

# Norfolk County Council

## Norfolk Minerals and Waste Development Framework

Ninth Annual Monitoring Report  
Mineral Data  
Local Aggregate & Silica Sand Assessment  
2012

Published May 2014

 **Norfolk** County Council  
at your service

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## **Note**

*This Local Aggregate Assessment is made available in accordance with Part 8 of the 'Town and Country Planning (Local Planning) (England) Regulations 2012'. The data contained in the report has been finalised and is made available, but the analysis and conclusion may be subject to revision following consideration by the East of England Aggregate Working Party (EoEAWP).*

*This report will be assessed by the members of EoEAWP at its next meeting in June 2014. Consideration will be given to the technical advice from EoEAWP, and any revisions which are considered necessary will be made after that time.*

## Introduction

Annual monitoring of aggregate production and reserves in Norfolk has been carried out since 1975. In 2011/2012 almost all the active sites produced sand and gravel, although there are three carstone (a type of sandstone) quarries in West Norfolk producing fill and aggregates. In addition there is one peat working, one clay working, three active chalk workings and one major silica sand operation in the County. These existing sites are listed in this document.

The National Planning Policy Framework (NPPF) (March 2012) paragraph 145 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 government produced guidance on the Managed Aggregate Supply System (MASS) in October 2012, regarding Local Aggregate Assessments (LAA). The MASS guidance was superseded on 6 March 2014, by the National Planning Practice Guidance.

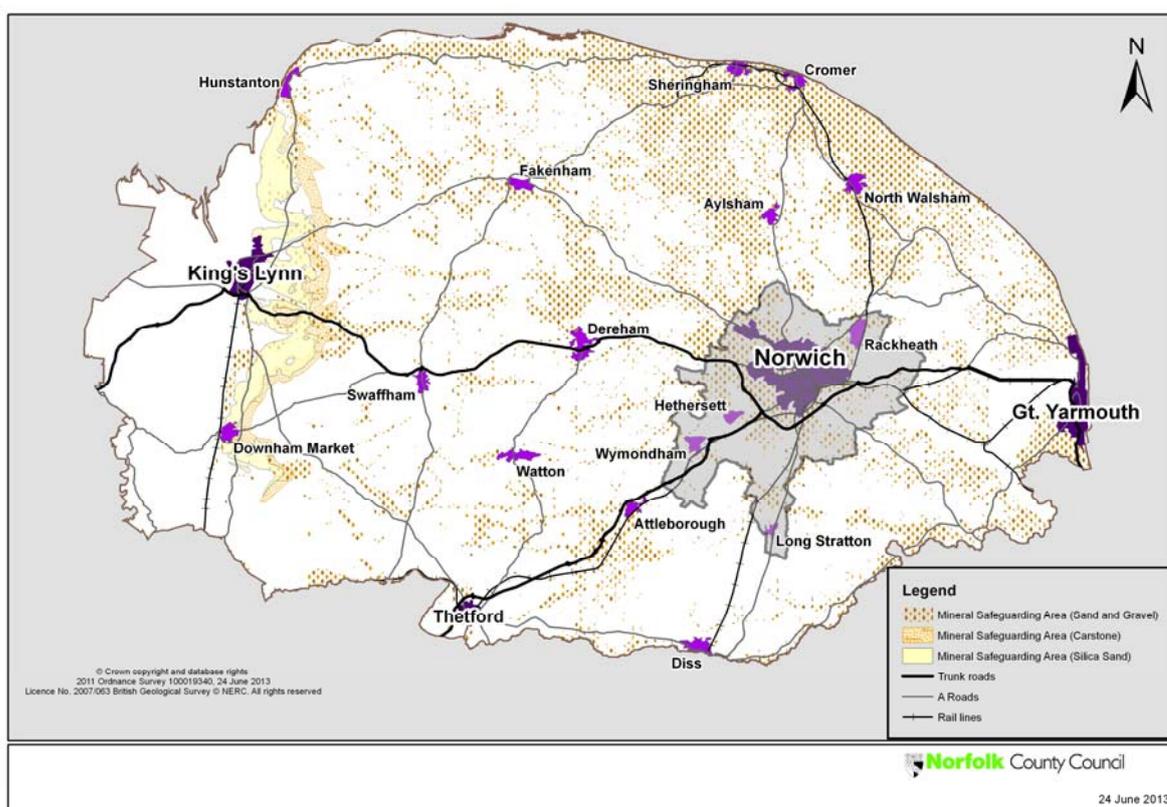
The National Planning Practice Guidance contains similar requirements to the previous MASS guidance in relation to LAA's and states that they are a monitoring report to provide "an annual assessment of the demand for and supply of aggregates in a mineral planning authority's area."

LAAs should include:

- A forecast of future mineral requirements based on both a rolling average of sales over a ten-year period, 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.

This is the first LAA prepared by Norfolk County Council, although mineral data consistent with an LAA was submitted to the Examination in Public for the Minerals Site Specific Allocations Plan. 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 future reviews of the adopted Core Strategy and Minerals and Waste Development Management Policies Development Plan Document and the Minerals Site Specific Allocations DPD. It is important to note that the landbank figures included within 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 a review of the allocations plan is required.

## Minerals in Norfolk



Sand and gravel is the main aggregate worked in Norfolk. A small amount of Carstone is extracted mainly in west Norfolk for use as a building material or as a hoggin. Crushed rock for asphalt production is imported in to Norfolk mainly by rail as no indigenous material is suitable for this use.

Norfolk is a county rich in important wildlife and designated landscapes. There are 12 Special Protection Areas (SPAs), seven Special Areas of Conservation (SACs) and 162 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 mineral activities.

### New Capacity in Norfolk

The table demonstrates the new mineral capacity approved between 1 April 2012 and 31 March 2013.

Location	Applicant	Type of Facility	Capacity (tonnes)	
			Per Annum	Total
Shropham	Breedon Aggregates	Sand and Gravel extraction	100,000	350,000
Horstead	Longwater Gravel	Sand and Gravel extraction	50,000	350,000

# 1. Sand and Gravel

## 2.1 Production

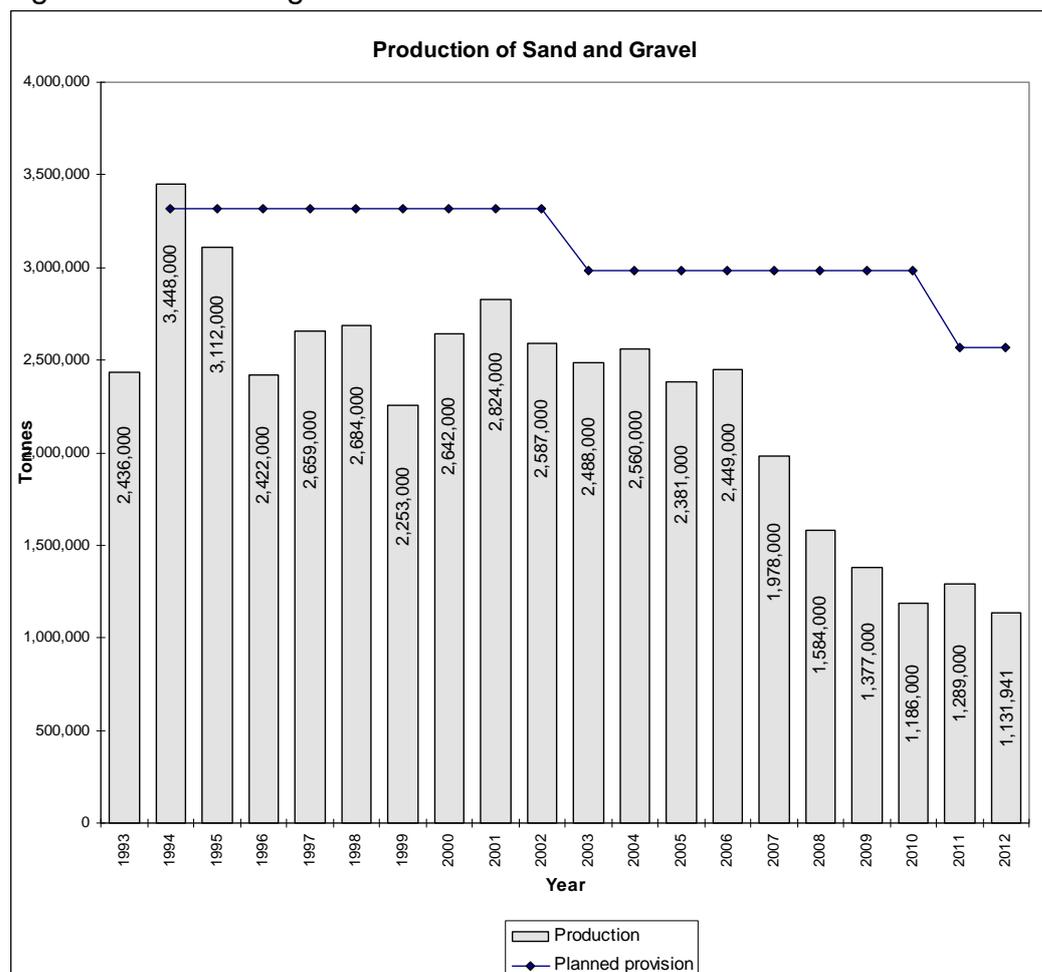
Norfolk County Council carries out an Annual survey for sand and gravel production, the totals from which are included in this report. The totals for the last 10 years are shown in table 1 below:

Table 1: Sand and gravel 10 year sales 2003-2012

Year	Production
2003	2,488,000
2004	2,560,000
2005	2,381,000
2006	2,449,000
2007	1,978,000
2008	1,584,000
2009	1,377,000
2010	1,196,000
2011	1,289,000
2012	1,131,941

Source: Norfolk County Council - annual minerals survey

Figure 1: Sand and gravel sales 1993-2012



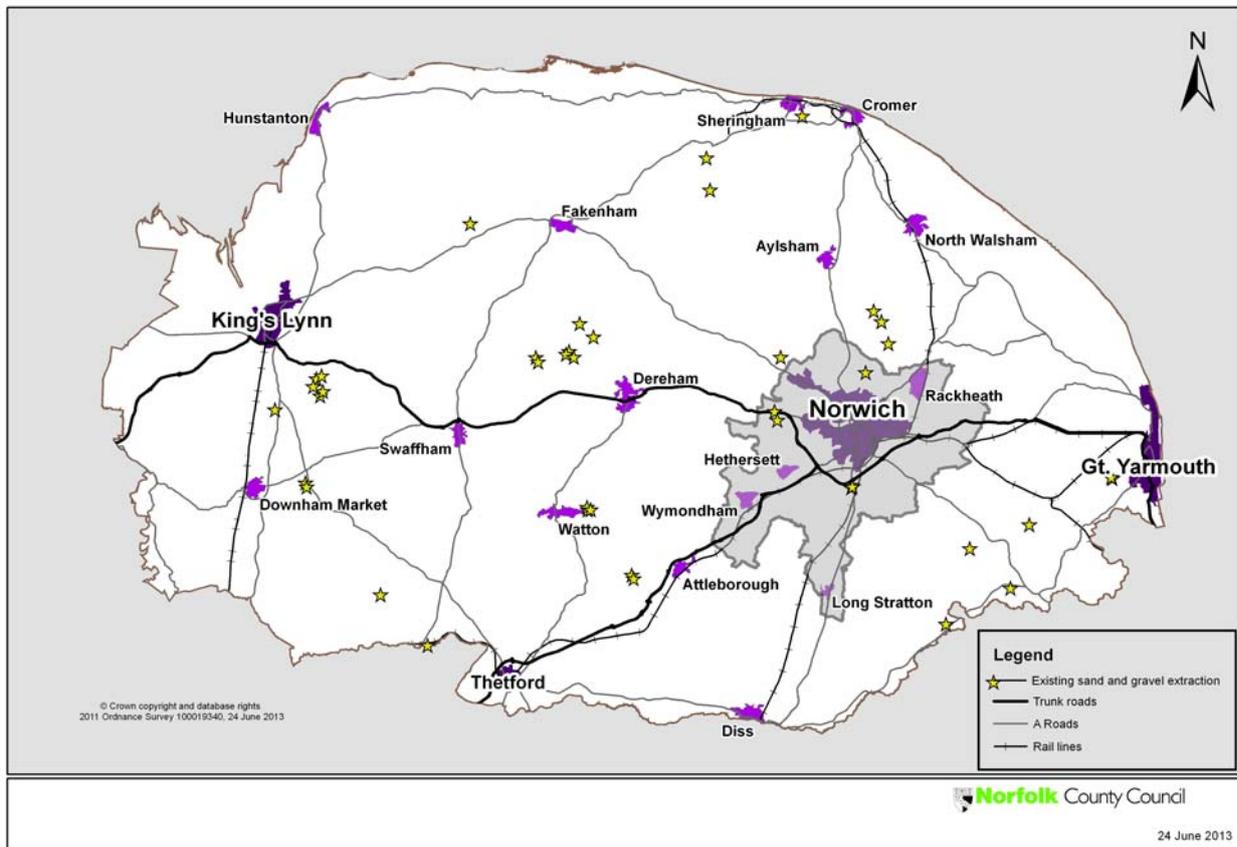
Source: Norfolk County Council – annual minerals survey.

Sand and gravel production in 2012 was 1,131,941 tonnes, representing a decrease of 12% on the 2011 figure. Production of sand and gravel continues to be well below the high levels of the late 1980s and early 1990s and below the average for the last twenty years of about 2.27 million tonnes (mt) per annum. **The average over the last 10 years was 1.84 million tonnes per annum.** The National Planning Practice Guidance (NPPG) states that the 10 year average should be used in the calculation of aggregate landbanks.

**The rolling 3 year average is 1.20 millions tonnes per annum.** This highlights a downward trend in recent years. The NPPG suggests the use of 3 year average figures to indicate recent trends in sales.

The NPPG suggests that the 10 rolling year average, 3 year rolling 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.

## 2.2 Sand and Gravel Quarries in Norfolk in 2012.



<b>Sand and Gravel extraction</b>		
<b>Parish</b>	<b>Operator</b>	<b>Address</b>
Beeston Regis	Carter Concrete	Britons Lane
Attlebridge	Cemex	Reepham Road
Costessey (Long Dale)	Longwater Gravel	Alex Moorhouse Way, Longwater Ind Est
Holt	Cemex	Ducks Hole Farm, Hunworth Road
Bittering	Tarmac	Reed Lane
Litcham	East Anglian Stone	Punch Farm, Watery Lane
Crimplesham	Frimstone	Main Road
Tottenhill	Cemex	Watlington Road
Wormegay	Delta Roadstone	New Road
Pentney	Middleton Aggregates / Tarmac	Abbey Farm
Middleton	Middleton Aggregates	Mill Drove
Earsham	Earsham Gravels	Bath Hills Road
Kirby Cane	Pallet Group Ltd	Leet Hill, Yarmouth Road
Carbrooke	Four Leaf Enterprises	Mill Lane
Shropham	Ennstone Johnston	Swangey Lane
Easton	Lafarge	County Showground
Stanfield	East Anglian Stone	Nr Highfields Lodge on B1146
Feltwell	Frimstone	Lodge Road
Burgh Castle	Folkes Plant	Butt Lane
Raveningham / Norton Subcourse	Cemex	Loddon Road
East Bilney	Middleton Aggregates	Rawhall Lane
Spixworth	Lafarge	Grange Farm, Buxton Road
Coxford	Longwater Gravel	Abbey Quarry, Docking Road
Middleton	Delta Roadstone	Mill Drove
Carbrooke	Frimstone	Summer Lane
Mundham	Earsham Gravels	Mundham Road
Easton (Longdell Hills)	Cemex	Costessey Quarry, Longdell Hills
Weeting	Lignacite	Off High Street, Brandon
Horstead	Longwater Gravel	Grange Farm, Buxton Road, Horstead
Horstead	Tarmac	Trafford Estate, Horstead
Buxton (Mayton Wood)	Frimstone	Adj Mayton Wood Landfill
Swardeston (Mangreen)	Lafarge	Mangreen Hall Farm
Stody Estate	Frimstone	Breck Farm, Melton Constable

Table 2: Sand and gravel quarries in Norfolk in 2012

### **2.3 Sand and gravel landbank of permitted mineral reserves**

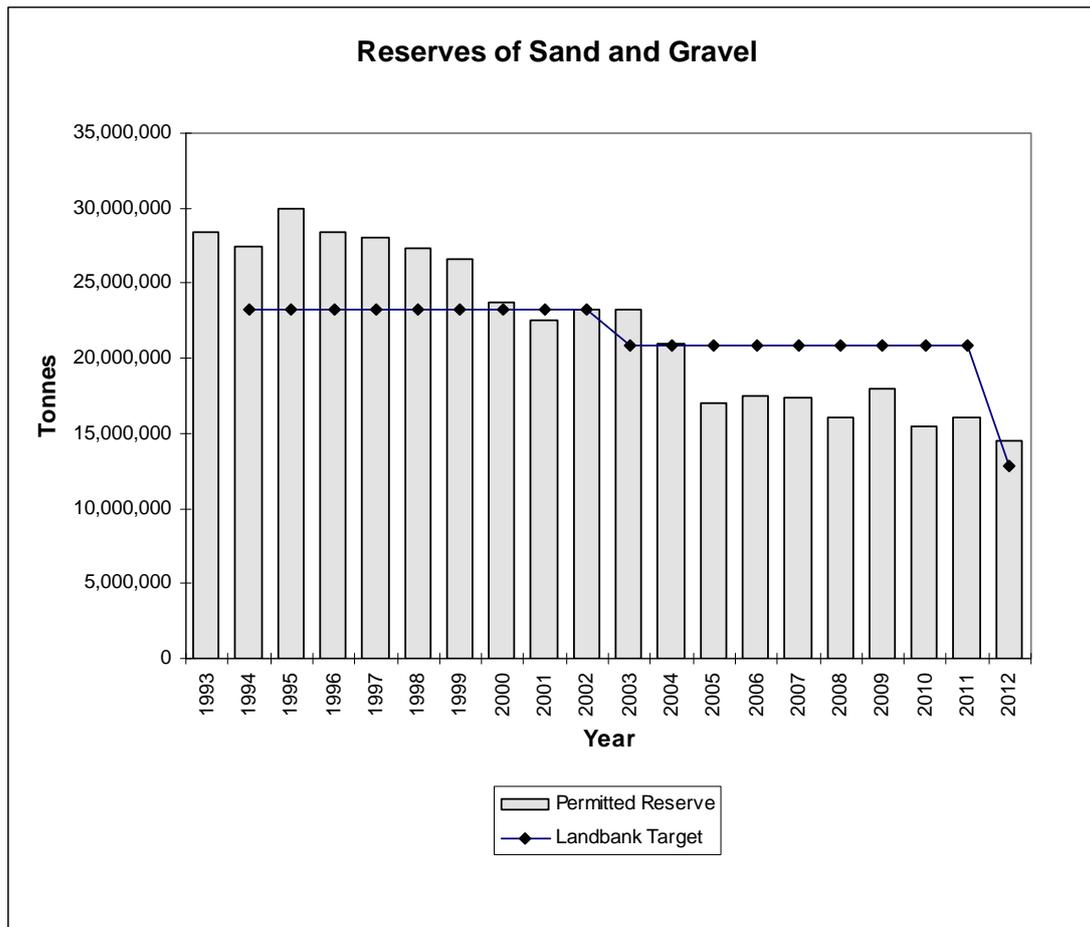
Reserves of sand & gravel at 31 December 2012 were 14,560,000 tonnes, a decrease of 10% on the 2011 figure. The decrease in reserve is due to a relatively low level of applications for new extraction, the majority of mineral applications having been for variation of conditions to extend the working life of extraction sites. This was likely to be a result of the low level of economic activity, and operators awaiting the outcome of the Site Specific Allocations Plan Examination in early 2013. Therefore, the grant of planning permissions did not keep pace with production and also there was a re-assessment of reserves downwards by a number of operators.

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. The landbank at 31/12/2012 based on the 10 year average in the NPPF was 7.9 years, and therefore within the range for the landbank indicated in Policy CS1, and national policy and guidance.

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

The Mineral Site Specific Allocations DPD allocated 26 sand and gravel sites which allocated slightly more than the total tonnage required in CS1, at the point of examination (March 2013). The estimated resource for the 26 sites was 27.51mt compared with a requirement based on policy CS1 of 25.04mt. The Mineral Site Specific Allocations were subject to an Examination in Public in March 2013, and the Inspector found the document sound in July 2013. Norfolk County Council adopted the Mineral Site Allocations DPD in October 2013.

Figure 2: Sand and gravel reserves/landbank target



Source: Norfolk County Council – annual minerals survey

Table 3: Sand and gravel Landbank calculation

	<b>Sand and gravel</b>
<b>Permitted reserves (as at 31/12/12)</b>	14,559,809
<b>10 year average sales</b>	1,840,000
<b>Resulting Landbank (years)</b>	7.9

Source: Norfolk County Council – annual minerals survey

# Carstone

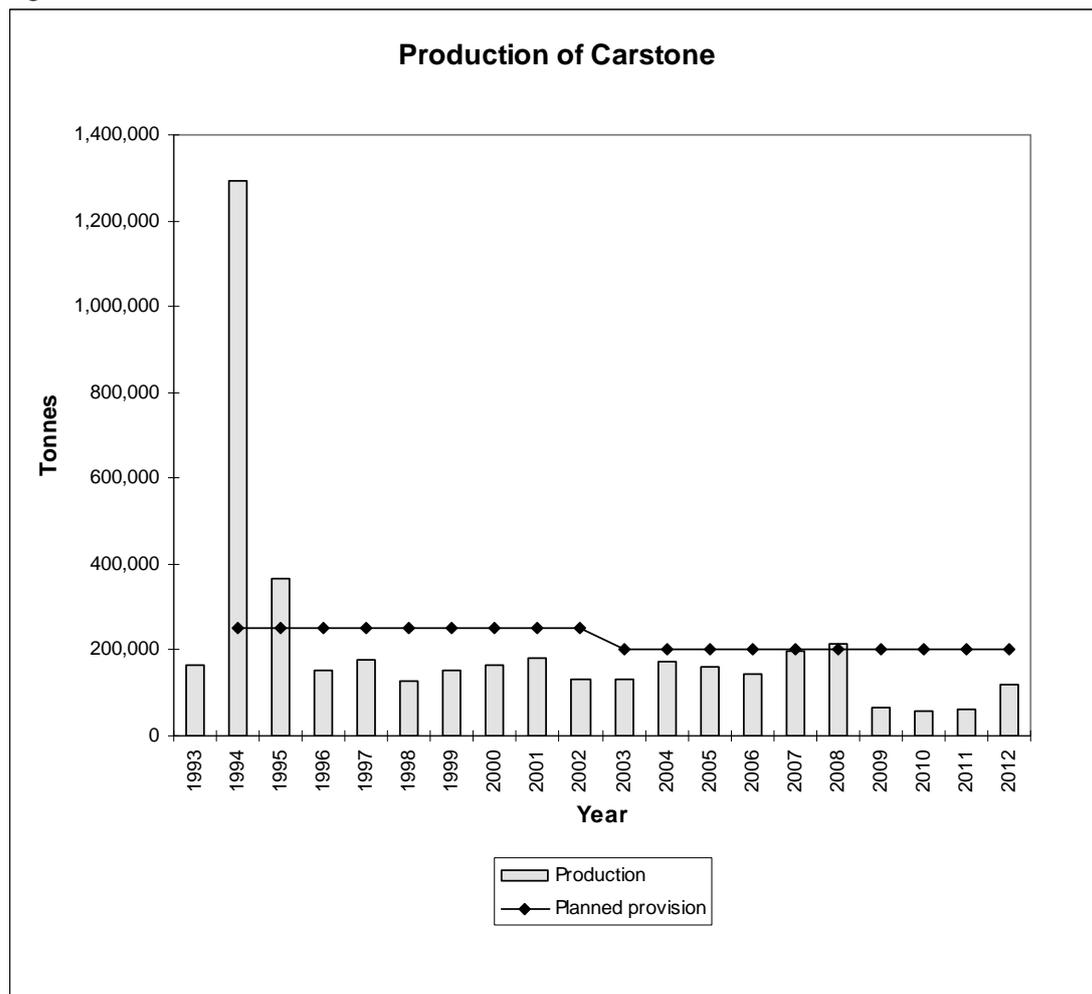
## 2.4 Production

Norfolk County Council carries out an Annual survey for carstone production. The totals for the last 10 years are shown in table 4 below, and for the last 20 years in Figure 3 below:

Table 4: Carstone 10 year sales 2003-2012

Year	Production
2003	131,000
2004	173,100
2005	159,454
2006	146,058
2007	196,389
2008	215,633
2009	66,298
2010	58,337
2011	62,308
2012	118,288

Figure 3: Carstone sales 1993-2012



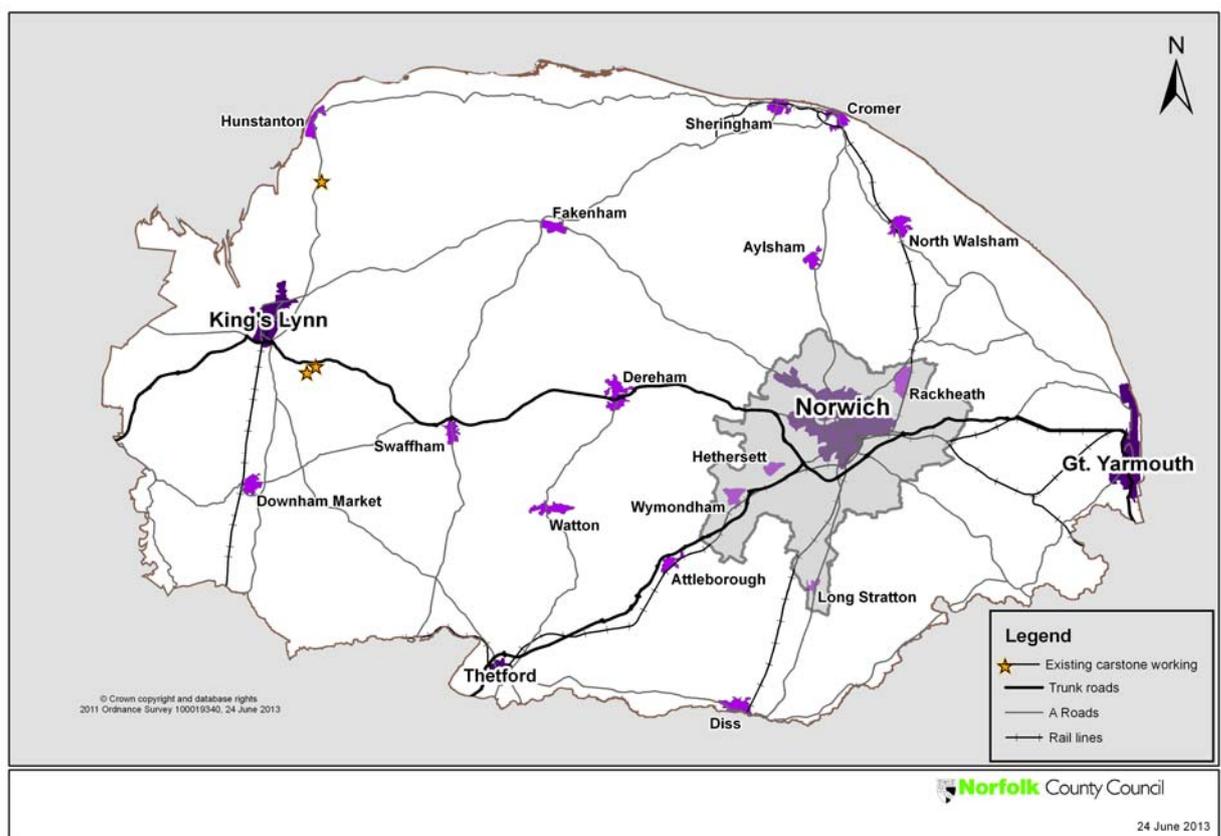
Source: Norfolk County Council – annual minerals survey.

Carstone production in 2012 was 118,288 tonnes, representing an increase of 90% over the 2011 figure. This is still substantially below the average for the last twenty years (211,000 tonnes) and slightly lower than the average for the last ten years (**132,000 tonnes**). The National Planning Practice Guidance (NPPG) states that the 10 year rolling average should be used in the calculation of aggregate landbanks.

The rolling 3 year average is 79,600 tonnes per annum. This highlights a downward trend in recent years. The NPPG suggests the use of 3 year rolling average figures to indicate recent trends in sales.

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.

## 2.5 Carstone Quarries in Norfolk



Carstone Extraction		
Parish	Operator	Address
Middleton	Middleton Aggregates	Mill Drove
Snettisham	Frimstone	Norton Hill
Middleton	Delta Roadstone	Mill Drove

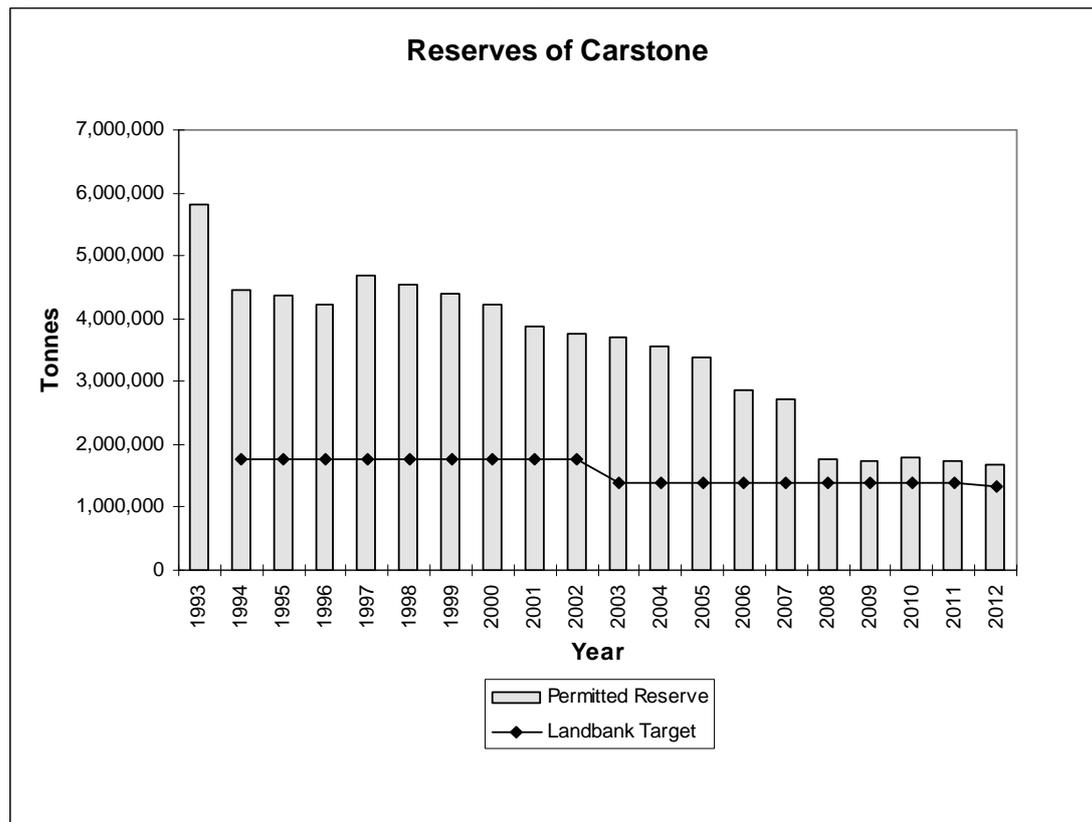
Table 4: Carstone Quarries in Norfolk

## 2.6 Carstone landbank of permitted mineral reserves

Reserves of Carstone at 31 December 2012 were 1,684,000 tonnes which represents a fall of 3% from 2011 figures. The decrease in reserve is due to no applications for new extraction having been received, the only application being for a variation of condition to extend the working life of an extraction site. This was likely to be a result of the low level of economic activity, and operators awaiting the outcome of the Site Specific Allocations Plan Examination in early 2013. Therefore, the grant of planning permissions did not keep pace with production, but there was a re-assessment of reserves upwards by the mineral operators.

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 landbanks at 31/12/2012 calculated on the 10 year rolling average sales, as set out in the NPPF was 12.7years, above the figure for the landbank indicated in Policy CS1, and national guidance.

Figure 4: Carstone reserves/landbank target



Source: Norfolk County Council – annual minerals survey.

Table 5: Carstone Landbank calculation

	<b>Carstone</b>
<b>Permitted reserves (as at 31/12/12)</b>	1,684,329
<b>10 year average</b>	132,000
<b>Landbank (years)</b>	12.7

Source: Norfolk County Council – annual minerals survey.

### 3 Secondary and recycled aggregate

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.

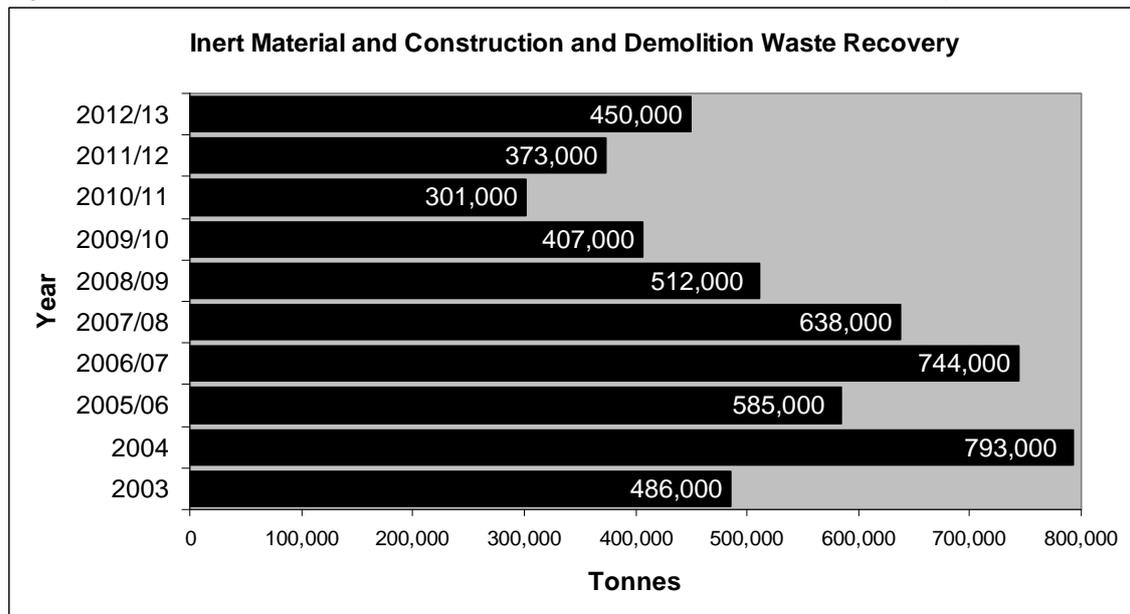
Recycled aggregates are aggregates produced from recycled construction waste such as crushed concrete, planings from road surfacing etc. Secondary and recycled aggregates can replace primary materials for many uses.

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 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.

#### 3.1 Overall inert waste management figures in Norfolk

It is estimated that in 2012/13 over 450,000 tonnes of the inert and construction & demolition waste, received at transfer stations and recycling centres, was recovered. This includes waste recovered at quarries, and sold as recycled aggregates, as well as waste management facilities. The figures from the quarry sites are only included in the last six years statistics.

Figure 5: Inert Material and Construction and Demolition Waste Recovery



Source: Norfolk County Council – annual waste survey/ Environment Agency returns.

The 10 year average figure for inert material and construction and demolition waste recovery is **528 900 tonnes**. The rolling 3 year average is

approximately **374 700 tonnes** per annum. This highlights a downward trend in recent years.

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 count with some of the figures.

### 3.2 Recycling Aggregate at Mineral Workings

Information about the amount of material from recycling aggregate as and ancillary operation at minerals workings is variable. The figure which has been included in the overall quantities of material recovered represents the sales figure of recycled material leaving the quarry site. This is only the sixth year that this figure has been reported therefore it is not possible to draw any meaningful conclusions from the data. This in part is due to less construction and demolition taking place during the survey period while economic activity has been low.

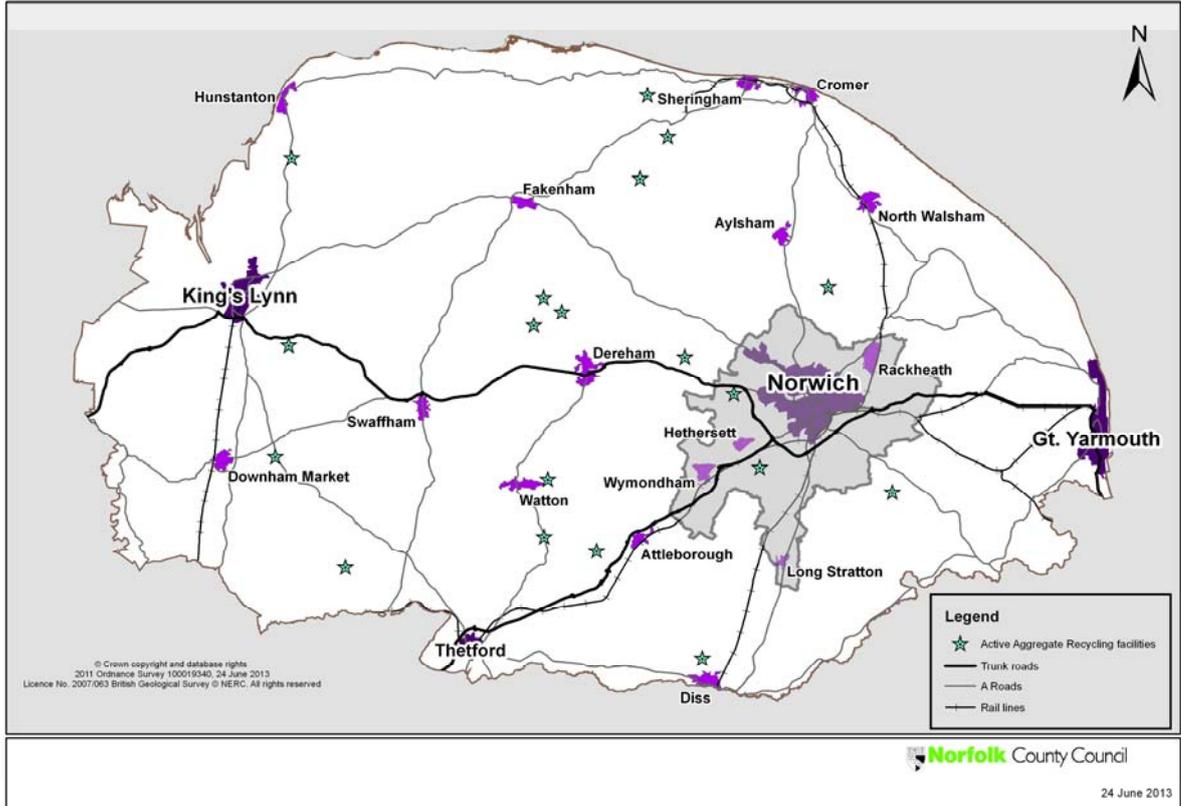
### 3.3 Secondary and Recycled Aggregate Sources

Table 6: Secondary and Recycled Aggregate Sources

Company	Location
Aylsham Plant Hire Ltd	Aylsham
Richardsons	Morningthorpe
Carter Concrete	Beeston Regis
Cemex	Costessey (Model Farm)
Cemex	Holt
Cemex	Costessey (Longwater)
Childerhouse, Mr R	Breckles
D R Cole Demolition	Brooke
East Anglian Stone Ltd	Stanfield
Fletcher Mr M	Feltwell
Frimstone Ltd	Feltwell
Frimstone Ltd	Snettisham
Frimstone Ltd	Carbrooke
Frimstone Ltd	West Dereham
Frimstone Ltd	Buxton
Glaven Pits Ltd	Letheringsett
Highways Contractors	West Caister
Lafarge Aggregates Ltd	Easton
Middleton Aggregates Ltd	Middleton
Middleton Aggregates Ltd	Ketteringham
Middleton Aggregates Ltd	Beetley
Morrisey Builders	Melton Constable
Mr Rounce	Aylmerton
Phillpott Demolition & Recycling	Bunwell
R & C Bettinson	Heywood

Company	Location
R J Holbrook	Shropham
T Farrow Construction	Bergh Apton

### 3.4 Secondary and Recycled Aggregate Sources in Norfolk over 20,000 tonnes per annum.



## **4 Materials sourced outside the County**

### **4.1 Imports and exports**

Quantifying intra county imports and exports has been a longstanding issue. However, the 2009 Aggregate Minerals Survey (AM2009), undertaken jointly between the Department for Communities and Local Government and the British Geological Survey (BGS) provided broad land-won sand and gravel import and export figures for MPAs/ regions. The data within the AM2009 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.

### **4.2 Crushed Rock**

Norfolk, due it's geology, relies on importation for the majority of its crushed rock (carstone is the only indigenous source and is not suitable for Asphalt production). The majority of this material is imported by rail into Norwich. Information about volumes of material imported through the railhead is commercially confidential. However the Collation of the Results of the 2009 Aggregate Minerals Survey for England and Wales the (AMS2009) indicated that the East of England (4.0 Mt) is one of the main importing regions and that the East Midlands and South West have the largest export figures representing 53 per cent (11.3 Mt), 31 per cent (5.4 Mt) of their respective total crushed rock sales.

Of the total crushed rock consumed in Norfolk (439,000 tonnes Table 11 in AM2009 Collation):

- 35-40% came from quarries within Leicestershire.
- 20-25% came from Derbyshire.
- 15-20% came from outside England and Wales (i.e., was imported via a wharf).
- 14% came from Norfolk (carstone).
- 5-10% came from Shropshire.
- 1-5% came from Yorkshire Dales National Park
- Rutland and North Somerset each supplied less than 1%.
- (NOTE: Powys and Somerset also supplied less than 1% each but the figures are so small as to be a small amount of back haul or specific deliveries).

Source: Collation of the results of the 2009 aggregate minerals survey for England and Wales & British Geological Survey (BGS).

### 4.3 Marine sources

Of the total marine sand and gravel consumed in Norfolk (1,000 tonnes Table 11 in AM2009 Collation):

- Between 90 and 100% was supplied via Kent. This represents less than 1% of total sand and gravel (both land-won and MSG) for Norfolk.
- Between 5-10% was supplied via Norfolk. This represents much less than 1% of total sand and gravel (both land-won and MSG) for Norfolk

Source: Collation of the results of the 2009 aggregate minerals survey for England and Wales & British Geological Survey (BGS).

## 5 Supply and Demand Assessment

### 5.1 Supply

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 7 below.

Table 7: Total aggregate sales in Norfolk

Year	Sand & Gravel	Carstone	Secondary & Recycled	Imports	Marine
2003	2,488,000	131,000	486,000		
2004	2,560,000	173,100	793,000		
2005	2,381,000	159,454	585,000		
2006	2,449,000	146,058	744,000		
2007	1,978,000	196,389	638,000		
2008	1,584,000	215,633	512,000		
2009	1,377,000	66,298	407,000		
2010	1,196,000	58,337	301,000	439,000	1,000
2011	1,289,000	62,308	373,000		
2012	1,132,000	118,288	450,000		
Average 2003-12	1,840,000	132,000	See para 4.1		

Source: Norfolk County Council – annual surveys/Environment Agency returns/ BGS AM2009 (rounded).

### Sand and gravel supply

The data in section 2.3 shows that the sand and gravel landbank of permitted reserves equates to 7.9 years which is above the 7 year minimum target for permitted reserves required by the NPPF. Norfolk County Council is also allocating sufficient land in the Mineral Site Specific Allocations DPD to ensure provision of a steady and adequate supply of aggregate for the county up to the end of 2026.

### **Carstone supply**

The data in section 3.3 shows that the carstone landbank of permitted reserves equates to 12.7 years which is above the 10 year target for permitted reserves required by the NPPF. Norfolk County Council is allocating sufficient sites in the Mineral 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 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.

Any potential increase in demand would be met by the adopted Mineral Site Specific allocations.

The landbank figures give no indication that there is any current need to review the planned provision in this allocations plan.

## **5.2 Demand**

### **Population & housing growth**

Forecasts produced by Norfolk County Council indicate that the county's population is likely to grow from 857,900 in 2011 to 949,500 by 2026 an increase of 11%. Accommodating this forecast population increase will be achieved through development planned for by Norfolk's district, borough and city authorities. The Greater Norwich Development Partnership (GNDP) 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 2001 and 2026 the area is planning for 42,000 new dwellings (12,706 completions up to 2011) and 27,000 new jobs in the period between 2008 and 2026. Breckland District Council is planning for 19,100 dwellings (6,119 completions up to 2011) in the period between 2001 and 2026 and 6,000 jobs. Great Yarmouth Borough Council's emerging strategy is planning for 4,500 dwellings over the period between 2013 and 2028 and 3,750 jobs. The Borough Council of King's Lynn and West Norfolk is planning for 16,500 dwellings (6,678 completions up to 2011) in the period between 2001 and 2026 and 5,000 jobs (2001-21). North Norfolk District Council is planning for 10,100 dwellings (3,465 completions up to 2011) and 4,000 jobs in the period between 2001 and 2021. The completion rates 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.

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 involve the use of alternative aggregates as well as primary aggregates.

## Infrastructure projects

There are a number of key infrastructure initiatives planned in the County to support the anticipated level of growth. Projects such as:

Location	Projects
Rural Norfolk	Broadband
Attleborough	Town centre transport improvements
	A11 link road
	Wastewater treatment
	Snetterton energy supply
Downham Market	Sewerage upgrades
Great Yarmouth	Third River Crossing
	A12 junction improvements
	Vauxhall roundabout improvements
	Gapton Hall roundabout improvements
	Harfreys roundabout improvements
	Great Yarmouth local junctions
	A12/A143 link road
	Strategic flood defence
	Wherry Line rail improvements and train station improvements
	Acle Straight dualling
King's Lynn	Middleton/East Winch bypass
	Hardwick Junction
	Other A47 junctions
	Town centre gyratory improvements
	Hospital roundabout improvements
	New bus station
	Increased surface water storage
	Sewerage improvements
	Reinforcement of medium pressure gas system.
	Reinforcement of electricity network
	Strategic flood risk
	Fenline rail improvements
Norwich Policy area	Blofield to Burlingham dualling
	Postwick Hub
	Norwich Distributor Road
	North East sub-station improvements
	North East trunk sewer
	Bittern Line rail improvements
	Harford – sustainable transport corridor
	Thickthorn – junction, P+R & bus priority
	B1108/NRP traffic signals
	South West Norwich sewerage upgrade
	Easton/Longwater junction improvements
	Public transport, walking and cycling improvements
	Easton to North Tuddenham dualling
	Honingham “expressway”
	Wymondham water supply connection
	Wymondham electricity upgrades
	Norwich to Cambridge Rail

<b>Location</b>	<b>Projects</b>
	Long Stratton bypass
	Long Stratton water supply
	Long Stratton sewer upgrades
	Hapton electricity upgrades
	Norwich to London Rail
Thetford	A11 junction improvements
	Bus station relocation
	Sewerage upgrades
	Electricity sub station
Wisbech fringe	Electricity reinforcement
	Bypass improvement
	Sewerage & drainage upgrades

## Conclusion

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.

Average annual sales of 1.84 million tonnes for sand and gravel and 0.132 million tonnes for carstone (as at 31/12/12) have been derived from a sales based assessment compliant with the NPPF and NPPG. In order to provide for flexibility; to cater for an potential increase in demand, or change in circumstances affecting the amount of mineral delivered from specific sites; as required by paragraph 14 of the NPPF having taken into account the 10 year rolling average of 2.05mt (as at 31/12/2010) the 'apportionment' figure was used in calculating the amount of allocations required in policy CS1. The Council does not consider it prudent at this time to base allocations purely on a rolling average of ten years sales, as flexibility is required in allocations. Having regard to all of the figures in this LAA, it is considered that the CS1 figure still represents a suitable figure on which to base allocations to achieve an adequate and steady supply of aggregate over the plan period. The Mineral Planning Authority will continue to monitor this trend. The Minerals and Waste Plan is up to date, and the County Council considers that the sand and gravel allocations within the plan are deliverable. Therefore, it is not considered necessary, at the present time, to conduct a review into the allocations plan.

The figures for aggregate need were 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 and has decided that it is appropriate for all MPAs in the East of England to continue to work with the 2009 EoEAWP apportionment figure for the foreseeable future in planning for future provision. Paragraph 145 of the NPPF 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.

The 2005-2020 apportionment figures are based on a sound and thorough assessment of national need, which has been debated in detail by all members of the EoEAWP, which includes representatives of all mineral planning authorities in the area and mineral operators. 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.

**Secondary & Recycled Provision Allowance to 2026** – the locally derived data available on secondary and recycled aggregate is variable and not considered completely reliable. 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 DCLG. 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 in to the apportionment figure. This enabled the apportionment figures to be set at a lower level than they otherwise would have been. The Council intends to carry forward the apportionment figures for aggregates and consider that this figure does not require any further adjustment to reflect secondary and recycled aggregate provision.

**Marine Sources Requirement to 2026** – the total of 1,000 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 moving forward.

## 8 Silica Sand

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 Britain, accounting for over 10 per cent of total output and a much larger proportion of glass sand production.

The three year average of silica sand extraction in Norfolk from 2010-2012 was 652,000 tonnes. This is a slight decrease on the previous three year average (from 2009-2011) of 669,000 tonnes. The silica sand reserve at 31/12/2012 was 4.9 million tonnes. This represents a landbank of 7.5 years based on the three year average figure, this is less than the 10 years set out in the NPPF. No planning applications have been submitted for silica sand extraction in 2012. The Minerals Site Specific Allocations Plan allocated a site (MIN 40) for silica sand extraction; this site contains an estimated resource of three million tonnes. This represents 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.

A single issue review of silica sand will be undertaken in 2015 to address this planned shortfall. The first stage of this review will be a call for sites within general areas of search.

Proposers of potential allocations will need to recognise the need to comply with relevant legislation, in particular that which relates to the protection of International and European protected habitats and species, to which the precautionary principle applies.

Landowner willingness for mineral extraction will also be a key factor.

All of the proposed allocations put forward for silica sand extraction, in the Mineral Site Specific allocations process, with the exception of MIN 40, were either deemed unacceptable as a result of uncertainty regarding likely significant effects on designated sites, or were withdrawn from the allocations process by the landowner.