Norfolk County Council

Norfolk Minerals and Waste Development Framework

Minerals Site Specific Allocations Plan –
Single Issue Silica Sand Review

Initial Consultation

January 2015

Norfolk County Council
at your service

Norfolk County Council

Norfolk Minerals and Waste Development Framework

Minerals Site Specific Allocations Plan –
Single Issue Silica Sand Review

Initial Consultation

January 2015

T. McCabe –Executive Director
Community and Environmental Services
Norfolk County Council
Martineau Lane
Norwich
NR1 2SG

www.norfolk.gov.uk

IN TRAN
communication for all

If you would need this document in large print, audio, braille, an alternative format or a different language please contact Norfolk County Council on 0344 800 8020 or 0344 8008011 (textphone) and we will do our best to help.

Contents

1. Introduction

1.1 The function of this document is to set out the scope and purpose of the **Norfolk Silica Sand Review** of the Minerals Site Specific Allocations Plan and to gather views on the potential methodology for identifying and assessing specific sites, preferred areas and/or areas of search on which silica sand extraction could take place during the plan period to 2026.

1.2 The National Planning Practice Guidance (paragraphs 27-008/009) states that mineral planning authorities should plan for the steady and adequate supply of minerals in one or more of the following ways (in order of priority):

a) designating Specific Sites – where viable mineral 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;

b) designating Preferred Areas, which are areas of known mineral resources where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction; and/or

c) designating Areas of Search – areas where knowledge of mineral resources may be less certain but within which planning permission may be granted, particularly if there is a potential shortfall in supply.

1.3 Designating Specific Sites in minerals plans provides the most certainty on when and where development may take place. The better the quality of data available to mineral planning authorities, the better the prospect of a site being designated as a Specific Site.

1.4 The purpose of the Silica Sand Review is to address an identified shortfall in the tonnage of silica sand resources in allocated specific sites compared with the target identified in the adopted Plan. The shortfall is explained in more detail in section 5. This is the first stage in the Silica Sand Review process. The subsequent stages are explained in the 'what happens next' section of this document.

1.5 You are invited to read the following document and comment on the issues raised. It would helpful to the process if comments made can be backed up by supporting information where possible as the Silica Sand Review will be subject to Examination in Public by a Planning Inspector appointed on behalf of the Secretary of State.

1.6 The consultation process and the questions that we are seeking responses to are detailed in the following section.

2. The consultation process

2.1 Norfolk County Council's Environment, Development and Transport Committee agreed at its meeting on 16 January 2015 for the Initial Consultation on the Silica Sand Review (this document) to be published for a consultation period of 6 weeks.

2.2 All information on the Initial Consultation will be available on the County Council's website at www.norfolk.gov.uk/nmwdf and respondents will be able to make direct online responses. The consultation documents will be available to view at Norfolk's libraries, the seven District/Borough/City Council offices and at County Hall in Norwich.

2.3 The preferred method of submitting consultation responses is by using the County Council's online consultation system to make the comments directly at www.norfolk.gov.uk/nmwdf. However emails, letters and faxed responses are also acceptable and the relevant contact details are as follows:

Post to: Planning Services
Community and Environmental Services Department
Norfolk County Council
County Hall
Martineau Lane
Norwich
NR1 2DH

Email: LDF@norfolk.gov.uk

Fax: 01603 223219 (marked for the attention of Planning Services)

2.4 Please note that consultation responses cannot be treated as confidential and will be published on the consultation website.

2.5 As stated earlier, this document is the first stage in the Silica Sand Review of the Minerals Site Specific Allocations Plan with the purpose of addressing an identified shortfall in the tonnage of silica sand resources in allocated sites, compared with the target identified in the adopted Plan. The shortfall is explained in more detail in section 5 of this document.

2.6 The Minerals Site Specific Allocations Plan was examined by an independent Planning Inspector and adopted by Norfolk County Council in October 2013. As the Minerals Site Specific Allocations Plan is adopted, any representations and consultation responses received during the production of the Plan will not be carried forward into the Silica Sand Review. This document is the start of a new process.

2.7 Consultation responses should only relate to the silica sand issues raised in this document. This consultation is **not** an opportunity to make representations on any other aspects of the adopted Minerals Site Specific Allocations Plan or the adopted Minerals and Waste Core Strategy.

2.8 The questions which we are specifically seeking responses to at this stage in the Silica Sand Review are detailed in the relevant section of this document and are also listed overleaf:

Background information for the following question is provided in Section 5 of this document:

Question 1: Should the Silica Sand Review plan to meet the revised shortfall of 2.45 million tonnes over the plan period, or should a different quantity be planned for? In your answer, please provide information/evidence to support your view.

Background information for the following questions is provided in Section 8 (Environment) of this document:

Section 8.1.1 Question 2: Should enhanced evidence on the potential effects of silica sand extraction on the Roydon Common and Dersingham Bog SAC and Roydon Common and Dersingham Bog Ramsar sites be provided in areas closer than 2km from the SAC/Ramsar, or should a different distance from these sites be used? In your answer, please provide information/ evidence to support your view.

Section 8.1.5 Question 3: Should enhanced evidence on the potential effects of silica sand extraction on the Wash and North Norfolk Coast SAC, The Wash SPA and The Wash Ramsar be provided in areas closer than 250 metres from the SAC/SPA/Ramsar, or should a different distance from these sites be used? In your answer, please provide information/ evidence to support your view.

Section 8.2.1 Question 4: Should enhanced evidence areas for SSSIs be based on the sensitivity of qualifying features to the effects of mineral extraction, or should different criteria be used? In your answer, please provide information/evidence to support your view.

Section 8.2.1 Question 5: Do you have information on the minimum distances from SSSIs within which an enhanced level of evidence would be required to ensure that harm is not caused to the qualifying features of a SSSI? In your answer, please provide information/evidence to support your view.

Section 8.3.1 Question 6: Should enhanced evidence on the potential effects of silica sand extraction on ancient woodland be provided in areas within 15 metres of the ancient woodland, as in the Four Acres appeal, or should a different distance from these sites be used? In your answer, please provide information/evidence to support your view.

Background information for the following questions is provided in Section 9 (Historic environment and heritage assets) of this document:

Question 7: Should enhanced evidence on the potential effects of silica sand extraction on heritage assets be provided in areas closer than 250 metres from the heritage asset, or should a different distance from these sites be used? In your answer, please provide information/evidence to support your view.

Question 8: Does consultation with English Heritage and the Norfolk Historic Environment Service provide an appropriate method for ascertaining the likely archaeological importance of proposed Specific Sites, designated Preferred Areas and/or Areas of Search, and potentially acceptable methods of protection/mitigation? Please provide information/evidence to support your view.

Background information for the following questions is provided in Section 10 (Amenity) of this document:

Question 9: Should enhanced evidence on the potential effects of silica sand extraction on amenity be provided in areas closer than 125 metres from sensitive receptors, recognising that this does not represent a potential standoff distance which will be determined on a case by case basis, or should a different distance be used? In your answer, please provide information/evidence to support your view.

Question 10: Should allocated sites and sites with planning permission for non-mineral uses that are located in or adjacent to the silica sand resource be excluded from Preferred Areas or Areas of Search, or should a different approach be taken? In your answer please provide information/evidence to support your view.

Background information for the following question is provided in Section 11 (Agricultural land classification) of this document:

Question 11: Should agricultural land grades 1, 2 and 3 be removed from consideration as potential Preferred Areas or Areas of Search for future silica sand extraction? Please supply information/evidence to support your view.

Background information for the following question is provided in Section 12 (Flood Risk) of this document:

Question 12: Should land in flood zones 2 & 3 be removed from consideration as potential Preferred Areas or Areas of Search for future silica sand extraction? Please supply information/evidence to support your view.

Background information for the following question is provided in Section 13 (Previous workings and current permissions) of this document:

Question 13: Are there any areas not shown as previous workings on the map which have been worked to the full extent of all commercially viable deposits of silica sand? Please supply evidence/information to support your view and a plan to show the area which should be removed from consideration in this review.

Background information for the following question is provided in Section 14 (Extent of deposits) in this document:

Question 14: Should proposals for Specific Sites for silica sand extraction be considered from within the carstone resource, if suitable evidence is provided regarding the quality and grade of silica sand on the site? Please provide evidence/information to support your view.

Question 15: Should defined Preferred Areas and Areas of Search only include the silica sand resource which is within the Leziate beds, or should the whole silica sand resource, as mapped by the BGS, be included? Please provide evidence/information to support your view.

Background information for the following question is provided in Section 16 (Landowner willingness) in this document:

Question 16: If you are a landowner of over 10 hectares in the silica sand resources and would be **unwilling** for silica sand extraction to take place on your land under all circumstances, please respond to us with details and a plan showing your landholding. This information would be used in defining Preferred Areas/Areas of Search only, and is valid for the purposes of this review only.

Background information for the following question is provided in Section 17 (Criteria for land to be defined as a Preferred Area or Area of Search) in this document:

Question 17: Is the approach to land to be excluded from Preferred Areas and Areas of Search appropriate, if these areas need to be defined through the Silica Sand Review process, or should an alternative approach be used? Please provide evidence/information to support your view, including alternatives which would comply with national policy and guidance.

Question 18: Are there any other issues that should be taken into account in the assessment of proposals for specific sites and in the definition of Preferred Areas and/or Areas or Search for silica sand extraction? Please provide evidence/information to support your response.

3. What happens next

a) Consultation responses received (early 2015): The purpose of the current document is to determine the information that must be submitted with proposals for silica sand extraction sites to be considered through the Silica Sand Review. The comments received in response to this consultation will be entered into Norfolk County Council's e-consultation database and taken into account in determining these criteria.

b) Call for sites (early 2015): Once the criteria for the information that must be submitted has been decided, a call for sites will be advertised to enable landowners, mineral companies and their agents to submit land for consideration for future silica sand extraction. If sufficient suitable sites are not submitted, the criteria proposed in this Initial Consultation document will be used by Norfolk County Council to map Preferred Areas or Areas of Search for future silica sand extraction instead. It is currently proposed that such Areas would exclude from consideration all land proposed as Enhanced Evidence Areas and land outside the inferred silica sand mineral resources as mapped by the British Geological Survey.

c) Assessment of sites (Spring 2015): The Specific Sites, Preferred Areas and Areas of Search proposed in response to the 'call for sites' and/or designated by Norfolk County Council if necessary, will be assessed by Planning Officers at Norfolk County Council in consultation with the relevant specialist County Council officers.

The basis for the site assessments undertaken by the County Council will follow a very similar methodology to that used in the assessment of sites for the adopted Minerals Site Specific Allocations Plan, and are expected to be as follows:

Landscape:

- A description of the site and its landscape context;
- Any known landscape constraints (e.g. designated landscape areas;
- The presence of any landscape detractors (e.g. overhead power lines);
- Comments on how existing landscape features or viewpoints might be affected by the proposed development;
- The landscape impact of the development (on residents, travellers/visitors' enjoyment of the countryside, light pollution etc) and whether any potential screening itself would be intrusive; and
- Consideration of whether a potential restoration scheme could be proposed which is feasible, suitable and offers opportunities for longer-term landscape gains.

Ecology:

- Details of any designated nature conservation sites nearby;
- Whether the site could affect the drainage of any designated sites;
- Details of any protected or BAP species and/or habitats which could be affects;
- Details of whether any suitable restoration scheme could be proposed; and
- Whether there is any potential to create any target habitats.

Highways:

- The hierarchy level of the road used to access the site (e.g. HGV Access Route);
- If not on an HGV access route or better, the distance to the nearest suitable road;
- Details of any significant access difficulties to the site; and
- Details of any improvements required to make the site suitable in highways terms (e.g. road widening, junction improvements etc) and whether such improvements are already planned.
- Highway access will be assessed in terms of the suitability of the route from the proposed extraction site to the existing silica sand processing plant at Leziate.

Archaeology:

- Details of known archaeological assets, including information on finds from the Historic Environment Records Service;
- Assessment of the likelihood of archaeological assets occurring onsite;
- Proposals for protection/mitigation likely to be necessary for archaeological assets; and
- Whether potential mineral extraction on site would be supported by Norfolk County Council's Historic Environment Service and whether this is dependent on appropriate protection/mitigation.

Sites will also be assessed against the relevant national and local planning policies. The relevant policy documents are the National Planning Policy Framework, the Norfolk Minerals and Waste Core Strategy and the King's Lynn and West Norfolk Core Strategy. These documents are explained in more detailed in Section 4.

Through the Sustainability Appraisal process, the potential impact (positive or negative) of each site will also be assessed on:

- amenity (noise, vibration, visual intrusion, health)
- water resources/water quality
- geodiversity
- heritage assets - conservation areas/listed buildings/scheduled monuments/historic parks and gardens/archaeology
- agricultural land grade/soil quality
- flood risk
- air quality
- employment and economic growth

The site assessment work will be published in the Preferred Options consultation document along with supporting documents as required.

d) Preferred Options consultation (Summer 2015): This version of the Silica Sand Review will include the Specific Sites, Preferred Areas and/or Areas of Search proposed for silica sand extraction in Norfolk. The document will contain an initial assessment of each of the proposed sites and/or areas for silica sand extraction and will describe the County Council's suggested way

forward in terms of which sites/areas are considered suitable for future silica sand extraction. The document will be published for consultation and the comments received will be entered into Norfolk County Council's e-consultation database and will be taken into account in the production of the Publication document.

e) Pre-submission publication (Autumn 2015): This is the version of the Silica Sand Review document that will be submitted to the Secretary of State and examined by a Planning Inspector. It will contain only those Specific Sites/Preferred Areas and/or Areas of Search which are considered suitable for silica sand extraction in Norfolk and needed during the plan period. This document will contain the policies detailing the requirements that a planning application for silica sand extraction on each allocated site or area will need to address. This document must be published for at least a six week period to enable representations to be made on whether or not the document is legally compliant and 'sound' (as explained in paragraph 182 of the National Planning Policy Framework).

f) Submission (early 2016): The representations received, in response to the publication of the pre-submission document, will be entered into Norfolk County Council's e-consultation database and summarised. If there are no fundamental issues raised against the Silica Sand Review, such as those raised by regulatory agencies, the Council will submit the plan together with all the representations and the summary to the Secretary of State for Examination in Public.

g) Examination and the Planning Inspector's Report (Spring 2016): Following the examination the Planning Inspector will decide whether or not the plan is legally compliant and 'sound'. In this decision the Inspector will take into account the representations received and consider the plan against the 'tests of soundness' detailed in the National Planning Policy Framework (paragraph 182). If the Inspector does not find the plan 'sound' and legally compliant then the Council will have to undertake the preparation of the plan again. The Inspector can recommend main modifications to the plan to make it legally compliant and 'sound' if required. If the Inspector does find the plan 'sound' and legally compliant then the Council can decide to adopt the plan.

h) Adoption (Summer 2016): Once the Council has received the Inspector's report and implemented any modifications required to the plan, the Council will then make the decision whether to adopt the document or not. On adoption the Council will produce an adoption statement that will be advertised in the local press and the adopted document, sustainability appraisal and adoption statement will be available for inspection.
As the purpose of the Silica Sand Review of the Mineral Site Specific Allocations Plan is to allocate additional Specific Sites and/or designate Preferred Areas/ Areas of Search for future silica sand extraction, the adopted document will form part of the Mineral Site Specific Allocations Plan.

4. Planning Policy Documents

The Norfolk Minerals and Waste Development Framework

4.1 The statutory plans for mineral planning in Norfolk are contained in the Norfolk Minerals and Waste Development Framework. This framework consists of four Planning Policy documents which form the Local Plan:

- **The Norfolk Minerals and Waste Core Strategy and Development Management Policies DPD –** (the 'Core Strategy') which contains policies for use in making decisions on planning applications for mineral extraction and associated development and for waste management development, and in the selection of the specific site allocations in Norfolk. This document was adopted in September 2011
- **The Norfolk Minerals Site Specific Allocations DPD** – allocates specific sites which are available and acceptable in principle for mineral extraction and associated development, to meet the requirements of Core Strategy Policy CS1 until the end of 2026. This document was adopted in October 2013.
- **The Norfolk Waste Site Specific Allocations DPD** – allocates specific sites which are available and acceptable in principle for waste management facilities, to meet the requirements of Core Strategy policy CS4, until the end of 2026. It was adopted in October 2013.
- **Policies Map** (previously referred to as a Proposals Map) - accompanies the adopted plans and is designed to act as a visual aid in interpreting the policies in the adopted Plans. The Policies map will be revised following the adoption of the Silica Sand Review and will reflect the up-to-date minerals and waste planning strategy for Norfolk.

4.2 These plan documents cover the period up to the end of 2026. Built into the plans is a requirement for regular review every five years from the date of adoption. In addition to a regular review is the requirement to carry out an early single issue review of silica sand allocations. This document is the start of the Silica Sand Review process.

4.3 The Silica Sand Review is required because there had been a shortfall in the amount of silica sand resource contained within allocated sites compared with the target in Core Strategy Policy CS1. The reasons for this shortfall included a lack of potential allocations which were deemed to be acceptable based on the evidence provided, and the late withdrawal of a site by the landowner, which was proposed for allocation. Further detail is provided in Section 5.

4.4 The Inspector carrying out the examination of the Mineral Site Specific Allocations Plan (Minerals SSA Plan) considered the silica sand sites which had been submitted, but not allocated, in deciding whether any of these sites would be suitable for allocation to address the shortfall. He decided that none were suitable for allocation based on the evidence before him. He recommended that the Minerals SSA Plan be modified to contain the requirement for an early single issue review to address the silica sand shortfall. The modified document was adopted by Norfolk County Council on 28 October 2013.

4.5 The Norfolk Minerals and Waste Development Framework also includes the following documents produced by Norfolk County Council:

Statement of Community Involvement (April 2012) which sets out the ways in which local stakeholders will be consulted on the production of the Local Plan and in the determination of planning applications

Minerals and Waste Development Scheme (May 2013) which sets out what documents are being produced as part of the Local Plan and the timetable for their production, including consultation stages

Local Aggregate and Silica Sand Assessment – this assessment is produced annually and includes information on the rolling average of 10 years' sales data, the landbank of permitted reserves and other relevant local information, taking into account the advice of the East of England Aggregate Working Party.

Monitoring Report – this document is produced annually and contains information on the implementation of the Minerals and Waste Development Scheme and the extent to which the policies set out in Local Plan (the Core Strategy and Site Specific Allocations policy documents described earlier) are being achieved.

National Planning Policy Framework (Department for Communities and Local Government (DCLG), March 2012) sets out the Government's planning policies for England and how these are expected to be applied. The NPPF must be taken into account in the preparation of local plans, and is a material consideration in planning decisions.

National Planning Practice Guidance A web-based resource published by DCLG on 6 March 2014 and updated as needed. This document should be read alongside the NPPF. It is available at: http://planningguidance.planningportal.gov.uk/blog/guidance

King's Lynn and West Norfolk Borough Council Local Plan
The silica sand resource is only located in the area of Norfolk covered by the Borough Council of King's Lynn and West Norfolk. Therefore the Local Plan for King's Lynn and West Norfolk also forms part of the Development Plan and is relevant to the determination of planning applications for silica sand extraction. The Borough Council's Local Plan currently consists of:

- **Saved policies** from the King's Lynn and West Norfolk Local Plan of 1998 which are available to view on the Borough Council's website at: http://www.west-norfolk.gov.uk/default.aspx?page=24530
- The King's Lynn and West Norfolk Borough Council **Core Strategy** was adopted in July 2011 and is available on the Borough Council's website at: http://www.west-norfolk.gov.uk/pdf/Complete%20Core%20Strategy%202011.pdf

King's Lynn and West Norfolk Borough Council's '**Site Allocations and Development Management Policies**' document is planned to be published in January 2015 and submitted to the Secretary of State in Spring 2015. Therefore, due to the timescale for production of the Silica Sand Review, this document is expected to be adopted and form part of the Development Plan prior to the examination of the Silica Sand Review document.

5. The Single Issue Silica Sand Review

5.1 The purpose of the Silica Sand Review is to address an identified shortfall in the tonnage of silica sand resources in allocated sites compared with the target identified in the adopted Plan.

5.2 Core Strategy Policy CS1 indicated that 6.4 million tonnes of additional silica sand site allocations were required to meet production demands, forecast to be 750,000 tonnes per annum, up to the end of 2026.

5.3 As the result of a reassessment of landbank reserves by the operator (Sibelco UK) and the use of updated production figures to the end of 2012, the requirement was reduced to 5.6 million tonnes of new site allocations for silica sand extraction in the Mineral Site Specific Allocations Plan. However, it was only possible to allocate one silica sand extraction site, MIN 40 at East Winch, in the adopted document. MIN 40 contains an estimated three million tonnes of silica sand. This resulted in a shortfall of 2.6 million tonnes of allocated silica sand resources.

5.4 Other potential silica sand extraction sites were submitted to the minerals site specific allocations process, these sites were referred to as MIN 39, MIN 41, MIN 42, MIN 94 and MIN 113. Site MIN 39 was intended to be allocated as an area of search within the Minerals Site Specific Allocations Plan. MIN 39 and MIN 113 were withdrawn by the landowners, during the site allocations process with MIN 39 withdrawn just before the examination hearings. MIN 42, MIN 41 and MIN 94 were determined to be unsuitable for allocation as the result of uncertainty regarding the potential for significant effects on European designated sites, specifically Roydon Common and Dersingham Bog SAC. The potential allocation of MIN 41 was discussed as a hearing matter, and the Inspector heard evidence from Natural England, the landowner's agent, Sibelco UK Ltd and Norfolk County Council.

5.5 The Planning Inspector, in recommending the inclusion of the Silica Sand Review in the Minerals Site Specific Allocations Plan, noted the need for appropriate levels of evidence and an understanding by site proposers of the sensitivities of the area surrounding any potential site allocation.

5.6 The attention of potential site proposers is drawn to the Inspector's comments that *"The review will also help ensure that attention is focussed on suitable extraction areas within the silica sand resource area. Uncertainty and unwarranted pressure on unsuitable sites would be avoided"*.
Noting the above, site proposers should ensure that they provide proportionate evidence to allow an assessment of the suitability of potential allocations. The Inspector noted that with regard to the evidence before him in the case of MIN 41 *"It is possible that, with further investigation, concerns could be quelled and Appropriate Assessment could be presented at the application stage."* However, the Inspector concluded that *"I cannot support the allocation on the basis of the information before me."*

5.7 Therefore, to aid site proposers, attention is drawn later in this consultation document, to areas and designations which are likely to require an increased level of evidence in order that a site allocation could be made which would be legally compliant and capable of passing the tests of soundness at examination.

5.8 The most recent Norfolk Local Aggregate and Silica Sand Assessment contains data on permitted reserves and silica sand production to the end of 2013, provided by Sibelco UK. The permitted silica sand reserve in Norfolk at 31/12/2013 was estimated to be 4.3 million tonnes. Therefore the estimated shortfall in allocated resources over the plan period (to 2026) is now calculated to be 2.45 million tonnes. Therefore it is expected that no more than one or two additional specific sites need to be allocated over the plan period to meet the shortfall.

5.9 The silica sand requirement over the plan period was calculated in the Core Strategy using an expected average production figure of 750,000 tonnes per annum. The 10 year average silica sand production for the extraction site at Leziate in Norfolk for 2004-2013 was 665,600 tonnes per annum. The National Planning Practice Guidance (paragraph 27-090) states "the required stock of permitted reserves for each silica sand site should be based on the average of the previous 10 years' sales. The calculations should have regard to the quality of sand and the use to which the material is put."

5.10 However, the three year average of silica sand extraction in Norfolk from 2011-2013 was 777,100 tonnes. This is a significant increase on the previous three year average (from 2009-2011) of 652,000 tonnes. This increase in production is as a result of an increased demand for Leziate sand as silica sand sites in other parts of the country reach the end of their working lives. Therefore, due to the increase in production over the last three years, it is considered to still be appropriate to continue to forecast the silica sand need over the plan period using an annual production figure of 750,000 tonnes.

Silica sand requirement and shortfall

Requirement: Expected production of 750,000 tonnes per annum x 13 years (2014-2026)	9.75 million tonnes
Silica sand reserve estimate at 31/12/2013	4.3 million tonnes
Estimated resource in allocated site MIN 40	3.0 million tonnes
Remaining shortfall	2.45 million tonnes
The 2.45 million tonnes shortfall is equivalent to a need for less than 3.5 years' additional supply over the period of the Core Strategy	

Question 1: Should the Silica Sand Review plan to meet the revised shortfall of 2.45 million tonnes over the plan period, or should a different quantity be planned for? In your answer, please provide information/evidence to support your view.

6. Spatial Portrait of Silica Sand and its uses

6.1 Silica Sand contains a high proportion of silica which makes it an important raw material in a number of industrial processes. Silica sand is recognised as a nationally important mineral resource and is one of a small number of such minerals which can be subject to the Nationally Significant Infrastructure Projects (NSIP) process. The criteria for a minerals project to be considered as a NSIP are that the proposal involves a strategically important industrial mineral, or that it is a significant scale, e.g. over 150 hectares. Silica sand would fit the first of these criteria. It is therefore possible that the prospective developer for any silica sand extraction could apply for it to be determined by the Planning Inspectorate as an NSIP rather than as an application to the Mineral Planning Authority. The adopted Development Plan would be a material consideration in the determination of an NSIP, including the outcome of this review. For more information on NSIPs see: http://infrastructure.planningportal.gov.uk/

6.2 Principal uses for silica sand are glass-making and as foundry sand, although it is also used in water filtration, the manufacture of glazes, enamels, plastics, sealants and paints, and as a proppant in oil and gas production. Lower grade silica sands are used in horticulture, sporting and equestrian uses as dressings and surface construction. The very lowest grade silica sands are used for non-industrial purposes in construction.

6.3 The use to which a particular deposit is best suited is a product of its quality, purity, and grain size and shape. Natural variations are present within the deposits and a change in any characteristic may render part of the deposit unsuitable for a particular use.

6.4 The deposits which have been worked in Norfolk to date have been used for glass-making and foundry uses, with only a very small proportion of material which does not make the required specification after processing being used for other purposes. Information from the sole silica sand operator in Norfolk (Sibelco UK Ltd) stated that all sales in 2013 were for industrial/ specialist end uses, with clear glass manufacture being the principal use.

6.5 The silica sand as a mineral resource in Norfolk is found in the west of the County, a relatively narrow band which runs north to south just to the east of King's Lynn. The northern extent of the silica sand resource is at Heacham, and the southern extent around Hilgay. The area of current extraction is centred on the parish of Leziate. This is also the centre for past workings. A silica sand processing plant is located at Leziate, together with a railhead.

6.6 The majority of the processed silica sand is transported out of Norfolk by rail, to glass manufacturers in the North-east and North-west of England.

6.7 The deposit which is being worked at Leziate is one of two in England where silica sand of sufficient purity and grade for the manufacture of colourless flint (container), and float (window) glass is extracted. The other extraction site of silica sand of comparable quality is in Surrey.

6.8 Silica sand which is to be used for glass manufacture requires a significant amount of processing prior to being suitable for onward shipment to the glass manufacturers. This processing requires large and capital intensive plant such as the one located at Leziate. Processes include acid leaching and magnetic separation. Consistency of material is an important consideration and this requires blending of sand from different areas of the working.

6.9 Due to the cost and largely fixed nature of the processing plant and railhead, silica sand working has historically taken place in close proximity to the Leziate processing plant. However this now means that the most accessible areas have either been worked or are in the process of being worked. Information will be sought from Sibelco UK Ltd regarding the likely maximum distance which it would be economic for mineral to be transported to the processing plant.

6.10 As the quality and grade of silica sand can vary significantly within a deposit, and this can affect the uses which the sand can be put to, information will also be sought regarding any areas of the resource which are likely to be unsuitable for industrial/specialist end uses.

6.11 In Norfolk the silica sand resource is split into two broad categories, the Mintlyn Beds and the Leziate Beds; historically the Leziate Beds have been used principally for glass sand and the Mintlyn Beds for the production of foundry sand. Processing of sand for foundry use has stopped at Leziate and those parts of the processing plant dedicated to their production have been removed. This reflects a general decline in the demand for foundry sand in England.

6.12 Manufacturers have been making increased use of crushed recycled glass (cullet) in the production of glass containers over a number of years. While the use of recycled glass has a significant number of environmental and economic benefits it has had the effect of increasing demand for higher purity silica sand such as is found in Norfolk. A certain proportion of silica sand needs to be mixed with cullet in order to ensure high quality products. Glass manufacture is sensitive to impurities, and the level of impurities is generally higher within cullet than primary materials, such that in order to produce a feedstock with an acceptable level of purities overall, higher purity silica sand is needed to balance out the impurities in the cullet.

6.13 The map on page 19 shows the general location of the silica sand resource in Norfolk and indicates that part of the resource which the British Geological Survey considers is part of the Leziate Beds.

6.14 The table below provides a national picture of silica sand production by end use over the most recent 12 years for which data is available.

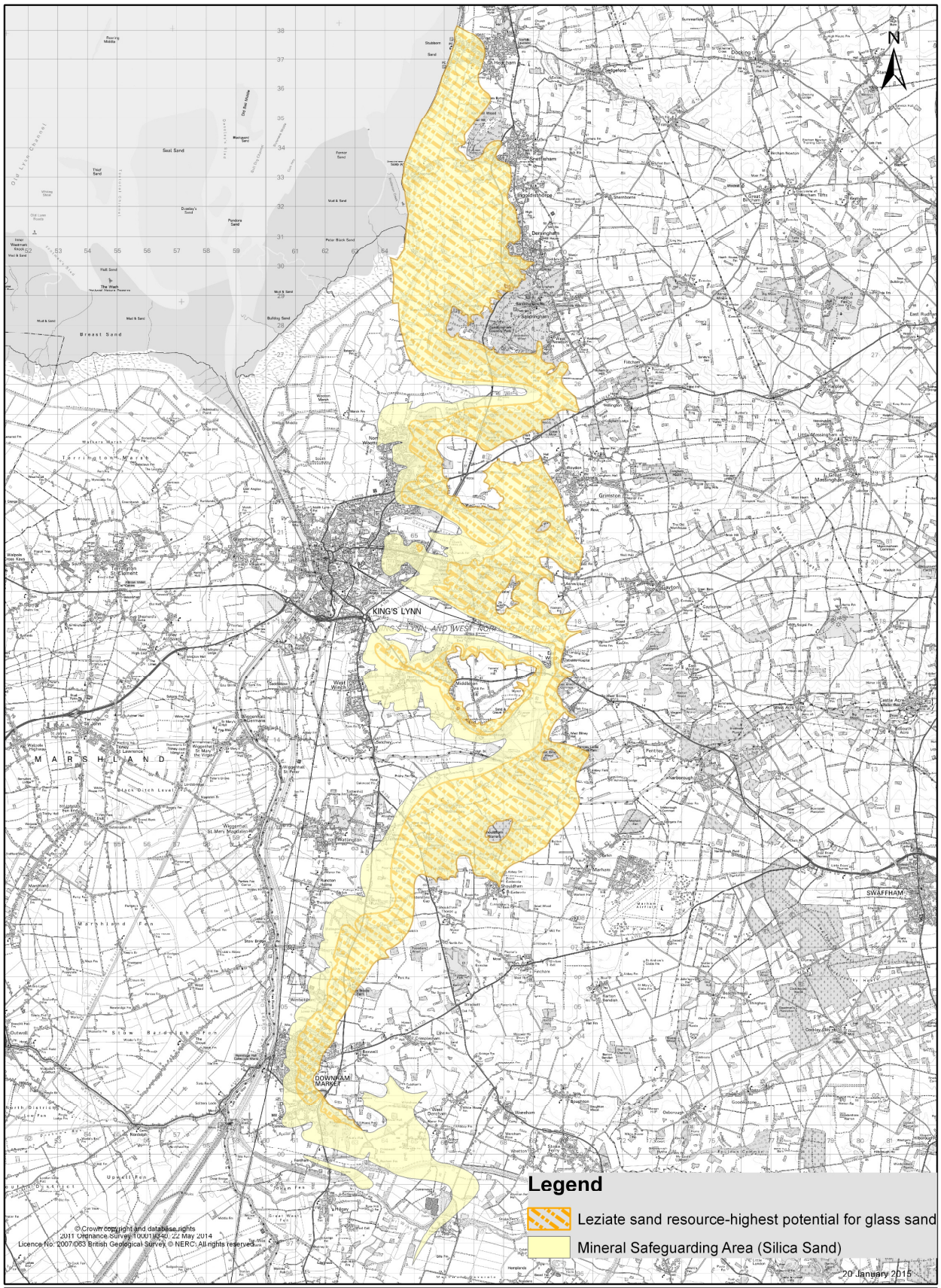
Great Britain production of silica sand by end-use

	Foundry uses	Glass manufacture	Other industrial Uses	Agricultural, horticultural & leisure uses	Total
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	No data	No data	1,088,000	888,000	3,766,000
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

6.15 The Norfolk Local Aggregate and Silica Sand Assessment, which contains data for 2012, states that the three year average of silica sand extraction in Norfolk from 2010-2012 was 652,000 tonnes per annum. This is 42.5% of the silica sand production used for glass manufacture sourced in Great Britain in the same period.


N
KING'S LYNN
MARSHLAND
SWAFFHAM
DOWNHAM MARKET
Legend
Leziate sand resource-highest potential for glass sand
Mineral Safeguarding Area (Silica Sand)
20 January 2015
© Crown copyright and database rights 2011 Ordnance Survey 100019340. 22 May 2014
Licence No: 2007/063 British Geological Survey. © NERC. All rights reserved.
5 2.5 0 5 Kilometres
Norfolk County Council

7. Evidence required to support Specific Sites

Evidence to be provided to support a proposed specific site allocation for silica sand extraction

7.1 If an individual or organisation wishes to propose an area of land as a potential silica sand specific site allocation they will need to provide a certain level of evidence to support their proposal. This evidence should include:

7.2 A statement confirming that the landowner has agreed to the inclusion of the land in the Silica Sand Review, as a silica sand extraction site. This statement should also include whether agreement has been reached for mineral extraction in the event that allocation is made, or whether only an exploration agreement has been reached. This is to ensure that the land is deliverable. The proposed silica sand site allocation MIN 39 was withdrawn by the landowner on the eve of the examination hearings for the Minerals Site Specific Allocations Plan and it transpired that while an agreement had been reached with a mineral operator this was only an exploration agreement.

7.3 Borehole data, and a statement as to the quality, quantity and extent of the mineral resource which is of commercial interest. This is to ensure that the boundaries of a potential allocation are limited to those areas which contain commercially viable mineral to reduce uncertainty for local residents. In the previous minerals site allocations process, an area of land close to residential properties was proposed for silica sand extraction, which was subsequently found not to contain commercially viable silica sand; information which the silica sand operator disclosed during the course of the Examination in Public. This information allowed the size of the allocation to be reduced and the boundary moved away from some residential properties. Quality is an important factor in the Silica Sand Review as the purpose of the review is to address an identified shortfall in silica sand for industrial/specialist end uses. In identifying the estimated quantity of mineral resources information on the likely annual production, and any factors which may affect or delay the extraction operation should be provided, for example in commercial forestry areas when felling is likely to take place. This is to ensure timely deliverability of any allocations to address the identified shortfall.

7.4 A Planning Statement to include proportionate information on the following topics, Environment, Transport, Heritage and Amenity.

7.5. This basic information will need to be **supplemented by a greater level of information in proximity to certain designations and structures** detailed in the following sections covering: internationally designated conservation sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar Sites), Sites of Special Scientific Interest (SSSIs), Ancient Woodland, agricultural land, heritage assets and amenity.