Local Plan Review. It is important to note that the landbank figures included within the LAA are, as stated in the NPPG, "principally a monitoring tool to provide a Mineral Planning Authority with early warning of possible disruption to the provision of an adequate and steady supply of land-won aggregates". As landbanks relate to the provision of aggregates, a figure below 7 years for aggregate and 10 years for crushed rock should be used as a trigger to determine whether an early review of the Local Plan is required.

Minerals in Norfolk



Map 1: Mineral resources in Norfolk

1.7 Sand and gravel is the main aggregate worked in Norfolk. Sand and gravel resources are located throughout the county (except for the Fens area in the far west and south-west of Norfolk). Sand and gravel is used in the construction of roads and buildings and is a key ingredient in the production on concrete and mortar, asphalt coating for road, as a drainage medium and in the constriction of embankments and foundations.

1.8 Carstone is a type of sandstone that is quarried in relatively small quantities in West Norfolk. It has traditionally been used as a vernacular building material, although it is no longer used to any significant degree. Although classed as a 'hard rock' it is not used as a hard rock (for example road surface dressing), instead it is mainly used as a fill material, to raise levels of land prior to construction, or in the formation of embankments. Therefore, carstone is often used in the construction of roads. Crushed rock for asphalt production is imported into Norfolk mainly by rail as no indigenous material is suitable for this use.

1.9 Norfolk is a county rich in important wildlife and designated landscapes. Currently there are eight Ramsar sites, 12 Special Protection Areas (SPAs), nine Special Areas of Conservation (SACs) and 163 Sites of Special Scientific Interest (SSSIs). Significant habitats include the Wash, the Broads, the Brecks and the Fens. The Norfolk Coast Area of Outstanding Natural Beauty (AONB) runs, with a few breaks, from King's Lynn in the west along the coast to Winterton in the east, and covers 450 square km. These designations often restrict the location of mineral activities.

2. Sand and Gravel

2.1 Production

2.1.1 Norfolk County Council carries out an annual survey for sand and gravel production, and the totals from this survey are included in this report. The totals for the last 10 years are shown in table 1 below:

Year	Production (tonnes)
2011	1,289,000
2012	1,131,941
2013	1,114,935
2014	1,359,620
2015	1,414,959
2016	1,622,566
2017	1,604,973
2018	1,511,054
2019	1,328,907[1]
2020	1,312,091

Table 1: Sand and gravel 10-year sales 2011-2020

Source: Norfolk County Council - annual minerals survey

2.1.2 Sand and gravel is important as a construction aggregate and prior to the introduction of the NPPF and National Planning Policy Guidance it was planned using a system known as the Managed Aggregate Supply System. A key part of the MASS was an apportionment system for national need. A national requirement for sand and gravel was calculated, and this was then divided into sub-national requirements, which were in turn apportioned to individual MPAs as provision to be planned for.

2.1.3 Since the introduction of the NPPF, the MASS guidance has been cancelled and the national and sub-national requirements have become guidelines. These guidelines form part of the information relevant to the calculation of future demand in a Local Aggregate Assessment. The table below shows annual production as a proportion of the apportionment/guideline figure. It can be seen that the apportionment figure has not been met by production in the last 10 years, despite a number of workings having been mothballed during that time demonstrating that there was spare productive capacity.

[1] A national Aggregate Mineral Survey was carried out by the British Geological Survey (BGS) in 2019 (AMS 2019) which recorded sand and gravel sales in Norfolk as 1.280 million tonnes in 2019, compared to Norfolk County Council's own survey of mineral operators which recorded 1.329 million tonnes in 2019.

Year	Apportionment/ guideline	Production	% Apportionment Produced
2011	2,570,000	1,289,000	50%
2012	2,570,000	1,131,941	44%
2013	2,570,000	1,114,935	43%
2014	2,570,000	1,359,620	53%
2015	2,570,000	1,414,959	55%
2016	2,570,000	1,622,566	63%
2017	2,570,000	1,604,973	62%
2018	2,570,000	1,511,054	59%
2019	2,570,000	1,328,907	52%
2020	2,570,000	1,312,091	51%

Table 2: Sand and Gravel production as a % of apportionment

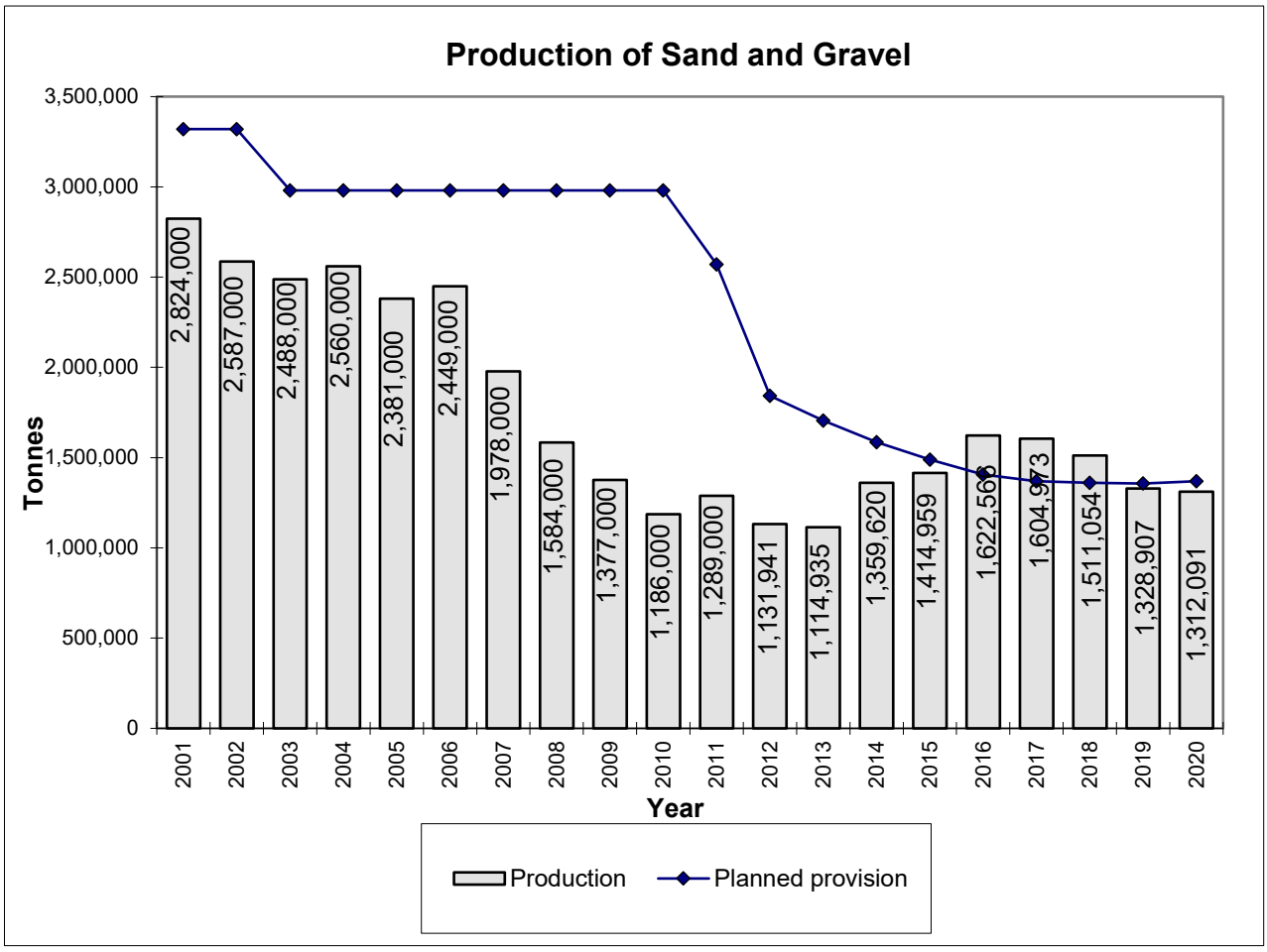


Figure 1: Sand and gravel sales 2001-2020

Source: Norfolk County Council – annual minerals survey.

2.1.4 Sand and gravel production in 2020 was 1,312,090 tonnes, representing a decrease of 1.3% on the 2019 figure. Therefore, the COVID-19 pandemic appears to have only had a very minimal impact on sand and gravel sales in Norfolk during 2020. Production of sand and gravel

continues to be below the average for the last twenty years of about 1.755 million tonnes (mt) per annum. **The average over the last 10 years was 1.369 million tonnes per annum.** The NPPG states that the 10-year rolling average is the starting point for the calculation of future demand for aggregate landbanks. The ten-year rolling average has been stable for the last four reporting years.

Year	10-Year Average
2016	1.41 million tonnes
2017	1.37 million tonnes
2018	1.36 million tonnes
2019	1.36 million tonnes
2020	1.37 million tonnes

Table 3: 10-year rolling average of sand and gravel production for the last five years

2.1.5 The rolling 3-year average is 1.384 million tonnes (mt) per annum. This indicates a decrease for sand and gravel with this year's production reducing the 3-year average from 1.48 Mt to 1.38 Mt. However, it is still higher than each of the five years from 2011 to 2015. The three-year rolling averages for the last 5 years are as follows:

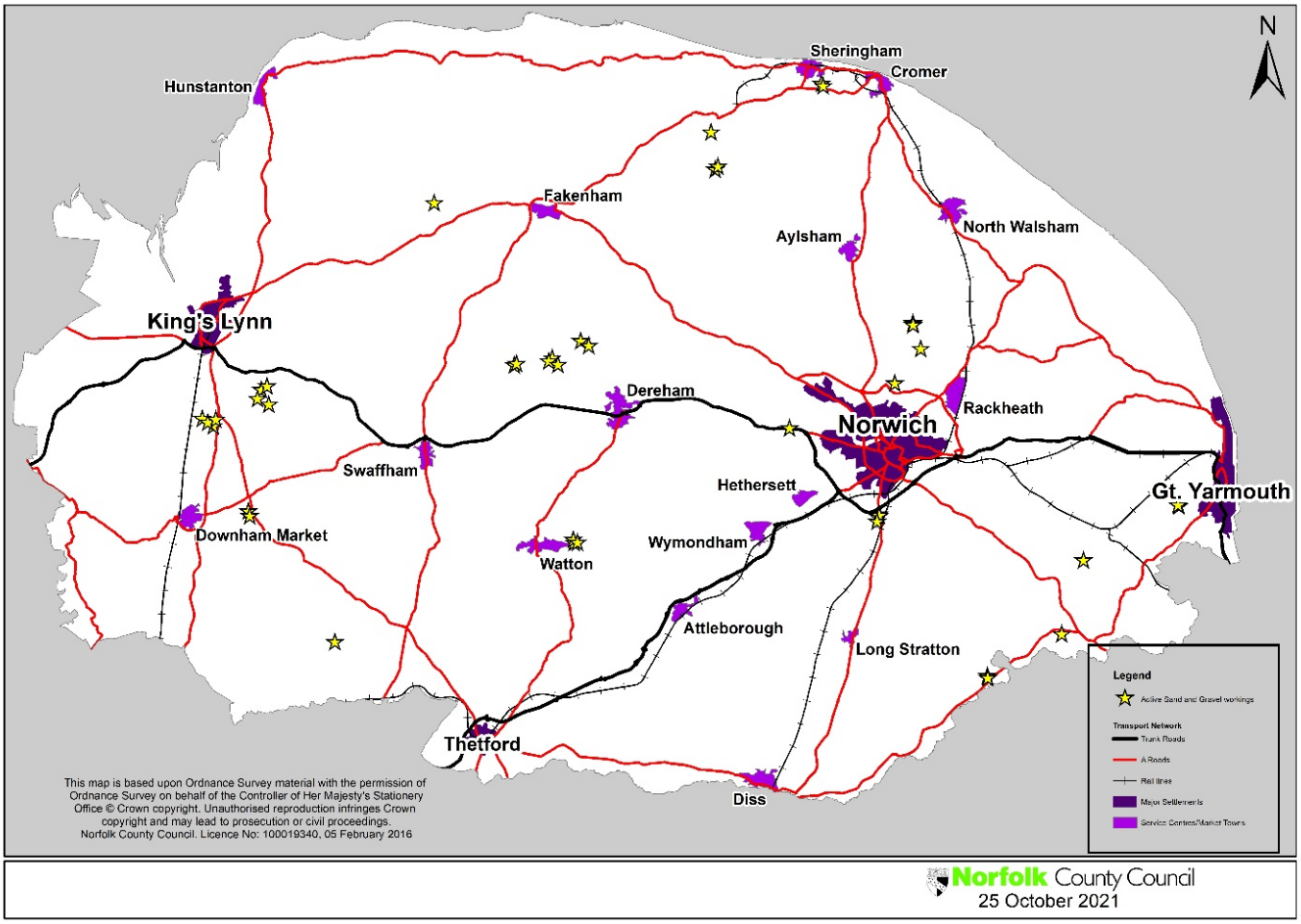
Year	3-Year Average
2016	1.47 million tonnes
2017	1.55 million tonnes
2018	1.58 million tonnes
2019	1.48 million tonnes
2020	1.38 million tonnes

Table 4: 3-year rolling average of sand and gravel production for the last five years

2.1.6 The NPPG suggests the use of 3-year average figures to indicate recent trends in sales. As can be seen from the table above, the rolling three-year average since 2015 has shown a general upward trend, although the 3-year average has fallen in 2020, but it is still higher than the 10-year average.

2.1.7 The NPPG suggests that the 10-year rolling average, 3-year rolling average and the sub-national guidelines should all be considered in order to establish a broad understanding of current and future mineral demand, especially during reviews of planned provision.

2.2 Active Sand and Gravel extraction sites in Norfolk in 2020



Map 2: Sand and Gravel extraction sites in Norfolk in 2020

Parish	Operator	Address	End date of Permission
Beeston Regis	Norfolk Gravel Ltd	Briton's Lane, Beeston Regis, Sheringham (new permission for extension area granted 23/10/2020)	22/02/2042 (31/12/2032)
Burgh Castle	Folkes Plant & Aggregates Ltd	Welcome Pit, Butt Lane, Burgh Castle, Great Yarmouth	31/12/2025
Carbrooke	4 Leaf Enterprises Ltd	Carbrooke Quarry, Mill Lane, Carbrooke	09/08/2027
Crimplesham	Mick George Ltd (Frimstone)	Crimplesham Quarry, Ashcraft Farm, Main Road, Crimplesham	21/12/2022
Earsham	Earsham Gravels Ltd	Earsham Quarry, Bath Hills Road, Earsham (new permission for land off Hall Road and Pheasants Walk, Earsham granted 9/11/2020)	31/12/2020 (09/11/2040)
East Beckham	Gresham Gravel Ltd	East Beckham Quarry, Holt Road, Upper Sheringham	31/12/2031

Parish	Operator	Address	End date of Permission
East Bilney	Middleton Aggregates Ltd	East Bilney Quarry, Rawhall Lane, East Bilney, Nr Dereham	31/12/2026
East Rudham	Longwater Gravel Co Ltd	Coxford Abbey Quarry, Docking Road, Syderstone, Fakenham	20/05/2027
Feltwell	L P Pallett Quarry (Feltwell) Ltd	Feltwell Quarry, Lodge Road, Feltwell, Thetford	22/02/2042
Horstead with Stanninghall	Longwater Gravel Co Ltd	Horstead Quarry, Buxton Road, Horstead	31/12/2024
Horstead with Stanninghall	Tarmac Trading Ltd	Stanninghall Quarry, Norwich Road, Horstead	26/01/2021
Holt	Breedon Trading Ltd	Holt Quarry, Hunworth Road, Holt	31/12/2030
Kirby Cane	The Lyndon Pallet Group Ltd	Feltwell Quarry, Yarmouth Road, Kirby Cane, Bungay	31/12/2025
Litcham	East Anglian Stone Ltd	Punch Farm Quarry, Watery Lane, Litcham	01/08/2031
Longham	McLeod Aggregates Ltd	Bittering / Longham Quarry, Reed Lane, Longham, Dereham	31/12/2032
Middleton	Middleton Aggregates Ltd	East of Mill Drove, Blackborough End, King's Lynn	26/01/2021
Middleton	William George Sand and Gravel Ltd	Land off Mill Drove, Blackborough End, King's Lynn	31/12/2024
Pentney	Middleton Aggregates Ltd	Pentney Quarry, Abbey Road, Pentney	31/12/2024
Raveningham / Norton Subcourse	Breedon Trading Ltd	Norton Subcourse Quarry, Loddon Road, Hales	20/02/2036
Stody	Mick George Ltd (Frimstone)	Briston Stody Estate, Breck Farm, Stody	31/03/2026
Swardeston	Tarmac Trading Ltd	Mangreen Quarry, Ipswich Road, Swardeston, Norwich	11/12/2021
Tottenhill	Mick George Ltd (Frimstone)	Watlington Quarry, Watlington Road, Tottenhill	31/12/2023
Wymondham	Longwater Gravel Co Ltd	Wymondham Quarry, Stanfield Road, Wymondham	30/03/2026

Table 5: Active sand and gravel extraction sites in 2020

2.3 Sand and gravel landbank of permitted mineral reserves

2.3.1 Two planning permissions were granted in 2020 for additional sand and gravel extraction: 1,000,000 tonnes at Beeston Regis and 1,670,000 tonnes at Earsham, which together add 2,670,000 tonnes of new permitted reserves to the landbank.

2.3.2 Reserves of sand and gravel at 31 December 2020 were 14,511,380 tonnes, an increase of 7.4% on the 2019 figure. In addition to the 1,670,000 tonnes of reserve granted in planning permissions in 2020, there were also five planning applications for additional sand and gravel extraction in the process of being determined during 2020.

2.3.3 The Norfolk 'Core Strategy and Minerals and Waste Development Management Policies DPD', was adopted by the County Council in September 2011. Policy CS1 of the Core Strategy states that the sand and gravel landbank will be maintained at between 7 and 10-year's supply. An upper limit of 10 years was placed on the landbank in Norfolk to ensure the timely working and restoration of mineral workings. This is because of the nature of mineral working in Norfolk which is undertaken by fourteen operators across twenty-four sites.

2.3.4 The landbank at 31/12/2020, based on the 10-year average production data, was 10.6 years and therefore slightly above the range for the landbank indicated in Policy CS1, and above the minimum target contained in national policy and guidance. The landbank is calculated as follows:

Permitted sand and gravel reserves (as at 31/12/20) = 14,511,380 tonnes

10-year average sand and gravel sales **=** 1,369,000 tonnes

Resulting sand and gravel landbank **=** 10.6 years

2.3.5 Policy CS1 sought to provide for the planned provision of a steady and adequate supply of mineral, by indicating a requirement to make specific site allocations having regard to the sub-national guidelines (the apportionment), and the 10-year rolling average.

2.3.6 It is important to note that the landbank figures are, as stated in the NPPG, "principally a monitoring tool to provide a Mineral Planning Authority with early warning of possible disruption to the provision of an adequate and steady supply of land-won aggregates". As landbanks relate to the provision of aggregates, a figure below 7 years for aggregate should be used as a trigger to determine whether a review of the Minerals and Waste Local Plan is required.

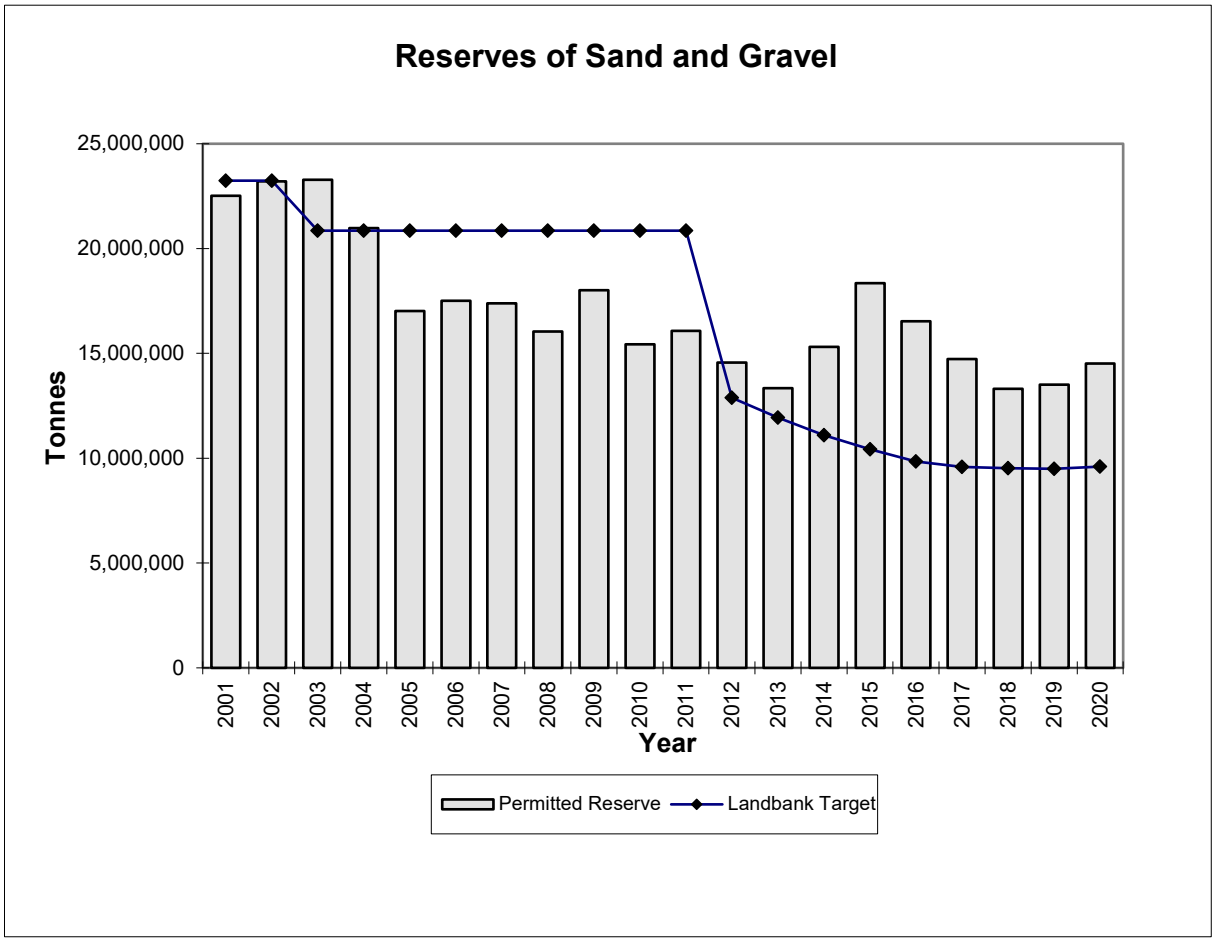


Figure 2: Sand and gravel reserves and landbank target

Source: Norfolk County Council – annual minerals survey

2.3.7 The Minerals Site Specific Allocations DPD allocated 26 sand and gravel sites which contained 2.5mt more than the total tonnage required in CS1, at the point of examination (March 2013). The estimated resource for the 26 sites was 27.59Mt compared with a requirement based on policy CS1 of 25.04mt. Table 7 shows the status of all the sand and gravel specific site allocations in the adopted Minerals Site Specific Allocations DPD. Since 2017, the mineral resource estimates for six of the allocated sites have been revised by the proposers of the sites. Therefore, the estimated resource for the 26 allocated sites is now 24.686Mt, which is slightly below the requirement contained in Policy CS1. The following paragraphs calculate the remaining allocated mineral resource based on the revised total of 24.686Mt.

2.3.8 Norfolk County Council adopted the Minerals Site Specific Allocations DPD in October 2013. By the end of 2020 planning permission had been granted for 9.74Mt of sand and gravel extraction from allocated sites. Three of the allocated sites had received planning permission for only part of the site. All mineral planning applications submitted so far for allocated sites have been found suitable and granted permission.

2.3.9 This leaves an estimated further 15.24Mt of allocated sand and gravel resource which had not received planning permission at the end of 2020. However, the allocated sites in Shropham (MIN 108, MIN 109 and MIN 110) and Swardeston (MIN 79 and MIN 80) are no longer expected to be delivered; together these five sites are estimated to contain 3.21 Mt, which reduces the deliverable allocated sand and gravel resource which has not received planning permission to **12.03Mt**.

2.3.10 As shown in Table 6, the permitted reserve was 14.51mt on 31/12/2020 and the sand and gravel landbank on 31/12/2020 was 10.58 years. The 10-year average sales of sand and gravel in the period to the end of 2020 were 1.369mt per annum. Based on this 10-year sales average, the remaining allocated sites (excluding those in Shropham and Swardeston) would provide 8.8 years of sand and gravel resource. This resource plus the existing permitted reserve would last 19.4 years; until 2040. Therefore, the permitted and allocated sites together would provide sufficient resources past the end of the adopted plan period (2026).

2.3.11 The production of the Minerals and Waste Local Plan (M&WLPR) has commenced because five years have passed since the adoption of the Minerals SSA DPD, and the requirement for a review was specified in the adopted document. The M&WLP will extend the Plan period to the end of 2038; this would coincide with the Plan period for other emerging Local Plans in Norfolk. Of the remaining 19 sites allocated in the adopted Minerals Site Specific Allocations DPD, 14 were carried forward for consideration into the review process, following confirmations of continued landowner willingness. A 'call for sites' was undertaken in 2017 and 24 additional sites for potential future sand and gravel extraction were submitted by landowners, mineral operators or agents, plus one further site submitted in response to the Initial Consultation.

2.3.12 The Initial Consultation document of the M&WLPR was subject to public consultation for six weeks in June-August 2018. In the Initial Consultation document, a total of 25 sites were proposed to be allocated as suitable for future sand and gravel extraction to meet the forecast need up to the end of 2036.

2.3.13 The Preferred Options document of the M&WLPR was subject to public consultation for six weeks in September-October 2019. In the PO document, a total of 20 sites were proposed to be allocated as suitable for future sand and gravel extraction to meet the forecast need up to the end of 2036. Two sites were withdrawn from the Local Plan process and one site received planning permission before the PO stage.

Location (district / parish)	**Site reference**	**Date permission granted**	**Allocated resources (tonnes)**	**31/3/12-31/12/20 Permitted reserve (tonnes)**
Breckland / Beetley	MIN 10	April 2015 (part of site)	2,400,000 (but revised to 1,855,000 in 2017)*	680,000
Breckland / Beetley	MIN 51		1,300,000 (but revised to 500,000 in 2017)*	
Breckland / Shropham	MIN 108	Site not expected to be developed	150,000	
Breckland / Shropham	MIN 109	Site not expected to be developed	400,000	
Breckland / Shropham	MIN 110	Site not expected to be developed	150,000	
Breckland / Snetterton	MIN 102		1,500,000 (but revised to 980,000 in 2017)*	
Broadland / Attlebridge	MIN 55		525,000	
Broadland / Buxton with Lammas & Frettenham	MIN 37	Application submitted	1,450,000	
Broadland / Felthorpe	MIN 48		1,900,000	

Location (district / parish)	Site reference	Date permission granted	Allocated resources (tonnes)	31/3/12-31/12/20 Permitted reserve (tonnes)
Broadland / Horstead with Stanninghall	MIN 64	Nov 2012 (part of site) Application submitted for remainder of site	950,000	350,000
Broadland / Spixworth & Horsham St Faith & Newton St Faith	MIN 96		1,000,000 (but revised to 1,600,000 in 2017)*	
King's Lynn & West Norfolk / Pentney	MIN 19	Application submitted	700,000 (but revised to 400,000 in 2017)*	
King's Lynn & West Norfolk / East Rudham	MIN 45	May 2014 (part of site)	3,600,000 (but revised down to 2,260,000)*	1,560,000
King's Lynn & West Norfolk / Tottenhill	MIN 76	April 2019	285,000	285,000
King's Lynn & West Norfolk / Watlington	MIN 75	November 2015	335,000	335,000
North Norfolk / Aylmerton	MIN 69	October 2020	750,000	1,000,000
North Norfolk / East Beckham	MIN 84	August 2014	1,600,000	1,600,000
North Norfolk / Holt	MIN 71		1,100,000	
North Norfolk / North Walsham	MIN 115		1,100,000	
South Norfolk / Heckingham & Norton Subcourse	MIN 83 & MIN 91 & MIN 90	February 2015	2,331,000	2,370,000
South Norfolk / Stoke Holy Cross	MIN 81	October 2015	955,000	960,000
Stoke Holy Cross, Swainsthorpe & Swardeston	MIN 79	Site not expected to be developed	1,750,000	
South Norfolk / Swardeston	MIN 80	Site not expected to be developed	760,000	
South Norfolk / Wymondham	MIN 118	January 2014	600,000	600,000
Total	N/A	N/A	**27,591,000** **(but revised down to 24,686,000 in 2017)**	**9,740,000**

*where mineral resource estimates were revised in 2017 this was done by the site proposer when the site was resubmitted for consideration in the emerging Minerals and Waste Local Plan

Table 6: Status of sand and gravel site allocations

3. Carstone

3.1 Production

3.1.1 Norfolk County Council carries out an annual survey for carstone production. The totals for the last 10 years are shown in table 8 below, and for the last 20 years in Figure 3 below:

Year	Production (tonnes)
2011	62,308
2012	118,288
2013	37,193
2014	60,189
2015	67,320
2016	106,438
2017	97,578
2018	106,278
2019	39,878
2020	55,907

Table 7: Carstone 10-year sales 2011-2020

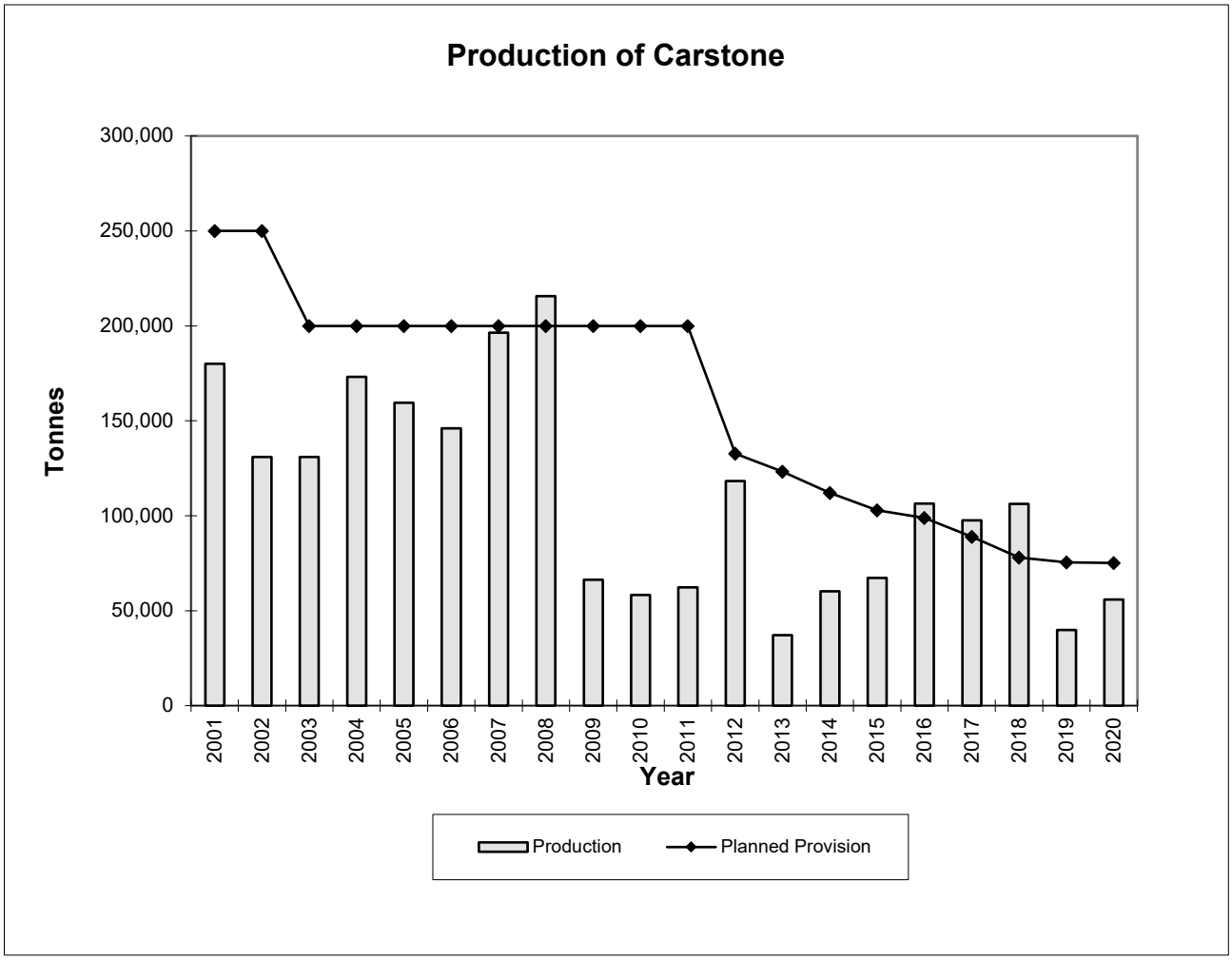


Figure 3: Carstone production 2001-2020 Source: NCC – annual minerals survey.

3.1.2 Carstone production in 2020 was 55,907 tonnes, representing an increase of 40.2% compared with the 2019 figure. Therefore, the COVID-19 pandemic appears to have not had any impact on the Carstone sales in Norfolk during 2020. Carstone production in 2020 was below the average for the last twenty years (110,432 tonnes) and below the average for the last ten years **(75,138 tonnes)**. The NPPG states that the 10-year rolling average should be used in the calculation of aggregate landbanks.

Year	10-Year Average (tonnes)
2016	98,839
2017	88,958
2018	78,023
2019	75,381
2020	75,138

Table 8: 10-year rolling average of carstone production for the last five years

3.1.3 The rolling 3-year average is 67,354 tonnes per annum. The production of carstone is concentrated into relatively few workings and the production fluctuates significantly from year to year dependent on individual construction projects that require significant amounts of fill material, as can be seen in table 4 above. These fluctuations mean that the three-year rolling average can also vary significantly year to year. This means that it is of less value in helping to identify production trends for carstone compared with sand and gravel. The three-year rolling averages for the last 5 years are as follows:

Year	3-Year Average (tonnes)
2016	77,982
2017	90,445
2018	103,431
2019	81,245
2020	67,354

Table 9: 3-year rolling average of carstone production for the last five years

3.1.4 The NPPG suggests that the 10-year average, 3-year average and the sub-national guidelines should all be had regard to in order to establish a broad view of mineral demand, especially during reviews of planned provision.

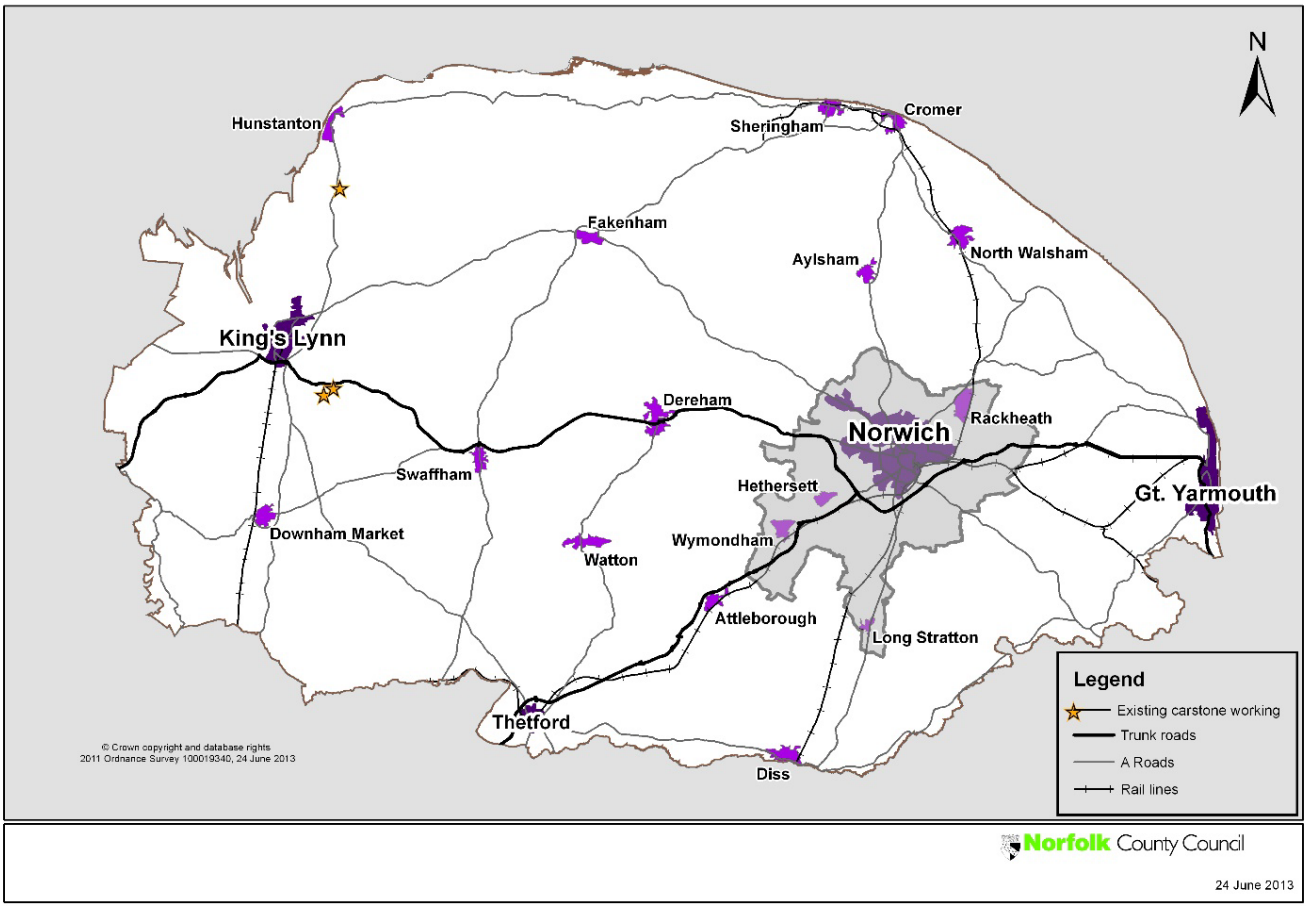
3.1.5 Carstone is mainly used as a construction aggregate, however prior to the introduction of the NPPF and National Planning Policy Guidance carstone was planned as part of the national hard rock requirement. A key part of the MASS was an apportionment system for national need. A national requirement for hard rock was calculated, and this was then divided into sub-national requirements, which were in turn apportioned to individual MPAs as provision to be planned for.

3.1.6 Since the introduction of the NPPF, the MASS guidance has been cancelled and the national and sub-national requirements have become guidelines. These guidelines form part of the information relevant to the calculation of future demand in a Local Aggregate Assessment. The table below shows annual carstone production as a proportion of the apportionment/guideline figure. It can be seen that the apportionment figure has not been met by production in the last 10 years.

Year	Apportionment	Production	% Apportionment Produced
2011	200,000	62,308	31%
2012	200,000	118,288	59%
2013	200,000	37,193	19%
2014	200,000	60,189	30%
2015	200,000	67,320	33%
2016	200,000	106,438	53%
2017	200,000	97,578	49%
2018	200,000	106,278	53%
2019	200,000	39,878	20%
2020	200,000	55,907	28%

Table 10: Carstone production as a % of apportionment

3.2 Carstone extraction sites in Norfolk



Map 3: Carstone extraction sites in Norfolk in 2020

Parish	Operator	Address	End date of Permission
Middleton	Middleton Aggregates	West of Mill Drove	17/10/2026
Middleton	Middleton Aggregates	East of Mill Drove	22/08/2022
Snettisham	Frimstone	Norton Hill	04/09/2028

Table 11: Carstone extraction sites in Norfolk in 2020

3.3 Carstone landbank of permitted mineral reserves

3.3.1 Reserves of Carstone at 31 December 2020 were 1,663,000 tonnes which represents a decrease of 3.4% from 2019 figures. No planning applications for carstone extraction were received in the year 2020; and no new planning permissions were granted for carstone extraction.

3.3.2 The Norfolk 'Core Strategy and Minerals and Waste Development Management Policies DPD', was adopted by the County Council in September 2011. Policy CS1 of the Core Strategy states that carstone will be maintained at 10 years' supply. The landbank at 31/12/2020 calculated on the 10-year rolling average sales, as set out in the NPPF was 22.13 years, above the figure for the landbank indicated in Policy CS1, and national guidance. The Carstone landbank is calculated as follows:

Permitted reserves (as at 31/12/20) = 1,663,000 tonnes

10-year average **=** 75,138 tonnes

1,663,000t permitted reserve divided by 75,138 t 10-year average sales = 22.13

Landbank (years) **=** 22.13

3.3.3 It is important to note that the landbank figures are, as stated in the NPPG, "principally a monitoring tool to provide a Mineral Planning Authority with early warning of possible disruption to the provision of an adequate and steady supply of land-won aggregates". As landbanks relate to the provision of aggregates, a figure below 10 years for crushed rock should be used as a trigger to determine whether a review of the Minerals and Waste Local Plan is required.

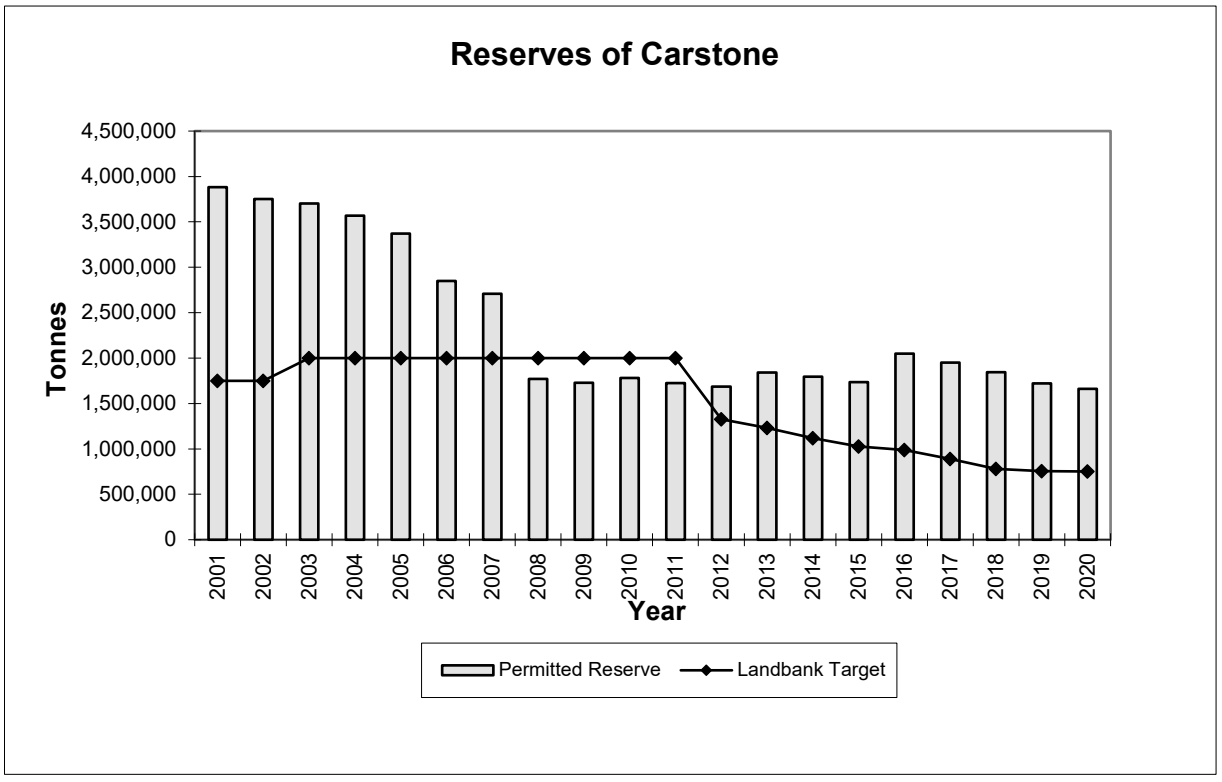


Figure 4: Carstone reserves/landbank target 2001-2020 Source: NCC – annual minerals survey.

3.3.4 The Minerals Site Specific Allocations DPD allocated one carstone site which contained 0.14mt more than the total tonnage required in CS1, at the point of examination (March 2013). The estimated resource for the site was 1.42mt compared with a requirement based on policy CS1 of 1.28mt.

3.3.5 Norfolk County Council adopted the Minerals Site Specific Allocations DPD in October 2013. By the end of 2020 no planning application had been submitted for the extraction of carstone at the allocated site.

3.3.6 Therefore, 1.42 mt of allocated carstone resource remains at the end of 2020. No planning applications were in the process of being determined for allocated carstone resources.

3.3.7 As shown in Table 14, the permitted reserve was 1.663mt on 31/12/2020 and the carstone landbank on 31/12/2020 was 22.13 years. The 10-year average sales of carstone in the period to the end of 2020 was 75,138 tonnes per annum. Based on this 10-year sales average, the remaining allocated site would provide 18.9 years of carstone resource. This resource plus the existing permitted reserve would last until 2061. Therefore, the permitted and allocated sites together would provide sufficient resources past the end of the plan period (2026).

3.3.8 The Minerals and Waste Local Plan Review has commenced because five years have passed since the adoption of the Minerals SSA DPD, and the requirement for a review was specified in the adopted document. The Mineral and Waste Local Plan Review will extend the Plan Period to the end of 2038; this would coincide with the Plan period for other emerging Local Plans in Norfolk. The site allocated in the adopted plan, has been carried forward into the review following a confirmation of continued landowner willingness. A ‘call for sites’ was also undertaken in 2017 however no additional sites for potential future carstone extraction were submitted by landowners, mineral operators or agents.

3.3.9 The Initial Consultation document of the Minerals and Waste Local Plan Review was subject to public consultation for six weeks during June-August 2018, the site allocated in the current adopted plan was proposed to be allocated as suitable for future carstone extraction to meet the forecast need up to the end of 2036.

3.3.10 The six-week Preferred Options Consultation took place during September-October 2019 and the site allocated in the current adopted plan continues to be considered suitable to allocate for future carstone extraction to meet the forecast need up to the end of 2036.

4. Secondary and recycled aggregate

Note: the data in section 4.1 is for 2019 and has not been updated for 2020

In addition to its resources of land won aggregates, secondary and recycled aggregates are also sourced within Norfolk:

Secondary aggregates are by-product wastes e.g. power station ash and colliery spoil that can be used for industrial and low-grade aggregate purposes, either solely or when mixed with primary aggregates.

Recycled aggregates are aggregates produced from recycled construction waste such as crushed concrete, planings from road surfacing etc. Secondary and recycled aggregates can replace primary materials for many uses.

Data for the production of recycled and secondary aggregates is limited, and less reliable than that for other types of aggregate. This part of the assessment reviews the recent reported levels of recycled and secondary aggregate production and the reliability of data to establish whether it would be feasible to reduce the amount of land won mineral required.

4.1 Inert / Construction and Demolition waste management figures

4.1.1 In the Environment Agency's Waste Data Interrogator, it is reported that in 2019 over 632,000 tonnes of the inert / construction and demolition waste received at waste transfer stations, treatment facilities and recycling centres in Norfolk, was recovered. This is an increase of over 138,000 tonnes on the 2018/2019 figure of 494,000 tonnes, which is at least partly due to a change in the method used to gather this data. The data for 2019 was taken from the Environment Agency's Waste Data Interrogator. In all previous years, the data was taken from Norfolk County Council's own survey of waste management sites and mineral workings. The Environment Agency's Waste Data Interrogator includes some sites that do not have planning permission from Norfolk County Council and therefore these sites had not been included in previous Norfolk County Council surveys. This figure includes waste recovered at quarries, and sold as recycled aggregates, as well as waste management facilities.

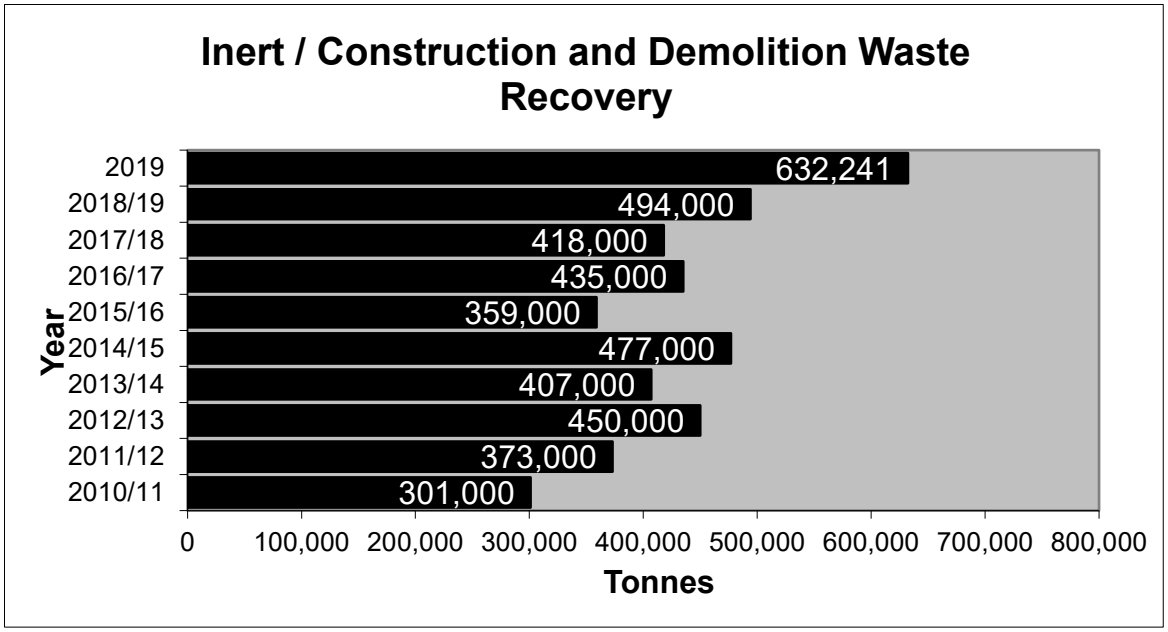


Figure 5: Inert / Construction and Demolition Waste Recovery

Source: Norfolk County Council annual waste survey / Environment Agency Waste Data Interrogator.

4.1.2 The 10-year average figure for inert material and construction/demolition waste recovery is **434,600 tonnes per annum**. This was an increase on the ten-year rolling average for 2018/19 of 412,100 tonnes per annum. The rolling 3-year average for 2019 is approximately **515,000 tonnes per annum**. This is an increase on the 3-year average for the previous year, which was 449,000 tonnes per annum. It should be noted that the quantity of inert material and C&D waste reported through waste management facilities excludes that which is used directly on site in place of aggregate. The quantity of inert and C&D waste used directly on site is unreported and therefore cannot be included in the data on secondary and recycled aggregates.

4.1.3 It is difficult to establish the percentage of the recovered material that can be sold as recycled aggregate. Construction Demolition Excavations Waste (CDEW) comprises a range of materials, of which the "hard" elements (e.g. concrete, bricks, stone, road planings, rail ballast and glass) can be recycled for use as aggregates. Other elements of CDEW; due to their "soft" and/or organic nature; (e.g. soil, timber and plasterboard) are unsuitable for aggregate use. There is also a risk for double counting with some of the figures where waste is handled at more than one facility.

4.2 Recycling Aggregate at Mineral Workings

4.2.1 Information about the amount of material from recycling aggregate as an ancillary operation at minerals workings is variable. The figure which has been included in the overall quantities of material recovered includes sales figure of recycled material leaving the quarry site, and material used in quarry restoration. This figure has been reported for over ten years, however, there does not seem to be any positive correlation shown in the data between recycled aggregate quantities and construction activity. It may be that the quantities of recycled aggregate are more dependent on both the type of site developed and construction activity, rather than just the amount of construction activity.

4.2.3 It is estimated that there are at least 800,000 tonnes of capacity for inert recycling and recycled aggregate at waste management facilities and at mineral workings as ancillary operations.

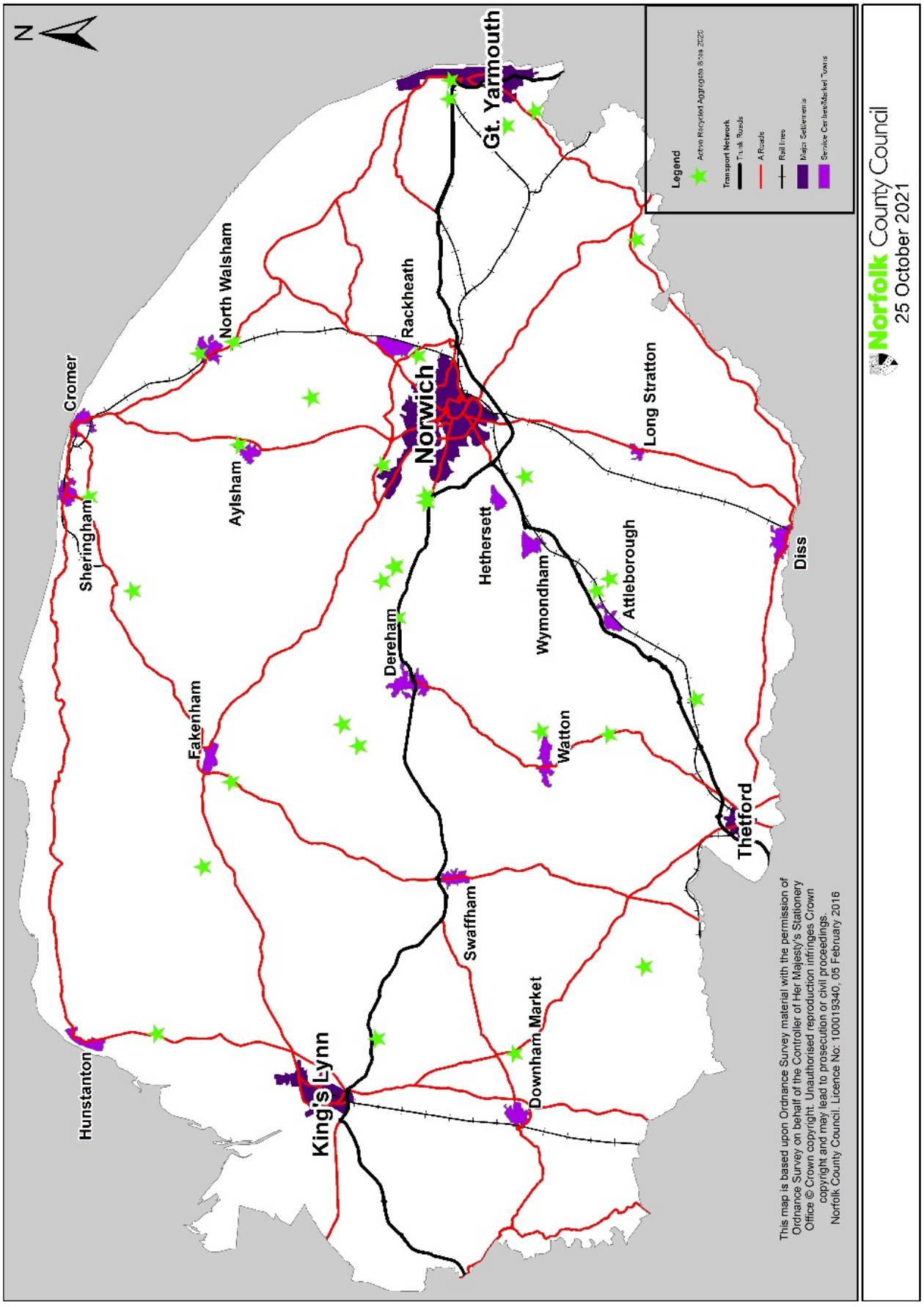
4.3 Secondary and Recycled Aggregate Sources

4.3.1 The table below lists active sites which process inert / construction and demolition waste, some of which will be used as recycled aggregates.

Operating Company	Site Location
Aylsham Plant Hire Ltd	Aylsham Industrial Estate, Aylsham
EE Green & Son	Townlands, Harfrey's Road, Great Yarmouth
Folkes Plant & Aggregates Limited	Welcome Pit, Butt Lane, Burgh Castle, Great Yarmouth
Norfolk Recycling Ltd	Six Acres, Stone Road, Hockering, Dereham
Green Planet Environmental Recycling	Rossfield, Reepham Road, Horsford, Norwich
Norman Wenn Ltd	Frans Green Industrial Estate, Sandy Lane, East Tuddenham
Pips Skips (PL Hyde)	Frans Green Industrial Estate, Sandy Lane, East Tuddenham
Martyn J Green Ltd	land South Of B1110, North Tuddenham, Dereham
Longwater Gravel Co Ltd	William Frost Way, Longwater Business Park, Costessey
N R Asphalt Limited	William Frost Way, Longwater Business Park, Costessey
Breedon Trading Ltd	Holt Quarry, Ducks Hole Farm, Hunworth Road, Holt

Operating Company	Site Location
East Coast Waste Ltd	Eurocentre, North River Road, Harfreys Industrial Estate, Great Yarmouth
Gresham Gravel Limited	East Beckham Quarry, Holt Road, Sheringham
Breedon Trading Ltd	Costessey Quarry, Longwater Industrial Estate, Costessey
E E Green & Son Limited	Browston sand pit, Cherry Lane, Browston, Great Yarmouth
Carl Bird Limited	Boundary Pit, Sandy Hills Lane, North Walsham
Lodge Farm Recycling Ltd	Lodge Farm, Breckles, Attleborough
Baldwin Skip Hire	Walnut Tree Farm, Silver Street, Besthorpe, Attleborough
Drury's Environmental Services Ltd	Lyngate Industrial Estate, North Walsham
R N Gamble	Blackwater Pit, Helhoughton Road, Hempton, Fakenham
Mick George Ltd (Frimstone)	Snettisham Quarry, Norton Hill, King's Lynn
Mick George Ltd (Frimstone)	Carbrooke Quarry, Summer Lane, Carbrooke
Mick George Ltd (Frimstone)	Crimplesham Quarry, Main Road, Crimplesham
Longwater Gravel Co Ltd	Coxford Abbey Quarry, Docking Road, Syderstone
Middleton Aggregates Ltd	East Winch Quarry, East Winch Road, East Winch, King's Lynn
Middleton Aggregates Ltd	Ketteringham Quarry. Hethersett Road, Ketteringham
Middleton Aggregates Ltd	East Bilney Quarry, Rawhall Lane, East Bilney
McLeod Aggregates Ltd	Bitteringham / Longham Quarry, Reed Lane, Longham, Dereham
The Lyndon Pallett Group Ltd	Kirby Cane Quarry, Yarmouth Road, Kirby Cane, Bungay
L P Pallett Quarry (Feltwell) Ltd	Feltwell Quarry, Lodge Road, Feltwell, Thetford
R G Carter Ltd	Ernest Gage Avenue, Longwater Industrial Estate, Costessey
Rory J Holbrook Ltd	Roudham Recycling Facility, Roudham Road, East Harling
Gamble Plant (Norfolk) Limited	Salhouse Road, Rackheath
Newall Plant Ltd	Heron Farm, Besthorpe, Attleborough
Pattisons (Anglia) Ltd	Ash Tree Farm, Acle New Road, Great Yarmouth

Table 12: Secondary and Recycled Aggregate Sources in 2020 (source: Environment Agency Waste Data Interrogator)



Map 4: Secondary and recycled aggregate sources in Norfolk

5. Materials sourced outside the County

5.1 Imports and exports

5.1.1 Quantifying intra county imports and exports has been a longstanding issue. However, the 2019 Aggregate Minerals Survey (AM2019), undertaken jointly between the Ministry for Housing, Communities and Local Government (MHCLG) and the British Geological Survey (BGS) provided broad land-won sand and gravel import and export figures for MPAs/ regions. The data within the AM 2019 along with additional information obtained through direct correspondence with the BGS has enabled the County Council to achieve a better understanding of the situation regarding imports and exports. Norfolk is a net importer of crushed rock, and a net exporter of sand and gravel.

5.2 Crushed Rock

5.2.1 Norfolk, due its geology, relies on importation for the majority of its crushed rock (carstone is the only indigenous source and is not suitable for asphalt production, due to its composition). A significant proportion of this material is imported by rail into Norwich. Other railheads are located at Snetterton and Brandon although these are significantly smaller in scale and volumes than those in Norwich. There are also landings of crushed rock at the Great Yarmouth Outer Harbour. Just over 700,000 tonnes of crushed rock was imported via railheads and wharves into Norfolk in 2020.

5.2.2 The Collation of the Results of the 2019 Aggregate Minerals Survey for England and Wales the (AM2019) indicated that the East of England (8.88 Mt) is one of the main importing regions of crushed rock, whilst the East Midlands (14.3Mt) and South West (8.4Mt) have the largest export figures.

5.2.3 Of the total crushed rock consumed in Norfolk (616,000 tonnes):

- 50-60% came from outside England and Wales
- 20-30% came from quarries within Leicestershire
- 10-20% came from quarries within Derbyshire
- 1-10% came from Norfolk (carstone)
- 1-10% came from Powys, Wales
- Cambridgeshire, Lincolnshire, the Peak District National Park and Yorkshire Dales National Park each supplied less than 1%.

Norfolk did not export any crushed rock in 2019.

Source: 2019 Aggregate Minerals survey for England and Wales (MHCLG & British Geological Survey)

5.3 Sand and Gravel

5.3.1 Norfolk, due to its geology, has considerable sand and gravel resources. The relative weight and value of sand and gravel means that this mineral does not normally travel significant distances, and a number of cross-boundary movements are likely to be as a result of the proximity of mineral workings to the market and therefore transport costs, regardless of their relationship to any administrative boundary, or lack of potential supply in another area. Neighbouring Mineral Planning Authorities plan to supply the demand in their own areas, by allocating sites, and therefore Norfolk does not need to make planned provision to supply additional aggregates.

5.3.2 Imports of sand and gravel

Of the total 1,396,000 tonnes of land-won sand and gravel consumed in Norfolk in 2019:

- 80-90% came from mineral workings within Norfolk
- Suffolk supplied between 10-20%
- Cambridgeshire supplied between 1-10%
- Lincolnshire supplied between 1-10%
- Peterborough and Central Bedfordshire each supplied less than 1%

5.3.3 Exports of sand and gravel

Of the total sales of 1,329,000 tonnes sand and gravel produced in Norfolk in 2019:

- 80-90% of Norfolk's sand and gravel production was used in Norfolk
- 20-30% of Norfolk's production was exported somewhere in the East of England
- 1-10% of Norfolk's sand and gravel production was exported to Suffolk
- Cambridgeshire and Peterborough, Lincolnshire, Hertfordshire, Bedfordshire (Central Bedfordshire, Bedford and Luton) each received less than 1% of Norfolk's sand and gravel production

It is considered that there is a degree of double counting regarding these figures and it seems likely that some of the amount attributed to being consumed somewhere in the East of England was consumed in Norfolk and not exported.

Source: 2019 Aggregate Minerals survey for England and Wales (MHCLG & British Geological Survey)

5.4 Marine sources

5.4.1 The Aggregate Minerals Survey 2019 contains the most recent estimate of the total marine sand and gravel consumed in Norfolk, which was zero. The average estimate of marine sand and gravel consumed in Norfolk over the last three national Aggregate Minerals Surveys was less than 500 tonnes per year. This represents much less than 1% of total sand and gravel (both land-won and marine) consumed in Norfolk

Source: 2019 British Geological Survey (BGS) Aggregate Minerals Survey for England and Wales.

6. Supply and Demand Assessment

6.1 Supply

6.1.1 The NPPF paragraph 145 states that "…minerals planning authorities should plan for a steady and adequate supply of aggregates," based on a rolling average of 10 years sales data, other relevant local data and an assessment of all supply options. The sand & gravel and carstone quarries in the Norfolk and the recycling sites have been listed in the previous section of the report. The total sales of aggregates in Norfolk are shown in table 15 below.

Year	sand & gravel production in Norfolk (tonnes)	carstone production in Norfolk (tonnes)	Inert / Construction & Demolition waste recovered[1]	Imports of crushed rock to Norfolk (tonnes)	Imports of sand and gravel to Norfolk (tonnes)	Marine dredged aggregate to Norfolk (tonnes)
2011	**1,289,000**	**62,308**	**373,000**	**439,000**	**100,000**	**1,000**
2012	**1,132,000**	**118,288**	**450,000**	No data	No data	No data
2013	**1,114,000**	**37,193**	**407,000**	No data	No data	No data
2014	**1,359,620**	**60,189**	**477,000**	**271,000**	**193,000**	**Less than 500**
2015	**1,414,959**	**67,320**	**359,000**	No data	No data	No data
2016	**1,622,566**	**106,438**	**435,000**	No data	No data	No data
2017	**1,604,973**	**97,578**	**418,000**	No data	No data	No data
2018	**1,511,054**	**106,278**	**494,000**	No data	No data	No data
2019	**1,328,907**	**39,878**	**632,240**	**591,000**	**272,000**	**0**
2020	**1,336,452**	**55,907**	**Not yet available**	No data	No data	No data
Average 2011-20	**1,371,353**	**75,138**	**449,471**	**434,000**	**188,000**	**Less than 500**

Table 13: Total aggregate sales in Norfolk

Source: Norfolk County Council annual surveys/ Environment Agency Waste Data Interrogator / BGS AM2014 and BGS AM2019 (rounded).

1 – This figure contains a proportion of material which will be suitable for reuse as secondary and recycled aggregate

Sand and gravel supply

6.1.2 The data in section 2.3 shows that the sand and gravel landbank of permitted reserves equates to 10.6 years at the end of 2020, which is above the 7-year minimum target for permitted reserves required by the NPPF. Norfolk County Council has also allocated sufficient land in the adopted Minerals Site Specific Allocations DPD to ensure provision of a steady and adequate supply of aggregate for the county up to the end of 2026. The Minerals and Waste Local Plan Review which has commenced will, on adoption, ensure a steady and adequate supply of sand and gravel for Norfolk up to the end of 2038. Imports of sand and gravel into Norfolk are significantly less than exports.

Carstone supply

6.1.3 The data in section 3.3 shows that the carstone landbank of permitted reserves equates to 22.13 years at the end of 2020, which is above the 10-year target for permitted reserves required by the NPPF. Norfolk County Council has also allocated sufficient sites in the Minerals Site Specific Allocations DPD to meet the provision of a steady and adequate supply of carstone

required for the county up to the end of 2026. The Minerals and Waste Local Plan Review which has commenced will, on adoption, ensure a steady and adequate supply of carstone for Norfolk up to the end of 2038.

6.1.4 There are significant imports of crushed rock into Norfolk due to the unsuitability of Norfolk's carstone for more demanding uses.

6.1.5 The Council is therefore satisfied that an adequate and steady supply of minerals covered by this Local Aggregate Assessment will be met by the permitted reserves up to the end of the adopted Plan period in 2026. Any potential increase in demand would be met by the adopted Minerals Site Specific Allocations.

Minerals and Waste Local Plan Review

6.1.6 Norfolk County Council commenced the planned review of the Minerals and Waste Local Plan in 2017. The review will extend the Plan period to 2038, and as part of the process consideration will be given to the need for new allocations to provide an adequate and steady supply of minerals up to the end of 2038. A 'call for sites' was undertaken in 2017 and 24 additional sites for potential future sand and gravel extraction were submitted by landowners, mineral operators or agents, plus one further site submitted in response to the Initial Consultation.

6.1.7 The Initial Consultation document of the Minerals and Waste Local Plan Review was subject to public consultation for six weeks during June-August 2018, a total of 25 sites were proposed to be allocated as suitable for future sand and gravel extraction, and one site was proposed to be allocated as suitable for future carstone extraction to meet the forecast need during the plan period.

6.1.8 The six-week Preferred Options consultation on the Minerals and Waste Local Plan Review took place during September/October 2019, a total of 20 sites were proposed to be allocated as suitable for future sand and gravel extraction, and one site was proposed to be allocated as suitable for future carstone extraction to meet the forecast need during the plan period.

6.2 Demand

Population & housing growth

6.2.1 Forecasts produced by Office of National Statistics indicate that the Norfolk's population is likely to grow from 903,680 in 2018 to 1,001,226 in 2036 an increase of 10.8%. Accommodating this forecast population increase will be achieved through development planned for by Norfolk's Local Planning Authorities. The Planning Authorities in Norfolk have agreed that adopted Plan reviews will extend the end dates of future Local Plans to at least 2036.

6.2.2 The Greater Norwich Growth Board (GNGB) is the body through which Broadland District Council, Norwich City Council, South Norfolk Council, Norfolk County Council, and the Broads Authority are working together to manage the delivery of growth. In the period between 2008 and 2026 the area is planning for at least 36,820 new dwellings (there have been 20,326 completions from 2008/09 to 2019/20) and 27,000 new jobs. The quantities to be planned for are contained in the adopted Joint Core Strategy for Broadland, Norwich and South Norfolk 2011 (with amendments adopted in 2014).

6.2.3 Broadland District Council, Norwich City Council and South Norfolk Council are currently producing a new Greater Norwich Local Plan, which was submitted for independent examination in July 2020. The Greater Norwich Local Plan will cover the period from 2018 to 2038 and the submitted Plan is planning to deliver a minimum of 49,492 new dwellings during the plan period.

6.2.4 Breckland District Council is planning for no less than 15,298 new homes in the period between 2011 and 2036 (3,493 completions have already taken place between April 2011 and March 2018). The quantities to be planned for are contained in the adopted Breckland Council Local Plan 2019.

6.2.5 Great Yarmouth Borough Council's is planning for 7,140 dwellings over the period between 2013 and 2030. The quantities to be planned for are contained in the adopted Great Yarmouth BC Core Strategy 2015. Great Yarmouth Borough Council is currently producing its Local Plan Part 2 which was submitted for independent examination in July 2020. The Local Plan Part 2 is planning for a lower housing need of 5,303 new homes over the period from 2013 and 2030. There have already been 1,691 dwelling completions between 2013/14 and 2019/20.

6.2.6 The Borough Council of King's Lynn and West Norfolk is planning for 16,533 dwellings and 5,000 jobs in the period between 2001 and 2026 (there have been 10,620 completions between 2001/02 and 2019/20). The quantities to be planning for are contained in the adopted KL&WN BC Core Strategy 2011. The Borough Council is currently producing a new Local Plan and the Pre-Submission representations period took place in August/September 2021. This Pre-Submission Local Plan proposes to deliver 12,057 dwellings over the plan period from 2016-2036 (1,802 dwellings have been completed between April 2016 and March 2020).

6.2.7 North Norfolk District Council is planning for 8,000 dwellings and 4,000 jobs in the period between 2001 and 2021 (there were 7,350 dwelling completions between 2001/02 and 2019/20). The quantities to be planned for are contained in the adopted North Norfolk Core Strategy 2008. North Norfolk District Council is currently producing a new Local Plan for the period 2016-2038 and consulted on a first draft in May / June 2019. In the First Draft the new Local Plan was proposing to deliver between 10,500-11,000 new homes over the plan period. There have already been 1,947 dwelling completions between 01/04/2016 and 31/03/2020.

6.2.8 The completion rates and new planned housing numbers contained in more recent Local Plans show that there remains a number of new dwellings to be built between now and the end of the plan period. These new dwellings will all require aggregate materials for their construction, although modern methods of construction use considerably less aggregate than methods used in previous decades, and this decline in the intensity of aggregate use has been a continuing trend over a number of years.

6.2.9 Housing development is key to meeting the growth requirement in plans and is generally accompanied by other types of development such as roads, drainage, schools, health facilities, employment and retail. In addition, housing and related developments involving the use of alternative aggregates as well as primary aggregates.

Exports of Sand and Gravel

6.2.9 Norfolk is a net exporter of sand and gravel, although it is considered that a significant number of these exports are likely to be as a result of transport costs, due to the proximity of a sand and gravel working in Norfolk compared with one in the neighbouring county. However, as neighbouring Mineral Planning Authorities plan to supply the demand in their areas suitable resources are allocated within these areas to meet this demand, and it does not need to be planned for in Norfolk.

Comparison between dwelling completions and sand and gravel production

6.2.10 The graph below shows past dwelling completion rates across Norfolk compared to sand and gravel sales. It should be noted that dwelling completions are reported for a financial year, whilst aggregate sales are reported for a calendar year. Whilst no other factors have been considered in the graph, such as mineral being exported outside Norfolk or being directed to other uses (such as construction of infrastructure and commercial or industrial development), the graph appears to show some correlation between the dwelling completions and aggregate production since 2007. This is likely to be mainly because dwelling completions and aggregate sales are both significantly affected by economic activity in the wider economy, rather than housing development directly driving aggregate sales. Any correlation between historic completions and aggregate sales is not easily translated into forecasts for future aggregate demand, as future housing forecasts have generally not been matched by actual completions. There is also a significant difference in the quantities of bulk aggregate required by different housing types and construction methods, which have changed over time.

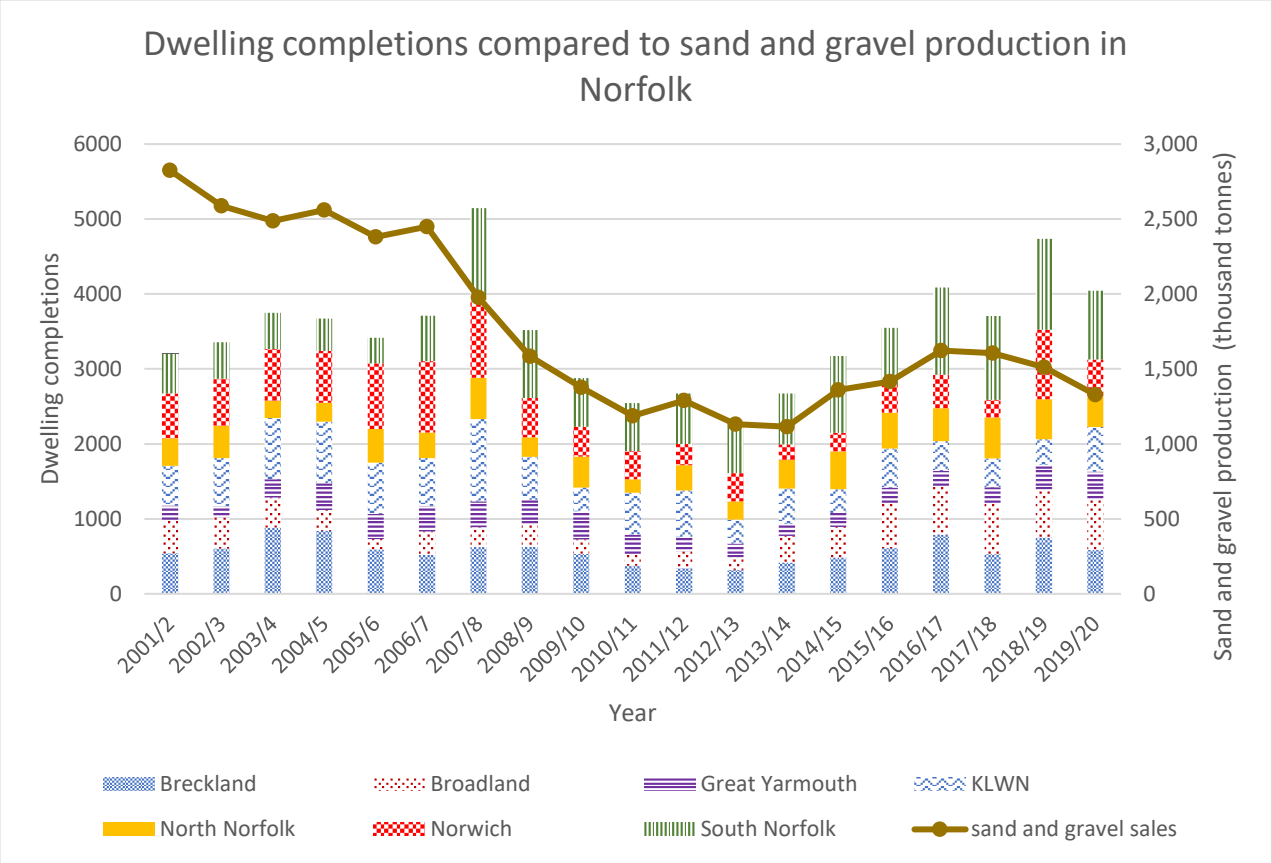


Figure 6: Dwelling completions compared to sand and gravel production in Norfolk

Major Construction projects

6.2.11 There were many major construction projects commencing or ongoing in Norfolk in 2020, which are listed below. To provide some focus for the purpose of this Local Aggregate Assessment, the major construction projects listed below only include residential / mixed residential schemes in excess of 200 units.

- North of the River Tud, Costessey: 1,650 residential units (on-going)
- West of Lodge Farm, Costessey: 509 residential units (on-going)
- Cringleford: up to 1,300 residential units (construction commenced in 2020)
- North of Hethersett: 1,196 residential units (ongoing)

- South of Stoke Road, Poringland: 232 residential units (ongoing)
- North of Shotesham Road, Poringland: 221 residential units (on-going)
- Heath Farm, Poringland: up to 250 residential units (ongoing)
- NW of Carpenter's Barn/Beckett's Grove, Wymondham: up to 350 residential units (ongoing)
- Between the A11 Spink's Lane & Norwich Road, Wymondham: 259 residential units (ongoing)
- Land north of A11, Wymondham: up to 500 residential units (on-going)
- Land between London Road and Suton Lane, Wymondham: up to 375 residential units (construction commenced in 2020).
- Royal Norwich Golf Club, Drayton High Road, Hellesdon, Norwich: up to 1,000 homes, primary school site, D1/D2 community use and associated car parking, open space plus off-site highway works (ongoing since 2018).
- East of Holt Road, Horsford, Norwich: 259 residential dwellings, with associated Public Open Space, landscaping, highways & drainage infrastructure works (ongoing since 2019)
- St Faiths Road, Old Catton, Norwich: 328 residential dwellings and associated infrastructure and landscaped public open space (ongoing since 2019)
- Home Farm, Blue Boar Lane, Sprowston: 164 residential dwellings, office, retail, community facilities and Petrol Filling Station (ongoing since 2014)
- White House Farm, Land at Blue Boar Lane, Sprowston: erection of up to 1233 dwellings Including Link Road, Recreation Areas, Primary School, Open Space and other associated works (ongoing since 2015)
- Land North of Carrow Quay, Kerrison Road, Norwich: 323 residential flats, car parking, commercial office space and community uses, access road and riverside walk (ongoing).
- St Anne's Wharf, King Street, Norwich: 437 residential units, 2128 sq m of A1, A2, A3 and D2 uses, carparking, riverside walkway, bridge over river and public open space (ongoing)
- Three Score Site, Land South of Clover Hill Road, Norwich: 908 dwellings, care home, shops, associated roads and infrastructure (ongoing)
- The Blackdale Building, Bluebell Road, Norwich: student accommodation for 915 bedrooms (equivalent to 366 dwellings) and community building (ongoing and Phase 1 completed)
- Wheatcroft Farm, south of Bradwell, Great Yarmouth: 850 residential dwellings, commercial mixed use, local centre, primary school and open space (ongoing since 2014)
- 'Site 25', Beacon Park, Bradwell, Great Yarmouth: 287 residential units (ongoing since 2019)
- North of Hempstead Road, Heath Farm, Holt: 212 residential dwellings (ongoing since 2017).
- Land at Haverscroft Farm House, Attleborough: 200 dwellings with associated infrastructure (ongoing)
- Land at London Road, Attleborough: 375 dwellings and employment development (ongoing)
- Land north of Red House Norwich Road, Thetford, Croxton and Kilverstone: 343 residential dwellings as part of mixed use urban extension (ongoing)
- Land at Greenfields Road, Dereham: 279 residential dwellings (ongoing)
- Land north and south of Norwich Road, Swaffham: 350 residential dwellings (ongoing)
- Land to west of Watton Road, Swaffham and Swans Nest site, Swaffham: 272 dwellings (ongoing)
- The Nar Ouse Regeneration Area (NORA), Wisbech Road, King's Lynn: 413 residential dwellings and associated infrastructure (across 4 planning permissions) (ongoing)

Infrastructure projects

6.2.12 There are a number of key infrastructure projects planned in the County to support the anticipated level of growth. These projects are contained in the Norfolk Strategic Infrastructure Delivery Plan and include:

Road Schemes

- Great Yarmouth Third River Crossing
- Broadland Growth Triangle Link Road
- Attleborough Link Road
- A10 West Winch Housing Access Road
- A140 Long Stratton Bypass
- Fakenham A148 roundabout enhancement
- Norwich Western Link
- A11 Thetford bypass junctions
- A47 Wisbech bypass junctions
- A47 Tilney to East Winch dualling
- A47 Acle Straight dualling
- A47 Thickthorn and Great Yarmouth junction improvements
- A47 dualling Blofield to North Burlingham
- A47 dualling Easton to North Tuddenham

Utilities Schemes

- Thetford energy supply
- Attleborough energy supply
- Snetterton Heath energy supply
- Sprowston Primary and Peachman Way Primary substations
- Earlham sub-station
- Cringleford Primary Substation
- Broadland Growth Triangle Trunk Sewer
- Wymondham water supply connections
- King's Lynn sewerage improvements
- Thetford Water Supply
- Thetford sewerage scheme
- Easton, Hethersett and Cringleford sewerage upgrade

Rail Schemes

- Broadland Business Park Rail Station
- Great Yarmouth Rail Station
- Norwich to London Rail

Schools

- Broadland Growth Triangle Secondary School
- Three primary schools at Thetford
- Two primary schools at Rackheath
- Three primary schools within North Norwich Growth Triangle
- Two primary schools at Attleborough
- Two primary schools at West Winch
- One new primary school in each of the following locations: Wymondham, Cringleford, Hethersett, Bradwell, Fakenham, Long Stratton, Blofield/Brundall, Poringland, Hellesdon.

Regeneration

- East Norwich Regeneration Area
- Great Yarmouth Operations & Maintenance Campus
- Anglia Square, Norwich

6.3 Conclusion

6.3.1 Norfolk's share of the sub-national guideline figures (the apportionment) for sand and gravel of 2.57 million tonnes per annum and carstone of 0.2 million tonnes per annum represent higher figures than the locally derived figures. These higher figures were used in Core Strategy Policy CS1 as the basis for allocations to plan for the provision of a steady and adequate supply of aggregate and provide flexibility.

6.3.2 Average annual 10-year sales of 1.369 million tonnes for sand and gravel and 0.075 million tonnes for carstone (as at 31/12/20) have been derived from a sales-based assessment compliant with the NPPF and NPPG.

6.3.3 The current Minerals and Waste Local Plan Review is the most appropriate method of determining any revised target for Core Strategy Policy CS1, having regard to the data in this LAA. The aim of any revised target will be to achieve an adequate and steady supply of aggregate over the revised plan period to 2038, recognising that Norfolk has not met the apportionment figure for many years. Minerals sales figures for Norfolk will be used to determine the most appropriate production figure for site allocations to be based on, considering the need to balance flexibility in supply to meet growth targets, while ensuring the timely completion and restoration of aggregate extraction sites.

6.3.4 The Initial Consultation document proposed that the 20-year average would provide the best approach as this time period includes data from at least one complete economic cycle, alternatives such as the 10-year rolling average were also included in the consultation document. The data available at the Initial Consultation stage was the 20-year average for the period 1997-2016; this was 1,980,000 tonnes per annum for sand and gravel and 126,500 tpa for Carstone.

6.3.5 The Preferred Options consultation on the Minerals and Waste Local Plan Review took place during September/October 2019. It also proposed forecasting the need for minerals using the 20-year average production. The data available at the Preferred Options stage was the 20-year average for the period 1999-2018; this was 1,868,000 tonnes per annum for sand and gravel and 121,400 tpa for carstone. The Pre-Submission Publication stage is expected to take place in 2022.

6.3.6 The adopted Minerals Plan is up to date in relation to the supply of aggregate, and the County Council considers that sufficient sand and gravel allocations within the plan to meet the current adopted CS1 target, to 2026, are deliverable.

6.3.7 Norfolk County Council undertook a Single Issue Silica Sand Review of the Minerals Site Specific Allocations Plan. This was examined in March 2017 and found sound and legally compliant; and was adopted by the Council in December 2017. Silica sand is a nationally important industrial mineral and is not used for aggregate uses in Norfolk.

6.3.8 The figure for aggregate need, in the current plan, was apportioned to MPAs by the East of England Regional Aggregates Working Party (EoEAWP) based on national guidelines. The EoEAWP has a valuable role in co-ordinating mineral provision. The EoEAWP's previous position was that all MPAs in the East of England should work with the 2009 EoEAWP apportionment figure in planning for future provision. However, the EoEAWP's position regarding apportionment was reviewed at its November 2016 meeting. It was decided that the

lack of an updated national guidelines rendered the current apportionment increasingly obsolete. It was agreed that MPAs within the EoEAWP would plan for future need based on Paragraph 145 (now paragraph 213) of the revised NPPF. Paragraph 213 states that these figures should still be taken into account, as a guideline, as part of the process for determining future demand for, and supply of, aggregates.

6.3.9 The 2005-2020 apportionment figures were based on a sound and thorough assessment of national need, and detailed debate at the time. The methodology underlying the assessment of national need (2005-2020) was based on an assumption of continued growth especially in housing construction throughout the period, this has been significantly affected by the recession. Norfolk County Council is considering future mineral need as part of the Plan review and has analysed past production across a range of time periods to determine the most appropriate level of mineral extraction to plan for.

6.3.10 Secondary & Recycled Provision Allowance to 2026 – the locally derived data available on secondary and recycled aggregate is variable and not considered completely comprehensive because many operations, such as on-site recovery, are not recorded. The data contains inert and construction/demolition waste; some parts of this waste stream are unsuitable for use as recycled aggregate, however it is not possible to disaggregate these wastes from the totals. This makes it difficult for Norfolk County Council to reduce the level of land won aggregate provision on this basis. The government carries out studies on secondary and recycled aggregate arisings in England, the most recent being in 2005 by the Department for Communities and Local Government. The work carried out to produce the aggregate apportionment figures for the period 2005-2020 took account of the capacity of facilities to provide recycled and secondary aggregates i.e. the assumptions are built into the apportionment figure. This enabled the apportionment figures to be set at a lower level than they otherwise would have been. Despite this, aggregate production in Norfolk has not met this apportionment figure for many years. Planned aggregate provision will be reviewed as part of the production of the emerging Minerals and Waste Local Plan, but it is not proposed to make any adjustments to the forecast mineral requirement figures based on secondary and recycled aggregate provision due to the quality of the data.

6.3.11 Marine Sources Requirement to 2026 – the total of less than 500 tonnes of marine sourced aggregate represents such a small percentage of the total aggregates used in Norfolk it is not proposed to make any adjustments to the mineral requirement figures due to marine sourced aggregates.

7. Silica Sand

7.1 Introduction to silica sand

7.1.1 Silica Sand is a nationally important industrial mineral, deposits of which are nationally scarce. Silica sand is extracted in West Norfolk and processed at a facility at Leziate, prior to being transported to industrial facilities, principally by train from the dedicated railhead at the processing plant. The high-quality silica sand extracted in Norfolk is not used as an aggregate, it is an essential raw material for many industrial processes, including the manufacture of glass. Norfolk is one of the most important sources of silica sand in Great Britain, accounting for 26 per cent of total output and a much larger proportion of glass sand production.

7.1.2 A Single Issue Silica Sand Review of the Minerals Local Plan was undertaken between 2015 and 2017 to address a predicted shortfall in sites for silica sand extraction. The Silica Sand Review was adopted in December 2017, following an Examination in Public carried out by an independent Planning Inspector.

7.1.3 A review of the entire Minerals and Waste Local Plan commenced in 2017, with a 'call for sites'. This resulted in insufficient potential sites for silica sand extraction being submitted. Therefore, it was proposed to continue to include the 'Areas of Search' for potential future silica sand exploration, that were adopted in the Silica Sand Review. An Initial public consultation stage took place during summer 2018, and a Preferred Options public consultation took place during autumn 2019. The next stage will be the Pre-submission Publication which will take place in 2022.

7.2 Production

7.2.1 The 10-year average production for the Leziate site for 2011-2020 was 800,051 tonnes. This is an increase of 2.5% on the previous 10-year average (2010-2019) which was 780,706 tonnes. The ten-year average is shown on the graph below and the data has been provided by Sibelco UK Ltd. However, it is unlikely that the 10-year average figure for 2014 is correct because it is not consistent with the 10-year average figures for 2013 and 2015.

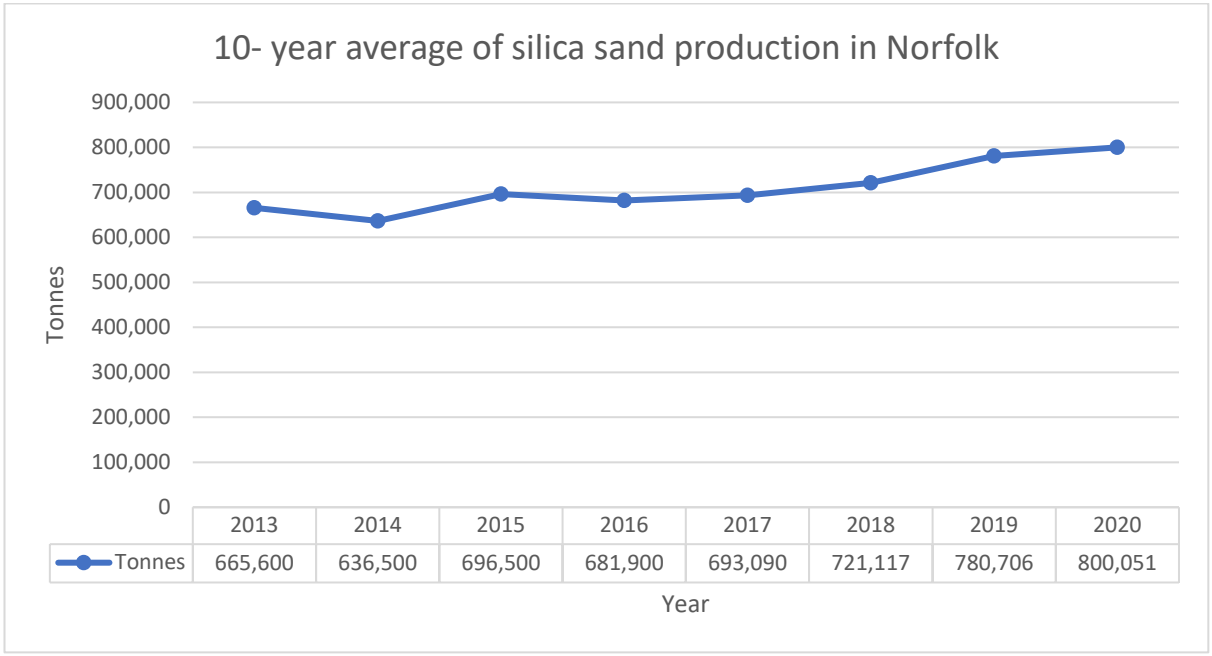


Figure 7: 10 year rolling average of silica sand production in Norfolk

7.2.2 The three-year average of silica sand extraction in Norfolk from 2018-2020 was 814,625 tonnes. This is a 4.6% increase on the previous three-year average (from 2017-2019) which was 854,092 tonnes.

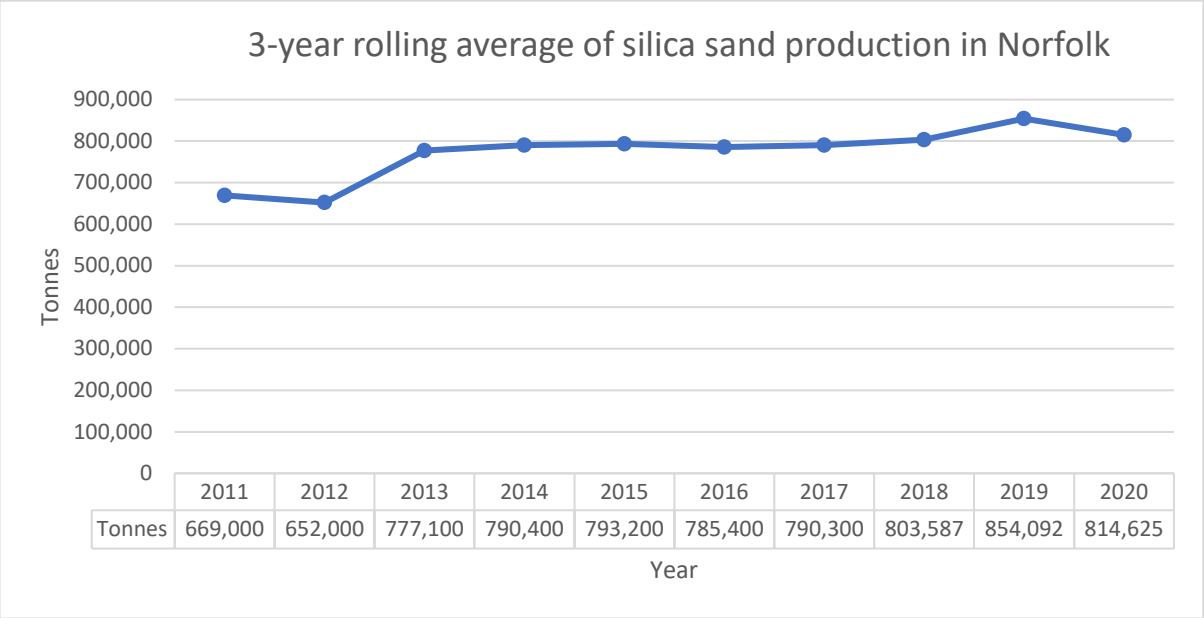


Figure 8: 3 year rolling average of silica sand production in Norfolk

7.3 Silica sand landbank of permitted mineral reserves

7.3.1 The silica sand reserve at 31/12/2020 was estimated at 3.232 million tonnes. This represents a landbank of 4 years based on the 10-year average figure, this is less than the "at least" 10 years for individual silica sand sites required in the NPPF.

7.3.2 In 2018, a planning application was submitted for silica sand extraction on allocated site MIN 40 at East Winch; this site contains an estimated resource of 3 million tonnes. In 2020, a planning application was submitted for silica sand extraction on allocated site SIL 01 at Bawsey; this site contains an estimated resource of 1.094 million tonnes. At the end of 2020 these applications had not yet been determined. If the applications for sites MIN 40 and SIL 01 were granted, the permitted reserve would increase to 7.326 million tonnes which would represent a landbank of 9.2 years. This would still represent a shortfall based on the amount planned for in Core Strategy Policy CS1 which was based on a forecast production volume of 750,000 tonnes per annum.

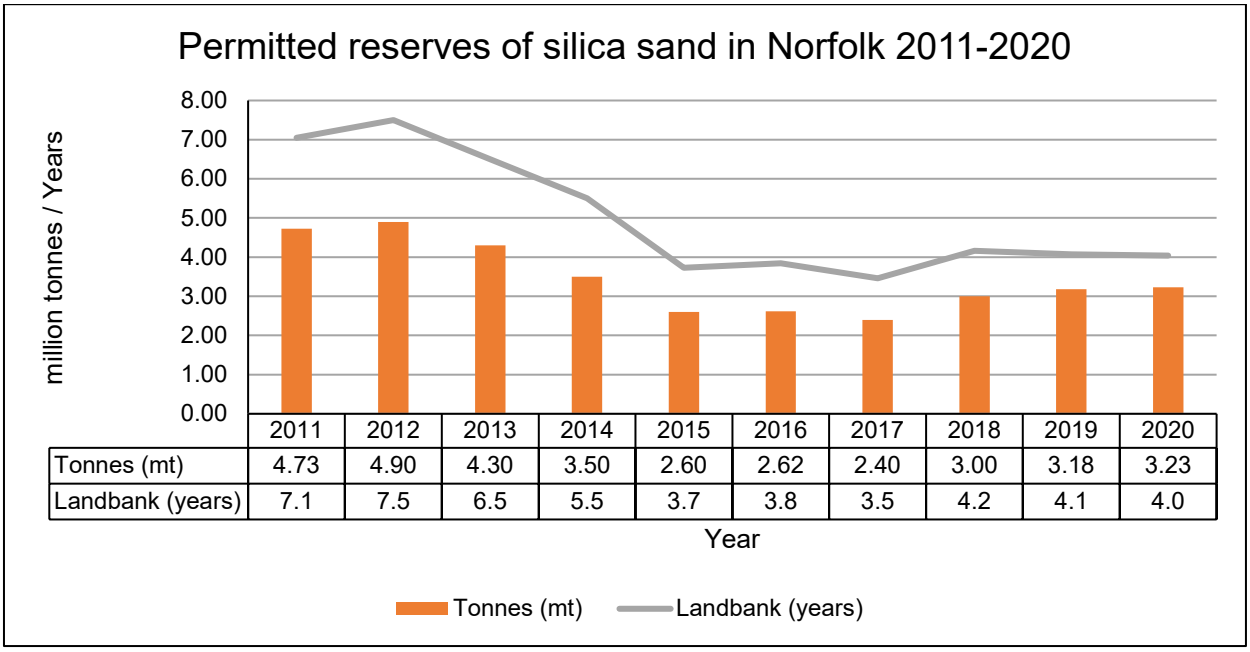


Figure 9: Permitted reserves of silica sand in Norfolk 2011- 2020

7.4 Production of silica sand in Great Britain

7.4.1 The graph and table below provide a national picture of silica sand production and end use over the most recent 19 years for which data is available. Where it is listed that figures are not available before 2015, this is because the information is considered confidential by the BGS, due to a small number of extraction companies involved in that market. The total includes all end use sectors. Since 2016 the Office for National Statistics have not carried out the Annual Minerals Raised Inquiry which means that data on the end uses of silica sand is no longer collected and is not available for the years from 2015 onwards.

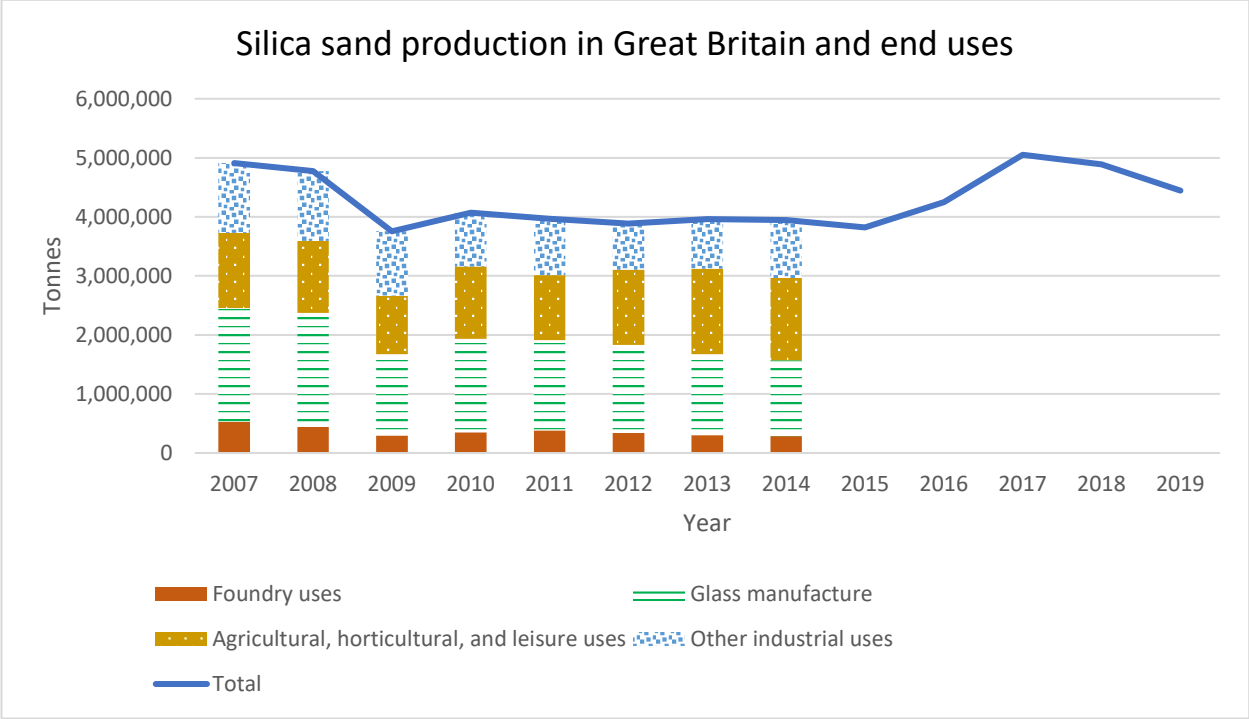


Figure 10: Silica sand production and end uses in Great Britain Source: BGS Minerals Yearbook

Year	Foundry uses	Glass manufacture	Other industrial uses	Agricultural, horticultural and leisure uses	Total production in Great Britain
2019	…	…	…	…	4,443,029
2018	…	…	…	…	4,890,940
2017	…	…	…	…	5,051,461
2016	…	…	…	…	4,251,219
2015	…	…	…	…	3,822,107
2014	>284,000	<1,288,000	982,000	1,394,000	3,948,000
2013	>302,000	<1,374,000	837,000	1,448,000	3,961,000
2012	340,000	1,489,000	782,000	1,277,000	3,888,000
2011	382,000	1,528,000	956,000	1,104,000	3,969,000
2010	353,000	1,582,000	913,000	1,222,000	4,070,000
2009	>297,000	<1,374,000	1,096,000	988,000	3,755,000
2008	443,000	1,932,000	1,186,000	1,216,000	4,777,000
2007	527,000	1,930,000	1,178,000	1,274,000	4,909,000
2006	…	2,206,000	1,306,000	…	5,174,000
2005	…	2,120,000	954,000	…	4,146,000
2004	…	2,663,000	…	838,000	5,011,000
2003	…	1,896,000	1,645,000	…	4,073,000
2002	…	1,940,000	1,331,000	…	3,833,000
2001	880,000	1,853,000	1,115,000	…	3,848,000

… Figures not available Source: BGS UK Minerals Yearbooks

Table 14. Great Britain production of silica sand by end use

7.4.2 As stated earlier, the three-year average of silica sand extraction in Norfolk in 2017-2019 was 854,092 tonnes. This is approximately 26% of all silica sand production in Great Britain in the same period.

7.5 Imports and exports of silica sand

7.5.1 The British Geological Survey records the imports and exports of mineral from the United Kingdom. This data is presented in the Minerals Yearbook. The table and graph below show the imports and exports since 2001.

Year	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Imports	203,569	139,980	154,051	111,060	140,865	139,874	100,057
Exports	270,849	83,315	91,001	63,227	61,234	93,849	87,289

Year	**2012**	**2011**	**2010**	**2009**	**2008**	**2007**	**2006**
Imports	137,761	310,715	148,619	79,629	48,112	61,454	190,813
Exports	88,376	64,924	100,773	115,746	156,451	222,581	388,440

Year	**2005**	**2004**	**2003**	**2002**	**2001**
Imports	127,992	79,829	78,944	104,232	46,500
Exports	174,236	166,899	51,095	39,816	54,419

Table 15: Imports and exports of UK silica sand (source: BGS Minerals Yearbook)

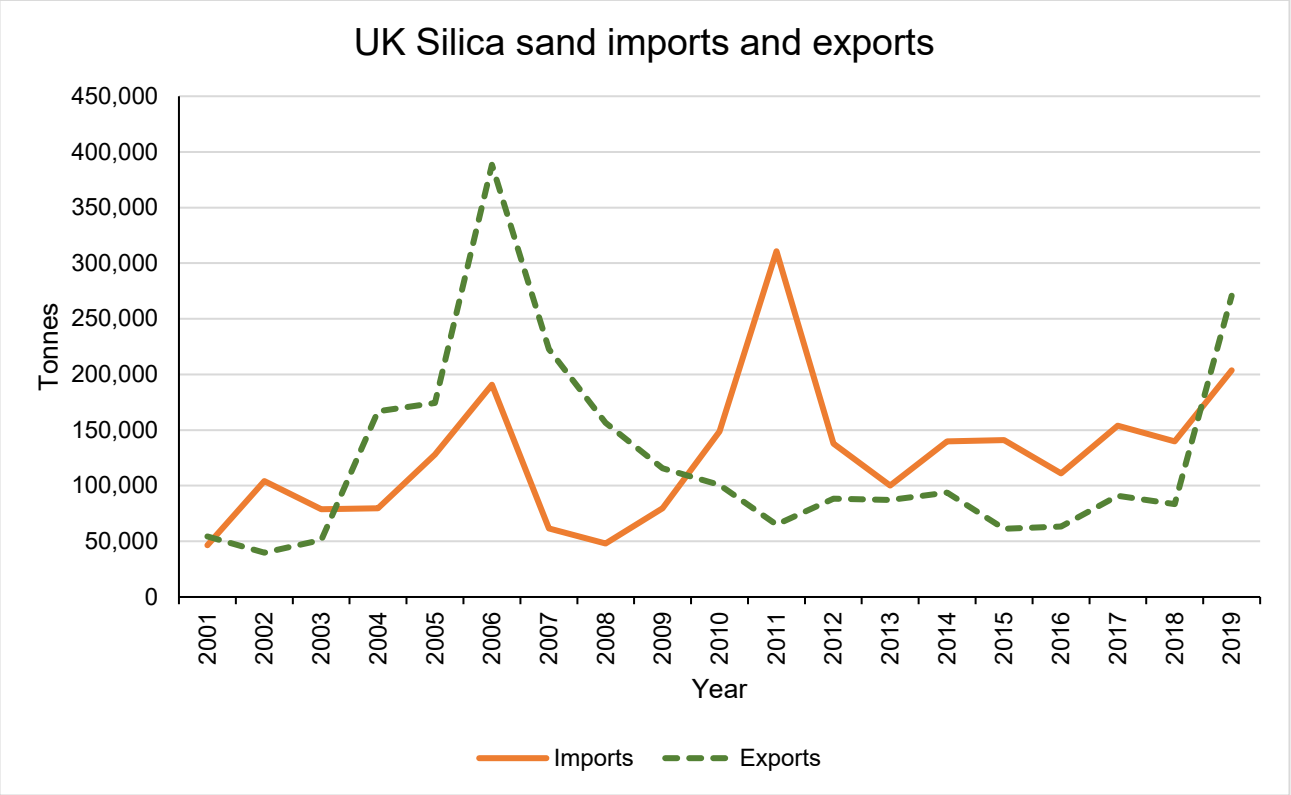


Figure 11: Imports and exports of UK silica sand (source: BGS Minerals Yearbook)

8. Other minerals worked in Norfolk

8.1 Other minerals besides sand and gravel, silica sand and carstone, are worked on a minor scale in Norfolk. Demand for these minerals is such that they are not included in the planned provision of the Minerals and Waste Local Plan, instead being dealt with on a case-by-case basis through the planning application process.

The table below gives details of the other mineral workings in Norfolk.

Parish	Operator	Address	mineral
Middleton	Middleton Aggregates Ltd	Setch Road, Middleton, King's Lynn	clay
Caistor St Edmund	Needham Chalks (HAM) Ltd	Norwich Road, Caistor St Edmund, Norwich	chalk
Hillington	West Norfolk Lime Ltd	Hillington Chalk Quarry, Grimston Road, Hillington, King's Lynn	chalk
Castle Acre	Needham Chalks (HAM) Ltd	Castle Acre Quarry, Dunham Road, Castle Acre, Swaffham	chalk

Table 16: Other minerals worked in Norfolk in 2020

9. Glossary

Aggregate Minerals: hard, granular materials which are suitable for use either on their own or with the addition of cement, lime or a bituminous binder in construction.

Apportionment (Minerals): The splitting of national supply guidelines for minerals demand between Minerals Planning Authorities or sub regions.

Area of Outstanding Natural Beauty: designated under the National Parks and Access to the Countryside Act 1949 for the purposes of preserving and enhancing their natural beauty.

British Geological Survey (BGS): A partly publicly funded body whose purpose is the advancement of geoscientific knowledge of the UK landmass and its continental shelf through survey, research and monitoring.

Core Strategy (for Minerals and Waste): This planning policy document contains the vision, objectives and strategic planning policies for minerals and waste development in Norfolk until 2026. The Minerals and Waste Core Strategy also includes Development Management policies which are used in the determination of planning applications to ensure that minerals extraction and associated development and waste management facilities can happen in a sustainable way.

Development Management: The process through which the Council determines whether a proposal for development should be granted planning permission.

Development Plan: This includes adopted Local Plans and neighbourhood plans and is defined in section 38 of the Planning and Compulsory Purchase Act 2004 (as amended) that set out the planning policies and proposals for the development and use of land. Decisions on planning applications must conform to the Development Plan, unless material considerations indicate otherwise.

East of England Aggregate Working Party: Established in the 1970's to identify and consider problems in the supply of aggregates. They provide technical advice in relation to the supply of, and demand for, aggregates in the East of England (including sand, gravel and crushed rock) to the Secretary of State, local government and mineral planning authorities.

Examination: Local Plans are subject to an independent examination by an independent planning inspector. The recommendations in the Inspector's report will inform the final adopted version of the Local Plan.

Industrial Minerals: Minerals which are worked for their commercial value, which are not fuel (fuel minerals or mineral fuels) and are not sources of metals (metallic minerals). These minerals are used in industries based on their physical and/or chemical properties. In Norfolk, silica sand is the only industrial mineral currently extracted.

Landbank: A stock of mineral reserves with planning permission for their extraction.

Local Plan: The plan for the future development of the local area, drawn up by the local planning authority in consultation with the community. In law this is described as the development plan documents adopted under the Planning and Compulsory Purchase Act 2004 (as amended). Current core strategies or other planning policies, which under the regulations are development plan documents, form part of the Local Plan. The term includes old policies which have been saved under the 2004 Act.

Managed Aggregate Supply System (MASS): guidance which set out future national needs and targets for aggregate minerals for a period of years and then subdivided this into regional needs and targets. Regional Aggregate Working Parties then apportioned the regional targets to individual Mineral Planning Authorities for incorporation into Minerals Local Plans. MASS guidance also set out how landbanks should be calculated and used in the determination of planning applications for minerals. The policy and guidance were cancelled by the publication of the NPPF in 2012.

Mineral Planning Authority: An organisation with statutory planning powers relating to minerals development, in most areas the County or Unitary Council.

Mineral Resources: Natural concentrations of minerals in or on the Earth's crust that are or may become of economic interest because they are present in such a form, quality and quantity that there is potential for eventual economic extraction.

National Planning Policy Framework: This document sets out the Government's planning policies for England and the most recent version was published in July 2021. The NPPF must be taken into account in the preparation of Local and neighbourhood Plans and is a material consideration in planning decisions. It states that in order to be considered sound a Local Plan should be consistent with national planning policy.

National Planning Practice Guidance: A web-based resource published by the Ministry for Housing, Communities and Local Government (MHCLG) and updated as needed. It is available at: www.gov.uk/government/collections/planning-practice-guidance

Permitted reserves: Saleable minerals in the ground with planning permission for extraction. Usually expressed in million tonnes.

Restoration: Operations designed to return an area to an acceptable environmental state, whether for the resumption of the former land use or for a new use following mineral working. Involves the reinstatement of land by contouring, the spreading of soils or soil making materials etc.

Specific Sites (for mineral extraction): where viable resources are known to exist, landowners are supportive of minerals development and the proposal is likely to be acceptable in planning terms. Such sites may also include essential operations associated with mineral extraction. This is the preferred way to plan for the steady and adequate supply of minerals as it provides the necessary certainty on when and where development may take place.

Site of Specific Scientific Interest (SSSI): Sites designated by Natural England under the Wildlife and Countryside Act 1981 on account of their flora, fauna, geological or physiographical features.

Special Area of Conservation (SAC): An SSSI of international importance designated under the EC Directive on the Conservation of Natural Habitats and Wild Fauna and Flora.

Special Protection Area (SPA): An SSSI of international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds found in European Union countries. They are European designated sites, classified under the EC Directive on the Conservation of Wild Birds.