Norfolk County Council

Norfolk Minerals and Waste Local Plan

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IN TRAN
communication for all

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Contents

Acronyms:

AONB – Area of Outstanding Natural Beauty
AQMA – Air Quality Management Area
ASNW – Ancient Semi-Natural Woodland
BGS –British Geological Survey
BMV – Best and Most Versatile
CD&E – Construction, demolition and excavation
C&I – Commercial and industrial
CWS – County Wildlife Site
DPD – Development Plan Document
EEFM – East of England Forecasting Model
EHO – Environmental Health Officer
ELV – End-of-Life Vehicle
HGV – Heavy Goods Vehicle
HRA –Habitats Regulations Assessment
IDB – Internal Drainage Board
IRZ – Impact Risk Zone
LAA –Local Aggregate Assessment
LACW – Local Authority Collected Waste
LLFA – Lead Local Flood Authority
LNR – Local Nature Reserve
LPA –Local Planning Authority
NM&WLP – Norfolk Minerals and Waste Local Plan
MPA –Minerals Planning Authority
MRF – Materials Recycling Facility
NCC – Norfolk County Council
NNR – National Nature Reserve
NPPF – National Planning Policy Framework
NPPG – National Planning Practice Guidance
ONS – Office of National Statistics
PAWS – Plantation on Ancient Woodland
PRoW – Public Right of Way
RDF – Refuse Derived Fuel
SA – Sustainability Appraisal
SAC – Special Area of Conservation
SEA – Strategic Environmental Assessment
SHMA – Strategic Housing Market Assessment
SPA – Special Protection Area
SSA – Site Specific Allocations
SSSI – Site of Special Scientific Interest
TPA – tonnes per annum
WDI – Waste Data Interrogator
WEEE – Waste electrical and electronic equipment
WFD – Water Framework Directive
WPA –Waste Planning Authority

1. Introduction

1.1 Norfolk County Council, as Minerals and Waste Planning Authority, has a statutory duty to produce and maintain an up-to-date Minerals and Waste Local Plan which covers the entire county of Norfolk and forms the basis for determining any relevant planning applications that are lodged with the authority. The provision of a steady and adequate supply of minerals and the management of waste constitute essential infrastructure to support the economic development of the county.

1.2 The Norfolk Minerals and Waste Local Plan (NM&WLP), together with the Local Plans produced by the Norfolk's Local Planning Authorities and Neighbourhood Plans will form the Development Plan for Norfolk. Therefore, the NM&WLP is a consideration in the determination of planning applications lodged with district councils, where there is the potential for those proposals to impact safeguarded minerals or waste management activities. Equally, when determining planning application for minerals and waste developments, Norfolk County Council will take into account all the relevant Local Plan and Neighbourhood Plan policies from the Development Plan for Norfolk. The East Onshore and East Offshore Marine Plan is also relevant to planning decisions in coastal locations.

1.3 The national planning policy context for the Norfolk Minerals and Waste Local Plan includes:

- National Planning Policy Framework (2021) and Planning Practice Guidance
- National Planning Policy for Waste (2014)
- Waste Management Plan for England (2021)
- Resources and Waste Strategy for England (2018)
- A Green Future: Our 25 Year Plan to Improve the Environment (2018)
- National Policy Statements

Norfolk Minerals and Waste Local Plan

1.4 The Norfolk Minerals and Waste Local Plan (NM&WLP) covers the period to the end of 2038. When adopted, the NM&WLP will replace the following existing Minerals and Waste Development Plan Documents with one Local Plan:

- The Norfolk Core Strategy and Minerals and Waste Development Management Policies Development Plan Document (DPD) (the 'Core Strategy) (adopted in 2011).
- The Norfolk Waste Site Specific Allocations DPD (adopted in 2013).
- The Norfolk Minerals Site Specific Allocations DPD (adopted in 2013). The Minerals Site Specific Allocations DPD was subsequently amended by the adoption of the Single Issue Silica Sand Review in December 2017.

1.5 The NM&WLP includes a vision and strategic objectives for waste management and minerals development for the Plan period to 2038 and includes policies relevant to both minerals and waste management development covering the following issues: development management criteria, transport, climate change mitigation and adaption, The Brecks protected habitats and species, and agricultural soils.

1.6 The NM&WLP includes figures for the quantities of waste that need to be planned for over the Plan period to 2038. Arisings of Local Authority Collected Waste are forecast to increase in line with planned household growth in Norfolk's Local Plans. An annual growth rate of 1.35% has been used to forecast arisings of commercial and industrial waste which is based on economic growth forecasts for specific business sectors during the Plan period. Construction and demolition waste arisings are forecast to remain constant, in accordance with national planning guidance. Hazardous waste arisings are expected to remain stable throughout the Plan period, based on the most recent time series data for hazardous waste arisings in Norfolk, in accordance with national guidance.

1.7 An assessment of the existing waste management capacity in Norfolk concluded that sufficient capacity already exists to accommodate the forecast growth in waste arisings over the Plan period to 2038. Therefore, it is not considered necessary to allocate any specific sites for waste management facilities in the NM&WLP. However, planning applications for new waste management facilities are still expected to come forward during the Plan period, both to move waste management

up the waste hierarchy and because waste management is a contract driven and competitive industry. Therefore, the NM&WLP contains criteria-based policies to determine those planning applications that come forward for waste management facilities.

1.8 The M&WLP therefore includes a spatial strategy for new waste management facilities, a policy detailing the land uses considered to be potentially suitable for waste management facilities and criteria-based policies for the determination of planning applications for waste management facilities for the following types of waste: inert (construction, demolition and excavation waste), non-hazardous, hazardous waste and waste water. It also includes criteria-based policies for the determination of planning applications for the following types of waste management facilities: inert waste recycling, waste transfer and treatment, composting, anaerobic digestion, household waste recycling centres, residual waste treatment, landfill and water recycling centres. Specific policies also cover the design of waste management facilities, landfill mining and safeguarding waste management facilities and water recycling centres.

1.9 The NM&WLP includes the quantities of sand and gravel, carstone and silica sand that need to be planned for during the period to 2038 in order to provide a steady and adequate supply of minerals. Based on the average sales data and other relevant local information, the NM&WLP proposes to plan for the extraction of 754,000 tonnes per annum (tpa) of silica sand, 82,650 tpa of carstone extraction and 1,506,000 tpa of sand and gravel extraction.

1.10 The NM&WLP contains a spatial strategy for minerals development. Policies relevant to the determination of applications for minerals development include: borrow pits for highway schemes, agricultural reservoirs, protection of core river valleys, cumulative impacts and phasing of workings, progressing working and restoration, aftercare, concrete batching and asphalt plants and energy minerals. Specific policies also cover safeguarding mineral resources, mineral sites and infrastructure.

1.11 Since the adoption of the Minerals Site Specific Allocations DPD, the allocated carstone site (MIN 06) and one of the allocated silica sand sites (MIN 40) have not yet received planning permission. The other allocated silica sand site (SIL 01) was granted planning permission in August 2021 but it had not been implemented by December 2021. Therefore, the NM&WLP continues to include the one proposed carstone extraction site, which has an estimated resource of 1.416 million tonnes) and the two sites proposed for silica sand extraction, which have an estimated resource of 4.1 million tonnes.

1.12 In addition to the one Carstone extraction site and two silica sand extraction sites, the NM&WLP also contains 16 sites allocated for sand and gravel extraction. The allocated sand and gravel extraction sites have an estimated resource of 18.145 million tonnes. 15.4 million tonnes of the estimated resource are expected to be extracted within the Plan period with a further 1.4 million tonnes already included in the existing landbank. The following sites allocated in the NM&WLP are already allocated in the Minerals Site Specific Allocations DPD: MIN 12 at Beetley, MIN 51 at Beetley, MIN 37 at Mayton Wood, MIN 64 at Horstead, MIN 96 at Spixworth, MIN 69 at Aylmerton and MIN 115 at North Walsham. Only the assessments of the allocated mineral extraction sites are included in this Publication NM&WLP. Landowner willingness for a site to be included in the NM&WLP has been provided for all of the allocated sites.

1.13 The following sites allocated in the NM&WLP have already been granted planning permission for sand and gravel extraction: MIN 37 at Mayton Wood, MIN 64 at Horstead, MIN 65 at Stanninghall, MIN 206 at Edgefield and part of MIN 69 at Aylmerton. As of December 2021, planning applications had been submitted and were in the process of being determined for allocated sites MIN 206 at Tottenhill and MIN 202 at Attlebridge.

1.14 Developers wanting to extract mineral from specific sites allocated in the NM&WLP will still need to apply for and be granted planning permission before mineral extraction can take place. Planning permissions are often granted subject to conditions to mitigate potential adverse impacts from site operations and permitted sites are monitored on a regular basis.

The Representations Procedure

Note: this box is for information only and is not part of the Publication M&W Local Plan

The Minerals and Waste Local Plan has been published in order for representations to be made prior to its submission to the Secretary of State. Representations received at this Pre-Submission stage will also be submitted to the Secretary of State, who will appoint an independent Planning Inspector to undertake an examination. The examination will include a public hearing.

All information on the process for making representations will be available on the County Council's website at www.norfolk.gov.uk/nmwdf (on the Minerals and Waste Local Plan Review page) and respondents and other interested parties will be able to make direct online responses.

The Pre-Submission Publication documents will be available for public inspection, free of charge, within normal opening hours, at:

- Norfolk County Council, County Hall, Martineau Lane, Norwich, NR1 2DH
- Breckland District Council, Elizabeth House, Walpole Loke, East Dereham, NR19 1EE
- Broadland District Council, Thorpe Lodge, Yarmouth Road, Norwich, NR7 0DU
- Great Yarmouth Borough Council, Town Hall, Great Yarmouth, NR30 2QF
- Borough Council of King's Lynn and West Norfolk, King's Court, Chapel Street, King's Lynn, PE30 1EX
- North Norfolk District Council, Holt Road, Cromer, NR27 9EN
- Norwich City Council, City Hall, Bethel Street, Norwich, NR2 1NH
- South Norfolk Council, South Norfolk House, Swan Lane, Long Stratton, NR15 2XE
- The Broads Authority, Yare House, 62-64 Thorpe Road, Norwich, Norfolk, NR1 1RY

At this Pre-Submission stage, comments are sought on the process of producing the Minerals and Waste Local Plan, and whether it is legally compliant and sound. Comments are likely to fall within the following two general categories:

- If you are seeking to make representations on the **way** in which Norfolk County Council has prepared the Minerals and Waste Local Plan, it is likely that your comments or objections will relate to a matter of **legal compliance**.
- If it is the **actual content** on which you wish to comment or object it is likely your response will relate to whether the Minerals and Waste Local Plan is **positively prepared, justified, effective, and consistent with national policy.**

In order to ensure you submit information in the format that the Planning Inspector can use, please **use either the County Council's online consultation system directly at norfolk.oc2.uk or complete the representation form.** Forms are available to complete or download from our website at www.norfolk.gov.uk/nmwdf on the 'Norfolk Minerals and Waste Local Plan Review' page or forms can be posted or emailed to you.

- Representations must be received during the stated representations period.
- Representations received before or after the stated representations period cannot be considered.
- Representations cannot be treated as confidential
- Representations made at the Initial Consultation or Preferred Options Consultation stages will not be carried forward.

Completed representation forms should be returned to the address below:

Email: LDF@norfolk.gov.uk

Post to: Planning Services, CES Department, Norfolk County Council, County Hall, Martineau Lane, Norwich, NR1 2DH

2. The Minerals and Waste Local Plan process

2.1 Drafting Minerals and Waste Management Policies
The Core Strategy and Development Management Policies in Norfolk's adopted plan have been reviewed and replacement policies and supporting text have been drafted. This process has taken into account the National Planning Policy Framework, National Planning Policy for Waste, National Planning Policy Guidance, other relevant policies and guidance, the performance of current adopted policies, current data on waste management, minerals extraction, proposed development and environmental constraints in Norfolk.

Proposed Mineral Extraction Sites

2.2 Call for sites (July 2017) A call for sites was advertised for six weeks to enable landowners, mineral companies and their agents to submit land for consideration for future mineral extraction, of either sand and gravel, carstone, or silica sand during the plan period. The information required to be submitted included landowner willingness for the site to be included in the plan, geological information to provide an estimate of the mineral resource and information on the environmental constraints of the site.

2.3 Assessment of proposed sites The specific sites proposed in response to the 'call for sites' have been assessed by Planning Officers at Norfolk County Council, in consultation with the relevant County Council officers. The basis for the site assessments undertaken by the County Council has followed a very similar methodology to that used in the assessment of sites in the adopted Minerals Site Specific Allocations DPD and is as follows:

2.4 Landscape

- A description of the site/area of search 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 mineral extraction;
- The landscape impact of mineral extraction (on residents, 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.

2.5 Ecology

- Details of any designated nature conservation sites nearby;
- Whether the proposed site or area could affect any designated sites, including the drainage of those sites;
- Whether a suitable restoration scheme could be proposed; and
- Whether there is any potential to create any target habitats (e.g. heathland).

2.6 The site assessments do not include details of any protected species found in and around the local area. New minerals sites, being located on rural greenfield sites, are likely to need a biodiversity survey and report as required by Norfolk County Council's Local List for Validation of Planning Applications, or as part of an Environmental Statement accompanying a planning application. The results of a biodiversity survey and report may impact upon the scheme of working, detail potential mitigation measures and might require planning conditions to be attached to any permission granted. However, if certain key species, especially bats or great crested newts, are thought to be present on a site, a full survey with details of mitigation will need to accompany the planning application.

2.7 Highways

- The hierarchy level of the road used to access the site or area (e.g. HGV access route)
- If not on an HGV access route or better, the suitability of the route to the nearest suitable road (an HGV access route, principal road or distributor road)
- Details of any improvements required to make the site or area suitable in highways terms (e.g. road widening, junction improvements etc).
- Highways access for proposed silica sand extraction will be assessed in terms of suitability of the route from the proposed extraction site or area to the existing silica sand processing plant at Leziate.

2.8 Historic Environment and Archaeology

- Details of designated heritage assets in the vicinity of the site/ area of search;
- Initial assessment of the historic environment in the vicinity of the site/ area of search based on the heritage conservation principles (aesthetic, evidential, historic and communal values);
- Details of known archaeological assets, including information on finds from the Historic Environment Records Service;
- Assessment of the likelihood of archaeological assets occurring on site;
- Proposals for protection/mitigation likely to be necessary for archaeological assets; and
- Whether potential mineral extraction within the site/area would be supported by Norfolk County Council's Historic Environment Service and whether this is dependent on appropriate protection/mitigation.

2.9 The site assessments for the allocated mineral extraction sites are contained in this document. The site assessments for all other proposed mineral extraction sites that have not been allocated can be found in the 2019 Preferred Options Consultation document.

2.10 Initial Consultation (July/August 2018) The first public consultation on Norfolk's Minerals and Waste Local Plan (NM&WLP). It contained a draft vision and strategic objectives for minerals development and waste management facilities in Norfolk. This document contained proposed wording for policies to be used when determining planning applications for minerals extraction and associated development and waste management facilities, and policy alternatives where this is considered appropriate. This document also contained an initial assessment of the sites and areas that have been proposed for mineral extraction in Norfolk over the Plan period. The document was published for a six week consultation period and the comments received were taken into account in the production of the Preferred Options consultation document.

2.11 Call for waste management sites (January/February) 2019 A call for sites was advertised for six weeks to enable landowners, waste management companies and their agents to submit land for consideration for waste treatment facilities during the plan period. The information required to be submitted included landowner willingness for the site to be included in the plan and information on the environmental constraints of the site. The 'call for sites' was restricted to proposals for new permanent sites of over 1 hectare, proposed for waste treatment with an estimated annual throughput of at least 50,000 tpa. Only sites that met these criteria would be considered as potential specific site allocations.

2.12 The specific sites proposed in response to the 'call for sites' were assessed by Planning Officers at Norfolk County Council in accordance with the 'assessment of proposed sites' process detailed earlier in this section. The waste site assessments were published in Appendix 10 of the Preferred Options consultation document. However, no waste sites are allocated in the NM&WLP.

2.13 Preferred Options consultation (September/October 2019) The Preferred Options version of the NM&WLP took into account the consultation responses received at the Initial consultation stage. It contained a vision and strategic objectives for minerals development and waste management facilities in Norfolk. It also contained proposed wording for policies to be used when

determining planning applications for minerals extraction and associated development and waste management facilities. This document also contained an assessment of the sites and areas that have been proposed for mineral extraction in Norfolk over the Plan period to 2036 and draft policy wording for those sites considered suitable to allocate. The document was published for a six-week consultation period and the comments received have been taken into account in the production of the Pre-Submission Publication version of the NM&WLP.

Sustainability Appraisal / Strategic Environmental Assessment

2.14 Through the Sustainability Appraisal process, the potential impact (positive or negative) of each planning policy option and each proposed site/area for future mineral extraction or waste treatment has also been assessed on:

- amenity (noise, vibration, visual intrusion, health)
- water resources/ water quality and flood risk
- geodiversity
- ecology – designated nature conservation sites and proposed restoration scheme
- landscape -
- historic environment – conservation areas/ listed buildings/ scheduled monuments/ registered parks and gardens / archaeology
- agricultural land grade/ soil quality
- air quality
- employment and economic growth

2.15 Sustainability appraisal is central to the planning system. The purpose of Sustainability Appraisal, which is required under the Planning and Compulsory Purchase Act 2004, is to promote sustainable development through integration of social, environmental and economic considerations into the preparation of Local Plans. The Sustainability Appraisal process helps to make sure that the proposals in the plan are the most appropriate given the reasonable alternatives, as well as a means of identifying and mitigating any potential adverse effects that the plan might otherwise have.

2.16 Sustainability Appraisal is an integral element of the preparation of the Minerals and Waste Local Plan, comprehensively assessing the likely impacts of proposed planning policies, and specific sites/ areas for future mineral extraction. The Sustainability Appraisal forms part of the evidence base for the NM&WLP and it is published in two parts: Part A is the Scoping Report and Part B covers developing and refining alternatives and assessing effects.

Habitats Regulations Assessment

2.17 A Habitats Regulations Appraisal has been carried out on the Minerals and Waste Local Plan in accordance with the *Conservation of Habitats and Species Regulations 2017.* A Habitats Regulations Assessment is undertaken to assess the impacts of a land-use plan against the conservation objectives of European designated nature conservation sites (SPAs, SACs and also Ramsar sites) and to ascertain where the Plan would adversely affect the integrity of the site, and if so how to amend the plan to avoid any potentially damaging effects. The Habitats Regulations Assessment forms part of the evidence base for the NM&WLP.

What happens next?

Note: this box is for information only and is not part of the Publication M&W Local Plan

2.18 A Programme Officer will be the first point of contact following the close of the representations period. The Programme Officer reports directly to the Planning Inspector and will be employed through to the completion of the Examination in Public. The Programme Officer is an independent person who has not previously been involved with the preparation of the Minerals and Waste Local Plan.

2.19 ***Submission (December 2022)*** Once the representations period has closed, the representations received will be entered into Norfolk County Council's e-consultation database and summarised. If there are no fundamental issues raised against the NM&WLP, such as those raised by statutory bodies, the Council will submit the plan together with all the representations and the summary to the Secretary of State for Examination in Public.

2.20 ***Examination (April 2023)*** The Inspector appointed by the Secretary of State to examine the plan will consider all the representations made against the plan. The Inspector will consider most of the representations by way of written representations received during the formal period. In some more complex cases representations may need to be presented at the public examination. It should be noted that written representations are treated with equal importance to examination appearances.

2.21 ***The Planning Inspector's Report (October 2023)*** 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 NPPF (paragraph 35). 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.

2.22 ***Adoption (December 2023)*** 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 Plan or not. On adoption, the Council will produce an adoption statement that will be advertised in the local press and the adopted Plan, sustainability appraisal and adoption statement will be made available for inspection. The adopted NM&WLP will form part of the Development Plan for Norfolk.

3. Norfolk Spatial Portrait

3.1 The purpose of this chapter is to set out the spatial context for the Minerals and Waste Local Plan Review by providing a summary of the characteristics of Norfolk that have an influence on waste arisings, how and where waste can be managed, the need for minerals and where minerals can be extracted and processed.

3.2 Within the County of Norfolk, the two-tier administrative system includes seven District Council areas, each of which is a Local Planning Authority. Overlaying parts of five of these areas is the Broads Authority, which is also a Local Planning Authority. Norfolk also contains 535 parishes. Norfolk adjoins the County of Suffolk to the south, and Cambridgeshire and Lincolnshire to the west; whilst Norfolk's north-west, north and eastern boundaries border the North Sea.

Population

3.3 The population of Norfolk was estimated to be 914,039 in 2020, compared with 857,888 in the 2011 census. Its area is 5,370 km^2 and the population density was 170 people per km^2 in 2020. Around 43 per cent of the County's population live in the four main urban areas of Norwich (233,023) Great Yarmouth (74,236), King's Lynn (48,301) and Thetford (27,010) (*2020 ONS population estimates*). Norfolk's population has a relatively elderly age profile; compared to England and Wales it has higher proportions of people aged 50 and over, and lower proportions in all the younger age groups.

3.4 By 2038 the population of Norfolk is expected to grow to over 1.09 million. Much of this growth is driven by net inward migration and an increase in the aging population.

3.5 Issues which could affect Norfolk's population from mineral extraction and associated development and waste management activities, include amenity problems such as noise, dust, odour, birds, litter and visual intrusion. Therefore, the location, design and operation of minerals and waste management development is an important way to avoid and mitigate potential amenity impacts to local residents.

Households

3.6 The Objectively Assessed Need (OAN) for new housing in Norfolk (based on the standard national methodology in the National Planning Policy Framework) for the 21 years from 2015-2036 is calculated to be over 87,000 homes. This equates to a need for over 4,100 new homes to be built each year in Norfolk. In addition to this OAN, Broadland, Norwich City and South Norfolk Councils will seek to deliver an additional supply of homes within the Greater Norwich Local Plan to ensure the housing needs arising from the City Deal are met in full.

3.7 The settlement hierarchy is defined by the Local Planning Authorities in Norfolk. The settlement hierarchy ranks settlements according to their size, range of services and facilities, and their capacity for growth. The highest levels of housing growth are planned to be located in the settlements at the top of the hierarchy (urban areas and main towns). The urban areas in Norfolk are Norwich, King's Lynn (including West Lynn), Thetford, Attleborough, Great Yarmouth and Gorleston-on-Sea. The Norwich urban area includes the built-up parts of the urban fringe parishes of Colney, Costessey, Cringleford, Trowse, Thorpe St Andrew, Sprowston, Old Catton, Hellesdon, Drayton and Taverham. The main towns in Norfolk are Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Harleston, Holt, Hunstanton, North Walsham, Swaffham, Watton and Wymondham.

Economy

3.8 Overall Norfolk has a relatively high level of self-containment as the vast majority of the resident workforce stay in Norfolk for work, although there are some strong functional cross-boundary linkages, in particular between Great Yarmouth and Lowestoft, and between King's Lynn and the Lincolnshire and Cambridgeshire Fens. Norfolk is a rural county and agriculture is the dominant land use. However, the majority of jobs in Norfolk are located in urban areas, with agriculture only accounting for less than 1 percent.

3.9 Overall Norfolk's economy is growing, although growth is stronger in some parts of the County than others. This growth is driven by certain sectors of the economy, mostly concentrated in specific geographic areas, where there are particular strengths and expertise, for example, offshore energy, advanced engineering, tech/digital, financial services, food, life sciences and tourism. Norfolk's overall employment rates have consistently remained above national levels over the past 10 years. However, this disguises substantial variation as the county includes some of the most deprived communities in the country.

3.10 In December 2013 the Greater Norwich City Deal was signed. The City Deal was expected to see 300 new businesses supported and secure an additional £100 million of private investment. The deal was also expected to create more than 19,000 jobs, including 6,000 construction jobs.

3.11 The minerals industry in Norfolk provides raw materials for the construction of buildings and roads and for glass manufacture. The provision of the steady and adequate supply of minerals and the management of waste produced by businesses and communities constitutes essential infrastructure to support the economic development of the County.

Transport

3.12 Norfolk contains three trunk roads, the A11, A47 and A12. Norfolk's transport infrastructure has benefited from a number of significant improvements in recent years, including the dualling of the A11 which was completed in 2014. The Norwich Northern Distributor Road (Broadland Northway) opened in 2018 and is a key part of the Norwich Area Transport Strategy. The National Highways Delivery Plan 2020-2025 contains a number of improvement schemes for the A47 to take place by 2025. Construction of the Long Stratton bypass on the A140 is expected to be underway during 2023. However, the majority of Norfolk's roads are B class or below and therefore it is important that minerals and waste management development are located in places where there is appropriate and safe highway access. Norfolk has two ports, at Great Yarmouth and King's Lynn. These ports can be used for the import and export of minerals and waste. Norfolk's railway lines can also be used for the movement of minerals and waste to and from the county. At the current time waste is not transported by rail in Norfolk, but silica sand is transported out of the county to glass manufacturers by rail and hard rock is imported to Norfolk by rail.

Environment

3.13 Norfolk is a county rich in important wildlife and designated landscapes. Norfolk contains a wide range of habitats including grasslands, woodlands, heathland, rivers and wetlands, farmland and coastal waters. The wider countryside also supports a considerable number of sites of local importance and has potential for habitat creation. Norfolk is home to numerous local, national, and international biodiversity designations and is an area of high landscape quality. There are nine Special Protection Areas (SPAs), twelve Special Areas of Conservation (SACs) and 163 Sites of Special Scientific Interest (SSSIs), as well as over 1,360 County Wildlife Sites. Significant habitats include the Wash, the Broads, The Brecks and the Fens.

3.14 Norfolk has 90 miles of coast and 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. Part of the Norfolk coast is also defined as a Heritage Coast which means that it is one of the best stretches of undeveloped coast in England. The Norfolk and Suffolk Broads covers 303 km^2 of Norfolk and Suffolk and has the status of a National Park.

3.15 Norfolk is nationally important for its geodiversity, particularly sites and features relating to the story of environmental change (including fauna, flora, climate and early human occupation) over the last two million years. Norfolk has important sites and features dating from the Cretaceous period, including the youngest chalk strata in Britain. It also has spectacular geomorphology, including the 40km stretch of coastal landforms on the north coast. Many of these sites and features have been designated as geological or geomorphological SSSIs.

3.16 Norfolk's countryside is predominantly agricultural in character. The areas to the east and north of Norwich contains generally excellent to very good soils. The area known as the Brecks

surrounding Thetford contains generally poor or very poor soils. The Fens, to the west of King's Lynn contains virtually entirely excellent or very good soils. The majority of the remaining soils in Norfolk are moderate to good quality.

3.17 Minerals extraction and associated development and waste management facilities should be located, designed and operated to ensure no unacceptable adverse impacts to the natural environment.

Air quality

3.18 Air quality throughout Norfolk is generally good and problems arise only on a localised basis. Norfolk currently (2021) contains four Air Quality Management Areas (AQMAs), one in Norwich, one in Swaffham and two in King's Lynn, which have all been declared for exceeding limits of nitrogen dioxide from traffic sources. Mineral extraction and associated development and waste management facilities should be located, designed and operated to ensure no unacceptable adverse impacts to air quality.

Historic Environment

3.19 Norfolk is an area of historical importance and has a rich and diverse history. Norfolk has over 280 conservation areas, more than 10,900 listed buildings, more than 430 scheduled monuments and more than 50 Registered Parks and Gardens. Norfolk also contains a large number of areas in which either undesignated heritage assets or archaeological assets occur. Archaeological assets may either be known or unknown where the potential for assets is high, but no field studies have been carried out. The Drainage Mills in the Broads and Fens are particularly important in these areas and the Broads Authority Executive Area is identified as an area of Exceptional Waterlogged Archaeology. Harm to the significance of a designated heritage asset should be avoided in the design and location of new minerals or waste management development.

Climate and Flood Risk

3.20 As Norfolk is low-lying, coastal and has a series of inland waterways and the Broads, flood risk is of particular concern throughout the county. Land within the fens area in west Norfolk and the Broads Authority Executive Area are at greatest risk of flooding from rivers and the sea. The effects of climate change are likely to increase these risks. Norfolk's Local Planning Authorities have produced Strategic Flood Risk Assessments for their areas, to assess the risk of flooding from all sources, now and in the future, taking account of the impacts of climate change. Sand and gravel extraction and silica sand extraction are 'water compatible' land uses which are appropriate in all flood zones. Carstone extraction and the majority of waste management facilities (except landfill and the management of hazardous waste) are 'less vulnerable' land uses and may be suitable in all flood zones except flood zone 3b (the functional flood plain), however, a sequential approach to the location of minerals and waste development should be taken to steer new development to areas with the lowest probability of flooding.

Minerals

3.21 Carstone is a type of sandstone that is quarried in west Norfolk. It has traditionally been used as a vernacular building material, although it is no longer used to any significant degree. Although it is classed as a 'hard rock' it is not used as a hard rock (e.g. road dressing), instead it is used primarily as fill (to raise the levels of land prior to construction) or in the formation of embankments. Therefore, it is often used in the construction of roads.

3.22 Carstone deposits are located in very limited areas of west Norfolk. In 2020 there were three carstone extraction sites in Norfolk, two were located at Middleton and one at Snettisham.

3.23 Carstone production in Norfolk was 55,907 tonnes in 2020. The 10-year rolling average of carstone sales was 75,138 tonnes in the period 2011-2020. The 3-year rolling average of carstone sales was 67,354 tonnes in the period 2018-2020. The permitted reserves for carstone extraction sites in Norfolk were 1.845 million tonnes at the end of 2018. Based on the 10-year sales average, the permitted reserves provide a carstone landbank of over 22 years, which would last until 2043.

3.24 Silica sand deposits are located in very limited areas of west Norfolk, 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. 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 process plant dedicated to their production have been removed. This reflects a general decline in the demand for foundry sand in England.

3.25 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.

3.26 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 operated by Sibelco UK Ltd which is located at Leziate. Consistency of material is an important consideration, and this requires blending of sand from different areas of the working. The processing plant site includes a rail head to export the processed mineral for use by glass manufactures elsewhere. Norfolk is one of the most important sources of silica sand in Britain, accounting for over 15 per cent of total output and approximately 60 per cent of silica sand production used for glass manufacture sourced in Great Britain in 2014 (the most recent available data by end use).

3.27 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.

3.28 The 10-year rolling average of silica sand sales in Norfolk was 800,051 tonnes in the period 2011-2020. The 3-year rolling average of silica sand sales was 814,625 tonnes in the period 2018-2020. The permitted reserves for silica sand extraction sites in Norfolk were 3.232 million tonnes at the end of 2020. Based on the 10-year sales average, the permitted reserve provides a silica sand landbank of over 4 years, which would last until the end of 2024.

3.29 Sand and gravel resources are located throughout the County (with the exception of the Fens area in the far west and south-west of Norfolk). Sand and gravel are used in the construction of roads and buildings and it is a key ingredient in the production of concrete and mortar, asphalt coating for roads, as a drainage medium and in the construction of embankments and foundations. The distribution of sand and gravel sites throughout Norfolk is widespread with a relatively large number of small operators. In 2020 there were 23 active permitted sand and gravel extraction sites in Norfolk operated by 15 different companies. There are, however, particular clusters of sand and gravel workings near to King's Lynn, in the north of Breckland District and around Norwich.

3.30 Sand and gravel production in Norfolk was 1.312 million tonnes in 2020. The 10-year rolling average of sand and gravel sales was 1.37 million tonnes in the period 2011-2020. The 3-year rolling average of sand and gravel sales was 1.38 million tonnes in the period 2018-2020. The permitted reserves for sand and gravel extraction sites in Norfolk were 14.51 million tonnes at the end of 2020. Based on the 10-year sales average, the permitted reserve provides a sand and gravel landbank of over 10 years, which would last until 2031.

3.31 Secondary and recycled aggregates are also sourced within Norfolk. The annual average quantity of inert and construction/demolition waste recovered at waste management facilities over the ten years from 2010-2019 was 434,600, however, some parts of this waste stream are unsuitable for use as a recycled aggregate (such as soil or timber). The data is not comprehensive because many operations, such as on-site recovery, are not recorded.

3.32 Marine aggregate dredging is carried out by companies on behalf of the Crown Estate and the sites are licensed by the Marine Management Organisation; therefore, Norfolk County Council does not have any planning involvement in marine aggregates and they do not form part of the Minerals

and Waste Local Plan. The East Inshore and East Offshore Marine Plans and the UK Marine Policy Statement, as well as the NPPF, inform and guide decisions by regulators managing the development of industry in marine and coastal areas, while conserving and enhancing the environment and therefore are relevant to Norfolk.

3.33 Aggregates from marine dredging are not currently received at any ports of wharves in Norfolk. No marine sourced aggregates were consumed in Norfolk in 2019 (the most recently available data).

3.34 Clay and chalk are also extracted in Norfolk. Clay is primarily used in the engineering of landfill sites and in flood protection schemes. Chalk is primarily used as a liming agent for farmland. In 2021 there was one active clay working at Middleton, and three active chalk workings located at Castle Acre, Caister St Edmund and Hillington. However, the resource for these minerals is considered to be abundant in Norfolk relative to the demand.

Waste management facilities

3.35 There are a number of waste management facilities within Norfolk (data from Environment Agency's Waste Data Interrogator 2019 and 2020). They include:

Twenty Household Waste Recycling Centres, provided by Norfolk County Council, which accepted over 58,000 tonnes of waste in 2019 and over 49,000 tonnes of waste in 2020.

Six commercial composting facilities which received over 111,000 tonnes of waste in 2019 and over 108,000 tonnes of waste in 2020;

There are two metal recycling facilities at Lenwade and Great Yarmouth, one metal recycling facility at King's Lynn docks and a large number of small sites accepting scrap metal or end-of life vehicles. The metal recycling facilities received over 161,000 tonnes of waste in 2019 and over 167,000 tonnes of waste in 2020;

89 operational sites for the treatment and/or transfer of waste (including municipal, commercial and industrial, hazardous, clinical, construction and demolition), which received over 2.533 million tonnes of waste in 2019 and over 2.172 million tonnes in 2020. Of these totals, over 0.861 million tonnes in 2019 and over 0.595 million tonnes in 2020 was received at Anglian Water Services Ltd sewage sludge treatment facilities at Thetford, King's Lynn and Whitlingham;

There are two non-hazardous landfill sites (Blackborough End and Feltwell) in Norfolk, but both sites were inactive in 2019 and only Blackborough End landfill site received waste in 2020 (over 75,000 tonnes). As at the end of 2020, Blackborough End landfill site has a permitted void capacity (remaining landfill space) of 3.767 million m^3 in total, however, 2.34 million m^3 of this voidspace is expected to be used for inert waste only, leaving 1.422 million m^3 voidspace for non-hazardous waste. The remaining voidspace in Feltwell landfill site at the end of 2020 is 1.204 million m^3. Therefore, the total landfill voidspace for non-hazardous waste disposal is 2.626 million m^3.

In 2019 over 308,000 tonnes of inert waste was received at inert landfill sites or used in the restoration of mineral workings, which increased to over 323,000 tonnes in 2020. There is an estimated void capacity at inert landfill sites and for quarry restoration of at least 3.42 million m^3 in Norfolk at the end of 2020 plus the 2.34 million m^3 in Blackborough End landfill site.

There is a renewable energy plant operated by EPR at Thetford which received over 493,000 tonnes of waste in 2019 and over 396,000 tonnes of waste in 2020. The waste received at this facility is poultry litter which is burned to produced energy.

There is a waste paper reprocessing facility operated by Palm Paper Ltd at King's Lynn which received over 540,000 tonnes of waste in 2019 and 448,000 tonnes of waste in 2020 to produce newsprint.

Some variations in the waste management data between 2019 and 2020 are likely to be due to the impacts of the Covid-19 pandemic.

Further detail on waste management capacity, movements, arisings and forecasts is provided in a separate Waste Management Capacity Assessment report.

4. The Strategy – Vision and Strategic Objectives

4.1 This chapter sets out the Plan Vision and Strategic Objectives for Norfolk up to 2038. The 'Vision' sets an aspiration for minerals and waste management development in Norfolk by the end of the Plan period. From the Vision a number of 'Strategic Objectives' have been defined. These are the issues and opportunities that must be addressed in order to achieve the Vision.

Minerals and Waste Local Plan Vision to 2038:

Norfolk will continue to be self-sufficient in the production of sand & gravel, whilst making an important contribution to the national production of silica sand. A steady and adequate supply of minerals to support sustainable economic growth will be planned for through allocating sufficient sites and using criteria-based locational policies in the Plan to meet the forecast need for sand and gravel, carstone, and silica sand, as required by national planning policy.

Resources of sand and gravel, carstone and silica sand within defined Mineral Safeguarding Areas will be safeguarded from needless sterilisation by non-mineral development. Infrastructure for the storage, handling, processing and transportation of minerals will also be safeguarded from incompatible development. The 'agent of change' principle will be applied to any new proposed development impacting on safeguarded areas or sites.

All mineral workings will be covered by progressive restoration schemes and the enhancement of Norfolk's biodiversity, and the creation of high quality, locally distinctive landscapes will be strongly supported.

Over the period to 2038, households, businesses, the public sector and voluntary organisations within Norfolk will be taking responsibility for waste prevention, re-use and recycling. The re-use, recycling and recovery of waste in Norfolk will increase, thereby reducing the quantity and proportion of waste arising in Norfolk that requires disposal.

Norfolk will aim to be net self-sufficient in waste management, where practicable. The Plan will enable sufficient waste management infrastructure to be provided for Norfolk to meet the existing and forecast amount of waste expected to arise over the Plan period. The Plan policies will offer flexibility whilst still maintaining a Plan-led approach to the delivery of waste management facilities, in accordance with the Waste Hierarchy.

New waste management facilities will be located in proximity to Norfolk's urban areas and main towns. Defined waste management facilities and water recycling centres will be safeguarded from incompatible development. The 'agent of change' principle will be applied to any new proposed development impacting on safeguarded areas or sites.

Mineral development and waste management facilities will be located, designed and operated without unacceptable adverse impacts on the amenity of local communities, the natural, built and historic environment, the landscape and townscape of Norfolk. Opportunities to enhance such features will be supported and all developments will provide biodiversity net gains.

Mineral development and waste management within Norfolk will be undertaken in ways that minimise and mitigate their contribution to climate change, including reducing methane emissions and reducing carbon emissions to contribute to net zero carbon targets, and will be designed and located to reduce the risk from and adapt to climatic effects, such as flooding.

4.2 Waste Management Strategic Objectives

WSO1. Support the prevention and minimisation of waste generation in line with the Waste Hierarchy, and where waste cannot be avoided, maximise the recovery value from waste.

WSO2. To support an increase in the proportion and the quantity of waste that is re-used, recycled and recovered within Norfolk.

WSO3. To safeguard and encourage opportunities to enhance existing waste infrastructure which provide an important contribution to waste management at sites that serve Norfolk. The 'agent of change' principle will be applied to any new proposed development impacting on safeguarded sites.

WSO4. To achieve net self-sufficiency in waste management throughout the Plan period, where practicable.

WSO5. To make provision to meet the need for new waste management facilities through the inclusion of 'criteria-based' locational policies.

WSO6. To reduce greenhouse gas emissions, primarily by moving waste up the hierarchy to minimise the need for landfill and by minimising waste transport and distance by locating new waste facilities as close as practicable to the origin of the waste.

WSO7. To ensure waste facilities and their proposed locations are sustainably designed, constructed and operated to reduce potential unacceptable adverse effects on human health, amenity and the natural, built and historic environment and to contribute to achieving net zero carbon emissions. All developments will provide biodiversity net gains.

WSO8. Recognise the importance of the waste sector in the local economy as a generator of employment and its provision of infrastructure which supports businesses and communities

The spatial strategy for waste management facilities is contained within Policy WP2 and illustrated on the key diagram.

4.3 Minerals Strategic Objectives

MSO1. To provide a steady and adequate supply of aggregate minerals by identifying adequate mineral extraction sites within Norfolk sufficient to meet the forecast need, based on the Local Aggregate Assessment, and safeguarding existing infrastructure.

MSO2. To provide a steady and adequate supply of industrial minerals by identifying adequate mineral extraction sites within Norfolk and through the inclusion of 'criteria-based' locational policies, sufficient to meet the forecast need and safeguarding existing infrastructure.

MSO3. To encourage the sustainable use of minerals by utilising secondary and recycled aggregates which will reduce the reliance on primary aggregates and safeguarding existing infrastructure.

MSO4. To safeguard silica sand, carstone, and sand and gravel resources for future use. Avoiding unnecessary sterilisation by encouraging the extraction of minerals prior to other development taking place where practicable and using minerals in construction on the land from which they are extracted. The 'agent of change' principle will be applied to any new proposed development impacting on safeguarded areas or sites.

MSO5. To promote the sustainable transport of minerals by rail, road and water, including the safeguarding of railheads and wharfs for the import of minerals to and export of minerals from Norfolk to minimise carbon emissions. The 'agent of change' principle will be applied to any new proposed development impacting on safeguarded sites.

MSO6. To ensure the sustainable and expedient delivery of mineral extraction while protecting people from harm, positively contributing to the natural, built and historic environments and mitigating against unacceptable adverse cumulative impacts.

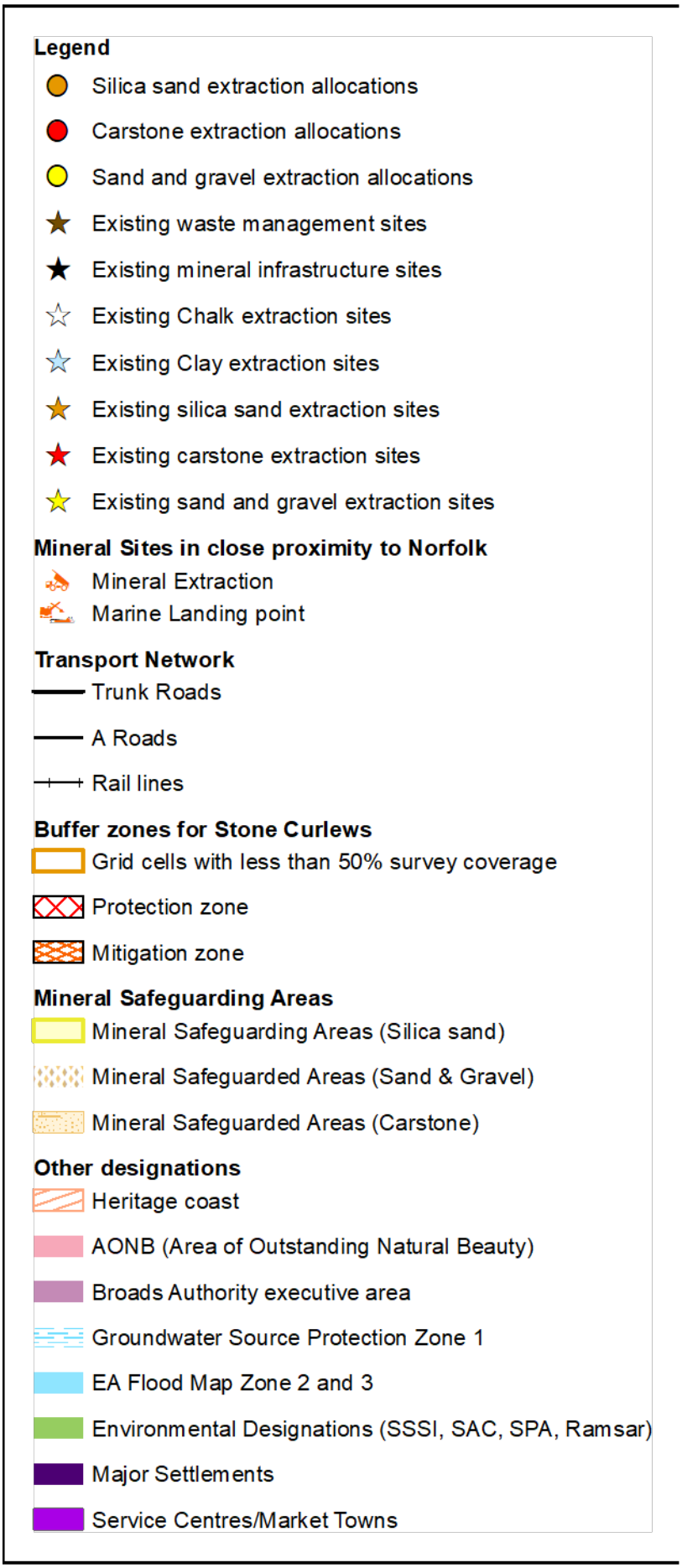
MSO7. To ensure potential impacts on the amenity of those people living in proximity to minerals development are effectively controlled, minimised and mitigated to acceptable levels.

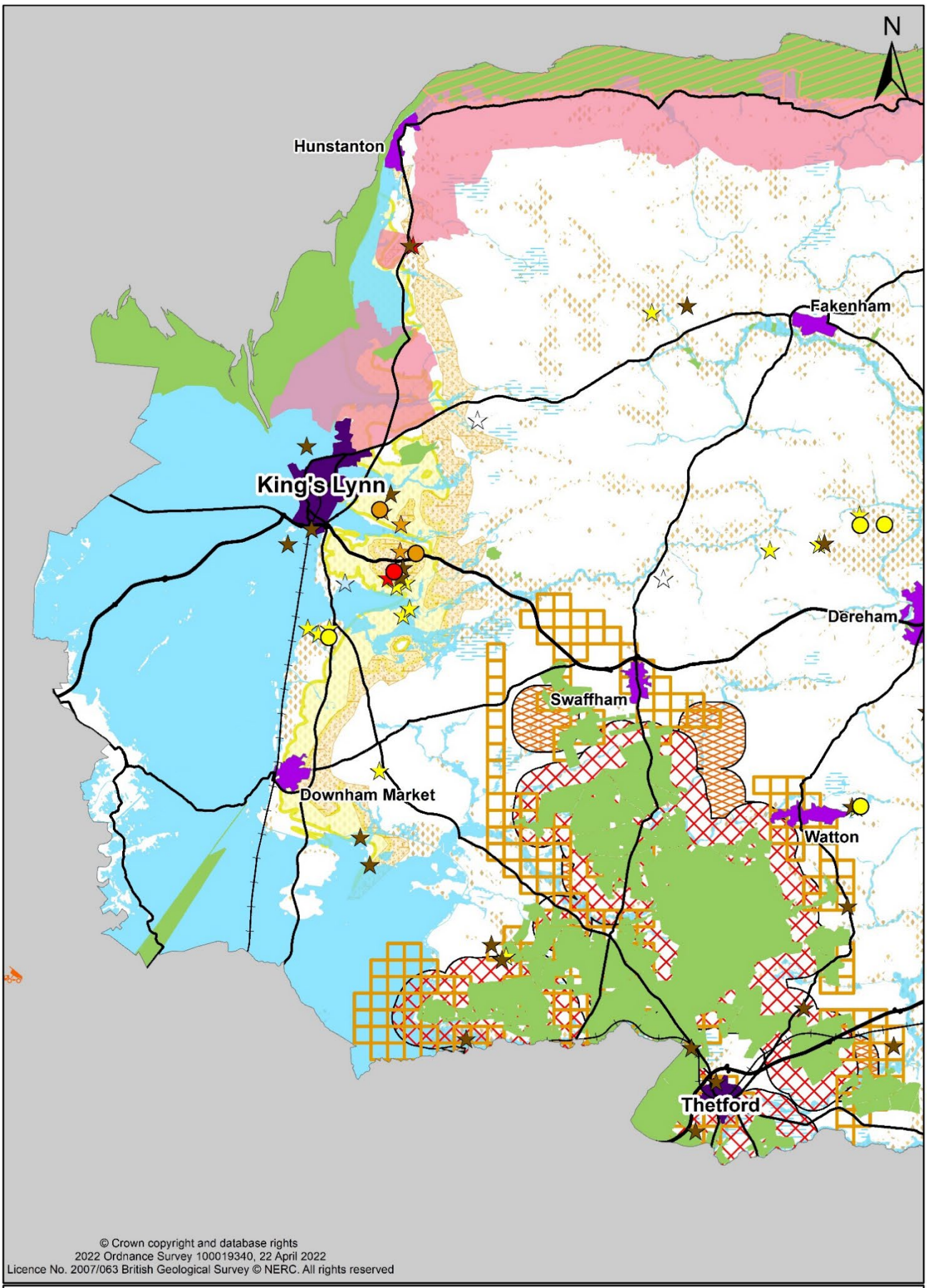
MSO8. To ensure that mineral development addresses and minimises the impacts it will have on climate change by: minimising greenhouse gas emissions during the winning, working and handling of minerals, providing for sustainable patterns of minerals transportation where practicable, and integrating features consistent with climate change mitigation and adaption into the design of restoration and aftercare proposals.

MSO9. To positively contribute to the natural, built and historic environments with high quality, progressive and expedient restoration to achieve a beneficial after use. The restoration scheme and aftercare will protect and enhance the environment, including landscape improvements and the provision of biodiversity net gains.

MSO10. Where appropriate, to increase public access to the countryside through enhancing the amenity value of land when restoring extraction sites.

The spatial strategy for mineral extraction is contained within Policy MP2 and illustrated on the Key Diagram.


Legend
Silica sand extraction allocations
Carstone extraction allocations
Sand and gravel extraction allocations
Existing waste management sites
Existing mineral infrastructure sites
Existing Chalk extraction sites
Existing Clay extraction sites
Existing silica sand extraction sites
Existing carstone extraction sites
Existing sand and gravel extraction sites
Mineral Sites in close proximity to Norfolk
Mineral Extraction
Marine Landing point
Transport Network
Trunk Roads
A Roads
Rail lines
Buffer zones for Stone Curlews
Grid cells with less than 50% survey coverage
Protection zone
Mitigation zone
Mineral Safeguarding Areas
Mineral Safeguarding Areas (Silica sand)
Mineral Safeguarded Areas (Sand & Gravel)
Mineral Safeguarded Areas (Carstone)
Other designations
Heritage coast
AONB (Area of Outstanding Natural Beauty)
Broads Authority executive area
Groundwater Source Protection Zone 1
EA Flood Map Zone 2 and 3
Environmental Designations (SSSI, SAC, SPA, Ramsar)
Major Settlements
Service Centres/Market Towns



Key diagram

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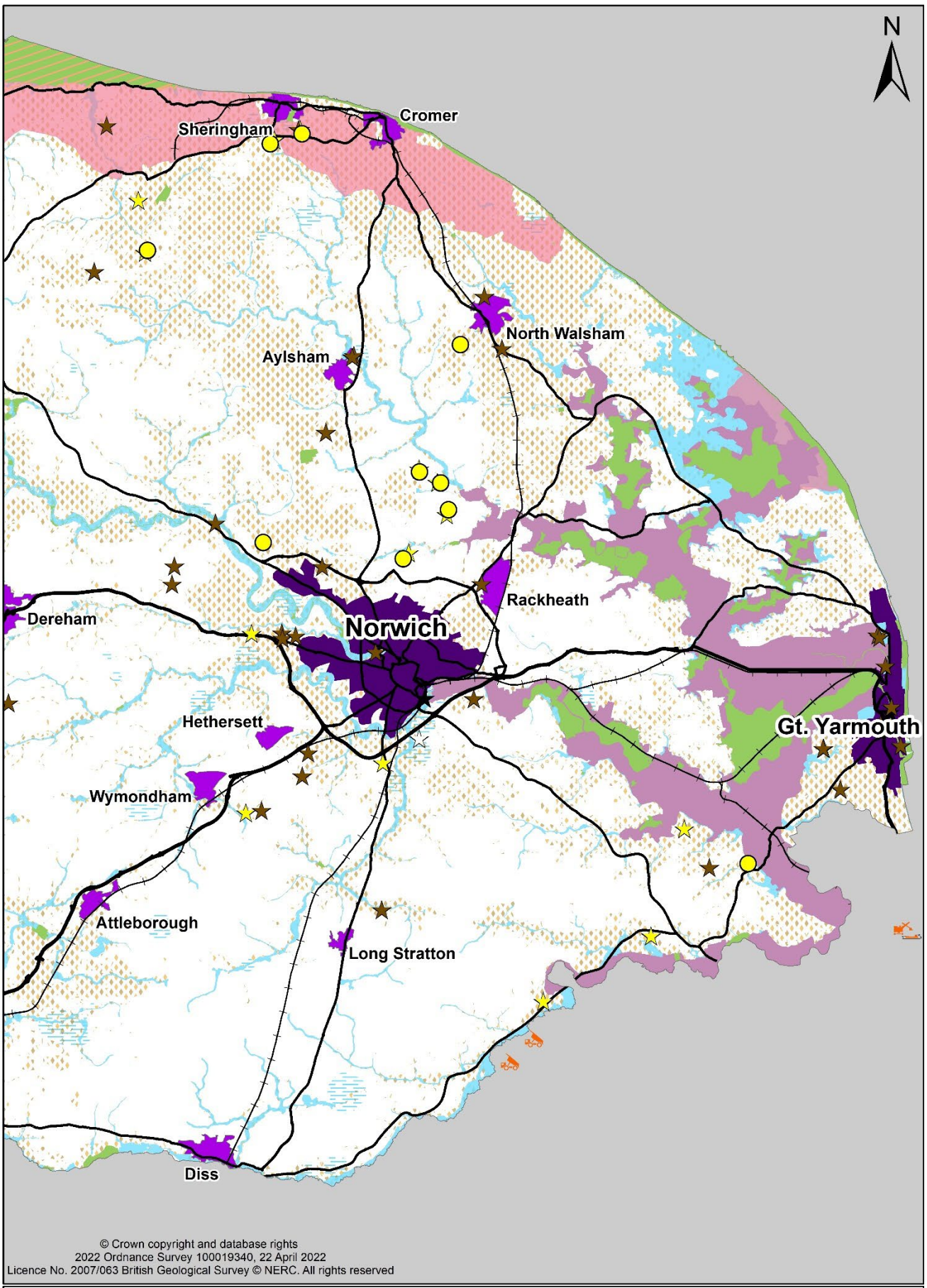

Key diagram

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5. Presumption in favour of sustainable development

5.1 At the heart of the National Planning Policy Framework (NPPF) is a 'presumption in favour of sustainable development'. The wording of the presumption in set out in paragraph 8 of the NPPF. The NPPF states "that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways so that opportunities can be taken to secure net gains across each of the different objectives:

> a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
>
> b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
>
> c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

5.2 The policies in the Norfolk Minerals and Waste Local Plan will seek to deliver these objectives in Norfolk to provide for the forecast need for mineral, and sufficient waste management capacity, as identified in the Local Plan, unless:

- policies within the NPPF that protect areas or assets of importance provide a strong reason for restricting the overall scale, type or distribution of development in the plan area[1]; or
- any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the NPPF as a whole.

5.3 When considering development proposals, the Norfolk County Council will take a positive approach to minerals development and waste management development that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework, which is a material consideration in the determination of planning applications.

5.4 Norfolk County Council will always work proactively with applicants and statutory consultees to find solutions which mean that proposals can be approved wherever possible and to secure development that improves the economic, social and environmental considerations of the area.

5.5 Planning applications that accord with the policies in this Local Plan will be approved without delay, unless material considerations indicate otherwise.

Where there are no policies relevant to the application or relevant policies are demonstrably out-of-date at the time of making the decision, then the Council will grant planning permission unless:

- policies within the NPPF that protect areas or assets of particular importance provide a clear reason for refusal[1]; or
- the adverse impacts of doing so would significantly and demonstrably outweigh the benefits, considering the NPPF as a whole.

[1] The policies referred to are those in the NPPF relating to: habitats sites (and those sites listed in paragraph 176 of the NPPF) and/or designated as Sites of Special Scientific Interest; Local Green Space, an Area of Outstanding Natural Beauty, within the Broads Authority, or defined as Heritage Coast; irreplaceable habitats; designated heritage assets, non-designated heritage assets of archaeological interest which are demonstrably of equivalent significance to scheduled monuments; and areas at risk of flooding or coastal change.

General Policies

6. Development Management Criteria

6.1 Minerals and waste developments can result in a range of potential benefits and operational impacts that need to be considered. The planning policy framework provided by this Plan is considered flexible enough to deal with a number of issues that may arise from different development, as well as take into account the local circumstances of each proposal.

6.2 National guidance is clear that Local Plans do not need to repeat or reformulate existing national or local policy or duplicate the existing pollution control regime.

6.3 The 'Local List for Validation of Planning Applications' adopted by the County Planning Authority provides guidance about the particular information that may be required to validate a planning application before it can be determined. Advice on the information to support an application should be sought on a case-by-case basis, normally through pre-application discussions with the County Planning Authority. For any proposal for minerals or waste management development that comes forward for determination, the impact of the proposal on the environment and amenity, as described below, will be carefully assessed and considered before a decision is made.

6.4 Where the impact of the proposal is unacceptable, and such impacts can't be controlled, then planning permission could be refused. Specific measures can, however, be sometimes undertaken to mitigate any potential adverse impact to either local amenity or the environment. Such measures could include, for example, additional landscaping, sustainable drainage schemes, protection of heritage assets, noise attenuation, the design of lighting (including avoidance of light pollution of the night sky), dust and vibration control, nature conservation, good building and site design and restrictions on working hours and lorry movements. The appropriate mitigation will depend on the characteristics of the proposal, the site and the surrounding area.

6.5 The production of waste is a natural result of economic and social activity by businesses and consumers. Wastes can also be an input to economic activity, either as a material or through energy recovery. The management of that waste has economic implications for productivity, government expenditure, and the environment. The waste industry contributes to the economy of Norfolk as an employer and businesses require effective waste management to offset costs associated with disposing of the waste it produces.

6.6 Minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. The minerals industry contributes to the economy of Norfolk as an employer and providing raw materials for the construction of buildings and roads and for glass manufacture.

6.7 The provision of minerals and the management of waste are therefore important to the economic growth of Norfolk and this needs to be taken into consideration when assessing planning applications for minerals or waste management development.

6.8 The Development Management Criteria Policy MW1 details the issues that will be taken into account when reaching a decision on a particular planning application to ensure that permitted sites represent sustainable development.

Policy MW1: Development Management Criteria

Mineral development and waste management development will be acceptable where the proposals demonstrate that the development would not have an unacceptable impact (including cumulative impact in combination with other existing or permitted development) on:

a. Local amenity and health (including noise levels, odour, air quality, dust, litter, light pollution and vibration);
b. The quality and quantity of surface waterbodies and groundwater, for resource purposes and to prevent the deterioration of their existing status, and their associated ecosystems;
c. The capacity of existing drainage systems;
d. Flood risk from all sources to those working on site or an increase in flood risk elsewhere, as demonstrated by a Flood Risk Assessment (where required by the National Planning Policy Framework) and making an allowance for climate change;
e. The best and most versatile agricultural land;
f. Aircraft safety due to the risk of bird strike and/or building height and position;
g. The safety and capacity of the road and any other transport network;
h. The appearance, quality and character of the landscape, countryside and visual environment and any local features that contribute to its local distinctiveness;
i. Protected landscapes including the Norfolk Coast Area of Outstanding Natural Beauty, the Heritage Coast and the Broads;
j. Public Open Space, Local Green Space, the definitive Public Rights of Way network and outdoor recreation facilities;
k. Land stability;
l. The natural, geological and hydrogeological environment (including internationally, nationally or locally designated sites and irreplaceable habitats);
m. The historic environment (as identified through a Heritage and Archaeology Statement), including heritage and archaeological assets and their settings; and
n. The character and quality of the area, in which the development is situated, through poor design.

In addition, all mineral and waste management proposals will be subject to the historic environment policy requirements set out in the NPPF, including striking an appropriate balance between harm and public benefit, but, as a first principle, development should avoid harm on the historic environment.

Mineral development and waste management development proposals must also conserve and, where opportunities arise, enhance the natural, built and historic environment and surrounding landscapes, including:

- the setting of heritage assets and protected landscapes,
- providing biodiversity and geodiversity net gains,
- enhancement of the Public Rights of Way Network,
- creation of recreation opportunities where possible,
- the reduction of flood risk elsewhere through betterment, and
- incorporating good design.

Pollution and Local Amenity Impacts

6.9 "Local amenity impact" is usually understood to mean the effect of the proposed development on the existing visual and aural characteristics of the immediate neighbourhood, including the impact on any residential and non-residential uses in the vicinity. Impacts on amenity can cover a range of potential pollution and disturbance from, for example, light, noise, dust, and odour as well as concerns of the possible effects on human health from the development. When considering planning applications, the County Planning Authority must be satisfied that those potential adverse impacts have all been satisfactorily investigated and addressed.

6.10 Development proposals for mineral extraction or for open air waste management facilities must provide a dust assessment at the planning application stage. The dust assessment should include: the existing baseline conditions, identify potential sources and activities which could cause or give rise to dust, identify site parameters which may increase potential impacts from dust, propose mitigation measures and dust monitoring.

6.11 Development proposals must provide a noise assessment at the planning application stage. The noise assessment should include: the existing background noise levels, the location of noise-sensitive properties and sensitive environmental sites, estimate likely noise levels from the development, assess the noise impact on the neighbourhood, propose mitigation measures and noise monitoring. The NPPF (paragraph 210) states that some noisy short-term activities, which may otherwise be regarded as unacceptable are unavoidable to facilitate minerals extraction. Examples of these noisy activities are soil-stripping, the construction and removal of baffle mounds, soil storage mounds and spoil heaps, construction of new permanent landforms and aspects of site road construction and maintenance. Detail on noise emissions, the impact of noise, noise standards and the control of noise emissions are contained within the national Planning Practice Guidance.

6.12 Development proposals which provide external lighting must submit lighting details / a lighting assessment at the planning application stage. The Norfolk Coast AONB contains three dark sky discovery sites, and The Broads Local Plan contains a dark skies policy. The Institute of Lighting Professionals has produced a Guidance Note for the Reduction of Obtrusive Light. A lighting assessment must contain details of the impact of any proposed lighting on:

- The amenity of neighbouring properties, specifically if light has the potential to extend beyond the boundary of the site;
- Roads/ highway safety;
- The character of the area and the wider landscape, specifically Conservation Areas, Listed Buildings, Designated Areas (SSSI, Broads Authority Executive Area, AONB) or rural areas with little background light; and
- Ecology, specifically European protected species.

The assessment will need to include reasons to justify the lighting proposed, and identification of any mitigation measures required.

6.13 The National Planning Policy Framework states that "The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively".

6.14 Detailed controls are exercised through specific pollution prevention and control regimes primarily regulated by the Environment Agency (EA) and Local Authority Environmental Health Officers (EHOs). However, potential pollution and health impacts can be 'material considerations' when determining applications and an assessment of the likely environmental impacts of a proposal could be required. The EA and EHOs will be consulted on minerals and waste planning applications, where appropriate.

6.15 Levels of disturbance will vary according to the nature of the proposed development and the relationship to the surrounding area. Factors to be taken into account include:

- The proximity of proposed development to homes, schools and other sensitive and incompatible land-uses,
- The location and siting of plant and other ancillary development,
- The topography of the site and the surrounding area (including natural and man- made features which can reduce impacts, such as landscape features), and,
- The site's relationship with roads, railways and waterways.

6.16 Many potential pollution impacts can be overcome by using measures to remove or reduce emissions at source, or by adopting appropriate working practices. Examples of these measures include:

- Controlling working hours,
- Locating plant away from neighbouring developments,
- Housing machinery indoors or attaching silencers to plant,
- Using water sprinklers to reduce dust, installing wheel washing for lorries, and,
- Minimising the use of external lighting, use hooded/cowled lighting to direct light downwards and contain light within the site.

6.17 If permission is granted, planning conditions may be imposed to help mitigate any impact on local amenity.

Biodiversity and Geological Conservation

6.18 There are numerous sites of biodiversity and geological interest in Norfolk and these will continue to be afforded strong protection. Norfolk has important international and national designations, namely Special Areas of Conservation, Special Protection Areas, Ramsar Sites, National Nature Reserves and Sites of Special Scientific Interest. There are also important areas of ancient woodland and areas of particular geological significance, some of which are designated as Local Geological Sites.

6.19 Within national planning policy, individual sites designated for their importance to biological or geological diversity at an international or national level receive statutory protection, whilst those designated at a local level gain protection through District, Borough or City Local Plans. The Plan seeks to ensure that there are no unacceptable adverse impacts on these important assets. Planning permission for minerals or waste management development affecting an international site (SPAs, SACs or Ramsar sites) will only be granted where the conclusions of a project-level Habitats Regulations Assessment (HRA), where one is required, demonstrate that the proposal will have no adverse impacts on the integrity of any site, either alone or in combination with other plans or projects.

6.20 Minerals or waste management development which impacts on Sites of Special Scientific Interest, National Nature Reserves and irreplaceable priority habitats such as ancient woodland and ancient or veteran trees will only be permitted where the impact does not conflict with the biodiversity or geological conservation interests of that asset.

6.21 Locally designated sites form a significant and important part of Norfolk's natural resource, often contributing to ecological connectivity and landscape linkages. Minerals or waste management development that will impact on County Wildlife Sites, Local Geological Sites, Local Nature Reserves, other priority habitats and protected and priority species will only be permitted where sufficient information is submitted to demonstrate that the proposal will not significantly harm the site or the benefits of the development outweigh any adverse effects and such effects can be satisfactorily mitigated or, as a last resort, compensated for, e.g. through offsetting. Proposals that can show a positive contribution to the restoration, creation, protection, enhancement and management of ecological networks at the landscape scale will be encouraged. Development that may affect the status of a waterbody, such as rivers, streams and lakes, will require a Water Framework Directive compliance assessment.

6.22 A Biodiversity Survey and Report will need to be provided at the planning application stage where it is likely that:

- the development will impact on a Site of Special Scientific Interest, Ancient Woodland, County Wildlife Site, Regionally Important Geological Site; or
- the application site is populated by any protected species; or
- the development will affect a feature which provides or could provide a habitat for wildlife (including, but not limited to, ponds, scrub and hedgerows); or
- the development will affect geodiversity.

The Biodiversity Survey and Report will contain:

- information on existing wildlife, habitats and geodiversity both on the site and adjacent sites, and an assessment of the possible impacts of the development on them;
- A Phase 1 habitat survey;
- Sufficient information to enable the County Council to undertake a Habitats Regulations Assessment.

Visual and Landscape Character Impacts

6.23 The character of Norfolk is important to residents and visitors alike. The visual impact experienced as a result of the development of minerals or waste management development on the landscape and townscape is a key consideration when deciding planning applications.

6.24 The Norfolk Coast Area of Outstanding Natural Beauty is a nationally important landscape. The north Norfolk coast from Holme-next-the-Sea to Salthouse is also defined as a Heritage Coast which means that it is one of the best stretches of undeveloped coast in England. The Norfolk and Suffolk Broads is Britain's largest protected wetland and has the status of a national park. Development within the setting of the AONB and the Broads should be located and designed to avoid or minimise adverse impacts on the designated areas. There are also important areas of ancient woodland across Norfolk, often with veteran trees. Norfolk's river valleys are also distinctive landscape features. All of these landscape features will be strongly protected from any adverse impacts arising from minerals or waste management development.

6.25 Landscape Character Assessments have been carried by the Local Planning Authorities in Norfolk and they consider where locally designated landscapes of importance are situated. Particular features that create local distinctiveness or character should be protected from future loss; this includes features such as topography, habitats that are unique to an area, geology (e.g. unique formations or preserved quarry geology) and historic landscapes (which may contain features such as ancient hedgerows and historic field boundaries). The intrinsic character of the Norfolk countryside should be recognised in preparing proposals for minerals or waste management development. A Landscape and Visual Impact Assessment will need to be provided at the planning application stage where:

- A proposal is likely to have effect on an Area of Outstanding Natural Beauty, The Broads or is within a Core River Valley; or
- A proposal involves mineral extraction, landfill or waste water treatment; or
- A proposal that due to its size, scale or location is likely to have a significant visual impact upon the surrounding landscape.

6.26 Mineral development in the countryside should pay particular regard to the local landscape and should aim to protect and enhance this, including through restoration and after-use. Impacts on the landscape can be avoided, reduced or overcome by a variety of measures including:
• Safeguarding local features (such as significant topography, woodland, veteran trees, hedgerows and viewpoints) to retain biodiversity networks and provide part of the framework for restoration,
• Using planting schemes and landscaped bunds and mounds to screen minerals development,
• Early design and planting of appropriate native species to enhance landscape character, support biodiversity networks and provide mature features to be later incorporated into restoration proposals,

• The careful siting of plant and machinery, including providing this at low level and using colour recessive paint.

Recreation

6.27 The Public Rights of Way (PROW) network provides an important means of accessing the countryside. Where relevant, applications for minerals or waste management development will be required to ensure that PROW remain usable at all times or provide satisfactory alternative routes. Alternative paths and any necessary diversions of existing paths will be required to be in place prior to the closure of the existing PROW and would be subject to public consultation as part of the development. Restoration schemes should, in the first instance, be seen as an opportunity to enhance and upgrade PROW where possible, especially with regard to the provision of Bridleways as multiuser paths as part of any permission granted. In all cases, restoration schemes should provide for access which is at least as good as that existing before workings began. The closure of a PROW, where no alternative route is provided, will not normally be acceptable.

6.28 Local recreation assets, including Public Open Space and other outdoor facilities such as country parks, are protected in District, Borough, City and the Broads Authority Local Plans. Open Access Land is designated through the Countryside and Rights of Way (CROW) Act 2000. Minerals and waste management proposals will be expected to mitigate any unacceptable impact on such designations.

Historic environment

6.29 The historic environment contributes towards creating local distinctiveness and a sense of place by understanding our past. Heritage assets (and their setting) are an irreplaceable resource and should be conserved in a manner appropriate to their significance (NPPF, para 189). Within the existing policy hierarchy, individual heritage assets designated at an international or national level receive statutory protection (under specific heritage legislation, such as Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens, and Registered Battlefields) whilst others designated at a local level are subject to protection through District, Borough, City and the Broads Authority Local Plans. Both designated and non-designated heritage assets are also protected through the NPPF.

6.30 If a development proposal could affect a designated or non-designated heritage asset, or its setting; or the application site has known or high potential for archaeological interest, then a Heritage and Archaeology Statement must be submitted at the planning application stage containing a level of detail proportionate to the assets' importance and sufficient to understand the potential impact of the proposal on their significance.

A Heritage and Archaeology Statement must include a desk-based assessment containing:

- A description of the significance of the heritage asset and the contribution of its setting
- The impact of the development on the significance of the heritage asset and/ or its setting. Specifically, how the development will sustain or enhance the heritage asset.
- Provide a justification of any harm to, or loss of the significance of, a heritage asset
- Proposed mitigation of any negative impact upon the significance of the heritage asset and/or its setting.

6.31 Information about archaeological sites and finds previously identified and recorded in Norfolk is held in the Norfolk Historic Environment Record. However, not all archaeological remains are currently known about and proposed development sites have potential to contain previously unidentified heritage assets of, as yet, undetermined significance. To safeguard both known and previously unrecorded heritage assets, an archaeological desk-based assessment must be carried out by the developer where sites are located in or adjacent to an area with known or high potential for archaeological interest. For sites of archaeological interest, a field evaluation must also be carried out by the developer. These assessments must be carried out prior to the submission of a planning application as the information that they provide will help determine the suitability of the

proposal, appropriate mitigation measures and methods of working, and suitable conditions if planning permission is granted.

Land and soil resources

6.32 The presence of the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) should be taken into account, alongside other sustainability considerations, when minerals development or waste management proposals affect such land. The NPPF states that "where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality".

6.33 Minerals development is, in almost all cases, a temporary use of land for a number of years, followed by restoration. Therefore, proposals for mineral working on higher grade agricultural land must protect these soils in order to enable the site to have the potential to revert back to productive agricultural use in the future. Top-soil and sub-soil should be carefully removed and handled with care and stored separately during the preparation and working of a mineral site. This will support later land restoration to agriculture and other beneficial uses. The overall integrity of land and soil should be protected (with measures taken to safeguard the quality of stored soils; in accordance with Defra's 'Good Practice Guide for handling soils') during working, and aftercare of the site once it is fully restored.

6.34 Measures must be taken to ensure the sides of mineral workings are stable and will not result in subsidence either on or off site. Surrounding areas and properties must not be adversely affected by the effects of erosion, subsidence or land slippage. Where mineral sites adjoin roads, railways, bridges, or energy transmission routes, appropriate land margins must be provided to ensure the continued structural integrity of this vital infrastructure.

The transport network

6.35 Most current minerals and waste sites in Norfolk are served by Heavy Goods Vehicles (HGVs) using the local road network, although Sibelco's silica sand complex at Leziate exports around three-quarters of the processed silica sand by rail.

6.36 The movement of HGVs to and from minerals and waste sites can have significant effects on roads, other road users and the local community. Alternatives to road freight, such as rail and water-borne freight distribution of minerals and waste will be strongly encouraged, and the potential for non-HGV transport must be assessed at the planning application stage and sustainable transport must be used where the opportunity is available (as set out in Policy MW2), but it is recognised that in Norfolk the majority of bulk materials are likely to continue being transported by road as this is currently the most feasible mode of transport.

6.37 Much of Norfolk's road network is made up of minor rural roads that are generally unsuitable for large vehicles and heavy traffic flows. A large proportion of Norfolk's unclassified road network is of unsuitable construction and alignment to cater for significant HGV traffic and in additional there can be localised amenity impacts from HGV traffic.

6.38 An assessment of the impacts of transporting minerals and associated products to and from quarries, and the movement of waste is a key consideration in determining the acceptability of development proposals. As detailed in Policy MW2 'Transport' it is anticipated that mineral and waste developments proposing reliance on the road network will be accompanied by a Transport Statement or Assessment. If planning permission is granted, it may be necessary to impose restrictions on the number of vehicle movements and the routes used, in order to mitigate against any potential impacts on the highway network and local amenity.

Flooding, water resources and water quality

6.39 The risk of flooding from all sources should be minimised for people, property and the natural environment by directing development away from areas at highest risk. Where development is necessary in areas at risk of flooding the development should be made safe for its lifetime without

increasing flood risk elsewhere. Flood risk from all sources includes flooding from rivers and the sea, surface water, groundwater and reservoirs, lakes and overwhelmed sewers and drainage systems. The Environment Agency's flood map for planning shows the location of flood risk zones for flooding from rivers and the sea, the Environment Agency has also mapped the flood risk from surface waters and reservoirs. The Local Planning Authorities in Norfolk have produced Strategic Flood Risk Assessments which include future flood risk from all sources, now and in the future, taking account of the impacts of climate change.

6.40 Development can increase surface water run-off to streams and rivers, through increasing built development in the local environment. To prevent or minimise this risk, proposals should incorporate effective surface water management, such as sustainable drainage systems, where necessary to ensure flood risk is not increased. Mineral extraction may remove infiltration media as part of the extraction operation. Therefore, a drainage strategy should be submitted that considers the changes to local drainage network during the works and following restoration e.g. interception of watercourses or drainage connections. Any current drainage arrangements should be maintained or diverted appropriately. Reinstatement of land can replace permeable material with less permeable, this along with the post development ground levels must not increase the risk of flooding elsewhere.

6.41 The NPPF sets out when a Site-Specific Flood Risk Assessment would be required at the planning application stage. A Site-Specific Flood Risk Assessment must also establish the flood risk to people on site and how any residual risk will be safely managed including a Flood Response Plan. Site Specific Flood Risk Assessments are required to take into account climate change scenarios, so issues related to flood risk and climate change mitigation are dealt with by policy MW1. Mineral sites have a significant potential to reduce flood risk in the surrounding area and downstream, through betterment on restoration.

6.42 In general terms, waste treatment (excluding landfill or the management of hazardous waste) is defined as a 'less vulnerable' land-use in the NPPF; therefore, it may be appropriate in Flood Zones 2 and 3a. Sand and gravel extraction and silica sand extraction are defined as 'water compatible development' (potentially appropriate in all flood zones) whilst other mineral working and processing, including carstone extraction, is a 'less vulnerable' land use; therefore minerals development may be appropriate in Flood zones 2 and 3a. A 'sequential test', as set out in the NPPF, is applied to new developments to steer development to areas with the lowest probability of flooding.

6.43 As well as flood risk, the effect of minerals and waste management development on the status of all water bodies should be addressed in accordance with the Water Framework Directive (WFD). This includes the quality and quantity of surface water and groundwater. The WFD assessment should determine if there could be a deterioration in WFD status. Activities should not allow any deterioration in any of the WFD elements. Minerals and waste management developments should not cause deterioration or prevent a water body from achieving Good Ecological Status/Potential, and whenever possible, help to implement environmental improvement measures to improve waterbodies. A further consideration could be the protection of sources of drinking water, identified via designated Source Protection Zones. Development proposals must therefore prevent the pollution of surface water and groundwater by fuels, chemicals and other contaminants (e.g. sediments), and include pollution prevention planning for incidents such as fires (and the risks posed by contaminated fire water), collisions and vandalism.

6.44 Minerals development must also ensure there will be no significant change to groundwater or surface water levels, including careful monitoring of any 'dewatering' operations (whereby water is pumped out of a pit to allow dry working below the water table) to ensure no adverse impacts on surrounding water availability and/or the water environment. Therefore, any de-watering water will need to be returned to the aquifer close to where it is abstracted and in a timely manner after the abstraction takes place. Dewatering for mineral extraction purposes requires a water abstraction licence from the Environment Agency, but one may not be granted, particularly for activities that have a consumptive element (such as mineral washing and dust suppression).

Potential hazard to aircraft from bird strike

6.45 Aerodrome safeguarding guidance is set out in the 'Safeguarding aerodromes, technical sites and military explosives storage areas Circular 01/03'.

6.46 The purpose of safeguarding aerodromes is to ensure that the operation and development of civil and military airfields is not inhibited by development that has the potential to increase the number of birds and the 'birdstrike' risk of aircraft damage or danger to life. The safeguarding area for potential bird hazards is a 13km radius from the centre point of civil and military aerodromes. Other potential risks to aerodromes include buildings and lighting affecting telecommunications and visibility, and tall structures affecting flightpaths.

6.47 Waste management facilities, especially non-hazardous landfill sites, have the potential to attract birds. Whilst the process of mineral extraction does not in itself attract bird populations, the restoration and after-use of workings may involve the creation of water features, nature reserves and berry producing plants all of which have the potential to attract flocks of birds.

6.48 A number of aerodromes and technical sites are located within Norfolk or have consultation areas within Norfolk. Within Norfolk safeguarding areas have been established for Norwich Airport and RAF Marham, whilst the safeguarding areas around RAF Mildenhall, RAF Lakenheath and RAF Honington in Suffolk, extend into parts of West Norfolk and Breckland. There are smaller airfields in Norfolk used for business aviation and recreational flying where similar safeguarding considerations also apply. There are also safeguarding areas around the MoD technical sites at Neatishead, Trimingham and Weybourne. The boundary of the safeguarded area for each site is shown on the Policies Map. The location and boundary of a safeguarded site is determined by the consultee and is not a matter of discretion for the County Council.

6.49 Proposals for site working, restoration and after-use must give careful consideration to the form of working and landscaping, planting and water features if located within an airport/ aerodrome/ or military safeguarding area. If a development proposal is within the safeguarding area for potential bird hazards, then a Bird Hazard Assessment will need to be provided at the planning application stage. The Bird Hazard Assessment should identify the risk of bird hazard to the safe operation of aerodromes and aircraft, propose mitigation of any identified risk and include a Bird Hazard Management Plan if necessary.

Cumulative impacts

6.50 It is appropriate to consider the cumulative impact of any proposed mineral or waste management development especially upon amenity, the natural, built and historic environment and the local road network.

6.51 In determining an application for new mineral or waste management development, account will be taken of the potential cumulative impact with other development within the locality and the area's capacity to absorb that change.

6.52 Cumulative impacts from mineral development could arise if mineral sites in proximity to one another were worked at the same time, or if working in a particular area was to continue over a long period of time. Potential applicants should consider what other existing and proposed development will take place under their control, or otherwise, in the area when formulating their own proposals to avoid unacceptable cumulative impacts. The MPA will normally require a primary site to have extraction completed and be undergoing restoration before a new extension area is prepared for extraction.

6.53 Where cumulative impacts have not been, or are unable to be, satisfactorily addressed through the application, the County Planning Authority could have grounds to refuse permission for that development.

Design

6.54 The layout and design of minerals and waste developments can help to reduce potential adverse impacts, create positive impacts with regard to the public perception of such activities, improve safety, accessibility and security, climate change and flood mitigation as well as increasing operational and/or energy efficiency. Paragraph 134 of the NPPF states that development that is not well designed should be refused. The Government has published a National Design Guide. Policy WP16 covers the design of waste management facilities.

6.55 As minerals are dug where physically found, usually in the countryside, this will temporarily affect the local landscape during extraction, and enhancements are unlikely to be gained until restoration. However, mineral schemes are still required to mitigate impacts, and design, layout and effective landscaping are key in delivering this.

7. Transport

7.1 Norfolk's 'Local Transport Plan 4 Strategy 2021-2036' has seven objectives:

1. Embracing the future – adapt to and use new technology to achieve better outcomes
2. Delivering a sustainable Norfolk – working in partnership with others to help shape the County's development plans and proposals
3. Enhancing connectivity – key connections into and across the county must be improved to provide better, faster and more reliable journeys. However, this must be done in a way that puts transport firmly onto a net zero carbon trajectory.
4. Enhancing Norfolk's quality of life – put a clear priority on carbon reduction and alongside this, give priority to tackling air quality and to improve quality of place, conserving and enhancing our built and historic environments.
5. Increasing accessibility – working in partnership with bus companies, train operators, local communities, service providers and those who plan service provision is key to increasing accessibility
6. Improving transport safety – work in partnership to achieve casualty reductions on the transport network using the Safe Systems approach
7. A well-managed and maintained transport network – focus core funding streams towards ensure that the most important parts of the network are kept in good repair. In urban areas and market towns the strategy is to identify sustainable and active transport corridors to focus maintenance and network management.

7.2 Norfolk County Council is working in partnership with local authorities to create a Local Cycling and Walking Infrastructure Plan (LCWIP) for Norfolk. The purpose of the LCWIP is to create a proposed cycling and walking network across the county, to identify and prioritise improvement schemes which can be delivered over the short, medium and long term. This will enable more people to consider cycling and walking as safe, direct and attractive forms of transport. Cycling and walking infrastructure plans will play an important part in the delivery of the Local Transport Strategy for Norfolk.

7.3 Most current minerals and waste sites in Norfolk are served by Heavy Goods Vehicles (HGVs) using the local road network, although Sibelco's silica sand complex at Leziate exports around three-quarters of the processed silica sand by rail.

7.4 The movement of HGVs to and from minerals and waste sites can have significant effects on roads, other road users and the local community. Alternatives to road freight, such as rail and water-borne freight distribution of minerals and waste will be strongly encouraged, but in Norfolk the majority of bulk materials are likely to continue being transported by road as this is currently the most feasible mode of transport.

7.5 Much of Norfolk's road network is made up of minor rural roads that are generally unsuitable for large vehicles and heavy traffic flows. The impact of HGV traffic on unsuitable roads can be significant in terms of physical damage. A large proportion of Norfolk's unclassified road network is of unsuitable construction and alignment to cater for significant HGV traffic and in additional there can be localised amenity impacts from HGV traffic.

7.6 One of the aims of the Highway Authority is to keep commercial vehicles away from areas where their presence would result in danger/unacceptable disruption to the highway or cause irreparable damage.

7.7 National Highways is responsible for managing the trunk roads in Norfolk (the A11, A47 and A12). The County Council has, of many years, designated every non-trunk road in Norfolk as a category within the Route Hierarchy. In declining order of appropriateness, the Route Hierarchy is: Principal Roads (generally A roads), Main Distributor Roads (generally B roads), Local Access Roads, HGV access Roads, Tourist Access Roads (generally C roads) and Other Roads (normally C or unclassified roads). The intention of the policy is that new minerals and waste sites should ensure that HGVs take the shortest practicable route (avoiding inappropriate junctions and travel through settlements where possible) to the nearest Principal Road or Main Distributor Road.

7.8 An assessment of the impacts of transporting minerals and associated products to and from quarries, and the movement of waste is a key consideration in determining the acceptability of development proposals. Norfolk County Council, as the Local Highway Authority, has published aims and guidance notes for the Local Highway Authority requirements in Development Management in 'Safe, Sustainable Development' (November 2019).

7.9 Road improvements by, or on behalf of a developer, may be required to mitigate any potential adverse transport impacts. Any improvements must be in accordance with the standard for HGV routes in Norfolk County Council's latest guidance on the Route Hierarchy. In cases where a highways improvement scheme has been identified by the County Highway Authority or National Highways, developers will be required to make an appropriate financial contribution to the scheme.

7.10 When determining planning applications for minerals and waste development, it may be necessary to use planning conditions to impose restrictions on the number of vehicle movements and to secure acceptable routing of HGVs when this is considered necessary to minimise highways and amenity impacts from HGV transport.

Policy MW2: Transport

All proposals for minerals development or waste management facilities must assess the potential for non-HGV transportation of materials to and from the facilities, principally by rail or water and take up these sustainable transport opportunities where available.

The County Council will consider minerals and waste development proposals to be satisfactory in terms of access where anticipated HGV movements, taking into account cumulative impacts and any mitigation measures proposed, do not generate:

a) Unacceptable risks to the safety of road users and pedestrians;

b) Unacceptable impacts on the capacity and/or efficiency of the highway network (including the trunk road network);

c) Unacceptable impacts on air quality (particularly in relation to any potential breaches of National Air Quality Objectives and impacts on any Air Quality Management Areas);

d) Unacceptable physical impacts on the highway network (e.g. road or kerbside damage).

Planning applications for new minerals development or waste management facilities, or proposals that generate an increase in traffic movements or traffic impact, must be accompanied by a Transport Statement or Transport Assessment that demonstrates:

- The provision of parking areas and suitable highway access and egress in accordance with published highway design guidance;
- A suitable route to the nearest major road (trunk road or principal road or main distributor road), which may need to be incorporated in a formal Routing Agreement;
- Consideration of other road users, including cyclists, horse riders and pedestrians; and
- Appropriate measures to reduce car travel to the site by workers and visitors and encourage walking, cycling and use of public transport.

8. Climate change mitigation and adaption - STRATEGIC POLICY

8.1 The Climate Change Act 2008 sets up a framework for the UK to achieve its long-term goals of reducing greenhouse gas emissions and to ensure steps are taken towards adapting to the impacts of climate change. That Act also introduced a requirement into the Planning and Compulsory Purchase Act 2004 for local planning authorities to address climate change in preparing Local Plans. In 2019 the Climate Change Act was amended to commit the UK government by law to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050. The Government's 'Net Zero Strategy: Build Back Greener' (2021) sets out policies and proposals for decarbonising all sectors of the UK economy to meet the net zero target by 2050.

8.2 The Government's Resources and Waste Strategy (2018) made a commitment to increase municipal waste recycling rates to 65% and to ensure that no more than 10% of municipal waste is landfilled by 2035 because biodegradable waste sent to landfill slowly breaks down anaerobically, emitting methane for many years afterwards.

8.3 Forestry and woodlands act as carbon sinks and capture greenhouse gas emissions. In addition, habitat creation and the expansion of existing habitats can increase the resilience of the natural environment to cope with climate change. There is the opportunity to incorporate trees and other natural landscape features into both permanent and temporary minerals and waste developments, and for the restoration schemes for temporary mineral developments to contribute to climate change mitigation and adaption measures. The restoration requirements for mineral workings are dealt with in Policy MP7.

8.4 There is a need to reduce the contribution to climate change from minerals development and waste management facilities, while also adapting to its potential effects. Norfolk County Council adopted an Environment Policy in November 2019 which includes the policy aim to achieve 'net zero' carbon emissions on our estates by 2030, but within our wider areas, work towards 'carbon neutrality' by 2030.

8.5 Norfolk is one of the driest counties in the UK and there is a need to minimise demands on potable water resources, particularly in the context of climate change. Large parts of Norfolk are at risk from flooding, particularly coastal and river localities, and particularly from surface water run-off after storm events; again, an issue that will be compounded by climate change.

8.6 The design and siting of new development can contribute to mitigation and adaption to climate change. New minerals development and waste management facilities should therefore include appropriate measures to ensure mitigation and adaption to climate change. The National Design Guide explains that well-designed places and buildings conserve natural resources including land, water, energy and materials and that their design responds to the impacts of climate change by being energy efficient and minimising carbon emissions. The National Design Guide identifies measures to achieve climate change mitigation, primarily by reducing greenhouse gas emissions and minimising embodied energy; and adaptation to anticipated events, such as rising temperatures and the increasing risk of flooding. As the requirements for site specific Flood Risk Assessments include climate change scenarios, this is dealt with as part of the Development Management Criteria Policy MW1.

8.7 Proposed developments should follow the energy hierarchy by:
1. reducing the need for energy usage through their design, construction and operation;
2. using energy efficient mechanical and electrical systems, and
3. by using renewable energy.

8.8 Minerals and waste developments have the potential to generate renewable energy (e.g. through solar panels, wind turbines, ground source heat pumps etc.) which could meet some of their electricity needs. Applicants should generate the energy used on site from decentralised and renewable or low carbon sources. Given the rural location of mineral sites, it is recognised that in some cases this may not be practicable, perhaps because of financial viability, site size, physiographical constraints of a site, environmental or landscape impacts. If the applicant

considers that this is the case, the policy requires evidence to be provided to the County Planning Authority, and the applicant should source the electricity required from renewable energy through a power supplier.

8.9 Policy MW3 provides the framework for the County Council's determination of minerals and waste development proposals in relation to climate change issues:

Policy MW3: Climate change mitigation and adaption - STRATEGIC POLICY

Proposals should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures.

New minerals sites and waste management facilities (including extensions to existing sites) will, through their design, construction and operation, be expected to: minimise their potential contribution to climate change through reducing carbon and methane emissions, incorporate energy and water efficient design strategies and be adaptable to future climatic conditions.

Proposals for new minerals and waste developments (including extensions to existing sites) will therefore be expected to:

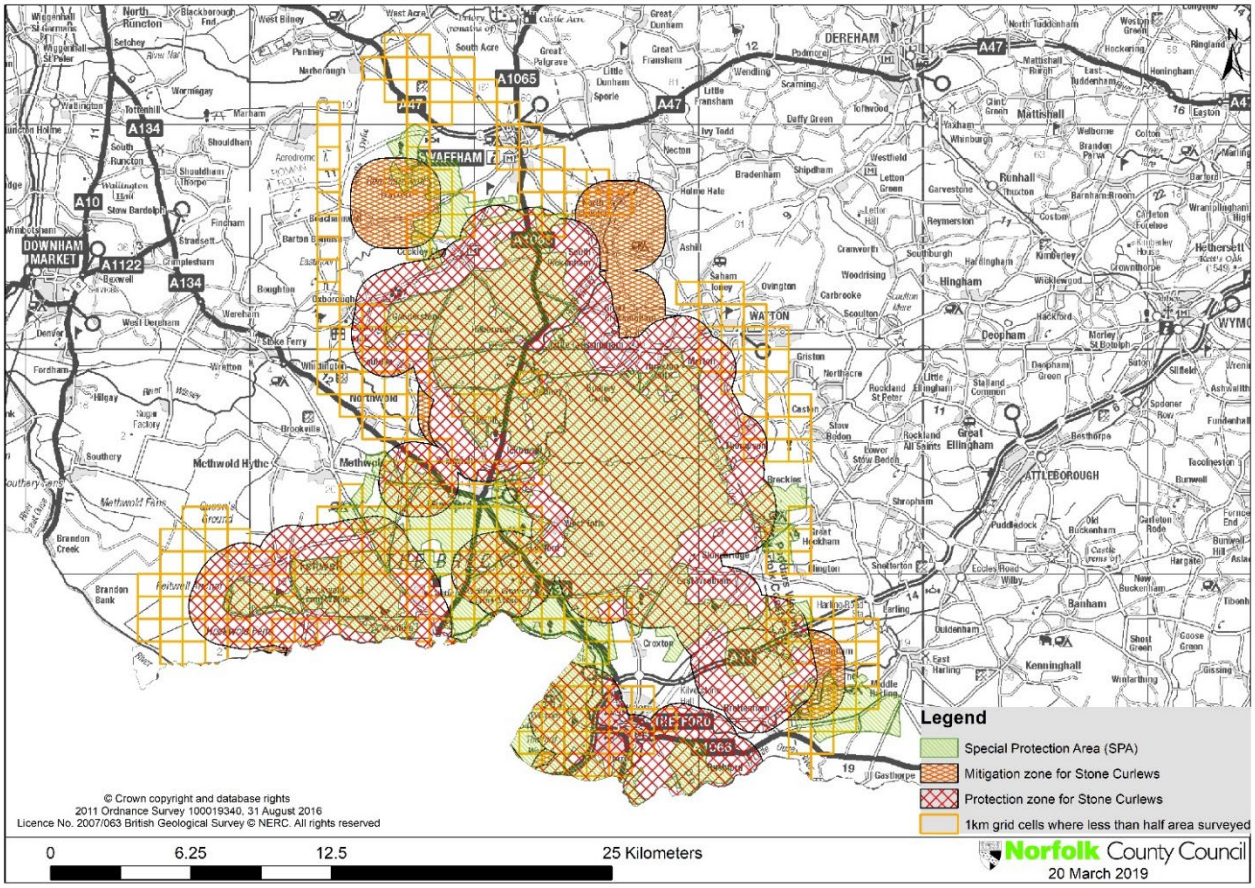
a) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption, including maximising cooling and avoiding solar gain in the summer,
b) be planned so as to minimise greenhouse gas emissions;
c) set out how the proposal will make use of renewable energy, including generating the energy used on site from decentralised and renewable or low-carbon sources. Where on-site renewable or low-carbon energy generation is not practicable, evidence must be provided to the County Planning Authority, and the applicant should source the electricity required from renewables through an energy supplier;
d) use sustainable drainage systems, rainwater harvesting, stormwater harvesting, including from impermeable surfaces wherever feasible and layouts that accommodate wastewater recycling where a connection to the public sewerage network is required;
e) take account of potential changes in climate including rising sea levels and coastal erosion;
f) take opportunities to incorporate trees, retain existing trees and include measures to assist habitats and species to adapt to the potential effects of climate change wherever possible;
g) set out how the transportation related to the development will help reduce carbon emissions and incorporate proposals for sustainable travel, including travel plans where appropriate; and
h) for waste management proposals, set out how the principles of the waste hierarchy have been considered and addressed.

9. The Brecks Protected Habitats and Species

9.1 Covering 39,434 ha of heathland, forest and arable farmland, The Brecks is of European value to birdlife. Designated in 2006 as a Special Protection Area (SPA) under the European Council's Directive on the Conservation of Wild Birds, The Brecks habitat is important for a range of ground-nesting birds, including the Stone Curlew, Woodlark and Nightjar. The East of England supports 65% of the UK's breeding pairs of Stone Curlew where most breeding is located within The Brecks. The rich biodiversity of The Brecks is also recognised through other statutory conservation designations including four Special Areas of Conservation (SACs), numerous SSSI and National Nature Reserves (NNR). SSSIs and NNRs make up 40% of the total area.

9.2 Evidence used to support the adoption of the Breckland Core Strategy in 2009 included research to inform the Habitats Regulations Assessment (HRA) of the Breckland Core Strategy which examined the effects of housing and roads on the distribution of the Stone Curlew in The Brecks. The adopted mitigation policy required that any new built development which may impact on the SPA must be subject to Appropriate Assessment. New built development is not permitted within 1,500m of the edge of the SPA (shown as a 'Protection Zone' on Map 2) unless it can be demonstrated by an appropriate assessment that the development would not adversely affect the integrity of the SPA. Such circumstances may include the use of existing buildings and development where completely masked from the SPA by existing development.

9.3 Stone Curlews are also found outside the SPA; these birds are clearly part of the SPA population and functionally linked. Accordingly, a mitigation zone indicated areas that have been identified where there are concentrations of Stone Curlew (most recently using data from 2011-2015). There are also areas within 3km of the SPA, where Stone Curlews could be associated with the SPA, but there is a lack of survey data. The yellow squares on Map 2, indicate precautionary areas where there is a lack of data, but future surveys could identify regular use by nesting Stone Curlew, functionally linking these areas to the SPA.



Map 2: Stone Curlew mitigation zones and protection zones

9.4 Within these areas, built development may be brought forward, providing a project level Habitats Regulations Assessment can demonstrate adverse effects have been prevented, for example where alternative land outside the SPA can be secured to adequately mitigate for the potential effects.

9.5 In 2013 a "Further Assessments of the Relationship between Buildings and Stone Curlew Distribution" study was carried out by Footprint Ecology on behalf of Breckland Council to update previous work on the effect of buildings and roads on Stone Curlews in The Brecks. Including new analysis and using additional survey data, this study report focused on the effects of buildings on the distribution of breeding Stone Curlew in The Brecks. The report provides strong support for the continuation of a 1,500m zone around the areas capable of supporting Stone Curlews. Within this zone additional built development is likely to have a significant effect on the SPA.

9.6 The 2013 research also suggests that the planting of woodland/screening as a mitigation measure is unlikely to be effective and that the effect of nest density is strongest as a result of the amount of buildings. One of the key aims of the research was to differentiate the effects of nest density due to different building classes. Due to the sample size and number of buildings identified there needs to be an element of caution applied to the results, however, the research indicates that there was no evidence of a negative impact of agricultural or commercial buildings. As such, the analysis suggests that project level HRA for non-residential development in the SPA buffer zones may be able to demonstrate that adverse effects can be ruled out.

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Policy MW4: The Brecks Protected Habitats and Species

The Council will require suitable information to be provided to enable it to undertake a Habitats Regulations Assessment of all proposals for development that are likely to have a significant effect on the Breckland Special Protection Area (SPA), which is classified for its populations of Stone Curlew, Woodlark and Nightjar, and/or Breckland Special Area of Conservation (SAC) which is designated for its heathland habitats. Development will only be permitted where sufficient information is submitted to demonstrate that the proposal will not adversely affect the integrity of the SPA or SAC.

Stone Curlew

A buffer zone has been defined (indicated in red hatching on Map 2) that extends 1,500m from the edge of those parts of the SPA that support or are capable of supporting Stone Curlew, where new built development would be likely to significantly affect the SPA population.

A buffer zone has also been defined (indicated in orange hatching on Map 2) that extends 1,500 metres around areas that have a functional link to the SPA, because they support Stone Curlew outside, but in close proximity to the SPA boundary, within which new built development would be likely to significantly affect the SPA population.

Built development (including plant and processing sites) within the SPA boundary, or located less than 1,500m away from the SPA boundary or identified areas that have a functional link (see Map 2) will not normally be permitted, unless a project level HRA is able to demonstrate that adverse effects can be ruled out.

Where a proposed building is outside the SPA but within 1,500m of the SPA boundary or identified areas that have a functional link, including those precautionary areas where there is currently a lack of data (see Map 2), there may be circumstances where a project level Habitats Regulations Assessment is able to demonstrate that the proposal will not adversely affect the integrity of the SPA.

Circumstances where the proposal is able to conclusively demonstrate that it will not result in an adverse effect on the Breckland SPA may include where the proposal is:

- More than 1,500m away from potential stone curlew nesting sites inside the SPA (these are those parts of the SPA that are also designated as Breckland Farmland SSSI);
- A new building that will be completely masked from the SPA by existing built development;
- A proposed re-development of an existing building that would not alter its footprint or increase its potential impact.

Woodlark and Nightjar

Built development (including plant and processing sites) within 400m of the SPA that support or are capable of supporting Woodlark and/or Nightjar will not normally be permitted.

The Council will consider the need for a Habitats Regulations Assessment to determine the implications of development on Nightjar and Woodlark on a case-by-case basis, depending on the location and nature of the proposal.

10. Agricultural soils

10.1 Norfolk is predominately rural in nature and agriculture plays a significant role in the local economy and heritage. Continuing to preserve good quality agricultural land is important as it will benefit the economy as well as Norfolk's landscape. Agricultural land is divided into five grades as follows:

Grade 1 – excellent quality
Grade 2 – very good quality
Grade 3 – good to moderate quality
Sub-grade 3a – good quality
Sub-grade 3b – moderate quality
Grade 4 – poor quality
Grade 5 – very poor quality

10.2 The Best and Most Versatile (BMV) Agricultural Land consists of grades 1, 2 and 3a. The NPPF states that "where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality". However, minerals development is, in almost all cases, a temporary use of land, followed by restoration. It is therefore normally possible to remove and store topsoils and subsoils during an operational phase, and then to replace them afterwards to bring a site back into agricultural use, if appropriate.

10.3 Grade 1 soils are a vital national resource and Norfolk contains some significant areas of Grade 1 land, particularly in the peaty soils of the Fenland area and the Broads. Grade 2 soils are distributed more widely across the county, albeit in smaller patches, but Grade 3 soils make up the majority of Norfolk's agricultural land. The subgrades of 3a and 3b agricultural land are not mapped, at a national level, and therefore it is only possible to differentiate between them by carrying out a detailed site survey of soil quality. It is only as surveys on individual landholdings are carried out that 3a and 3b are differentiated. Grade 4 land occurs in smaller areas, located mainly in the drier and more free-draining Brecks. There are only 110 hectares of Grade 5 agricultural land in Norfolk which is all located either within or adjacent to the Breckland SPA, therefore there is no policy preference for locating minerals or waste development on Norfolk's Grade 5 agricultural land.

10.4 As detailed in Policy WP3, waste management facilities should be suitably located on previously developed land or on land allocated or permitted for general industrial use or storage and distribution use. Therefore, it is not normally appropriate to locate waste management facilities on agricultural land. However, where a waste management facility is proposed on BMV agricultural land, policy MW5 will still apply.

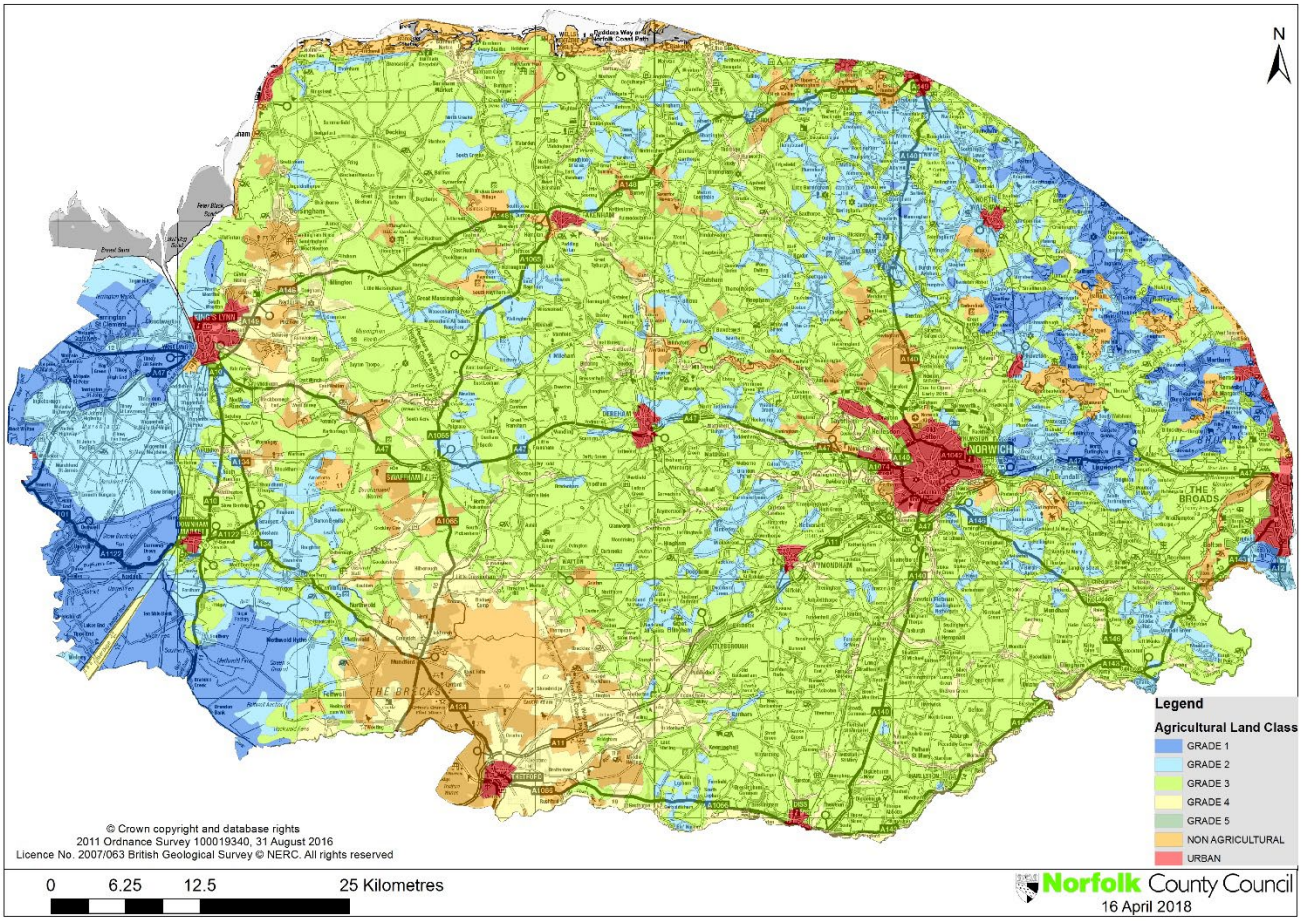
Policy MW5: Agricultural soils

Where development is proposed on agricultural land, the County Council has a clear preference for locating new mineral extraction and associated activities, and composting facilities, on land of agricultural grades 3b and 4.

Development proposals affecting Grade 1 agricultural land will only be permitted in exceptional circumstances, where it is demonstrated that there are no alternative locations for the development.

In addition to the above, when minerals development, particularly extraction, is proposed on agricultural land of grades 1, 2 or 3a it will only be permitted where:

- Provision is made for high standards of soil management that would enable restoration to a condition at least as good as its previous agricultural quality. To demonstrate this, soil and land quality surveys, and soil handling and replacement strategies (based upon Defra's 'Good Practice Guide for Handling Soils') must be submitted to the County Planning Authority; or
- The benefit of restoring the land to another after-use can be shown to outweigh the loss of the agricultural use of the land.



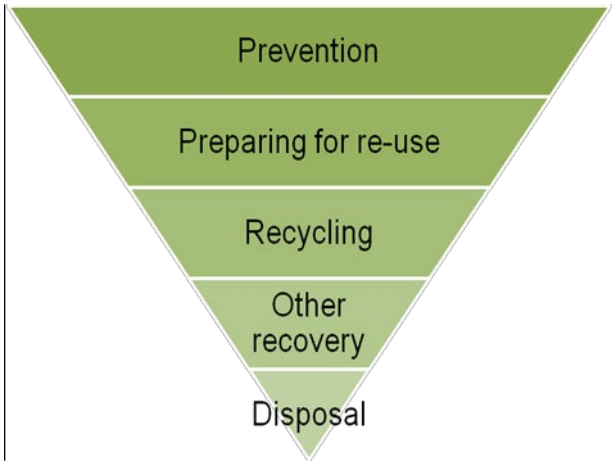
Map 3: Agricultural land grades

Waste Management Specific Policies

National Planning Policy for Waste

W0.1 National Planning Policy for Waste requires that Waste Planning Authorities should identify sufficient opportunities to meet the identified needs for their area for the management of waste streams.

W0.2 A significant element of the planning policy context for waste is the Waste Hierarchy. The intention is that, in making decisions about waste management, greater weight should be attributed to those waste management methods that are at the top of the hierarchy. In order of preference the waste hierarchy is:



W0.3 In terms of planning this has meant a change from planning for new temporary landfill sites in former quarries and instead the emphasis is now on permanent fixed facilities in employment areas or other suitable sites. This Plan is mainly concerned with recycling, other recovery and disposal because these are the stages of the waste hierarchy where waste management facilities are required.

W0.4 The other key element of National Planning Policy for Waste is the principal of self-sufficiency in waste management capacity. This is the concept of providing enough waste management capacity to handle the forecast amount of waste arising in Norfolk. Therefore, the County Council aims to plan for sufficient capacity to manage an amount of waste equal to that arising in Norfolk, whilst acknowledging that waste is transported between different areas of the Country. It is recognised that there may be certain waste streams for which the complexity of the waste management process, and/or the volumes of waste in each area are so low that it would be unviable for a full range of waste management facilities to exist in every area.

W0.5 Article 16 of the Waste Framework Directive recognises this; '*The principles of proximity and self-sufficiency shall not mean that each Member State has to possess the full range of final recovery facilities within that Member State*.'

W0.6 Discussions with other Waste Planning Authorities take place as part of the Duty to Cooperate, to ensure adequate capacity exist both inside and outside Norfolk to manage such waste.

Waste types

W0.7 Waste is classified into different types depending on the nature and source of the material; these are referred to as waste streams. The different waste streams that arise within Norfolk are defined in the glossary and are:

- Local Authority Collected Waste (LACW)
- Commercial and Industrial waste (C&I)
- Construction, Demolition and Excavation waste (CD&E)

- Hazardous waste
- Radioactive waste
- Wastewater (sewage)
- Agricultural waste

Waste reduction and prevention

W0.8 The Norfolk Waste Partnership is an organisation which promotes waste reduction and prevention, members include all eight local authorities in Norfolk. The partnership has four strategic objectives:

- Reduce the amount of waste generated per household
- Increase the availability of waste reduction, reuse, repair and recycling activities
- Ensure residents and businesses understand the importance of waste as a resource and the range of opportunities for waste reduction, repair, reuse and recycling
- Reduce the overall system cost of dealing with Norfolk's household waste.

W0.9 The targets set out in the Waste Management Plan for England (2013) and in 'Our waste, our resources: a strategy for England' (2018) are key drivers for the partnership. These documents include targets for 50% of household waste by weight to be recycled by 2020, and at least 65% of municipal waste by weight to be recycled by 2035, with no more than 10% ending up in landfill.

W0.10 The recycling rate (which also includes composting and reuse) for Norfolk's household waste in 2020/21 was 42.1%, compared to a household waste recycling rate for England of 42.3%. However, there are disparities between individual authority's recycling rates, with the highest recycling rate in Norfolk being 49% and the lowest 29.2%. The rates are significantly affected by the quantity of garden waste collected. The recycling rates dropped slightly in 2020/21 as they were affected by the covid-19 pandemic which included increased working from home, the suspension of food and garden waste collections in some areas and the closure of recycling centres during April and May 2020. The household waste recycling rate in Norfolk varied from 46.7% to 42.1% over the five-year period from 2016/17 to 2020/21. The household waste recycling rate for England varied between 43.8% and 42.3% over the same five-year period.

W0.11 The recycling rate (which also includes composting and reuse) for Norfolk's Local Authority Collected municipal waste was 42.16% in 2020/21, whilst the rate for England was 41.6%. The quantity of municipal waste arisings and the recycling rate in 2020/21 were also affected by the covid-19 pandemic. The municipal waste recycling rate in Norfolk varied from 46.83% to 42.16% over the five-year period from 2016/17 to 2020/21. The municipal waste recycling rate for England varied from 43.2% to 41.6% over the same five-year period.

W0.12 Initiatives to reduce waste and improve the recycling rate are largely outside the scope of this Plan, these being aligned with the aims of the Waste Collection and Waste Disposal Authorities through their membership of the Norfolk Waste Partnership. The Plan will provide an approach that ensures suitable areas for sustainable waste management facilities are identified and that there is a flexible approach to waste technologies so that innovation within the market is encouraged, while still providing appropriate safeguards.

Existing Waste Management Capacity

W0.13 Norfolk currently has a wide range of waste management facilities, which manage both waste arising within Norfolk and some types of waste arising in other Waste Planning Authority areas. These facilities include composting, recycling, household waste recycling centres, anaerobic digestion, transfer stations and treatment facilities. Assessment of the maximum recorded throughputs for a range of waste management sites in Norfolk has indicated that approximately 3.534 million tonnes of capacity per annum exists for the treatment and processing of waste.

W0.14 Waste management was previously dominated by landfill as a final destination for residual waste, but there has been a significant shift away from this situation during the last ten years. Nationally, the majority of residual waste is now either consumed directly in Energy from Waste

plants (usually incinerators) which produce electricity and/or heat as part of the process; or processed into Refuse Derived Fuel (RDF), and then transported to Energy from Waste plants. The move away from landfill disposal has led to the closure of landfill sites. In Norfolk, in 2021, there is one operational non-hazardous landfill site and one mothballed site, which together still contain significant voidspace (further detail is provided in paragraph W1.10). While, Norfolk does not have any final treatment or recovery facilities for residual LACW or Commercial & Industrial waste, there are a number of facilities which provide treatment and processing (for example, into RDF) before it is transported to such facilities.

W0.15 Inert waste recycling takes place using mobile plant at construction sites as well as waste management facilities. It is recognised nationally that figures for inert waste recycling are less robust than for other waste streams, as there is no requirement for data to be provided for mobile plant operating under exemptions from the Environment Agency. Many inert waste recycling facilities operate at mineral workings as part of the wider commercial undertaking and the processed waste is sold as a recycled aggregate. Inert material unsuitable for reuse as a result of recycling is often used in the restoration of mineral workings.

W0.16 Norfolk contains a number of specialised facilities which deal with hazardous waste, mainly florescent tubes, waste electronic and electrical equipment and end-of-life vehicles. These sites receive waste from a wide area, including nationally for some sites, due to the nature of the waste stream. The facilities in Norfolk manage a greater quantity of waste than arises within the county.

Existing waste movements

W0.17 The waste management industry is market driven, and as such operators seek to find the most efficient way of managing waste. The disposal of waste is expensive, and therefore separation of waste for which a recycling or reprocessing market exists is a widely accepted business model. As waste is separated into more and more homogenous streams, so the technology and processing complexity required generally increases, with final reprocessing often requiring a large scale industrial plant. As transport is a cost to business, a commercial operator will not move waste further than is necessary to make a given return. Waste from Norfolk travels nationally and internationally to appropriate waste management facilities, and Norfolk waste management sites receive some wastes from other areas nationally.

W1. Waste management capacity to be provided – STRATEGIC POLICY

W1.1 In order to plan for future waste arisings, national planning policy guidance states that growth projections should be produced. The Environment Agency's Waste Data Interrogator includes data on Household, Industrial and Commercial, Inert, and Hazardous waste streams. Growth projections have therefore been produced for the following waste streams:

W1.2 Local Authority Collected Waste (LACW): The data on arisings is considered to be robust and national guidance suggests that forecasts for population growth and household formation should be used as a basis for the waste arisings forecasts. Norfolk County Council has produced a LACW forecast for this Plan using a growth scenario where the current arisings of waste per household (approximately 1 tonne per year) are multiplied by the number of new homes planned for in the Local Planning Authorities' Local Plans. The Local Plans targets are generally based on the NPPF standard housing needs methodology, but some authorities are planning for a higher rate of housing delivery. Therefore, LAWC is forecast to grow in line with the expected growth in households.

W1.3 Commercial and Industrial waste: Forecasting future arisings for Commercial and Industrial waste is recognised as being less robust due to the lack of data on quantities of waste arising. However, the Environment Agency's Waste Data Interrogator contains data on the quantities of household, industrial and commercial (HIC) waste received at waste management facilities with an Environmental Permit. Therefore, the arisings of C&I waste have been calculated by taking the arisings of Household, Commercial and Industrial Waste in the Waste Data Interrogator and subtracting the quantity of Local Authority Collected Waste arisings from the total. Therefore, all

remaining HIC waste has, for the purpose of this Plan, been considered to be C&I waste (although it is recognised that it will also include some Construction & Demolition and agricultural waste).

W1.4 Defra have carried out a number of surveys to estimate national C&I waste arisings. We have taken the business sectors used in the Defra Survey; and equated these to the GVA (Gross Value Added) growth forecasts for certain business sectors within the East of England Economic Forecasting Model (EEFM), to produce a growth forecast for C&I waste for the Plan period of an annual growth rate of 1.35%. Therefore C&I waste is forecast to grow in line with economic growth.

W1.5 Inert waste: National guidance advises that Waste Planning Authorities should start from the basis that net arisings of construction and demolition waste will remain constant over time as there is likely to be a reduced evidence base on which forward projections can be based for C&D waste. Therefore, this plan has taken the inert waste arisings in Norfolk from the Environment Agency's Waste Data Interrogator 2020 and assumed that the arisings will remain constant in each year of the Plan period. Any C&D waste arisings that are not inert will already be included within the figures for Commercial and Industrial waste arisings and forecasts for this waste stream over the Plan period, which assume an increase in waste arisings.

W1.6 Hazardous waste: National guidance states that data returns for hazardous waste should be considered robust due to the need for facilities dealing with this waste to have an Environmental Permit and therefore submit waste returns to the Environment Agency. National guidance states that time series data should be used to forecast quantities of hazardous waste for the Plan period. Analysis of the Environment Agency's Waste Data Interrogator data shows that hazardous waste in Norfolk has been relatively stable in recent years, and it is considered that the hazardous waste arisings are therefore likely to remain stable through the Plan period.

Summary

W1.7 The waste forecasts do not take into account potential improvements in waste reduction and prevention. Analysis of the way the waste management industry in Norfolk operates indicates that existing sites are likely to modify the methods they use in order to adapt to such changes rather than large numbers of operators entering or leaving the market.

W1.8 Using the growth forecasts above, total waste arisings for Norfolk of LACW, C&I, inert and hazardous waste will increase from 3.216mt per annum in 2019/20 to approximately 3.651mt per annum in 2037/38.

W1.9 The targets in 'Our waste, our resources: a strategy for England' are that at least 65% of municipal waste by weight to be recycled by 2035, with no more than 10% ending up in landfill. Using the forecast waste arisings for Norfolk's LACW this means that by 2038 at least 326,300 tonnes of LACW should be recycled per annum with no more than 50,200 tonnes being landfilled per annum.

W1.10 Norfolk's waste management capacity consists of:

- The maximum existing waste management capacity of operational sites in Norfolk, which is calculated to be 3.534 million tonnes per annum in 2020. This is based on the maximum recorded throughputs at sites between 2017 and 2020; and these may not represent absolute maximums, with many sites having higher maximum volumes set out in their Environmental Permits. This waste management capacity includes composting facilities, metal recycling, inert waste recycling, sewage sludge treatment, waste transfer and waste treatment facilities.
- Permitted void space within two non-hazardous landfill sites at Feltwell and Blackborough End of 3.767 million m^3 at the end of 2020; 1.422 million m^3 for non-hazardous waste and 2.34 million m^3 for inert waste (further detail is provided in paragraph W12.3).
- Permitted void space at mineral extraction sites which will be restored using imported inert material was 2.523 million m^3 at the end of 2020, with a further 0.9 million m^3 permitted in 2021 and a further 2.34 million m^3 available at Blackborough End landfill site. In addition, a few of the mineral extraction sites proposed to be allocated through this local plan are

proposed to be restored using inert waste materials, although the amounts needed have not been quantified for all sites. Together, these sites will meet the capacity requirements for the inert waste arisings that are unsuitable for recycling, over the Plan period.

- New planning permissions were granted during 2020 and 2021 for facilities with a total throughput of over 0.25 million tonnes waste management capacity per annum.

Waste management facility type (Using Environment Agency Waste Data Interrogator site categories and facility types)	**Highest throughput over 4 years from 2017-2020 ('000 tonnes)**
Metal Recycling sites (including car breaker, metal recycling and vehicle depollution facilities)	182
Household waste recycling centre	62
Inert waste transfer / treatment	62
Non-hazardous waste transfer / treatment	705
Hazardous waste transfer / treatment	246
Clinical waste transfer / treatment	4
Composting and anaerobic digestion	130
Treatment (includes biological treatment, chemical treatment, material recycling facility, physical treatment, physical-chemical treatment, WEEE treatment facility)	642
Anglian Water Ltd sewage sludge treatment (at Thetford, King's Lynn and Whitlingham Water Recycling Centres)	961
Paper and pulp reprocessing	540
Total existing capacity from EA WDI data	**3,534**

Additional capacity in planning permissions granted in 2020 and 2021 = >250,000 tpa

Permitted inert void space (landfill and quarry restoration) at 30/12/2020 = 4.863 million m^3

Permitted non-hazardous landfill void space at 30/12/2020 = 1.422 million m^3 total

W1.11 Further detail on waste management capacity, movements, arisings and forecasts is provided in a separate Waste Management Capacity Assessment report.

W1.12 The following policy indicates the quantities of waste arisings that are expected over the Plan period to 2038. These figures are not limits but are indicative.

W1.13 Planning for net self-sufficiency in waste management recognises that there will be some cross-boundary movement of waste, as it is sometimes more sustainable to take waste to a facility out of Norfolk where the source of waste arisings is close to an administrative boundary. Therefore, the premise is to provide for the equivalent of waste forecast to arise within Norfolk, irrespective of where it actually arises. The data on existing waste management capacity shows that sufficient capacity already exists in Norfolk to accommodate the forecast growth in waste arising over the Plan period to 2038 and therefore it is not considered necessary to allocate any waste management sites in the Plan.

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Policy WP1: Waste management capacity to be provided – STRATEGIC POLICY

The strategy for waste management is to provide, through the policies for specific waste management facility types, for sufficient waste management capacity to meet the expected arisings of Local Authority Collected Waste (LACW), commercial & industrial waste (C&I), and inert waste. Appropriate handling, transfer and management capacity will also be provided for hazardous waste, while recognising that due to the quantities of such waste it is unlikely to be feasible for Norfolk to have a full range of facilities, and that Norfolk may have certain specialist facilities which receive waste from other Waste Planning Authorities.

Provision will be made to manage the quantities of waste set out in Appendix 11. New facilities or changes to existing facilities which help to achieve the targets for recycling, composting, reuse and recovery set out in the Waste Management Plan for England (2013) and 'Our Waste, our resources: a strategy for England' (2018) will be encouraged.

During the plan period, there is a need to ensure that capacity exists to manage at least the following quantities of waste. Sufficient capacity currently exists to meet the growth forecast.

Five-year period	LACW ('000 tonnes)	C&I ('000 tonnes)	Inert ('000 tonnes)	Hazardous ('000 tonnes)	Total ('000 tonnes)
2019-2023	424	1,602	1,100	90	3,216
2024-2028	450	1,713	1,100	90	3,353
2029-2033	476	1,838	1,100	90	3,504
2034-2038	502	1,959	1,100	90	3,651

W2. Spatial Strategy for waste management facilities - STRATEGIC POLICY

W2.1 The Key Diagram and Policy WP2, set out the spatial strategy for the location of new waste management facilities within Norfolk. The following factors have been considered in the spatial strategy for waste management facilities:

a) in the past temporary sites for the disposal of waste by landfill followed minerals extraction, whereas waste is increasingly being managed at permanent facilities that are located with suitable highways access in proximity to centres of population and sources of waste;

b) the Norfolk Route Hierarchy provides a recognised hierarchy of roads. HGVs should take the shortest practicable route (avoiding inappropriate junctions and travel through settlements where possible) to access the strategic highway network at the earliest appropriate point;

c) significant areas of the County are within the statutory landscape designations of the Norfolk & Suffolk Broads, and the Norfolk Coast Area of Outstanding Natural Beauty;

d) significant areas of the County are within the statutory ecological designations of Ramsar, Special Protection Areas, Special Areas of Conservation and Sites of Special Scientific Interest;

e) the production of waste is likely to be concentrated in the county's larger settlements; these settlements will also be the locations of greatest housing and employment growth in Norfolk during the Plan period.

W2.2 The settlement hierarchy is defined by the Local Planning Authorities in Norfolk. The urban areas and main towns are as follows:

Urban Areas: Norwich, King's Lynn (including West Lynn), Thetford, Attleborough, Great Yarmouth and Gorleston-on-Sea. The Norwich urban area includes the built-up parts of the urban fringe parishes of Colney, Costessey, Cringleford, Trowse, Thorpe St Andrew, Sprowston, Old Catton, Hellesdon, Drayton and Taverham.

Main Towns: Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Harleston, Holt, Hunstanton, North Walsham, Swaffham, Watton, Wymondham

W2.3 Locating waste management facilities in proximity to the locations of greatest housing and employment growth in Norfolk during the Plan period is expected to contribute to minimising greenhouse gas emissions arising from road transport by locating waste management facilities as close as practicable to the likely origin of the waste.

W2.4 The landscape designations of the Norfolk Coast AONB and the Broads Authority Executive Area are shown on the Key Diagram and the Policies Map along with the national and international ecological designations of Ramsar sites, SPAs, SACs and SSSIs. Some of these landscape and ecological designations occur in proximity to Norfolk's urban areas and main towns and are protected by national planning policy and in legislation.

W2.5 There are over 10,900 Listed Buildings, over 430 Scheduled Monuments, 53 Registered Parks and Gardens and over 280 Conservation Areas in Norfolk. These designated heritage assets are shown on the Policies Map and are protected by legislation and in national planning policy. However, due to the number and scale of these designated heritage assets they are not shown on the Key Diagram.

W2.6 It is considered that the spatial strategy in Policy WP2, of locating waste management facilities within five miles of one of Norfolk's urban areas or three miles of one of the main towns provides for sufficient locations of waste management facilities within Norfolk. Therefore, it is not considered appropriate or necessary to include Key Service Centres, which are a lower tier in the settlement hierarchy, within the spatial strategy policy. It is also not considered necessary to or appropriate to increase the distance at which waste management facilities could be located from urban areas or main towns to any greater than five miles as this would cover the majority of the County and therefore would not provide an appropriate spatial strategy.

Policy WP2: Spatial Strategy for waste management facilities – STRATEGIC POLICY

New or enhanced waste management facilities should be located within five miles of one of Norfolk's urban areas or three miles of one of the main towns and be accessible via appropriate transport infrastructure, subject to the proposed development not being located within:

- the Broads Authority Executive Area or the Norfolk Coast Area of Outstanding Natural Beauty, other than in exceptional circumstances and where it can be demonstrated that the development is in the public interest, or
- a Site of Special Scientific Interest or a habitats site and which is likely to have an adverse effect on it, or
- ancient woodland, or
- a designated heritage asset, including listed buildings, registered parks and gardens, and scheduled monuments, or their settings if the proposed development would cause substantial harm to or the loss of the heritage asset

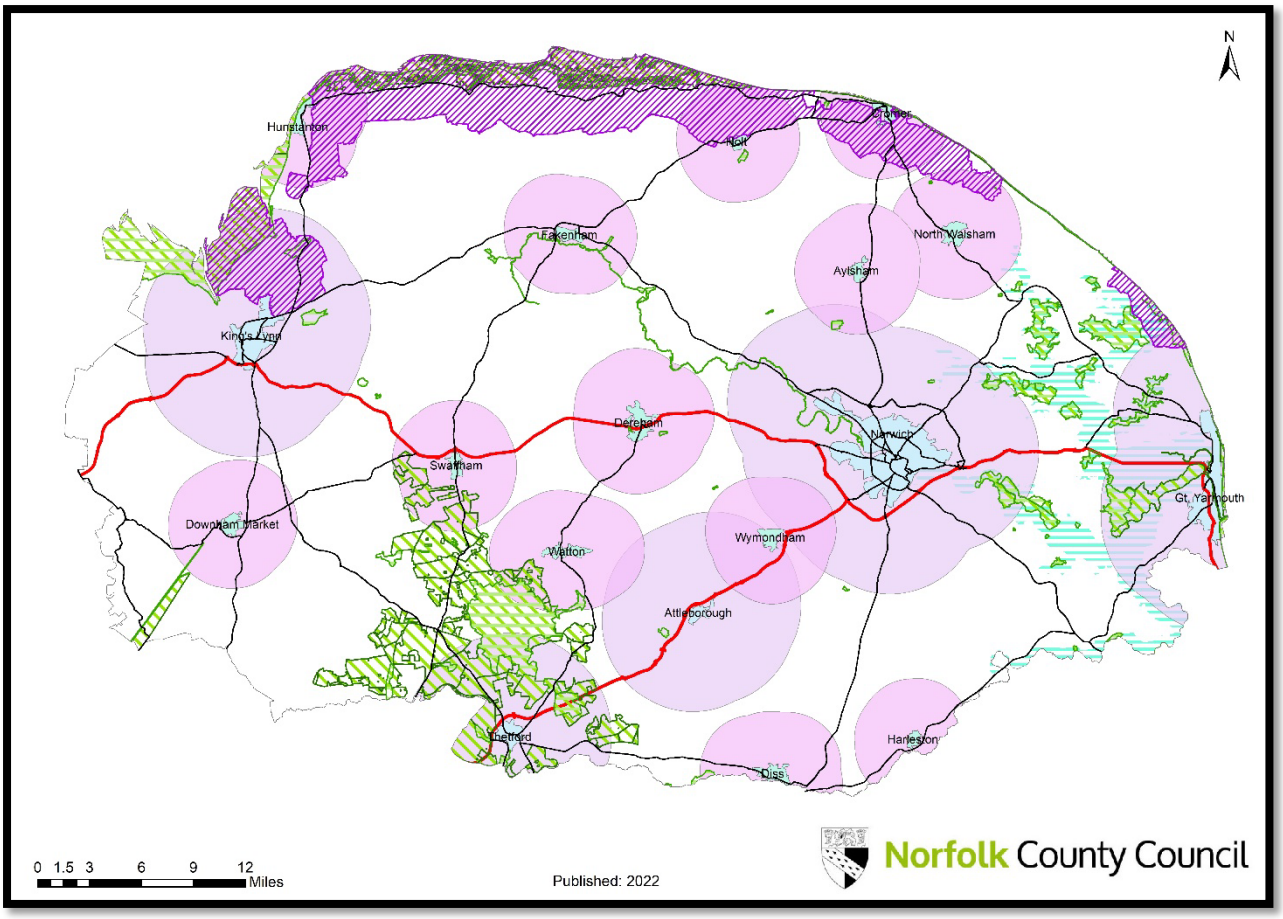
For the purpose of this policy Norfolk's main towns are Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Harleston, Holt, Hunstanton, North Walsham, Swaffham, Watton and Wymondham. Norfolk's urban areas are King's Lynn (including West Lynn), Thetford, Attleborough, Great Yarmouth, Gorleston-on-Sea and Norwich [the Norwich urban area includes the built-up parts of the urban fringe parishes of Colney, Costessey, Cringleford, Trowse, Thorpe St Andrew, Sprowston, Old Catton, Hellesdon, Drayton and Taverham].

However, due to their characteristics, the following types of facilities will be acceptable in locations more distant from the urban areas or main towns, if they are close to the source of the waste, or the destination of the recovered waste material:

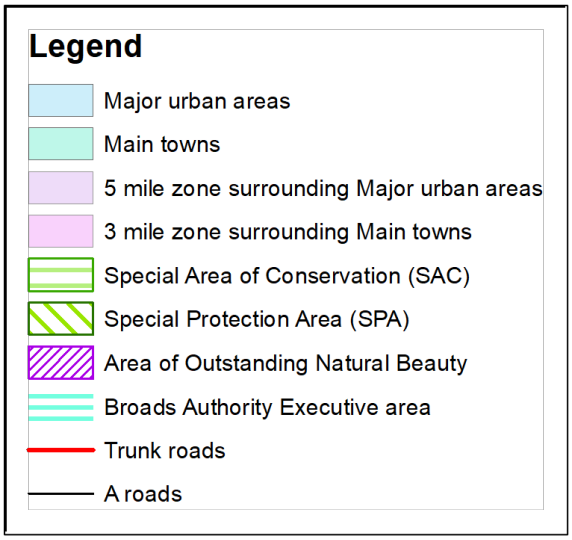
- agricultural waste treatment facilities
- windrow (open-air) composting facilities
- community composting facilities
- small scale local facilities (including "bring" sites for the collection of recyclables).

Water recycling centres can normally only be located on or adjacent to watercourses, so they are acceptable in such locations.

Waste management facilities will only be acceptable on the types of land identified within Policy WP3 and must also comply with the development management criteria set out in Policy MW1.



Map 4. 5-mile zones surrounding urban areas and 3-mile zones surrounding main towns



W3. Land suitable for waste management facilities – STRATEGIC POLICY

W3.1 Modern waste management facilities may require purpose designed buildings and structures which, in most instances, are suited to industrial areas. Most types of enclosed waste facilities, regardless of the technology used or waste type being processed, have similar locational requirements due to their potential to impact on local amenity and the environment. Such facilities are therefore directed towards specific suitable locations where any impacts can be more easily accommodated. Opportunities for integrated waste management will be encouraged, where various waste management operations can be co-located to reduce transport requirements, make efficient use of land and assist improved levels of waste recovery close to the source of the waste.

W3.2 Waste management facilities that deal with waste in the open air can give rise to specific impacts such as noise and dust which can influence where such development should take place. Open air waste operations include aggregate recycling facilities and open windrow composting.

W3.3 Aggregate recycling facilities are likely to be best located either close to the source of the waste or the market for the recycled aggregate, to minimise transport distances. Further detail is contained in Policy WP4 which specifically applies to aggregate recycling facilities.

W3.4 Open windrow composting facilities are likely to be suitable in more rural locations due to their similarity to other agricultural developments (e.g. farms). They can produce odours because of the biodegrading process and therefore, rural, less populated locations are more appropriate for these facilities. Any particular requirements for minimising adverse effects on residential amenity and rural character will be expected to be demonstrated through a planning application. Policy WP8 specifically applies to composting facilities.

Policy WP3: Land suitable for waste management facilities – STRATEGIC POLICY

Waste management facilities (other than landfill sites and water recycling centres) will be acceptable only on the following types of land:

a) land benefiting from a permanent permission for an existing waste management use;

b) land in existing general industrial use (B2 use class) or in existing storage or distribution use (B8 use class) (excluding open air composting);

c) land allocated for B2 and B8 uses in a local plan or development plan document (excluding open air composting);

d) land within or adjacent to redundant agricultural and forestry buildings;

e) previously-developed (brownfield) land (excluding open air composting);

f) former airfields (open air composting only);

g) water recycling centres (composting and anaerobic digestion only);

Proposals for the recycling of inert CD&E waste at existing sand and gravel workings will only be considered acceptable on a temporary basis and will be restricted to no later than the cessation date for the mineral extraction and at least 12 months prior to the date for restoration to be completed to allow for timely restoration of the land.

Proposals must also comply with the development management criteria set out in Policy MW1.

W3.5 The National Planning Policy for Waste states that “Waste Planning Authorities should identify, in their Local Plans, sites and/or areas for new and enhanced waste management facilities in appropriate locations.”

W3.6 As stated in Policy WP1, sufficient capacity currently exists to meet the growth forecast in waste arisings and therefore it is not considered necessary to allocate any specific sites for waste management facilities in the NM&WLP. However, planning applications for waste management facilities are still expected to come forward during the Plan period, both to move waste management

up the waste hierarchy and because waste management is a contract driven and competitive industry. Therefore, Policy WP3 identifies suitable types of land for the location of waste management facilities, whilst further details are provided in the following policies that would apply to planning applications for particular types of waste management facilities.

W4. Recycling or transfer of inert construction, demolition and excavation waste

W4.1 The recycling of construction, demolition and excavation waste makes a significant contribution to meeting aggregates demand and to reduce pressure on land won and marine dredged sources of aggregate. Therefore, the recycling of these wastes provides a sustainable source of aggregates. Whilst the resultant material is typically lower grade, recycled inert material can still often act as a substitute for freshly excavated material. Potential environmental and amenity impacts from the recycling of inert CD&E wastes include noise and dust.

W4.2 Minerals can only be worked where they occur, which is normally within the open countryside. Ancillary development, such as recycling of inert CD&E waste, would not normally be allowed in the open countryside, and are only permitted on mineral workings in order to facilitate the timely phased restoration of the site. Therefore, the waste recycling operations should cease no later than the cessation date of the permitted mineral extraction and at least 12 months prior to the date for restoration to be completed. The recycling operation and associated plant and equipment should be removed if they are considered to be delaying the restoration of the site.

Policy WP4: Recycling or transfer of inert construction, demolition and excavation waste

Proposals for recycling or transfer of inert construction, demolition and excavation (CD&E) waste will only be acceptable on the types of land identified within Policy WP3.

At sand and gravel workings, the recycling of inert CD&E waste will only be acceptable where:

a) it would enable the restoration of the mineral working at the earliest opportunity;
b) the recycling operation is ancillary to the primary land use of mineral extraction at the site; and
c) the recycling operation would cease no later than the cessation date for the permitted mineral extraction and at least 12 months prior to the date for restoration to be completed, to allow for timely restoration of the land.

Applications to vary planning conditions to extend the time for recycling operations on mineral workings will only be acceptable where:

a) there are exceptional circumstances to justify why the timely restoration of the mineral workings set out in the extant planning permission could not be completed;
b) the recycling operation is ancillary to the primary land use of mineral extraction at the site; and
c) the recycling operation would cease no later than the cessation date for the permitted mineral extraction and at least 12 months prior to the date for restoration to be completed, to allow for timely restoration of the land.

Proposals must also comply with the development management criteria set out in Policy MW1.

W5. Waste transfer stations, materials recycling facilities, end-of-life vehicle facilities and waste electrical and electronic equipment recovery facilities

W5.1 The main function of a waste transfer station is to facilitate the efficient transportation of waste by sorting loads from small collection vehicles such as skip lorries and reloading onto much larger lorries including articulated lorries for onward transportation. Waste transfer stations sort mixed waste to separate out the recyclable materials as well as bulking up waste into larger loads for onward transportation to recycling, recovery or disposal facilities.

W5.2 Materials recycling facilities are where recyclable wastes are separated into their different types for onward transportation to recyclers (such as paper/card, glass, metal and plastic). The remaining waste, called residual waste, is either sent to landfill or a treatment facility for recovery.

W5.3 End-of-life vehicle facilities remove potential pollutants from vehicles, remove the usable parts and send the scrap items off to recyclers.

W5.4 Waste electronic and electrical equipment (WEEE) recovery facilities carry out the disassembly of WEEE and the separated parts and materials can then be either reused, recycled, recovered or disposed of at other waste management facilities. The exact treatment of WEEE can vary significantly according to the category of the waste and the technology that is used. As the treatment of WEEE is a specialised activity, often receiving waste from a large area, other facilities carry out the storage and transfer of WEEE before onward transportation to a treatment facility.

Policy WP5: Waste transfer stations, materials recycling facilities, end-of-life vehicle facilities and waste electrical and electronic equipment recovery facilities

Waste transfer stations, material recycling facilities, end-of-life vehicle facilities and waste electrical and electronic equipment recovery facilities will only be acceptable within purpose designed or suitably adapted facilities on the types of land identified within Policy WP3.

Proposals must also comply with the development management criteria set out in Policy MW1.

W6. Transfer, storage, processing and treatment of hazardous waste

W6.1 There are many different types of hazardous waste and five main categories of hazardous waste are:

- Construction and demolition waste, including asbestos, contaminated soils and treated wood
- Oily wastes, batteries and accumulators, and end-of-life-vehicles
- Chemical processing wastes and marine wastes
- Waste water treatment and water industry wastes
- Waste electrical and electronic equipment, including televisions and florescent tubes.

W6.2 Applications for facilities for the transfer, storage and treatment of waste electronic electrical and electronic equipment (WEEE) and end-of-life vehicles (ELV) will be determined in accordance with Policy WP5. Applications for other types of hazardous waste management facilities will be determined in accordance with Policy WP6 below.

W6.3 Hazardous wastes usually require specialised treatment and disposal facilities and, given the relatively small quantities of waste produced (compared to other waste streams), the catchment area of such facilities is often wider than a single county. Hazardous waste therefore travels considerable distances to specialised facilities across the Country.

Policy WP6: Transfer, storage, processing and treatment of hazardous waste

Facilities for the transfer, storage, processing and treatment of hazardous waste will only be acceptable within purpose designed or suitably adapted facilities on land:

a) in existing general industrial use (B2), in storage and distribution use (B8), or
b) identified for B2 or B8 uses in a local plan or development plan document, or
c) which is brownfield land, or
d) integrated within an establishment producing much of the waste that will be dealt with, or
e) which is an existing waste management facility for non-hazardous waste transfer, where hazardous waste will only represent up to 5% of waste managed on site and the hazardous waste will only be subject to transfer or short-term storage.

Proposals must also comply with the development management criteria set out in Policy MW1.

W7. Household Waste Recycling Centres

W7.1 The County Council has a statutory duty, as Waste Disposal Authority, to provide Household Waste Recycling Centres (HWRCs) for householders within Norfolk to dispose of their waste. There are 20 HWRCs in the county in 2020.

W7.2 A number of the HWRCs can at times suffer from constraints such as size restrictions and peak-time queues. Modern sites offer an improved recycling service, and the County Council would wish to consider the potential for upgrading more of its current sites, or construct new replacements sites, to these higher standards when opportunities emerge.

W7.3 Significant housing and employment growth is planned for Norfolk over the next twenty years. In the light of future housing growth and the desire to improve some existing sites, the County Council will continually be reviewing the current distribution, adequacy and number of HWRCs in the county. Improvements to existing sites and/or new sites may be required as the major housing growth planned for Norfolk is delivered.

W7.4 It is important to note that the upgrading of current HWRC sites and the construction of new sites is dependent on both the County Council finding suitable sites and securing necessary finance to purchase or lease the land, and to construct/improve the site.

W7.5 Although most potential HWRC improvements or new HWRC locations will be consistent with Policy WP3, there may be cases where there is a demand for a HWRC in a certain area, but no suitable sites are available. In these cases, Policy WP7 will allow an appropriate proposal to be determined positively.

Policy WP7: Household Waste Recycling Centres

Household waste recycling centres may be acceptable within purpose designed or suitably adapted facilities on the types of land identified within Policy WP3.

Where sufficient information is submitted to demonstrate that no suitable sites consistent with Policy WP3 are available within the area to be served by the household waste recycling centre, household waste recycling centres may be acceptable on other sites provided these are consistent with the development management criteria set out in Policy MW1 and are accessible to the public.

W8. Composting

W8.1 Composting is a natural process that involves the breakdown of organic material in the presence of air (aerobically). It creates a product that can be applied to land to improve soil structure and enrich the nutrient content of soil. Potential environmental and amenity impacts from composting include bio-aerosols, odour and dust.

W8.2 Open-air composting involves green waste (vegetation) which is shredded and placed outdoors in elongated heaps, which are kept at specific moisture and oxygen levels. The windrows are turned and re-mixed on a regular basis to maintain their aerobic state, until the active composting period is finished and the final product is ready. This form of composting can require a large site.

W8.3 In-vessel composting facilities promote aerobic degradation of organic waste including green waste and/or food waste within either an enclosed building or other form of containment that have forced air pumped into and extracted out of them and then discharged to the atmosphere via bio-filters that remove odours. The main advantage of this system over open-air composting is that it can take food waste, including meat, because the required temperature can be reached and maintained so that harmful bacteria can be neutralised. In-vessel composting often also requires some form of outdoor maturation.

Policy WP8: Composting

Composting facilities will only be acceptable on the types of land identified in Policy WP3.

Proposals for open air composting or in-vessel composting will not be approved unless they are accompanied by a site-specific risk assessment which shows that bio-aerosol levels can be maintained throughout the life of the operations, at appropriate levels at dwellings or workplaces within 250m of a facility. Appropriate schemes for the management of odours and dust will also be required.

Proposals must also comply with the development management criteria in Policy MW1

W9. Anaerobic digestion

W9.1 Anaerobic digestion facilities promote anaerobic degradation of organic wastes such as animal wastes, energy crops, sewage sludge and vegetable tailings. Anaerobic digestion is an enclosed process and can operate at a range of scales (from the very small to the very large). The process involves introducing the feedstock into a tank of bacteria rich slurry. This process produces methane gas that is normally used to drive a diesel generator and export the electricity to the grid. The organic waste is converted into a nutrient rich digestate (which can be used as a fertiliser if produced from source segregated biodegradable waste). The main advantage of anaerobic digestion over composting is the electrical power is produced.

Policy WP9: Anaerobic digestion

Anaerobic digestion facilities will only be acceptable on the types of land identified in Policy WP3 or integrated with water recycling centres.

Proposals must also comply with the development management criteria in Policy MW1.

W10. Residual waste treatment facilities

W10.1 Residual waste is the waste that is not re-used, recycled or composted. The residual waste treatment facilities policy is technology neutral. There are various types of residual waste treatment facilities, which range in size from very big to very small. Residual waste treatment facilities fall into two main categories:

- Thermal treatment – involving some form of combustion of the waste
- Mechanical Biological Treatment (MBT) – where the waste is stabilised through some form of biological treatment after, and/or before, mechanical separation of the non-organic material.

W10.2 Within these broad categories there is a wide range of residual waste treatment technologies, which Policy WP10 would apply to:

Direct Energy from Waste in which the waste is combusted and used to generate electricity and also potentially to supply a Combined Heat and Power (CHP) Scheme.

Advanced Thermal Treatment including gasification and pyrolysis, in which the waste is charred in low or zero levels of oxygen and the resulting gases are recovered for combustion to generate electricity or CHP.

Refuse Derived Fuel (RDF) and Solid Recovered Fuel (SRF) is produced from the waste, sometimes as part of an MBT process, and then used as a fuel at another facility to generate electricity or CHP.

Autoclave/Mechanical Heat Treatment in which the waste is subjected to heat and steam to break down the organic fibres and aid separation of the recyclable/combustible material.

Mechanical and Biological Treatment (MBT) in which the recyclable and/or readily combustible waste is separated from the remaining organic/lower grade waste. The remaining waste is then either stabilised by in-vessel composting or anaerobic digestion. The composting or AD process has the effect of significantly reducing the volume of the waste and reducing the biodegradable potential of the residue. The residue is either landfilled or processed further to make a refuse derived fuel.

W10.3 In 2014 Norfolk County Council adopted waste procurement policies which relate specifically to the management of the residual Local Authority Collected Waste (LACW) for which the County Council, as Waste Disposal Authority, is responsible. The waste procurement policies state that any proposed waste treatment facility in Norfolk will reduce dependency on landfill and must be higher up the waste hierarchy than incineration. The waste procurement policies also state that incineration of waste or fuel derived from waste is accepted outside Norfolk and any such arrangements should be reviewed by Committee on an annual basis. The waste procurement policies are not land use planning policies, but as LACW is a significant waste stream the procurement policies could influence the nature of residual waste management site brought forward over the plan period.

Policy WP10: Residual waste treatment facilities

Residual waste treatment facilities will only be acceptable within a purpose designed or suitably adapted facility on the types of land identified within Policy WP3, and where the proposals meet the development management criteria set out in Policy MW1.

The treatment of waste that could practicably be recycled or composted will not be acceptable. Conditions will be placed on planning permissions to ensure that only residual source-separated or pre-sorted waste is treated. Facilities that include thermal treatment of waste must provide for the recovery of energy and, where practicable, heat; and the use of combined heat and power will be encouraged.

W11. Disposal of inert waste by landfill

W11.1 Many inert wastes can be reused or recycled. Although landfill is the least preferred option within the waste hierarchy, there may be a need for the disposal of inert material to landfill if no other waste management method is practicable. In particular, inert waste can be used to enable the restoration of former mineral workings to a satisfactory landform and afteruse. This may be considered a recovery operation rather than a disposal operation if the Environment Agency considers that the proposal meets one of two recovery tests: Is there a statutory obligation to undertake the work (i.e. has a regulator imposed a legal requirement for the restoration of a site to be completed in accordance with an approved restoration plan), or would it be financially viable for the scheme to be completed using non-waste materials (i.e. the waste is being used as a substitute for non-waste materials)?

W11.2 In 2020 Norfolk had three inert waste landfill sites located at Blackborough End, Spixworth and Cantley. The Cantley site is for the disposal of waste soils from the sugar beet processing factory, but it is not currently receiving waste as the waste soils are being recycled instead. There are also several mineral extraction sites in Norfolk that are being restored with inert waste.

W11.3 Where possible, restoration should be focused on providing multiple benefits of biodiversity, landscape and historic environment enhancement through restoration with public amenity value.

W11.4 When planning ahead for restoration, it is important that the setting of heritage assets, the historic character of landscape and the archaeology of the site itself are given due consideration. Landscape characterisation techniques can inform decision-making, enabling restoration to reflect or harmonise with the character of the surrounding landscape. The results of archaeological investigation can provide evidence of past land use that can help to inform decisions on appropriate future land use.

W11.5 Applicants should note that ecological interest can be incorporated into most schemes that are primarily for another after-use. Restoration schemes should achieve a net gain for nature primarily through providing linkages to local ecological networks and creating priority habitats to encourage priority species.

W11.6 Planning obligations and/or conditions will be used to ensure that restoration and commencement of after-use takes place within an appropriate timeframe. Any site restored to 'public amenity' must provide appropriate access to the general public. Access links to Public Rights of Way and national trails should be provided where appropriate. Planning conditions and/or obligations may be used to determine the required duration of aftercare of restored sites and an agreement for management of such sites in the long term, where appropriate.

W11.7 Any proposals for additional inert waste landfill voidspace would be determined in accordance with Policy WP11 below.

Policy WP11: Disposal of inert waste by landfill

Proposals for additional void space for the disposal of inert waste will only be acceptable where:

a) the importation of inert waste is required for restoration of a former mineral extraction void;

b) there is no acceptable alternative form of waste management further up the waste hierarchy that can be made available to meet the need; and

c) the proposals comply with the development management criteria set out in Policy MW1, and;

d) the proposals demonstrate that there will be improvements to biodiversity, landscape, the historic environment and/or amenity on restoration, when compared to the baseline prior to landfill.

The landfilling of inert waste that could practicably be recycled will not be acceptable. Conditions will be placed on planning permissions to ensure that only pre-sorted wastes are landfilled.

W12. Non-hazardous and hazardous waste landfill

W12.1 Landfill sites are facilities where waste is disposed of mainly below ground level. Modern landfill practice requires a significant degree of engineering to contain the waste, control emissions and minimise potential environmental effects. The primary by-products of landfilling, where biodegradable materials are disposed of, are landfill gas and leachate (a liquor resulting from water passing through the waste mass) and much landfill engineering is geared towards dealing with these substances. As such, landfill sites require containment lining systems and abstraction systems for both landfill gas and leachate.

W12.2 Norfolk does not have any hazardous waste landfill capacity. At the end of 2020 Norfolk had an estimated 4.971 million m^3 of void capacity (remaining landfill space) at two non-hazardous waste landfill sites which are located in west Norfolk at Blackborough End and Feltwell.

W12.3 Blackborough End landfill site did not receive any waste for nearly four years, from April 2016 until early 2020. Feltwell landfill site has been inactive since 2012. The Environment Agency's data states that the remaining void capacity at Feltwell landfill is 1.204 million m^3 and the remaining void capacity at Blackborough End is 3.767 million m^3 \ at the end of 2020. However, 2.34 million m^3 of this voidspace is expected to be used for inert waste only, leaving 1.422 million m^3 voidspace for non-hazardous waste. Therefore, the total landfill voidspace for non-hazardous waste disposal in Norfolk is 2.626 million m^3. The position at the end of 2021 is that Feltwell landfill is required to be restored by 2041 and Blackborough End landfill is required to be restored by the end of 2026.

W12.4 Most of Norfolk has unsuitable geology for the location of new non-hazardous or hazardous waste landfill sites; these are areas of Major Aquifers and Minor Aquifers that have high vulnerability and intermediate vulnerability. New non-hazardous or hazardous waste landfill sites would also not be suitable within groundwater Source Protection Zones 1 and 2. The land west of the River Ouse is an area of Norfolk that is not an aquifer, however, this area is at high risk of flooding and therefore would also not be a suitable location for a new non-hazardous or hazardous waste landfill site.

W12.5 Where possible, restoration should be focused on providing multiple benefits of biodiversity, landscape and historic environment enhancement through restoration with public amenity value. Further details are provided in paragraphs W11.4, W11.5 and W11.6.

W12.6 Any proposals for additional non-hazardous or hazardous waste landfill voidspace would be determined in accordance with Policy WP12 below.

Policy WP12: Non-hazardous and hazardous waste landfill

Proposals for additional landfill void space for the disposal of non-hazardous waste or hazardous waste will only be acceptable if:

a) it could be designed, built, operated and restored without unacceptable risk to groundwater quality and air quality;

b) it would accept only pre-treated wastes (except where pre-treatment is not feasible or necessary, e.g. for asbestos);

c) it would not prejudice the movement of waste up the waste hierarchy by providing excessive landfill capacity;

d) the proposals comply with the development management criteria set out in Policy MW1; and

e) the proposals demonstrate that there will be improvements to biodiversity, landscape, the historic environment and/or amenity on restoration, when compared to the baseline prior to landfill.

The landfilling of waste that could practicably be recycled, composted or recovered will not be acceptable. Conditions will be placed on planning permissions to ensure that only residual source-separated or pre-sorted waste is landfilled. Proposals for landfill gas energy recovery will be required.

W13. Landfill Mining and Reclamation

W13.1 Historically the options for waste management were limited to what would be called 'final disposal' today with little or no recycling or reuse of materials. Over time, uncontrolled landfilling has been phased out, and more stringent regulatory requirements were imposed to ensure the environment and human health were effectively managed. Landfill is now recognised as the least preferred form of waste management through the waste hierarchy and legislative drivers such as the incrementally increasing landfill tax are acting to reduce the viability of landfilling as a means of managing waste. However, Norfolk has a legacy associated with historic mining operations, with approximately 300 historic landfills of various types located across Norfolk.

W13.2 As resources become scarcer, the value in previously disposed wastes is being increasingly recognised. With the notion of the circular economy gaining momentum, attention is turning towards the potential resource and energy value that could be recovered through extracting material from historic landfills, through a process known as Landfill Mining and Reclamation.

W13.3 At present, landfill mining schemes are little more than trials, as it is not yet considered to be cost effective at a significant scale[2]. In 2012, Zero Waste Scotland, commissioned Ricardo-AEA to undertake a Scoping Study 'Feasibility and Viability of Landfill Mining and Reclamation in Scotland'. This identified more barriers than drivers to this process at present, although this may change towards the latter parts of this Plan period. In order for this Minerals and Waste Local Plan to be able to respond to any technological advancement in landfill mining, there is a requirement to set out a policy stance.

W13.4 Landfill mining and reclamation may be required in Norfolk for reasons not linked to purely economic concerns. Examples could include where the historic landfill site suffers from poor engineering, or if it is currently the cause of significant pollution, environmental or health impacts which justifies its reopening.

W13.5 However, the mining or excavation of waste has the potential to given rise to significant environmental issues. In the case of putrescible waste, this could potentially result in the rapid increase of leachate, landfill gas and odours. Therefore, any proposal will need to demonstrate mitigation of any impact on the local environment and amenity in accordance with other policies in this Plan. Further, landfills are normally a temporary use of land which is subsequently returned to its former, or an alternative use, such as agriculture or biodiversity and the excavation of landfilled waste may disturb previously restored sites or delay the final restoration of sites. Therefore, there are only certain circumstances where it is considered that landfill mining or excavation is justified.

[2] The only significant landfill mining project in Europe at the Remo Milieubeheer landfill in Belgium, was projected to commence in 2017 (following the acquisition of relevant permits), but operations had not started by the end of 2020. This would look to recover materials for recycling and to capture and generate 75MW to 100MW of electricity from the residual waste by way of gasification technology developed by a company based in the UK

Policy WP13: Landfill Mining and Reclamation

Proposals for the mining or excavation of landfill sites will only be permitted where:

a. The site (without intervention) is demonstrated to pose a significant risk to human health or safety, and/or to the environment; or
b. Removal of the waste is required to facilitate a major infrastructure project and it is demonstrated that there are no other locations which are suitable for the infrastructure.

In all cases, all the following requirements must also be met:

- The waste is demonstrated to be suitable for recovery and/or the waste will be captured for fuel/energy as part of the mining operation; and
- The proposals include detailed information upon how the types of waste deposited within the landfill are to be managed; and
- The proposals comply with the development management criteria set out in Policy MW1.

Proposals will be considered in terms of their impact on the restored use, and whether there would be an unacceptable impact on any development which has taken place since the closure of the old landfill.

W14. Water Recycling Centres

W14.1 Water Recycling Centres treat wastewater and sewage; they are a vital part of community infrastructure and are necessary to protect human health and water quality. Existing Water Recycling Centres will be safeguarded through the application of Policy WP17.

W14.2 With increasing populations and water quality standards there is continuing investment being made into wastewater treatment. Although changes to permitted development rights have sought to remove the need for planning applications for very small developments there are still applications that will need to be determined.

Policy WP14: Water Recycling Centres

New or extended Water Recycling Centres, or improvements to existing sites and supporting infrastructure, will only be acceptable where such proposals aim to:

a) treat a greater quantity of wastewater; and/or

b) improve the quality of discharged water; and/or

c) reduce the environmental impact of operation.

Proposals must also comply with the development management criteria set out in Policy MW1.

W15. Whitlingham Water Recycling Centre

W15.1 Whitlingham Water Recycling Centre, located to the south of Norwich (in South Norfolk District) is the largest such plant in Norfolk. It handles sewage from Norwich and the surrounding rural area and also takes in sewage waste (such as sludge cake and liquors) for treatment from a wider area (including from outside Norfolk). Whitlingham WRC is therefore a vital piece of infrastructure for the implementation of the growth planned in the Greater Norwich area. Based on Anglian Water's landholdings, there is room for Whitlingham WRC to expand to meet any increased future needs for both water quality improvements and volumetric (capacity) increases.

W15.2 However, whilst future development on the site will be necessary to better treat waste waters, there is the potential for the site to cause amenity impacts to local residents, particularly from HGV movements, noise and odour. The site's location close to the Broads also raises landscape and flood risk concerns. Recent years have seen a series of developments on the site, some of which have been permitted development, and others requiring planning permission. In the absence of a longer-term masterplan or vision for the future development of the site it is not easy to assess the significance of individual proposals or the cumulative impact of a number of separate, but linked, proposals.

W15.3 It is acknowledged that Anglian Water's strategic budget is set by OFWAT through the Asset Management Planning (AMP) process in five-yearly tranches, with the current period (AMP 7) running from 2020 to 2025. But the company does not know how much money it will have to spend on improvements during the remaining of the plan period to 2038 which will fall within AMP 8, AMP 9 and AMP 10. There is no public information as to how much money will be spent at Whitlingham.

W15.4 It is proposed that the Whitlingham Local Liaison Group, with the purpose of discussing both operational matters and Anglian Water's future plans for the site, should hold meetings on a regular basis (perhaps quarterly or six-monthly). The following parties should form part of the Local Liaison Group: Kirby Bedon Parish Council, Trowse Parish Council, Postwick Parish Council, Thorpe St Andrew Council, local residents, Anglian Water, the Environment Agency, Norfolk County Council, South Norfolk Council, the Broads Authority and Crown Point Estate. The Liaison Group should consider requests from other organisations to join the group.

W15.5 Anglian Water has published a 'Water Recycling Long-Term Plan' (September 2018) which provides the context for future development at Whitlingham WRC. The 'Water Recycling Long-Term Plan' includes proposals for a strategic sewer to serve the Yare Valley at Norwich, and to increase drainage capacity through surface water management (Sustainable Urban Drainage Schemes - SuDS) and upsizing at Whitlingham, Norwich. Anglian Water is planning to publish a Drainage and Wastewater Management Plan in 2022 covering the period 2025-2050. However, there is still a need for Anglian Water to develop a longer-term masterplan/ implementation strategy for the Whitlingham WRC site with the local authorities of the Greater Norwich Growth Board and the Environment Agency so that the strategic importance and cumulative impact of individual development proposals at Whitlingham WRC can be most effectively understood and assessed.

W15.6 Whitlingham WRC has a consented discharge to controlled waters granted and monitored by the Environment Agency. The National Planning Policy for Waste states that Waste Planning Authorities (WPAs) should not concern themselves with the control of processes which are a matter for the pollution control authorities and that WPAs should work on the assumption that the relevant pollution control regime will be properly applied and enforced. Therefore, Policy WP15 does not apply to the discharge from Whitlingham WRC.

W15.7 The policy sets out the considerations for future development of the site, with the aim of minimising the impact on nearby dwellings and the Broads area whilst recognising the strategic significance of Whitlingham WRC for housing and employment growth in the Greater Norwich.

Policy WP15: Whitlingham Water Recycling Centre

Future improvements to Whitlingham Water Recycling Centre, whether to increase the physical capacity or to increase the treatment standard of waste waters, will be vital to successful delivery of the planned growth in Greater Norwich and as such are supported in principle.

However, future improvements will need to be planned carefully to minimise adverse environmental and amenity impacts, particularly on the Broads area and nearby residents.

Any proposals for the improvement of the WRC must be accompanied by and be consistent with a longer-term masterplan for the WRC, produced in collaboration with the constituent authorities of the Greater Norwich Growth Board, the Broads Authority and the Environment Agency.

The County Council will work closely with Anglian Water, the Environment Agency, South Norfolk Council and the Broads Authority to ensure that development proposals at Whitlingham WRC, where relevant to the submitted application, will:

a) Minimise the effect on the amenity of local residents, with particular emphasis on noise and odour;
b) Route all HGV movements to and from the site via the C202 Kirby Road and the A146 Loddon Road, with the routing of HGV movements to be controlled through planning conditions or Section 106 Legal Agreement as appropriate;
c) Conserve, and where opportunities arise, enhance the landscape setting of the Broads;
d) Conserve, and where opportunities arise, enhance the setting of the Crown Point Registered Park and Garden and associated listed buildings, through the location and design of equipment and buildings on the site;
e) Not have an adverse effect on the Broads Special Area of Conservation; and
f) In line with the requirements of the NPPF and National Planning Practice Guidance, choose preferentially locations within Flood Zone 1, and where locations in Flood Zone 2 or 3 are proposed, adequate measures to control pollution and manage sewage during flooding events are put in place, to be controlled by either a Section 106 Legal Agreement or planning condition(s) as appropriate.

W16. Design of waste management facilities

W16.1 The National Planning Policy Framework 2021 (paragraph 126) states that "the creation of high quality, beautiful and sustainable buildings and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development". Waste management facilities are often permanent development and therefore their design is just as important as the design of any other development type.

W16.2 The layout and design of waste management facilities can help to reduce potential adverse impacts, create positive impacts with regard to the public perception of such activities, improve safety and security, as well as increasing operational and/or energy efficiency.

W16.3 Strategic site layout can also allow for greater opportunities to incorporate elements of visual interest, reflect local identity in the design or provide for effective buffers. Visual design elements of such developments can either seek to facilitate integration into the surrounding landscape or townscape, or create visual interest and highlight innovation.

W16.4 This policy sets out the criteria for the consideration of the design of waste management facilities.

Policy WP16: Design of waste management facilities

All waste management development should secure high quality design and waste management facilities should incorporate:

a) designs of an appropriate scale, density, massing, height and materials;
b) efficient use of land and buildings, through the design, layout and orientation of buildings on site and through prioritising use of previously developed land;
c) safe and convenient access for all potential users;
d) schemes for the retention of existing and provision of new landscape features;
e) measures which will protect, conserve and, where opportunities arise, enhance the natural, built, and historic environment including the setting of heritage assets; and
f) climate change adaption and mitigation measures (as detailed in Policy MW3)

Proposed variations shall not materially diminish the quality of the approved development between permission and completion, as a result of changes being made to the permitted scheme.

W17. Safeguarding waste management facilities – STRATEGIC POLICY

W17.1 The safeguarding of waste management facilities is necessary to protect them from other forms of development which might either directly or indirectly impact upon the waste management facility. Therefore, applications for new development in proximity to existing safeguarded waste management facilities or water recycling centres should take into account any potential conflicts. Local Planning Authorities are therefore requested to consult the Waste Planning Authority if a proposed development is within the consultation area of a safeguarded facility.

W17.2 Decisions on whether a proposed development would prevent or prejudice the continued use of a safeguarded facility and would therefore raise an objection from the Waste Planning Authority, will be made on a case-by-case basis. Each decision will take into account the particular use of the safeguarded site, the nature of the proposed development, their compatibility and, where appropriate, any mitigation which could address any adverse impacts.

W17.3 Proposals for non-waste development within the consultation areas of safeguarded sites would need to provide appropriate mitigation, as an 'agent of change', so as to not prejudice the continued operations of the waste management facility. This information should be set out at the planning application stage in a Waste Management Facilities Impact Assessment (WMFIA), as detailed in Appendix 9. The scope and level of detail of a WMFIA will be influenced by the specific characteristics of the site's location, the nature of the development being applied for and the nature of the safeguarded waste management facility.

W17.4 The safeguarded waste management facilities and water recycling centres will be identified on the Policies Map and are listed in Appendices 7 and 8. For clarity and consistency, Norfolk's Local Planning Authorities should identify these safeguarded facilities on their own Policies Map for their relevant administrative area.

Policy WP17: Safeguarding waste management facilities – STRATEGIC POLICY

The County Council will safeguard existing and permitted waste management facilities, within the following categories:

- Waste management facilities with a permitted input of over 20,000 tonnes per annum;
- Key water recycling centres (listed in Appendix 8);
- Waste water pumping stations;

Consultation areas are delineated on the Policies Map and extend to 250 metres from each safeguarded waste management facility, and 400 metres from each safeguarded water recycling centre (or a distance specified by Anglian Water in any successor document to their Asset Encroachment Policy). The Waste Planning Authority should be consulted on all development proposals within these consultation areas, except for the excluded development types set out in Appendix 4.

Development proposals within the defined consultation areas around safeguarded facilities should demonstrate that they would not prevent or prejudice the use of those facilities, through the submission of a Waste Management Facilities Impact Assessment, as set out in Appendix 9. The 'agent of change' principle will be applied to all such development.

The County Council will oppose development proposals which would prevent or prejudice the use of safeguarded facilities for those purposes unless suitable alternative provision is made, or the applicant demonstrates that those facilities no longer meet the needs of the waste management industry or Anglian Water as the relevant sewerage company.

In addition, any development which includes occupied land or buildings proposed within 15 metres of a pumping station (as identified through the planning application) will be subject to consultation with the relevant sewerage company by the planning authority responsible for determining the application.

Minerals Specific Policies

MP1. Provision for minerals extraction – STRATEGIC POLICY

MP1.1 The NPPF states that Mineral Planning Authorities should plan for a steady and adequate supply of aggregates. The aggregates that are extracted within Norfolk are sand and gravel, and carstone.

Sand and gravel requirements and shortfall

MP1.2 The NPPG advises 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. The NPPF (paragraph 213) states that other relevant local information and an assessment of all supply options should also be taken into account when planning for a steady and adequate supply of aggregates. This information is contained in the Local Aggregate Assessments produced annually by Norfolk County Council.

MP1.3 The sub-national guidelines are for Norfolk to produce 2.57 million tonnes of sand and gravel a year. However, in the last 10 years (2011-2020) this has not been reflected in the actual sand and gravel production in Norfolk, which has not met the sub-national guidelines at any time in the last ten years and has only reached 2.57 million tonnes twice in the last 20 years. During the last 10 years sand and gravel production has only been between 43% and 63% of the sub-national guidelines. Therefore, the sub-national guidelines for sand and gravel are considered to be too high. In addition, the sub-national guideline figures only covered the period 2005-2020 and have not been updated, making these figures increasingly obsolete.

MP1.4 The average sand and gravel production in Norfolk over the last 10 years (2011–2020) was 1.369 million tonnes per annum (tpa). Using the 10-year sales average to forecast the future need for sand and gravel would mean that sites for 10.131 million tonnes of sand and gravel extraction would need to be allocated over the plan period. The 10-year sales average is lower than the 3-year sales average (2018-2020) of 1.384 million tonnes. Therefore, the 10-year sales average is considered to be slightly too low to use when forecasting future need for a steady and adequate supply of aggregate in Norfolk.

MP1.5 The NPPG suggests the use of 3-year average figures to indicate recent trends in sales. The average sand and gravel production in Norfolk over the last three years (2018-2020) was 1.384 million tonnes per annum. Whilst this is lower than the previous 3-year average, it is still higher than each of the seven years from 2010 to 2017, therefore showing a general upward trend and production levels above the 10-year average.

MP1.6 The permitted reserve of sand and gravel at 31/12/2020 was 14,511,385 tonnes. The permitted reserve therefore currently provides a landbank of more than 7 years' worth of sand and gravel production as required by the NPPF.

MP1.7 Due to the 3-year sales average being slightly higher than the 10-year sales average, a 10% buffer (0.137 million tpa) has been added to the 10-year average in the calculation of forecast need during the Plan period. Over the 18-year plan period to 2038, using the 10-year average plus 10% (1.506 million tonnes per annum), 27.108 million tonnes of sand and gravel resources would be needed in total. Taking into account the existing permitted reserve, the remaining need for allocated sites is 12.597 million tonnes of sand and gravel.

Calculation of forecast need for sand and gravel

- The 10-year sales average for sand and gravel (2011-2020) is 1.369 million tonnes per annum (tpa)
- For flexibility an additional 10% of 0.137 million tpa has been included for each year
- This is a total forecast need of 1.506 million tpa
- The forecast need for sand and gravel from 2021-2038 is therefore 1.506 million tpa x 18 years = 27.108 million tonnes
- Sand and gravel permitted reserve at 31/12/2020 = 14.511 million tonnes
- Total shortfall is the forecast need minus permitted reserve = 12.597 million tonnes

The total shortfall and the minimum quantity to be allocated is therefore 12.597 million tonnes which is equivalent to a need for 9.2 years' further supply over the period of the Minerals and Waste Local Plan.

MP1.8 In addition to land won aggregates, secondary and recycled aggregates are also sourced within Norfolk. Data for the production of recycled and secondary aggregates is limited, and less reliable than for other types of aggregate. The annual average quantity of inert and construction/demolition waste recovered at waste management facilities over the ten years from 2011-2020 was 460,383 tonnes per annum, however, some parts of this waste stream are unsuitable for use as a recycled aggregate (such as soil or timber). The data is not comprehensive because many operations, such as on-site recovery, are not recorded. Therefore, it is not proposed to make any adjustments to the forecast need for aggregate mineral based on recycled and secondary aggregate provision due to the quality of the data.

MP1.9 Limited data is available on marine sourced aggregates because this information is only available through the four yearly national Aggregate Mineral Surveys. In 2014 less than 500 tonnes of marine sourced aggregates were consumed in Norfolk and no marine sourced aggregates were consumed in Norfolk in 2019 (the most recently available data). Therefore, 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 forecast need for aggregate mineral due to marine sourced aggregates.

Carstone requirement and shortfall

MP1.10 The NPPG advises 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. The NPPF states that other relevant local information and an assessment of all supply options should also be taken into account when planning for a steady and adequate supply of aggregate. This information is contained in the Local Aggregate Assessments produced annually by Norfolk County Council.

MP1.11 The sub-national guidelines are for Norfolk to produce 200,000 tonnes of carstone a year. However, in the last 10 years (2011-2020) this has not been reflected in the actual carstone production in Norfolk, which has not met the sub-national guidelines at any time in the last 10 years and has only reached 200,000 tpa once in the last 20 years. During the last ten years carstone production has only been between 19% and 59% of the sub-national guidelines. Therefore, the sub-national guidelines for carstone are considered to be too high. In addition, the sub-national guideline figures only covered the period 2005-2020 and have not been updated, making these figures increasingly obsolete.

MP1.12 The average Carstone production in Norfolk over the last ten years (2011-2020) was 75,138 tpa. Using the 10-year sales average to forecast the future need for carstone would mean that no additional carstone extraction sites are required to be allocated over the plan period.

MP1.13 The average carstone production in Norfolk over the last three years (2018-2020) was 67,354 tonnes per annum. The production of carstone in Norfolk is concentrated into relatively few workings and the production fluctuates significantly from year-to-year dependent on individual construction projects that require significant fill material. 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. Due to the variations in Carstone sales over recent years meaning that there is not a clear trend, a 10% buffer has been added to the 10-year average in the calculation of forecast need during the Plan period.

MP1.14 The permitted reserve of carstone, at 31/12/2020 was 1,663,000 tonnes. The permitted reserve therefore currently provides a landbank of more than 10 years' worth of carstone production, as required by the NPPF.

MP1.15 Over the 18-year plan period to 2038, using the 10-year average plus 10% (82,650 tpa), a total of 1,487,700 tonnes of carstone resources would be needed. The existing permitted reserves are higher than this forecast need and therefore there is not a shortfall of Carstone during the plan period. However, the current permitted reserve is contained in only three sites, which may not provide sufficient flexibility to meet any future increase in demand for carstone. Therefore, it is considered that for the plan to be positively prepared, a site for carstone extraction should be allocated.

Calculation of forecast need for carstone

- The 10-year sales average for carstone (2011-2020) is 0.075 million tonnes per annum (tpa)
- For flexibility an additional 10% of 0.008 million tpa has been included for each year
- This is a total forecast need of 0.083 million tpa
- The forecast need for Carstone from 2021-2038 is therefore 0.083 million tpa x 18 years = 1.494 million tonnes
- Carstone permitted reserve at 31/12/2020 = 1.663 million tonnes
- Total shortfall is the forecast need minus permitted reserve = -0.169 million tonnes

Therefore, there is no forecast shortfall of Carstone reserve during the period of the Minerals and Waste Local Plan because the permitted reserve is greater than the forecast need.

Silica sand requirement and shortfall

MP1.16 The NPPF states that Minerals Planning Authorities should plan for a steady and adequate supply of industrial minerals. The industrial mineral that is extracted in Norfolk is silica sand which is used for the manufacture of glass. The silica sand is processed at an existing plant site, operated by Sibelco UK Ltd, which is located at Leziate. The processing plant site includes a rail head to export the processed mineral for use by glass manufacturers elsewhere.

MP1.17 The NPPF states that the supply of silica sand should be planned as years' worth of production for the plant within a Mineral Planning Authority's area. The stock of permitted reserves of silica sand should be at least 10 years' production for individual silica sand sites, and if significant new capital is required, then stocks for at least 15 years production should be planned for. There are no sub-national guidelines for silica sand extraction.

MP1.18 The average silica sand production in Norfolk over the last 10 years (2011-2020) was 800,051 tonnes per annum. The average silica sand production in Norfolk over the last 3 years (2018-2020) was 814,625 tonnes per annum. 10-year average sales data and 3-year average sales data is provided to Norfolk County Council annually by Sibelco UK Ltd, but annual silica sand production data is not provided. The NPPF makes a specific link between silica sand supply and the production of the plant that it is supplying; therefore, it is considered appropriate to forecast the

need for silica sand extraction in Norfolk based on the maximum lawful throughput of the Leziate Processing Plant Site, which is 0.754 million tonnes of raw silica sand per annum.

MP1.19 The largest single industrial use for silica sand is glass-making, including container glass (such as bottles and jars) and float glass (such as windows and automotive glass). The UK glass packaging recycling rate in 2019 was 72.5% (DEFRA UK Statistics on waste). There is potential to increase float glass recycling in the UK as the majority of float glass currently recycled is from the manufacturing process (pre-consumed glass) rather than glass that has been utilised in end products, this is because there needs to be a high visual quality for float glass to be reused, so it cannot be contaminated in any way when being recycled. However, high purity silica sand, such as is found in Norfolk is needed in order to produce glass from recycled glass cullet; it is an ingredient within the feedstock which balances the higher level of impurities found in recycled glass so that glass of acceptable quality can be made. It is not possible to quantify the impact that potential glass recycling increases in the UK would have on the need for silica sand from Norfolk during the Plan period. Therefore, it is not proposed to make any adjustments to the forecast need for silica sand based on recycled glass.

MP1.20 The permitted reserve of silica sand, at 31/12/2020 is estimated at 3.232 million tonnes. The permitted reserve therefore provides a landbank of less than 10 years' worth of silica sand production, which is below the level required by the NPPF. However, the permitted reserve is dependent upon the submission of suitable planning applications. Planning permission was granted in August 2021 for the extraction of 1.1 million tonnes of silica sand at Bawsey (allocated site SIL 01). A planning application for the extraction of 3 million tonnes of silica sand at East Winch (allocated site MIN 40) was received in 2018 and had not been determined by December 2021. However, even with the inclusion of the mineral resource in both these planning applications, the landbank of permitted reserves would still be less than 10 years' worth of silica sand production.

Calculation of forecast need for silica sand

- The maximum total lawful throughput per annum for the Leziate Plant Site is 0.754 million tonnes of silica sand
- The forecast need for silica sand from 2021-2038 is therefore 0.754 million tpa x 18 years = 13.57 million tonnes
- Silica sand permitted reserve at 31/12/2020 = 3.232 million tonnes
- Total shortfall is the forecast need minus permitted reserve = 10.34 million tonnes

The total shortfall and the minimum quantity to be allocated is therefore 10.34 million tonnes which is equivalent to a need for 13.7 years' further supply over the period of the Minerals and Waste Local Plan.

Other minerals

MP1.21 Clay and chalk are also extracted in Norfolk. However, the resource for these minerals is considered to be abundant in Norfolk relative to the demand.

MP1.22 There is no national policy requirement to maintain a landbank for clay or chalk and therefore it is considered that there is no need to allocate additional sites for these minerals over the plan period. Any planning applications coming forward for clay or chalk extraction will be considered on their merits.

MP1.23 The NPPF states that Local Plans should not identify new sites or extensions to existing sites for peat extraction.

Policy MP1: Provision for minerals extraction – STRATEGIC POLICY

The strategy for minerals extraction is to allocate sufficient sites to meet the forecast need for both sand & gravel and hard rock (carstone).

For **sand and gravel**, specific sites to deliver at least **12.597 million tonnes** of resources will be allocated. The sand and gravel landbank will be maintained at a level of at least 7 years' supply (excluding any contribution from borrow pits for major construction projects).

Mineral extraction for sand and gravel outside of allocated sites will be resisted by the Mineral Planning Authority unless the applicant can demonstrate:

a) There is an overriding justification and/or overriding benefit for the proposed extraction, and
b) The proposal is consistent with all other relevant policies set out in the Development Plan.

There is not a forecast shortfall in permitted reserves for Carstone during the Plan period. However, a site for **carstone** will be allocated to provide flexibility to meet any future increase in demand for carstone. The landbank for carstone will be maintained at a level of at least 10 years' supply.

For **silica sand**, sufficient sites to deliver at least **10.34 million tonnes** of silica sand resources will be required during the Plan period. The landbank for silica sand will be maintained at a level of at least 10 years' supply where practicable. Planning applications for silica sand extraction located outside of allocated sites, which would address the shortfall in permitted reserves, will be determined on their own merits in accordance with the policies in this Local Plan, including the requirements contained within Policy MPSS1.

MP1.24 National guidance sets the Plan at the heart of the planning system with a statutory requirement that planning decisions are taken in accordance with the plan unless material considerations indicate otherwise.

MP1.25 Paragraph 15 of the NPPF states that the planning system should be genuinely plan-led and provide a framework for addressing need and other economic, social and environmental priorities. To ensure future sand and gravel extraction is clearly focused on the Spatial Strategy and the identified allocated sites in this Plan, other proposals for sand and gravel extraction at locations situated outside of the areas identified for future working will normally be resisted by the Mineral Planning Authority (MPA). There may, however, be circumstances where an 'over-riding justification' and/ or over-riding benefit for mineral development can be demonstrated. Mineral extraction on unallocated sites may occur in relation to:

• Agricultural irrigation reservoirs – where mineral is extracted and exported to create the reservoir landform,

• Borrow pits – where extraction takes place over a limited period for the exclusive use of a specific construction project such as for a specific road scheme,

• Prior extraction to prevent mineral sterilisation – this may be required on occasions where significant development takes place (on a site of over 2 hectares) and where a workable mineral resource could otherwise be permanently lost through sterilisation.

MP1.26 Such proposals will be considered on their own individual merits and the MPA will pay particular regard to the justification/ need that is cited by applicants when determining planning applications. The MPA must be satisfied that there are exceptional reasons for permitting such

applications, after having considered all the relevant circumstances so as not to prejudice the overall strategy of the document. All proposals will be considered against policies in the Development Plan.

MP1.27 Where proposals are put forward on the basis of fulfilling some form of 'mineral need' for minerals extraction, then the MPA will always require consideration of the whole of the County for the purposes of estimating the adequacy of the landbank or the sufficiency of the Plan's provision. The MPA does not consider that information about mineral supply in specific County sub-areas, or the individual commercial business need of a mineral operator to continue production at a particular mineral extraction site, to be relevant or material to its decisions in respect of unallocated Sites.

MP1.28 Due to only two specific sites (containing an estimated mineral resource of 4.1 million tonnes) being found suitable to allocate for silica sand extraction, flexibility has been provided within Policy MP1 to enable planning applications for silica sand extraction which would address the shortfall in permitted silica sand reserves, to be considered on their own merits, with specific requirements contained in criteria-based Policy MPSS1 to be used in the determination of applications for silica sand extraction on any unallocated sites.

MP2. Spatial strategy for minerals extraction – STRATEGIC POLICY

MP2.1 The Key Diagram and Policy MP2 below set out a spatial strategy for minerals development within Norfolk. These following factors have been considered in the spatial strategy for minerals:

a) minerals can only be worked where they occur;

b) crushed rock is imported, primarily by rail from outside of the County via rail heads located at Norwich, Snetterton and Brandon;

c) marine borne crushed rock is landed at a wharf at Great Yarmouth for onward transport by road;

d) the nearest location where marine dredged sand and gravel aggregates are landed is at Ipswich docks in Suffolk;

e) aggregates recycling facilities should be located with suitable access to the road network and in proximity to centres of population and therefore sources of waste;

f) the Norfolk Route Hierarchy provides a recognised hierarchy of roads. HGVs should take the shortest practicable route (avoiding inappropriate junctions and travel through settlements where possible) to access the strategic highway network at the earliest appropriate point;

g) significant areas of the County are within the statutory landscape designations of the Norfolk & Suffolk Broads, and the Norfolk Coast Area of Outstanding Natural Beauty;

h) significant areas of the County are within statutory ecological designations of Ramsar, Special Protection Areas, Special Areas of Conservation and Sites of Special Scientific Interest;

i) the county's larger settlements will be the locations of greatest housing and employment growth in Norfolk during the Plan period

j) the existing processing plant for silica sand is located at Leziate.

MP2.2 Mineral deposits can only be extracted where they occur, so the spatial strategy for mineral extraction is prescribed to a large extent by the geological distribution of mineral resources within Norfolk. The Norfolk Mineral Resources Map, published by the British Geological Survey (BGS), as amended by the BGS DiGmapGB-50 dataset, includes a breakdown of mineral types and distribution. The key diagram shows the location of the sand and gravel, carstone and silica sand resources in Norfolk; it also shows the location of currently operational mineral extraction sites.

MP2.3 The key diagram shows that sand and gravel resources are abundant and located widely in Norfolk, with the exception of the Fens area in west Norfolk, although the ratio of sand to gravel varies significantly. Carstone and silica sand deposits are located in very limited areas of Norfolk, with both resources only occurring in a north/south band in west Norfolk. Specific site allocations, for future mineral extraction will be identified based on these resource areas.

MP2.4 Silica sand is mostly exported out of Norfolk by train, for glass production elsewhere. Therefore, within the confines of the available mineral resource, the spatial preference for new silica sand extraction sites is for sites which would be able to access the existing processing plant and railhead at Leziate via conveyor, pipeline or off-public highway haul routes.

MP2.5 Sand and gravel is used in the construction of roads and buildings and is a key ingredient in the production of concrete and mortar, asphalt coating for roads, as a drainage medium and in the construction of embankments and foundations. Norfolk's urban areas and main towns are the locations where there will be the greatest need for a supply of aggregate for new housing developments and associated infrastructure.

MP2.6 The settlement hierarchy is defined by the Local Planning Authorities in Norfolk. The urban areas and main towns are:

Urban Areas: Norwich, King's Lynn (including West Lynn), Thetford, Attleborough, Great Yarmouth and Gorleston-on-Sea

The Norwich urban area includes the built-up parts of the urban fringe parishes of Colney, Costessey, Cringleford, Trowse, Thorpe St Andrew, Sprowston, Old Catton, Hellesdon, Drayton and Taverham.

Main Towns: Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Harleston, Holt, Hunstanton, North Walsham, Swaffham, Watton, Wymondham

MP2.7 Locating mineral extraction sites in proximity to the locations of greatest housing and employment growth in Norfolk during the Plan period is expected to contribute to minimising greenhouse gas emissions arising from road transport by locating mineral workings close to the market for the mineral, or close to the processing plant site in the case of silica sand.

MP2.8 The landscape designations of the Norfolk Coast AONB and the Broads Authority Executive Area are shown on the Key Diagram and the Policies Map along with the national and international ecological designations of Ramsar sites, SPAs, SACs (known as habitats sites) and SSSIs. Some of these landscape and ecological designations occur in proximity to Norfolk's urban areas and main towns and are protected by national planning policy and in legislation.

MP2.9 There are over 10,900 Listed Buildings, over 430 Scheduled Monuments, 53 Registered Parks and Gardens and over 280 Conservation Areas in Norfolk. These designated heritage assets are shown on the Policies Map and are protected by legislation and in national planning policy. However, due to the number and scale of these designated heritage assets they are not shown on the Key Diagram.

MP2.10 The National Planning Practice Guidance 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.

MP2.11 It is considered that the spatial strategy in Policy MP2, of specific sites for Carstone or sand and gravel extraction within five miles of one of Norfolk's urban areas or three miles of one of the main towns provides for sufficient locations for aggregate mineral extraction within Norfolk. Therefore, it is not considered appropriate or necessary to include Key Service Centres, which are a lower tier in the settlement hierarchy, within the spatial strategy policy. It is also not considered necessary or appropriate to increase the distance at which aggregate mineral extraction sites could be located from urban areas or main towns to any greater than five miles as this would cover the majority of the County and therefore would not provide an appropriate spatial strategy.

MP2.12 Designating specific sites in minerals plans provides the most certainty on when and where development may take place.

Policy MP2: Spatial Strategy for minerals extraction – STRATEGIC POLICY

Within the resource areas identified on the key diagram, specific sites for sand and gravel or carstone extraction should be located within five miles of one of Norfolk's urban areas or three miles of one of the main towns and/or be well-related to one of Norfolk's urban areas or main towns via appropriate transport infrastructure.

For the purpose of this policy Norfolk's main towns are Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Harleston, Holt, Hunstanton, North Walsham, Swaffham, Watton and Wymondham. Norfolk's urban areas are King's Lynn (including West Lynn), Thetford, Attleborough, Great Yarmouth, Gorleston-on-Sea and Norwich [the Norwich urban area includes the built-up parts of the urban fringe parishes of Colney, Costessey, Cringleford, Trowse, Thorpe St Andrew, Sprowston, Old Catton, Hellesdon, Drayton and Taverham].

Within the resource area identified on the key diagram, specific sites for silica sand should be located where they are able to access the existing processing plant and railhead at Leziate via conveyor, pipeline or off-public highway haul route.

This spatial strategy for mineral extraction sites is subject to the proposed development not being located within:

- the Broads Authority Executive Area or the Norfolk Coast Area of Outstanding Natural Beauty, other than in exceptional circumstances and where it can be demonstrated that the development is in the public interest, or
- a Site of Special Scientific Interest or a habitats site and which is likely to have an adverse effect on it, or
- ancient woodland, or
- a designated heritage asset, including listed buildings, registered parks and gardens, and scheduled monuments, or their settings if the proposed development would cause substantial harm to or the loss of the heritage asset

MPSS1. Silica Sand extraction sites

MPSS1.1 As set out in Policy MP1; the forecast need for additional silica sand resources is 10.34 million tonnes over the Plan period. Whilst site specific allocations have been made for 4.1 million tonnes of silica sand resource, they are not sufficient on their own to meet the forecast need. There are no other specific sites or preferred areas suitable to allocate for silica sand extraction primarily due to the proximity of RAF Marham to large parts of the silica sand resource and the concerns raised by the Defence Infrastructure Organisation about the bird strike risks to aircraft from the creation of large areas of open water following mineral extraction.

MPSS1.2 The potential to allocate Areas of Search for silica sand extraction within the Leziate Beds silica sand resource (as mapped by the British Geological Survey) has also been fully explored. However, in addition to the safeguarding area around RAF Marham, large parts of the silica sand resource are within the setting of the Norfolk Coast AONB, the impact risk zone for The Wash SSSI or other SSSIs, the hydrogeological catchment around Roydon Common SSSI and Dersingham Bog SSSI, the setting of designated heritage assets, on designated Open Access Land, on Grade 1 and 2 Best and Most Versatile agricultural land and in proximity to sensitive receptors such as residential dwellings. The remaining areas of the silica sand resource would be too fragmentary to form an appropriately sized area within which to find a potentially viable silica sand extraction site. Therefore, Areas of Search are no longer considered to be a deliverable method to use to plan for future silica sand provision in Norfolk and a criteria-based policy for the consideration of any future planning applications for silica sand extraction, is considered to be the most appropriate and effective method of planning for the remaining forecast need during the Plan period.

MPSS1.3 Due to the need to address a predicted shortfall in the quantity of allocated silica sand extraction sites, the following criteria-based policy will apply to applications for silica sand extraction on unallocated sites.

Policy MPSS1: Silica sand extraction sites – STRATEGIC POLICY

Planning applications for silica sand extraction located outside of allocated sites, which would address the shortfall in permitted reserves, will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. To address the shortfall in silica sand supply to meet the requirements of the existing processing plant (as set out in the NPPF);
b. Submission of an acceptable noise assessment, an acceptable air quality/dust assessment and a programme of mitigation measures (e.g. standoff areas, screening and/or bunding, operational practices) to deal appropriately with any potential impacts;
c. Submission of an acceptable Landscape and Visual Impact Assessment to identify potential landscape impacts, together with suitable mitigation measures to address the impacts and manage change in ways that will best sustain heritage values. The LVIA will include Core River Valleys, the Norfolk Coast Area of Outstanding Natural Beauty, Scheduled Monuments, Listed Buildings, Registered Parks and Gardens, Conservation Areas, non-designated heritage assets of archaeological interest and their settings where appropriate;
d. Submission of an acceptable Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation to sustain heritage values if required. As a result of the historically complex and significant environment in which the mineral resource is present, applicants should consider the potential for early engagement with Historic England, the Norfolk Historic Environment Service and Conservation Officers in the preparation of the Heritage Statement;

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e. An appropriate archaeological assessment must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
f. Submission of an acceptable Hydrogeological Impact Assessment; based on proportionate evidence,
    - to identify potential impacts to groundwater quality, quantity and levels; and
    - to propose appropriate mitigation to protect any abstraction points, ecosystems and surface water features that are reliant on groundwater, in particular SSSIs, SACs and SPAs.

    The assessment will need to consider the precautionary principle as it relates to European designations. The assessment should include a programme of mitigation measures to address identified potential impacts;
g. Submission of an acceptable Biodiversity Survey and Report, including a protected species assessment. If protected species are found on the proposed extraction site, then appropriate mitigation will be required;
h. Submission of an acceptable assessment of the potential for impacts on Water Framework Directive waterbodies, including from silt ingress and modification, and appropriate mitigation to prevent unacceptable adverse impacts;
i. A sufficient stand-off distance around any water main that crosses the site or diversion of the water main at the developers' costs and to the satisfaction of Anglian Water;
j. Submission of an acceptable Arboricultural Impact Assessment to identify the impact of the development on existing trees and identify appropriate mitigation measures if required;
k. Submission of a suitable scheme for the temporary diversion and reinstatement of any Public Rights of Way located within the site;
l. Submission of a detailed agricultural land survey to identify subgrades, if the application area contains Grade 3 agricultural land. Land identified as being within the Best and Most Versatile classification (grades 1, 2, 3a) will require a working scheme which incorporates a soil management and handling strategy which is compliant with Policy MW5;
m. The existing processing plant should be accessed via conveyor, pipeline or off-public highway routes. However, if silica sand is proposed to be transported to the processing plant using the public highway then there will be a preference for a transport route which minimises amenity impacts through the use of off-highway haul routes from the B1145 to the processing plant. A right-turn lane at the junction with the B1145 would probably be required to provide a suitable junction;
n. Submission of an acceptable Transport Assessment or Statement which considers the potential for transport impacts and identifies appropriate mitigation measures, including highway improvements where appropriate, to address these impacts;
o. Submission of a comprehensive phased working and restoration scheme, incorporating opportunities on restoration for ecological enhancement and biodiversity net gains, the improvement of public access and geological exposures for future study;
p. Submission of an acceptable Bird Hazard Assessment report if the site is located within a statutory birdstrike safeguarding consultation zone. The Bird Hazard Assessment report will identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary; and
q. Submission of an acceptable site specific Flood Risk Assessment and sequential test demonstrating that the development is located in an area of the silica sand resource with the lowest risk of flooding from any source.

MP3. Borrow pits

MP3.1 A 'borrow pit' is a temporary mineral working to supply material for a specific construction project. Major construction projects, especially road schemes, can demand considerable quantities of aggregate, particularly low grade fill material. In some cases this can be sourced near to major construction projects, which can have advantages over established extraction sites, by reducing the impact of concentrated flows of heavy goods traffic on the public highway. A proposal of this nature must be able to demonstrate that it represents the most appropriate source of mineral to meet the additional demand.

Policy MP3: Borrow pits

Borrow pits will be permitted so long as the applicant can demonstrate that:

- The borrow pit will only be used in connection with a major construction project with which it is associated; and
- The pit is the most appropriate source of mineral to meet the additional demand; and
- The pit can be accessed from the construction project site either directly or via a short length of suitable highway; and
- The scale of the extraction is no more than the minimum essential for the purpose of the project; and
- It will be worked and restored, by the completion of the related construction project; and
- Material will not be imported to the borrow pit other than from the project itself, unless such material is required to achieve beneficial restoration; and
- Extraction from the site causes less environmental damage than would result from using material from an established source of supply; and
- Proposals comply with the development management criteria in Policy MW1.

MP4. Agricultural or potable water reservoirs

MP4.1 Policy MP4 applies to proposals for new reservoirs, or extensions to existing reservoirs with incidental mineral extraction, involving removal of sand and gravel off-site. Such proposals will need to demonstrate that there is a proven need for the reservoir proposed at the given location. Such need could be demonstrated, for example, by the Environment Agency agreeing that a proposal for a winter-fill agricultural reservoir or potable water reservoir is justifiable and acceptable, or by the need for additional potable water reservoirs being identified within Anglian Water's Water Resource Management Plan. The scale, phasing and duration of the mineral extraction required to form the reservoir must therefore not cause any delay to the provision of the reservoir. As the mineral extraction is incidental to the provision of the reservoir, the quantity of mineral extracted should only be the minimum required to enable the reservoir to be created. This could be demonstrated by providing details of the planned dimensions of the completed reservoir and the quantity of mineral necessary to be extracted in order to create the reservoir.

Policy MP4: Agricultural or potable water reservoirs

Proposals for agricultural reservoirs, potable water reservoirs with incidental mineral extraction involving off-site removal of minerals will be permitted, so long as the applicant can demonstrate that:

- there is a proven need for the reservoir proposed at the given location; and
- the scale of the extraction is no more than the minimum essential for the purpose of the proposal; and
- the phasing and duration of development adequately reflects the importance of the early delivery of water resources or other approved development; and
- the proposal complies with the development management criteria set out in Policy MW1.

Planning applications for the formation of reservoirs that do not involve any incidental mineral extraction are not County matters and will be determined by the Local Planning Authority.

MP5. Core River Valleys

MP5.1 Norfolk's river valleys constitute a very important and valued element of Norfolk's landscape character, ranging from the fast-flowing chalk streams of the north-west of the county feeding to the Wash (such as the River Bablingley), slow-flowing rivers draining to the north Norfolk coast (such as the River Glaven) and the larger rivers of the Broads area (such as the rivers Bure, Yare, Wensum and Waveney). The county's river valleys were surveyed by Norfolk County Council during the 1990s to identify, in landscape terms, the areas considered to be core to the character of the river valley landscape. The Core River Valleys normally include the floodplains of the rivers and their major tributaries but in some cases the core areas also include the lower valley slopes where these are clearly defined, such as where grazing land extends up to a hedge or tree line on the valley sides. Core River Valleys have not been defined in areas located within the Broads, because the Broads landscape is already nationally protected. The locations of the Core River Valleys are shown on the Policies Map.

MP5.2 The Core River Valleys in Norfolk and their associated grazing pastures offer a marked landscape contrast to the more common, intensively cultivated farmland and are vital ecological habitats and corridors, supporting a variety of biodiversity habitats and species. In this respect, Core River Valleys are a key component in the development of Norfolk's identified Green Infrastructure corridors.

MP5.3 Sand and gravel resources are commonly found in river valleys and many of Norfolk's river valleys have therefore been quarried for aggregate extensively over many years. This has led to many large bodies of open water left on restoration of past mineral workings which are not in keeping with the general character of Norfolk's river valleys.

MP5.4 Although not formally designated, safeguarding the Core River Valleys will help preserve the unique and rich quality of Norfolk's landscape and natural heritage.

Policy MP5: Core River Valleys

Minerals development will only be permitted in Core River Valleys (as shown on the Policies Map) where the applicant demonstrates that the development will:

- enhance the form, local character and distinctiveness of the landscape and historic environment; and
- enhance the biodiversity of the river valley (either immediately or on restoration); and
- not impede floodplain functionality.

An assessment of any impacts from mineral development will include:

- consideration of the potential impacts or enhancement of the landscape, the historic environment and the natural environment, both during and after working;
- the impacts of any additional areas of open water created through mineral extraction;
- the duration of any adverse impacts, and mitigation and/or compensatory measures, as appropriate, to replace losses; and
- the provision of any long-term asset enhancement through restoration proposals.

MP6. Cumulative impacts and phasing of workings

MP6.1 Minerals can only be worked where they occur. Where viable mineral deposits are present, sometimes more than one mineral company may wish to exploit them at sites which are closely located. This can increase the impacts of operations to an extent that they become unacceptable. It is therefore important to ensure that, where there are a number of sites proposed close together or new sites proposed close to existing operations, the potential cumulative impacts are considered fully and satisfactorily mitigated.

MP6.2 Mitigating measures might include such measures as the phasing of extraction operations so that one site is completed before a second commences, a restriction on the number of HGV movements or the timetabling of such movements, undertaking pre-extraction landscaping works to reduce cumulative visual impacts and addressing needed junction improvements.

MP6.3 This policy aims to provide clarity as to how the County Council will consider such circumstances.

Policy MP6: Cumulative impacts and phasing of workings

Where the cumulative impact of a proposed mineral extraction site, in conjunction with other existing, permitted or allocated mineral extraction sites in the proximity is considered unacceptable, the proposal may be found acceptable if:

- it is phased so that one site follows the completion of the other, or
- the applicant can demonstrate that the adverse cumulative impacts can be adequately mitigated.

Proposals must also comply with the development management criteria in Policy MW1.

MP7. Progressive working, restoration and after-use

MP7.1 Proposals for new mineral working areas can be extensive, reflecting the industry's need to be able to plan a number of years in advance. It is normal practice to work medium and larger sites in phases and to progressively restore each phase. Progressive working and restoration can lessen the overall impact of mineral working on the environment and minimise loss of agricultural production. The direction of working can be particularly relevant to the impact on residential and local amenity, and working arrangements that significantly impact on a restored phase or prevent restoration of a worked-out phase should be avoided.

MP7.2 Suitable restoration and after-use must therefore be considered for minerals extraction sites. Once a phase of operation is complete, or use of a whole site has ceased, there are often different opportunities for restoration and after-use of sites. Where possible, restoration should be focused on providing multiple benefits of landscape, geodiversity and biodiversity enhancement through restoration with public amenity value. However, it may be decided that a site, wholly or partly, would be better suited to being restored to agriculture, to leisure and recreational development, or to water storage, which could provide benefits for flood alleviation or water supply. Applicants should note that ecological interest can be incorporated into most schemes that are primarily for another after-use and minerals developments must provide biodiversity net gains in accordance with the requirements of the Environment Act 2021.

MP7.3 An ecological network has been mapped for each district in Norfolk and comprises of the following elements:

- Clusters of high value wildlife sites forming core areas
- Enhancement or habitat creation areas
- Corridors and stepping stones designed to promote connectivity between the sites and through the wider landscape
- Buffer areas surrounding these sites to reduce the adverse impacts from adjacent land-uses

Information on the ecological networks is available on the Norfolk Biodiversity Partnership website.

MP7.4 Restoration schemes for mineral workings should wherever possible provide priority habitats to encourage priority species. Restoration proposals should be matched to existing priority habitats in proximity, to allow for greater connectivity through the landscape for local species. This will also help create a more permeable landscape for the movement of species' ranges in response to climate change in the future. Wherever possible, if there is the potential for native species seeds to be present in the seed bank at the start of the working period, then such soils should be stored appropriately to ensure that it can be used in any restoration scheme and allow for recolonization by native flora. A list of the priority habitats and species can be found on the Norfolk Biodiversity Partnership website.

MP7.5 The Norfolk Biodiversity Information Service carried out a Green Infrastructure Mapping project in 2018 which provides a county-wide green infrastructure network made up of identified Green Infrastructure Corridors throughout the county, along with a prioritisation of opportunities. The Green Infrastructure Mapping also shows the location of native habitat corridors/core areas of grassland-heathland, woodland and wetland. It is important that areas of native habitat are joined together into an overarching network as this can ensure they are more resilient to changing climates and stresses. Larger and better-connected areas of natural habitats are also recognised as a key strategy for maintain biodiversity.

MP7.6 The Climate Change Act commits the UK government to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050. Forestry and woodlands act as carbon sinks and capture greenhouse gas emissions whilst habitat creation and the expansion of existing habitats can increase the resilience of the natural environment to cope with climate change. There is the opportunity to incorporate trees and other natural landscape features into the restoration and after-use of mineral extraction sites to contribute to climate change mitigation and adaption measures.

MP7.7 Where restoration creates permanently filled water bodies these may be suitable as Ark sites to protect the white clawed crayfish, which would be encouraged. Where such waterbodies are isolated from existing rivers, protection is given from invasive crayfish and the crayfish plague they carry.

MP7.8 When planning a restoration scheme, it is important that the setting of heritage assets, the historic character of landscape and the archaeology of the extraction site itself are given due consideration. Landscape characterisation techniques can inform decision-making, enabling restoration to reflect or harmonise with the character of the surrounding landscape. The results of archaeological investigation, in advance of and during extraction programmes, can provide evidence of past land use that can help to inform decisions on appropriate future land use.

MP7.9 Planning obligations and/or conditions will be used to ensure that progressive restoration and commencement of after-use takes place within an appropriate time-frame during the site's operations or after completion of working phases. Any site restored to 'public amenity' must provide appropriate access to the general public. Planning conditions and/or obligations may be used to determine the required duration of aftercare of restored sites and an agreement for management of such sites in the long term, where appropriate.

MP7.10 Upon cessation of working and restoration of a minerals site, the removal of some local road improvements may be required to meet the provisions outlined in Policy MP7. This will mainly relate to the lower designated, rural routes in the route hierarchy, securing for example the removal of kerbed site accesses and visibility splays, in the interests of landscape and local amenity.

Policy MP7: Progressive working, restoration and after-use

Proposals for new mineral working areas and extensions to existing mineral workings must be accompanied by a scheme for the phased and progressive working and restoration of the site throughout its life to ensure that the worked land is reclaimed at the earliest opportunity. Phased and progressive working and restoration must seek to reduce and mitigate potential impacts, including to amenity, landscape, the natural, built and historic environment, through minimising the area of land occupied at any one time by the mineral working.

Applications to vary planning conditions to amend progressive working and restoration schemes, including varying timescales which result in a delay to restoration, will only be acceptable where exceptional circumstances justify a change from the permitted schemes and/or the approved restoration date. Any amendment must not materially diminish the quality of the approved restoration scheme.

Restoration and consequent after-use of mineral extraction sites and associated development will be determined on a case-by-case basis. After-use proposals may include agriculture, forestry, ecology, reservoirs, amenity or flood alleviation.

Preference will be given to restoration that:

- Enhances Norfolk's biodiversity (focussing on priority habitats and species in Norfolk),
- contributes positively to identified strategic green infrastructure corridors and known ecological networks,
- creates high-quality, locally distinctive landscapes,
- enables access links to Public Rights of Way and national trails, where appropriate and
- Reinstates Best and Most Versatile agricultural land, where it occurs.

The restoration proposal must demonstrate that:

- The appropriate restoration and after-use is both feasible and achievable in the proposed time scales
- The scheme provides for a biodiversity net gain, primarily through the creation or enhancement of priority habitats and linkages to local ecological networks and green infrastructure corridors
- Opportunities have been taken to improve public access, where appropriate, particularly to implement the Norfolk Access Improvement Plan
- The restoration scheme and after-use has taken opportunities to incorporate trees, retain existing trees and incorporate additional features consistent with climate change mitigation and adaption wherever possible
- Any important geology or geomorphology on the site will be retained in sample exposures for study purposes where practical and safe to do so
- The scheme has been informed by the historic environment and historic landscape character assessments and the restoration enhances the historic environment.

MP8. Aftercare

MP8.1 Where the proposed restoration of a mineral extraction site is to an agriculture, forestry, amenity or ecology after-use, the outline aftercare strategy sets the general parameters of the proposed action required to bring the restored land up to the required standard for the intended after-use. For an arable agricultural after-use this can entail a particular pattern of cultivation over the five-year aftercare period. Where restoration proposals include the retention of a geological exposure for study, provision should be made in the aftercare strategy for either periodic cleaning of the face of the exposure, or cleaning prior to geological studies taking place.

MP8.2 During the five-year aftercare period annual reports are submitted for the approval of the Mineral Planning Authority following a site meeting to establish if any further action is required, such as the installation of land drainage etc.

MP8.3 Where the proposed after-use is not agriculture, aftercare strategies covering a period greater than five years may be required to ensure the successful establishment and maintenance of the approved after-use. The need for annual reports after the initial five-year period will be assessed on a case by case basis.

Policy MP8: Aftercare

Where the proposed restoration following mineral extraction is to an agriculture, forestry, amenity or ecology after-use; or includes a geological exposure, an outline aftercare strategy for at least five years is required prior to the determination of the planning application. The outline strategy should set out the land management proposed to bring the restored land up to the required standard for the proposed after-use.

Planning conditions and/or longer-term planning obligations will be used to ensure that a detailed annual management report is provided. The annual management report must include any measures required, following the annual aftercare inspection, to achieve the outline aftercare strategy.

MP9. Asphalt plants, concrete batching plants and the manufacture of concrete products

MP9.1 Minerals can only be worked where they occur, which is normally within the open countryside. Ancillary development such as asphalt plants, concrete batching plants and the manufacture of concrete products (such as blockworks) would not normally be allowed in the open countryside in the absence of adjacent mineral workings and therefore should be removed once mineral extraction has ceased.

Policy MP9: Asphalt plants, concrete batching plants and the manufacture of concrete products

Proposals for asphalt plants, concrete batching plants or the manufacture of concrete products at sand and gravel workings must stipulate the proportion of indigenous sand and gravel that will be used in the production of asphalt, ready mixed concrete and other concrete products.

At sand and gravel workings, planning permission will be limited to the end date of the quarry permission, or to when the indigenous material no longer forms the majority of the feedstock being used, whichever is the sooner.

Any proposals for asphalt plants, concrete batching plants or the manufacture of concrete products that are County matters must also comply with the development management criteria set out in Policy MW1.

MP10. Safeguarding of port and rail facilities, and facilities for the manufacture of concrete, asphalt and recycled materials – STRATEGIC POLICY

MP10.1 It is important to safeguard existing, planned or potential infrastructure for the storage, handling, processing and distribution of minerals from incompatible development which may prevent or prejudice the use of these facilities.

MP10.2 The safeguarding of minerals infrastructure is necessary to protect it from other forms of development which might either directly or indirectly impact upon these facilities. Therefore, applications for new development in proximity to existing safeguarded minerals infrastructure should take into account any potential conflicts. Local Planning Authorities are therefore requested to consult the Minerals Planning Authority if a proposed development is within the consultation area of a safeguarded facility.

MP10.3 Decisions on whether a proposed development would prevent or prejudice the continued use of a safeguarded facility and would therefore raise an objection from the Minerals Planning Authority (MPA), will be made on a case-by-case basis. Each decision will take into account the particular use of the safeguarded site, the nature of the proposed development, their compatibility and, where appropriate, any mitigation which could address any adverse impacts.

MP10.4 Proposals for non-mineral development within the consultation areas of safeguarded sites would need to provide appropriate mitigation, as an 'agent of change', so as to not prejudice the continued operations of the mineral facility. This information should be set out at the planning application stage in a Minerals Infrastructure Impact Assessment (MIIA), as detailed in Appendix 9. The MIIA should be undertaken at such a time that it can shape and inform the early stages of a Master Plan or planning application. The scope and level of detail of an MIIA will be influenced by the specific characteristics of the site's location, the nature of the development being applied for and the nature of the safeguarded mineral infrastructure.

MP10.5 The Policies Map will indicate the location of all known safeguarded facilities. Railheads and wharfs handling minerals are listed in Appendix 5. For clarity and consistency, Norfolk's Local Planning Authorities should identify safeguarded minerals facilities on their own Policies Map for their relevant administrative area.

Policy MP10: safeguarding of port and rail facilities, and facilities for the manufacture of concrete, asphalt and recycled materials – STRATEGIC POLICY

The County Council will safeguard:

a) Existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handing and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine-dredged materials; and
b) Existing, planned and potential sites for concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material.

Development proposals within 250 metres of the above minerals related facilities should demonstrate that they would not prevent or prejudice the use of those facilities, through the submission of a Minerals Infrastructure Impact Assessment, as set out in Appendix 9. The 'agent of change' principle will be applied to all such development.

The Mineral Planning Authority should be consulted on all development proposals within Mineral Consultation Areas, except for the excluded development types set out in Appendix 4.

The County Council will oppose development proposals which would prevent or prejudice the use of safeguarded sites for those purposes unless suitable alternative provision is made, or the applicant demonstrates that those sites no longer meet the needs of the aggregates industry.

MP11. Mineral Safeguarding Areas and Mineral Consultation Areas -STRATEGIC POLICY

MP11.1 The NPPF (paragraph 210) states that in preparing local plans, local authorities should: "safeguard mineral resources by defining Mineral Safeguarding Areas; and adopt appropriate policies so that known locations of specific mineral resources of local and national importance are not sterilised by non-mineral development where this should be avoided (whilst not creating a presumption that resources defined will be worked)". National Planning Practice Guidance states that Mineral Planning Authorities should also define Mineral Consultation Areas.

MP11.2 Minerals are a finite natural resource and can only be worked where they exist. The safeguarding of mineral extraction sites has a number of benefits, both in terms of protecting sources for construction purposes and maintaining a supply of building stone for conservation purposes. Norfolk County Council will therefore safeguard existing, permitted and allocated mineral extraction sites from incompatible development proposals.

MP11.3 The purpose of safeguarding existing and proposed sites is not necessarily to prevent other forms of development from taking place in proximity to those sites, but to ensure that issues of compatibility across the differing forms of development are taken into account in the planning process.

MP11.4 Therefore, applications for new development in proximity to existing safeguarded mineral extraction sites should take into account any potential conflicts. Local Planning Authorities are requested to consult the Mineral Planning Authority if a proposed development is within the consultation area of a safeguarded site. The Mineral Consultation Area will extend 250 metres around each safeguarded mineral extraction site. The safeguarded sites will be identified on the Policies Map and are listed in Appendix 6.

MP11.5 Decisions on whether a proposed development would prevent or prejudice the continued use of a safeguarded site and would therefore raise an objection from the Mineral Planning Authority, will be made on a case-by-case basis. Each decision would take into account the particular use of the safeguarded site, the nature of the proposed development, their compatibility and, where appropriate, any mitigation which could address any adverse impacts.

MP11.6 Norfolk County Council has also defined Mineral Safeguarding Areas (MSAs) and Mineral Consultation Areas (MCAs) to safeguard specific mineral resources. The primary evidence base for defining mineral resources as Mineral Safeguarding Areas is the Norfolk Mineral Resources Map 2004, produced by the British Geological Survey (BGS), as amended by the BGS DiGmapGB-50 dataset. Deposits of aggregates (sand and gravel) are widely distributed across Norfolk and there are very considerable resources. The area covered by the MSA includes only those deposits which are most likely to be commercially viable; this will normally be those deposits with the highest proportion of gravel.

MP11.7 The table overleaf shows the superficial geology types which have been included within the indicative sand and gravel Mineral Safeguarding Areas. There are two main types of geology; bedrock and superficial. In Norfolk, chalk is the main bedrock material, along with younger crag (sand and gravel) and other sedimentary deposits in some areas. The superficial geology is made up of more recent deposits generally of a sedimentary nature from either ancient river system or as a result of glacial activity, during the Quaternary Period (the most recent geological period).

Superficial geology types within the sand and gravel mineral resource

BGS superficial geology classifications in Norfolk	Included in sand and gravel Mineral Safeguarding Area
calcareous tufa	No
clay and silt	No
clay, silt and sand	No
clay, silt, sand and gravel	No
diamicton	No
gravel	Yes
gravel, sand and silt	Yes
gravel, sand, silt and clay	Yes
peat	No
sand	Yes
sand and gravel	Yes
sand and silt	No
sand with clay and gravel	No
sand, silt and clay	No
sediment, shell	No
shelly mudstone	No
unknown llithology	No

MP11.8 In addition to the sand and gravel resource, silica sand and carstone resources will also be safeguarded. Silica sand is scarce both nationally and in Norfolk and it is defined as an important resource in the NPPF, therefore it is appropriate for the entire resource to be safeguarded as part of the MSA. Carstone is also a scare resource in Norfolk and therefore it is appropriate for the entire carstone resource to be safeguarded as part of the MSA. The Mineral Safeguarding Areas will be identified on the Policies Map.

MP11.9 Demand for chalk and clay is relatively low in comparison to the extent of the resource in Norfolk and therefore it is not considered necessary to safeguard these deposits. The National Planning Policy Framework states that planning permission must not be granted for peat extraction from new or extended sites and therefore the peat deposit will not be safeguarded as a mineral resource.

MP11.10 For safeguarding mineral resources, the Mineral Planning Authority has determined that the Mineral Consultation Area (MCA) is the same defined area as the Mineral Safeguarding Area (MSA). Local Planning Authorities are required to consult the County Planning Authority on applications for any form of development received within the MCA/MSA, which are likely to affect or be affected by mineral working and meet the criteria outlined in Appendix 4.

MP11.11 The inclusion of land in a MSA/MCA does not necessarily mean that planning permission would be granted for mineral extraction and there may be sound planning reasons why proposals would be rejected. Designation of these areas is intended to ensure that mineral interests are taken into account at the appropriate time. For example, circumstances may arise where it is appropriate to undertaken mineral extraction in advance of development. The NPPF states that planning authorities should “encourage the prior extraction of minerals, where practicable and environmentally feasible, if it is necessary for non-mineral development to take place”.

Policy MP11: Mineral Safeguarding Areas and Mineral Consultation Areas – STRATEGIC POLICY

The County Council will safeguard existing, permitted and allocated mineral extraction sites from inappropriate development proposals. Mineral Consultation Areas are delineated on the Policies Map and extend to 250 metres from each safeguarded site. Development proposals within 250 metres of a safeguarded site should demonstrate that they would not prevent or prejudice the use of the safeguarded site for mineral extraction and the 'agent of change' principle will be applied in all such cases. The County Council will object to development proposals which would prevent or prejudice the use of safeguarded sites for mineral extraction.

The County Council will safeguard Norfolk's silica sand, carstone, and sand and gravel mineral resources, within the Mineral Safeguarding Areas identified on the Policies Map, from inappropriate development proposals. For mineral resources the Mineral Consultation Area is the same defined area as the Mineral Safeguarding Area.

The Mineral Planning Authority should be consulted on all development proposals within Mineral Consultation Areas, except for the excluded development types set out in Appendix 4.

For relevant development proposals located within a Mineral Safeguarding Area the Mineral Planning Authority will expect to see appropriate investigations carried out to assess whether any mineral resource there is of economic value, and if so, whether the mineral could be economically extracted prior to the development taking place. This information should be provided through the submission of a Mineral Resource Assessment, as set out in Appendix 10.

The conservation benefits of carstone will be a consideration in safeguarding resources.

In line with the NPPF, the Mineral Planning Authority will object to development which would lead to the sterilisation of the mineral resource, and it would be for the relevant Local Planning Authority to decide whether there are compelling planning reasons for over-riding this safeguarding objection.

Implementation, Monitoring and Review

The Policies and Specific Site Allocations included in the Plan will mainly be implemented through the Development Management function of Norfolk County Council. However, some of the policies will be implemented through on-going dialogue with the Local Planning Authorities within Norfolk, which takes place through established work practices.

Implementation of the Minerals and Waste Local Plan will be monitored and captured in the Annual Monitoring Reports or Local Aggregate Assessment as appropriate. If the monitoring identifies any significant divergence from a trend or target required, we will seek to establish the reason (s) for the divergence from the target, and as a consequence, an intervention by Norfolk County Council may be required. Intervention could include a review of the evidence base, a specific policy or the Plan as a whole, and will be reported in the Annual Monitoring Report.

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Landbank for sand and gravel	Objective MSO1 Policy MP1 Specific site allocation policies	Maintenance of at least a 7-year landbank for sand & gravel, based on previous 10 years' sales average plus 10%	NCC Mineral operators	Allocations of specific sites in the M&WLP Development management decisions taken on planning applications	Mineral industry survey returns
Landbank for carstone	Objective MSO1 Policy MP1 Policy MIN 06	Maintenance of at least a 10-year landbank for carstone, based on previous 10 years' sales average plus 10%	NCC Mineral operators	Allocations of specific sites in the M&WLP Development management decisions taken on planning applications	Mineral industry survey returns
Landbank for silica sand	Objective MSO2 Policy MP1 Policy MPSS1 Policy MIN 40 Policy SIL 01	Maintenance of at least a 10-year landbank for silica sand based on 754,000 tpa forecast extraction rate.	NCC Mineral operators	Allocations of specific sites in the M&WLP Development management decisions taken on planning applications	Mineral industry survey returns
Annual production of sand and gravel, carstone and silica sand	Objectives MSO1 & MSO2 Policy MP1	To maintain a steady and adequate supply of aggregate and industrial minerals	NCC Mineral operators	Allocations of specific sites in the M&WLP Development management decisions taken on planning applications	Mineral industry survey returns

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Quantity of secondary and recycled aggregate produced in Norfolk (tonnes)	Objectives MSO3, WSO2, WSO8 Policy WP1 Policy WP3 Policy WP4	To increase the proportion of waste that is recycled and recovered in Norfolk. To maintain and steady and adequate supply of aggregate minerals.	NCC Waste management companies Mineral operators	Development management decisions taken on planning applications	Annual NCC waste survey returns
New waste management capacity provided (tonnes)	Objectives WSO2, WSO3, WSO4, WSO5, WSO8. Policy WP1 Policy WP3 Policy WP4 Policy WP5 Policy WP6 Policy WP7 Policy WP8 Policy WP9 Policy WP10	To achieve net self-sufficiency in waste management by 2038, where practicable. To increase the proportion of waste reused, recycled and recovered within Norfolk. To move waste up the waste management hierarchy to minimise the need for landfill.	NCC Waste management companies	Development management decisions taken on planning applications.	Determined planning applications for waste management operations. Environment Agency Waste Data Interrogator Annual NCC waste survey returns

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
% local authority collected waste: • Reused • Recycled • Composted • RDF / energy recovery • Landfilled	Objectives WSO1, WSO2, WSO2, WSO6 Policy WP1 Policy WP3 Policy WP4 Policy WP5 Policy WP6 Policy WP7 Policy WP8 Policy WP9 Policy WP10 Policy WP11 Policy WP12	To increase the proportion of waste that is reused, recycled and recovered in Norfolk. To move waste up the waste management hierarchy to minimise the need for landfill.	NCC NCC as Waste Disposal Authority Waste Collection Authorities Waste management companies	Education and promotion of waste minimisation, composting and recycling by the Waste Collection Authorities and NCC as Waste Disposal Authority. NCC's procurement of waste management contracts. Development management decisions taken on planning applications.	WasteDataFlow
% waste received at waste management facilities in Norfolk that is recycled / recovered	Objectives WSO1, WSO2, WSO4, WSO6 Policy WP1 Policy WP3 Policy WP4 Policy WP5 Policy WP6 Policy WP7 Policy WP8 Policy WP9 Policy WP10	To increase the proportion of waste that is recycled and recovered in Norfolk. To move waste up the waste management hierarchy to minimise the need for landfill.	NCC NCC as Waste Disposal Authority Waste Collection Authorities Waste management companies	Education and promotion of waste minimisation, composting and recycling by the Waste Collection Authorities and NCC as Waste Disposal Authority. NCC's procurement of waste management contracts. Development management decisions taken on planning applications.	Environment Agency Waste Data Interrogator Annual NCC waste survey returns

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Waste input to landfill (tonnes)	Objectives WSO1, WSO2, WSO6 Policy WP11 Policy WP12	To reduce the proportion and quantity of waste that is landfilled in Norfolk. To move waste up the waste management hierarchy to minimise the need for landfill.	NCC NCC as Waste Disposal Authority Waste Collection Authorities Waste management companies	Education and promotion of waste minimisation, composting and recycling by the Waste Collection Authorities and NCC as Waste Disposal Authority. NCC's procurement of waste management contracts. Development management decisions taken on planning applications.	Environment Agency Waste Data Interrogator Annual NCC waste survey returns WasteDataFlow
Inert, non-hazardous and hazardous waste landfill capacity (cubic metres and years)	Objectives MSO9, WSO1, WSO2, WSO4 WSO6 Policy WP11 Policy WP12	To reduce the proportion and quantity of waste that is landfilled in Norfolk. To move waste up the waste management hierarchy to minimise the need for landfill.	NCC NCC as Waste Disposal Authority Waste management companies	Education and promotion of waste minimisation, composting and recycling by the Waste Collection Authorities and NCC as Waste Disposal Authority. NCC's procurement of waste management contracts. Development management decisions taken on planning applications.	Environment Agency Waste Data Interrogator Annual NCC waste survey returns Determined planning applications for landfill sites.

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Renewable energy generation capacity at waste management facilities (MW)	Objectives WSO1, WSO2, WSO6, WSO7, WSO8 Policy MW3 Policy WP10 Policy WP12	To move waste up the waste hierarchy by increasing the proportion of waste recovered in Norfolk. To reduce greenhouse gas emissions by increasing renewable energy produced.	NCC Waste management companies	Development management decisions taken on planning applications.	NCC closed landfill team Waste management companies Renewable energy generation companies Renewable Energy Foundation
Distance of new mineral extraction sites and waste management facilities from main settlements and market towns.	Objectives WSO6, MSO8 Policy MP2 Policy WP2	Mineral extraction sites for sand and gravel or carstone to be located within 5 miles of one of Norfolk's urban areas or three miles of a main town. Waste management sites to be located within 5 miles of an urban area of 3 miles of a main town.	NCC Waste management companies Mineral operators	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations
Number of minerals and waste planning applications granted that involved highway infrastructure upgrades / improvements	Objectives MSO5, MSO6, MSO8, WSO6, WSO7 Policy MW2	To ensure minerals and waste developments do not have an unacceptable impact on the safety and capacity of the road network.	NCC NCC as Highway Authority National Highways	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Number of minerals and waste planning applications granted that include access to corridors of movement (i.e. trunk roads and A class roads)	Objectives MSO5, MSO6, MSO8, WSO6, WSO7 Policy MW2	To ensure minerals and waste developments do not have an unacceptable impact on the safety and capacity of the road network.	NCC NCC as Highway Authority National Highways	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of reported accidents involving HGVs	Objectives MSO5, MSO6, MSO8, WSO6, WSO7 Policy MW2	To ensure minerals and waste developments do not have an unacceptable impact on the safety and capacity of the road network.	NCC NCC as Highway Authority National Highways	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications. Site monitoring visits	NCC as Highway Authority
Number of substantiated complaints concerning lorry traffic.	Objectives MSO5, MSO6, MSO8, WSO6, WSO7 Policy MW2	To ensure minerals and waste developments do not have an unacceptable impact on the safety and capacity of the road network.	NCC Waste management companies Mineral operators NCC as Highway Authority National Highways	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications. Site monitoring visits.	NCC records of complaints

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Number of minerals and waste sites located within 5km of a Special Protection Area (SPA), Special Conservation Area (SAC) or Ramsar site.	Objectives MSO6 & WSO7 Policies MW1 and MW4	To ensure minerals and waste developments do not have unacceptable adverse impacts on the natural environment.	NCC Natural England	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within 2km of a SSSI.	Objectives MSO6 & WSO7 Policy MW1	To ensure minerals and waste developments do not have unacceptable adverse impacts on the natural environment.	NCC Natural England	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within 2km of a National Nature Reserve (NNR).	Objectives MSO6 & WSO7 Policy MW1	To ensure minerals and waste developments do not have unacceptable adverse impacts on the natural environment.	NCC Natural England	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within 250m of a Local Nature Reserve.	Objectives MSO6 & WSO7 Policy MW1	To ensure minerals and waste developments do not have unacceptable adverse impacts on the natural environment.	NCC Local Planning Authorities	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Number of mineral and waste sites located within 250m of a County Wildlife Site.	Objectives MSO6 & WSO7 Policy MW1	To ensure minerals and waste developments do not have unacceptable adverse impacts on the natural environment.	NCC	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within the Area of Outstanding Natural Beauty (AONB).	Objectives MSO6 & WSO7 Policy MW1	To ensure that minerals and waste developments do not have unacceptable adverse effects on the natural, built and historic environment.	NCC Natural England Norfolk Coast Partnership	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within the Heritage Coast.	Objectives MSO6 & WSO7 Policy MW1	No increase in sites located within the Heritage Coast. To ensure that minerals and waste developments do not have unacceptable adverse effects on the natural, built and historic environment.	NCC Natural England Norfolk Coast Partnership North Norfolk District Council King's Lynn & West Norfolk Borough Council	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Number of minerals and waste sites located within the Broads Authority Executive Area.	Objectives MSO6 & WSO7 Policy MW1	To ensure that minerals and waste developments do not have unacceptable adverse effects on the natural, built and historic environment.	NCC Broads Authority	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within a Core River Valley.	Objectives MSO6 & MSO9 Policy MW1 Policy MP4	To ensure that minerals developments do not have unacceptable adverse effects on the natural environment, positively contribute to the natural environment and mitigate against cumulative impacts.	NCC	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within 250m of a registered historic park or garden.	Objectives MSO6 & WSO7 Policy MW1	To ensure minerals and waste developments do not have unacceptable adverse impacts on the historic environment.	NCC Historic England	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within 250m of a Conservation Area.	Objectives MSO6 & WSO7 Policy MW1	To ensure minerals and waste developments do not have unacceptable adverse impacts on the historic environment.	NCC Historic England Local Planning Authorities	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Number of minerals and waste sites located within 250m of a Listed Building or Scheduled Monument.	Objectives MSO6 & WSO7 Policy MW1	To ensure minerals and waste developments do not have unacceptable adverse impacts on the historic environment.	NCC Historic England	Site specific allocations decisions as part of M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste sites located within Groundwater Source Protection Zone 1.	Objectives MSO6 & WSO7 Policy MW1	To ensure that minerals and waste development do not have unacceptable adverse effects on the natural environment.	NCC Environment Agency	Site specific allocations decisions as part of the M&WLP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.
Number of minerals and waste planning permissions granted contrary to the advice of the Environment Agency or the LLFA on flood risk grounds.	Objectives WSO7, MSO6, MSO8, MSO9 Policy MW1 Policy MW3	To ensure that minerals and waste development do not have unacceptable adverse impacts on flood risk on site or an increase in flood risk elsewhere.	NCC Environment Agency LLFA	Site specific allocations decisions as part of the M&WLP. Development management decisions taken on planning applications. Planning consultation responses from the Environment Agency Planning consultation responses from the LLFA	Determined planning applications for minerals and waste operations.

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Area of priority habitat to be created in approved restoration schemes for mineral workings.	Objectives MSO8, MSO9, MSO10 Policy MP7 Policy MP8	All mineral extraction sites to have an agreed high quality progressive and expedient restoration scheme to achieve a beneficial afteruse to protect and enhance the environment.	NCC Mineral operators	Site specific allocations decisions as part of the M&WLP. Development management decisions taken on planning applications Site monitoring visits.	Determined planning applications for minerals extraction.
Number of minerals and waste developments securing their energy from on-site renewable or low carbon sources	Objectives MSO8, WSO6. Policy MW3	To address and minimise the impacts minerals and waste developments will have on climate change by reducing greenhouse gas emissions from energy generation.	NCC Mineral operators Waste management operators	Development management decisions taken on planning applications. Site monitoring visits.	Determined planning applications for minerals and waste operations.
Number of minerals and waste developments located within an AQMA.	Objectives WSO7, Policy MW1	To reduce potential adverse effects on human health and amenity from mineral and waste developments.	NCC LPAs – Environmental Health	Site specific allocations decisions as part of the M&W LP. Development management decisions taken on planning applications.	Determined planning applications for minerals and waste operations.

Indicator	Related Policy / strategic objective	Target	Agencies responsible	Implementation mechanism	Data Source
Number of substantiated complaints about amenity impacts from minerals and waste activities	Objectives MSO7 & WSO7 Policy MW1	To ensure that minerals and waste development do not have unacceptable adverse amenity impacts.	NCC LPAs - Environmental Health Environment Agency Waste management companies Mineral operators	Site specific allocations decisions as part of the M&W LP. Development management decisions taken on planning applications. Site monitoring and enforcement.	NCC records of complaints
Number planning applications granted by LPAs within minerals or waste consultation areas (unless they fall within the exclusions set out in Appendix 4).	Objectives MSO4, MSO5, WSO3 Policies MP10, MP11 and WP17	Safeguard mineral extraction sites, mineral infrastructure, waste management sites and water recycling centres from incompatible development. Safeguarding mineral resources so that they are not sterilised by non-mineral development where this should be avoided.	NCC Local Planning Authorities	Mapping safeguarded mineral sites, mineral infrastructure, mineral resources, and waste sites in the Policies Map. Consultation process on planning applications within safeguarded areas.	Determined planning applications by LPAs.

Mineral Extraction Sites

Sand and gravel

The following sites were proposed for sand and gravel extraction by mineral operators and are allocated to meet the forecast sand and gravel need during the plan period. The assessments for all the allocated sites are included in this document. Policy MP1 'Provision for minerals extraction' states that specific sites for at least 12.597 million tonnes of sand and gravel will be allocated. The following 16 sites with an estimated resource of 18.145 million tonnes are allocated to meet the forecast sand and gravel need during the plan period. 15.4 million tonnes of the estimated resource are expected to be extracted within the plan period with a further 1.4 million tonnes already included in the existing landbank.

Parish	Site reference	Location	Estimated total resource (tonnes)	Estimated resource (tonnes) available during the plan period 2021-2038	Planning status at 31.12.2021
Beetley	MIN 12	land north of Chapel Lane	1,175,000	1,120,000	No planning application
Beetley	MIN 51 & MIN 13 & MIN 08	land west of Bilney Road	1,830,000	1,480,000	No planning application
Carbrooke	MIN 200	land west of Cuckoo Lane	300,000	300,000	No planning application
Attlebridge	MIN 202	land south of Reepham Road,	545,000	545,000	Planning application submitted in 2018 and being determined
Frettenham and Buxton with Lammas	MIN 37	land at Mayton Wood, Coltishall Road, Buxton	1,450,000	1,450,000	Permission granted June 2021
Horstead with Stanninghall	MIN 64	land at Grange Farm, Buxton Road, Horstead	650,000	650,000	Permission granted May 2021
Horstead with Stanninghall	MIN 65	land north of Stanninghall Quarry	3,745,000	3,745,000	Permission granted August 2021
Spixworth	MIN 96	land at Grange Farm (between Spixworth Road and Coltishall Lane)	1,600,000	1,600,000	No planning application
Tottenhill	MIN 206	land at Oak Field, west of Lynn Road	750,000	750,000	Planning application submitted in 2021 and being determined

Parish	Site reference	Location	Estimated total resource (tonnes)	Estimated resource (tonnes) available during the plan period 2021-2038	Planning status at 31.12.2021
Aylmerton	MIN 69	land north of Holt Road	2,000,000	700,000 (northern part of site received permission in 2020 so 1 million tonnes already included in the landbank)	Permission granted for northern part of site in October 2020
North Walsham	MIN 115	land at Lord Anson's Wood, near North Walsham	1,100,000	960,000	No planning application
Edgefield	MIN 207	land at Pinkney Field, Briston	400,000	N/A site received permission in 2019 so already included in the landbank	Permission granted in August 2019
East Beckham	MIN 208	land south of Holt Road	1,320,000	800,000	No planning application
Haddiscoe	MIN 25	land at Manor Farm (east of Crab Apple Lane)	1,300,000	1,300,000	No planning application
N/A	**N/A**	**TOTAL**	**18,165,000**	**15,400,000**	N/A

Carstone

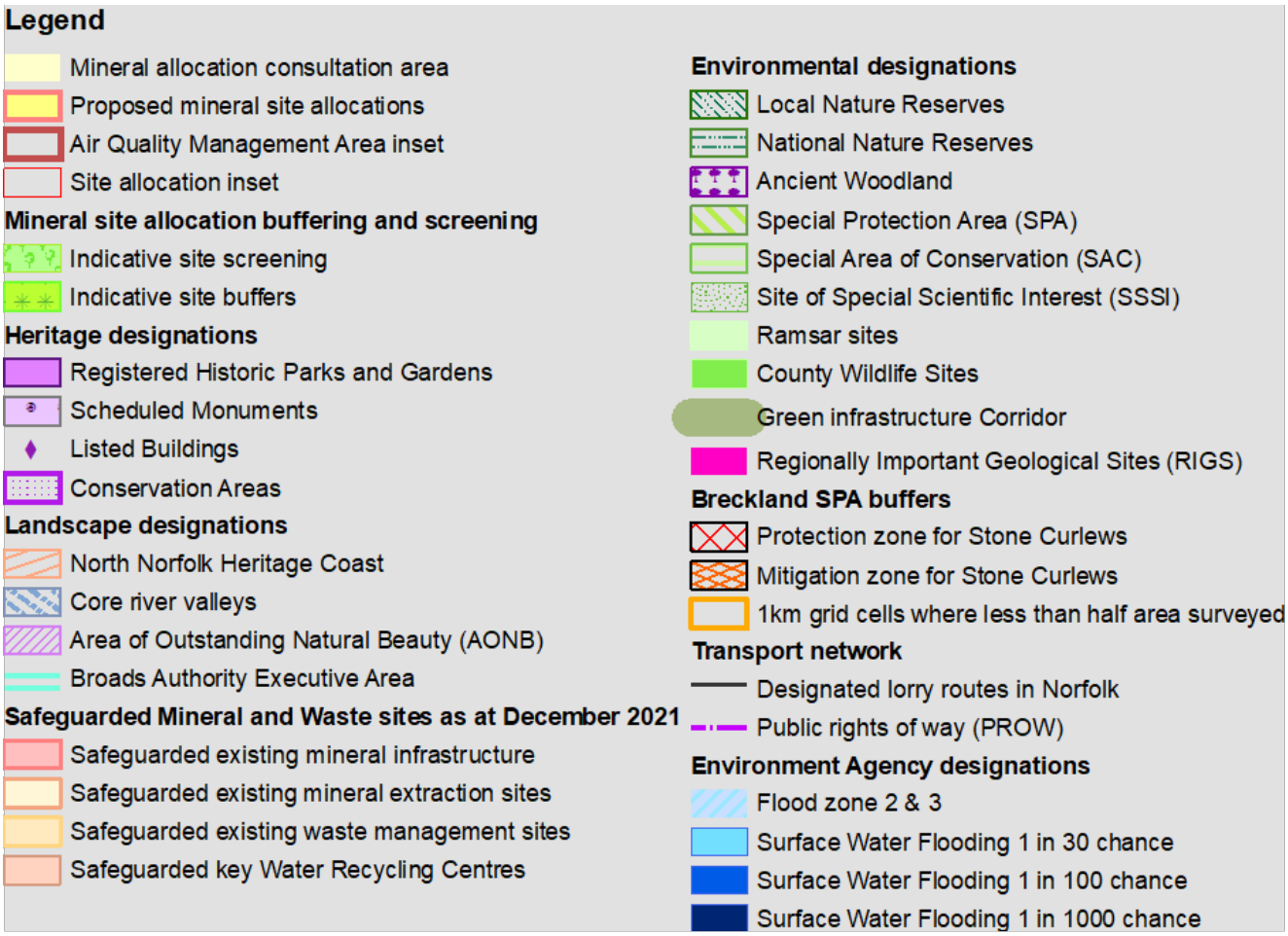
The carstone resource in Norfolk is only located in West Norfolk. Only one site has been proposed (by Middleton Aggregates Ltd) for carstone extraction, with an estimated mineral resource of 1,416,000 tonnes. The assessment of the carstone site is included in this document. This site is concluded to be suitable to allocate for carstone extraction and would provide flexibility to meet any future increase in demand for Carstone during the Plan period.

Parish	Site reference	Location	Estimated resource (tonnes)	Estimated resource available during the plan period 2021- 2038	Planning status at 31.12.2021
Middleton	MIN 6	land off East Winch Road, Mill Drove	1,416,000	1,120,000	No planning application

Silica Sand

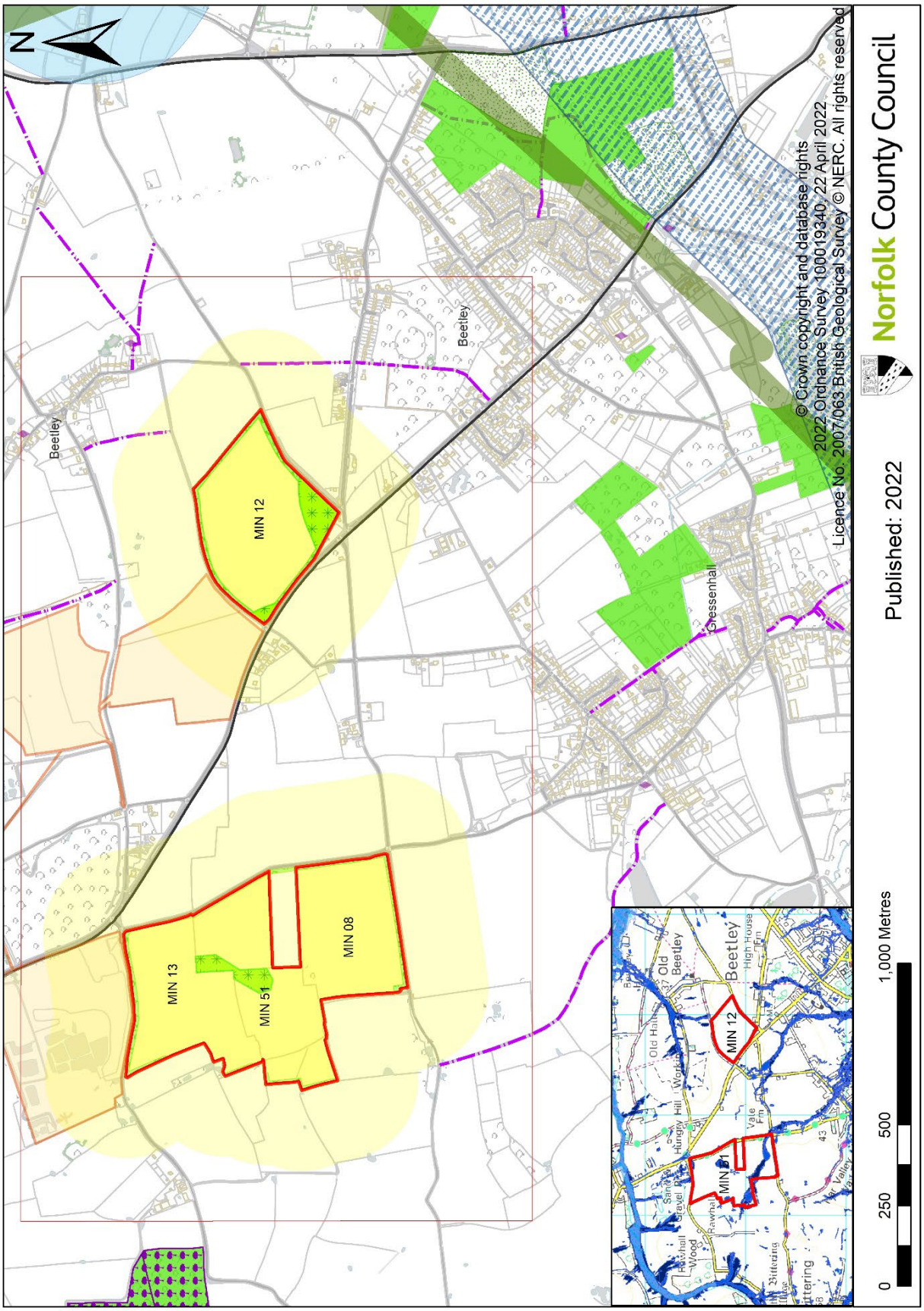
The silica sand resource in Norfolk is only located in West Norfolk. Two sites with an estimated resource of 4.1 million tonnes will be allocated for silica sand extraction. Both sites have been proposed by Silbelco UK Ltd. The assessments of these two sites are included in this document. These two sites would not meet the forecast need of 10.34 million tonnes of silica sand during the plan period. Therefore, a criteria-based policy (MPSS1) for planning applications for silica sand extraction is also included in the Minerals and Waste Local Plan.

Parish	Site reference	Location	Estimated resource (tonnes)	Resource available during the plan period 2021-2038 (tonnes)	Planning status at 31.12.2021
East Winch	MIN 40	land east of Grandcourt Farm	3,000,000	3,000,000	Planning application submitted in 2018 and being determined
Bawsey	SIL01	land at Mintlyn South	1,100,000	1,100,000	Permission granted August 2021
N/A	**TOTAL**	**N/A**	**4,100,000**	**4,100,000**	**N/A**



Breckland Sites

Map of proposed sites in Beetley (MIN 12, MIN 13/ MIN 51/ MIN 08)



MIN 12 - land north of Chapel Lane, Beetley

Site Characteristics

- The 16.38 hectare site is within the parish of Beetley
- The estimated sand and gravel resource at the site is 1,175,000 tonnes
- The proposer of the site has given a potential start date of 2025 and estimated the extraction rate to be 80,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within 15 years, therefore approximately 1,120,000 tonnes could be extracted within the plan period.
- The site is proposed by Middleton Aggregates Ltd as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 3.
- The site is 3.7km from Dereham and 12km from Fakenham, which are the nearest towns.

A reduced extraction area has been proposed of 14.9 hectares, which creates standoff areas to the south west of the site nearest to the buildings on Chapel Lane, and to the north west of the site nearest the dwellings on Church Lane.

M12.1 Amenity: The nearest residential property is 11m from the site boundary. There are 22 sensitive receptors within 250m of the site boundary and six of these are within 100m of the site boundary. The settlement of Beetley is 260m away and Old Beetley is 380m away. However, land at the north-west and south-west corners is not proposed to be extracted. Therefore, the nearest residential property is 95m from the extraction area and there are 18 sensitive receptors within 250m of the proposed extraction area (two of these are within 100m of the proposed extraction area). Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M12.2 Highway access: The site would access the existing plant site on the land to the north of Rawhall Lane via an extension to the existing conveyor. From the plant site the existing site access would be used onto Rawhall Lane east to the junction with the B1146 Fakenham Road, which is a designated lorry route. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 30 (in and out) per day. The proposed highway access is considered to be suitable by the Highway Authority.

M12.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with boundary loss. The site is within a wider historic landscape character of Twentieth Century agriculture with enclosure and boundary loss, agriculture with 18th to 19th Century enclosure, and enclosed wetland meadows. The wider historic landscape character also includes 18th to 20th Century woodland plantation, mineral extraction and leisure/recreation.

M12.4 The nearest Listed building is 460m away and is the Grade I Church of St Mary Magdalen. There are 14 Listed Buildings within 2km of the site. The only Scheduled Monument within 2km of the site is 1.57km away and is the 'Moated site 280m south east of Spong Bridge'. There are no Conservation Areas or Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M12.5 Archaeology: There are no Historic Environment records within the site boundary, however this may just be due to a lack of investigations. The site is in a wider landscape with a significant number of finds and features from multiple periods, and the site is immediately north of the remains of a Roman road. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning

application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M12.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site comprises open arable land with few landscape features apart from boundary hedgerow. The site lies close to the boundaries of the landscape character areas described as 'Beeston Plateau Farmland' and 'River Nar Tributary Farmland' in the Breckland Landscape Character Assessment. It lies within a wider area of open arable landscape punctuated with hedgerow oaks and small areas of woodland. Immediately to the north of the site is an existing permitted mineral extraction site, which formed part of the adopted allocation site MIN 10, of which MIN 12 was part.

M12.7 The site is generally well screened from views from surrounding roads and property, although views of the site would be seen from Field Lane, a road used as a public path which bounds the site to the north. In addition, the southern part of the site is slightly elevated and may be visible in a long view from public paths crossing land to the north of the Whitewater valley. The site would be relatively easy to screen from the views from Field Lane, although attention would need to be given to screening views from the north. A low-level restoration scheme with appropriate margins, gradients and land use could be acceptable in this plateau arable landscape, and this is what has been proposed.

M12.8 There are no Public Rights of Way within or adjacent to the site.

M12.9 Ecology: The site is 3.47km from the River Wensum SAC and is outside the Impact Risk Zone for the River Wensum SSSI. Due to this distance, no impacts on this SAC are expected.

M12.10 Beetley and Hoe Meadows SSSI is 1.16km from the site boundary. The SSSI citation states that the valley site represents one of the finest remaining areas of wet unimproved grassland in Norfolk which is species-rich and includes several locally uncommon plants. The proposed extraction site would be worked dry (above the water table) and is located up-gradient of the SSSI. Therefore, the SSSI would not be adversely affected.

M12.11 Dillington Carr, Gressenhall SSSI is 1.44km from the site boundary. The SSSI citation states that the site is an extensive area of carr woodland and open water occupying the valley floor and sides of a small tributary of the River Wensum. The site also includes extensive stands of the nationally rare lowland bird cherry-alder woodland. Irrigation reservoirs have been created within the carr which support an outstanding assemblage of freshwater breeding birds, including several uncommon species. The proposed extraction site would be worked dry (above the water table) and is located up-gradient of the SSSI. Therefore, the SSSI would not be adversely affected.

M12.12 The nearest County Wildlife Site is CWS 1027 'Gressenhall Green Marshes' which is 730m from the site boundary. The CWS is a mosaic of predominantly unmanaged broad-leaved semi-natural woodland, scrub, hedgerows, ditches and marshy grassland. Due to the distance from the CWS there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the County Wildlife Site would not be adversely affected.

M12.13 The nearest ancient woodland site is Great Wood which is a Plantation on Ancient Woodland Site (PAWS) and Ancient Semi-Natural Woodland (ASNW); it is 1.28km from the site boundary. Due to the distance from the ancient woodland there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the ancient woodland would not be adversely affected.

M12.14 Geodiversity: The site consists of the Briton's Lane sand and gravel member, overlying chalk formations. The Briton's Lane sands and gravels are known to contain priority features such as palaesols and erratics in other locations, and therefore they may occur on this site. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during

operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M12.15 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. No areas of the site are at risk of flooding from surface water. The site is not in an Internal Drainage Board area.

M12.16 Hydrogeology: The site is located over a secondary A aquifer (superficial deposits) and a principal aquifer (bedrock). The site is within groundwater Source Protection Zone 3. The proposed extraction site would be worked dry (above the water table) and therefore no effect on water resources is expected.

M12.17 Water Framework Directive: The site is approximately 1km from the Blackwater and 1.2km from Wendling Beck, which are the nearest Water Framework Directive waterbodies. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the Blackwater or Wendling Beck. MIN 12 and the existing processing plant, which the sand and gravel could be transported to by conveyor, are both located north of Wendling Beck and south of the Blackwater. Therefore, the sand and gravel to be processed would not be transported across either of these watercourses. Due to the distance of the site from the Blackwater and Wendling Beck, it is not expected that there would be a pathway for silt ingress into these waterbodies from any future sand and gravel extraction within site MIN 12.

M12.18 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M12.19 Safeguarding aerodromes: The site is not within an aerodrome safeguarding zone.

M12.20 Restoration: The site is proposed to be restored at a lower level and returned to arable agriculture. Restoration would include wide field margins, new hedgerows and some woodland.

M12.21 Conclusion: Site MIN 12 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 12.

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Specific Site Allocation Policy MIN 12 (land north of Chapel Lane, Beetley):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
b. The existing processing plant (at East Bilney Quarry), accessed via an extension to the current conveyor, must be used;
c. The submission of a detailed landscaping and screening scheme which ensures that there are no unacceptable impacts on residents of Chapel Road and Fakenham Road/Church Lane specifically, users of Field Lane, and the landscape generally, and that the settings of nearby listed buildings are protected;
d. The site will need to be phased with the adjacent permitted site so that only one site is worked for extraction at a time in accordance with a phased and progressive working and restoration scheme.
e. The submission of an acceptable progressive restoration scheme to a lower level (with no importation of materials) back to agriculture, to provide wide field margins, new hedgerows and additional woodland to provide landscape and biodiversity net gains;
f. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
g. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including the grade I listed Church of Mary Magdalene and grade II listed Old Hall and Beetley Hall), assess the potential for impacts and identify appropriate mitigation measures if required; and
h. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures.

MIN 51 / MIN 13 / MIN 08- land west of Bilney Road, Beetley

Site Characteristics

- The 39.65 hectare site is within the parish of Beetley
- The estimated sand and gravel resource at the site is 1,830,000 tonnes
- The potential start date of the site is 2022 and estimated the extraction rate to be 70,000 tonnes per annum for the first seven years, increasing to 110,000 tpa for the remaining years. Based on this information the full mineral resource at the site could be extracted within nineteen years, therefore 1,480,000 tonnes would be extracted within the plan period.
- The site is proposed by Longwater Gravel Co Ltd as a new site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 3
- The site is 4.2km from Dereham and 11km from Fakenham, which are the nearest towns

M51.1 Amenity: The nearest residential property is 171m from the site boundary. There are three sensitive receptors within 250m of the site boundary. The settlement of East Bilney is 470m away and Gressenhall is 530m away. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M51.2 Highway access: Access would be from the north-eastern corner of the site onto Rawhall Lane just before it joins the C225 Bilney Road and then join the B1146 Fakenham Road, which is a designated lorry route. There would only be approximately 100m before vehicles could access the B1146. The site is not within an AQMA. The estimated number of HGV movements is 10 out per day for the first seven years, increasing to 15 out per day for the final nine years. The proposed highway access using Rawhall Lane considered to be suitable by the Highway Authority.

M51.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with boundary loss and agriculture with 18th to 19th Century enclosure. The site is within a wider historic landscape character of Twentieth Century agriculture with enclosure, boundary loss and boundary loss with a relict element, agriculture with 18th to 19th Century enclosure and enclosed wetland meadow. The wider historic landscape character also includes informal parkland, mineral extraction and woodland (ancient woodland and 18th to 20th century plantation woodland).

M51.4 The nearest Listed Building is 680m away and is the Grade II Almshouses. There are 16 Listed Buildings within 2km of the site. The only Scheduled Monument within 2km is the 'Deserted Medieval Village' which is 1.11km away. Brisley Conservation Area is 1.74km from the site. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M51.5 Archaeology: Historic Environment records of cropmarks and isolated finds, including a ring ditch, exist within the site boundary, however the site has not been subject to a programme of investigation. The site is in a wider landscape with a significant number of finds and features from multiple periods, and the site is north of the remains of a Roman road and south of a number of features from multiple periods. A possible road linking to the Roman Road runs through the southern part of the site. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M51.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site comprises open arable land with few landscape features

apart from mature hedgerow oaks. The site is within the landscape character area described as 'Beeston Plateau Farmland' in the Breckland Landscape Character Assessment. It lies within a wider area of open arable landscape punctuated with hedgerow oaks and small areas of woodland. An active quarry lies to the north of Rawhall Lane but does not really detract from the rural appearance of this site.

M51.7 Views of the site can be seen from Bilney Lane to the east, Stoney Lane to the south and Rawhall Lane to the north. The site is fairly flat and would be relatively easy to screen from the views from surrounding roads, by planting additional boundary hedges and thickening up existing boundary hedges. The nearest isolated properties along Rawhall Lane to the north-west would have limited views into the north-west part of the site which would require also additional hedgerow boundary screening. The site comprises open agricultural land, set down to a grass ley with some boundary hedges and hedgerow trees. The site contains some good internal landscape features; the internal hedgerow oaks and the block of woodland and rough grass lie within the centre of the site are notable features in this open landscape and should be protected by a suitable working scheme. A low level restoration scheme with appropriate margins and landuse could be acceptable in landscape terms.

M51.8 There are no Public Rights of Way within or adjacent to the site.

M51.9 Ecology: The site is 4.54km from the River Wensum SAC and is outside the Impact Risk Zone for the River Wensum SSSI. Due to this distance, no impacts on this SAC are expected.

M51.10 Beetley and Hoe Meadows SSSI is 2.12km from the site boundary. The SSSI citation states that the valley site represents one of the finest remaining areas of wet unimproved grassland in Norfolk which is species-rich and includes several locally uncommon plants. The proposed extraction site would be worked dry (above the water table) and is located up-gradient of the SSSI. Therefore, the SSSI would not be adversely affected.

M51.11 Dillington Carr, Gressenhall SSSI is 1.88km from the site boundary. The SSSI citation states that the site is an extensive area of carr woodland and open water occupying the valley floor and sides of a small tributary of the River Wensum. The site also includes extensive stands of the nationally rare lowland bird cherry-alder woodland. Irrigation reservoirs have been created within the carr which support an outstanding assemblage of freshwater breeding birds, including several uncommon species. The proposed extraction site would be worked dry (above the water table) and is located up-gradient of the SSSI. Therefore, the SSSI would not be adversely affected.

M51.12 Horse Wood Mileham SSSI is 2.84km from the site boundary. The SSSI citation states that it is an ancient woodland with a structure of coppice-with-standards. The ground flora is exceptionally diverse and includes a number of rare and uncommon species in great abundance. The proposed extraction site would be worked dry (above the water table). Therefore, the SSSI would not be adversely affected.

M51.13 County Wildlife Site 2137 'Beck Farm Meadows' is 520m from the site boundary. The CWS is a series of damp, cattle-grazed meadows on the south bank of the Black Water. County Wildlife Site 2068 'Rawhall Wood' is 540m from the site boundary. The CWS is an ancient broad-leaved semi-natural woodland supporting a species-rich ground flora, with a network of wide rides. Due to the distance from the CWS there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the County Wildlife Site would not be adversely affected.

M51.14 The nearest ancient woodland site is Rawhall Wood which is a Plantation on Ancient Woodland Site (PAWS) and Ancient Semi-Natural Woodland (ASNW); it is 0.57km from the site boundary. Due to the distance from the ancient woodland site there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the ancient woodland would not be adversely affected.

M51.15 Geodiversity: The site consists of the Briton's Lane sand and gravel member, Lowestoft formation – diamicton, overlying chalk formations. The Briton's Lane sands and gravels are known

to contain priority features such as palaesols and erratics in other locations, and therefore they may occur on this site. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M51.16 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a medium probability of surface water flooding with a few locations of surface water pooling in 1 in 30 and 1 in 100-year rainfall events. In a 1 in 100-year rainfall event a flow path develops in the south-eastern corner of the site. In a 1 in 1000-year rainfall event the surface water flow path further develops to run north-west to south-east across the southern part of the site. Sand and gravel extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M51.17 Hydrogeology: Most of the site is located over a Secondary A aquifer (superficial deposits) and part of the site is located over a Secondary (undifferentiated) aquifer. The whole site is located over a principal aquifer (bedrock). The site is within groundwater Source Protection Zone 3. The proposed site would be worked dry (above the water table) and therefore no effect on water resources is expected.

M51.18 Water Framework Directive: The site is approximately 600 metres from the Blackwater and 1.7km from Wendling Beck, which are the nearest Water Framework Directive waterbodies. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the Blackwater or Wendling Beck. If mineral is extracted from this site it is expected to be processed on site. Therefore, the sand and gravel to be processed would not be transported across either of these watercourses. Due to the distance of the site from the Blackwater and Wendling Beck, it is not expected that there would be a pathway for silt ingress into these waterbodies from any future sand and gravel extraction within this site.

M51.19 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There is a National Grid high-pressure gas pipeline located along the eastern boundary of the site.

M51.20 Safeguarding aerodromes: The site is not within an aerodrome safeguarding zone.

M51.21 Restoration: The site is proposed to be restored at a lower level and the majority returned to arable agricultural. Due to the expected depth of extraction, it is recognised that restoration to arable is likely to require the use of imported inert material to provide a suitable profile. Lagoons to be retained as ponds with planting to create wet woodland habitat. Hedgerow interspersed with oaks is to be planted along the northern boundary alongside Rawhall Lane. A proportion of the site will be restored to woodland and associated grassland habitat.

M51.22 Conclusion: Site MIN 51/ MIN 13/ MIN 08 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 51/ MIN 13/ MIN 08.

Specific Site Allocation Policy MIN 51 / MIN 13 / MIN 08 (land west of Bilney Road, Beetley):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. Highway access to be from the north-eastern corner of the site onto Rawhall Lane just before it joins the C225 Bilney Road and then join the B1146 Fakenham Road. Appropriate financial contributions to B1146 Fakenham Road/Rawhall Road junction improvements must be made, if required;
b. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
c. The submission of a high-quality working scheme with site screening to include the planting of new boundary hedges and the thickening of existing boundary hedges, safeguarding the hedgerow oaks and two small areas of woodland on the site and using them as a focal point for restoration.
d. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
e. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including the Grade II* Listed Church of St Peter, Grade II Listed Manor Farmhouse as well as listed buildings in East Bilney and the Scheduled Monument site 'deserted medieval village'), assess the potential for impacts and identify appropriate mitigation measures if required;
f. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
g. The submission of an acceptable progressive restoration scheme to provide wide field margins, new hedgerows and additional woodland to provide landscape and biodiversity net gains; and
h. Restoration of the extraction void to use the importation of inert materials only.

MIN 200 - land west of Cuckoo Lane, Carbrooke

Site Characteristics

- The 7.94 hectare site is within the parish of Carbrooke
- The estimated sand and gravel resource at the site is 300,000 tonnes
- The proposer of the site has given a potential start date of 2025 and estimated the extraction rate to be 25,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within twelve years, which would be within the plan period.
- The site is proposed by Mick George Ltd as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 3
- The site is 0.8km from Watton and 10.1km from both Attleborough and Dereham, which are the nearest towns

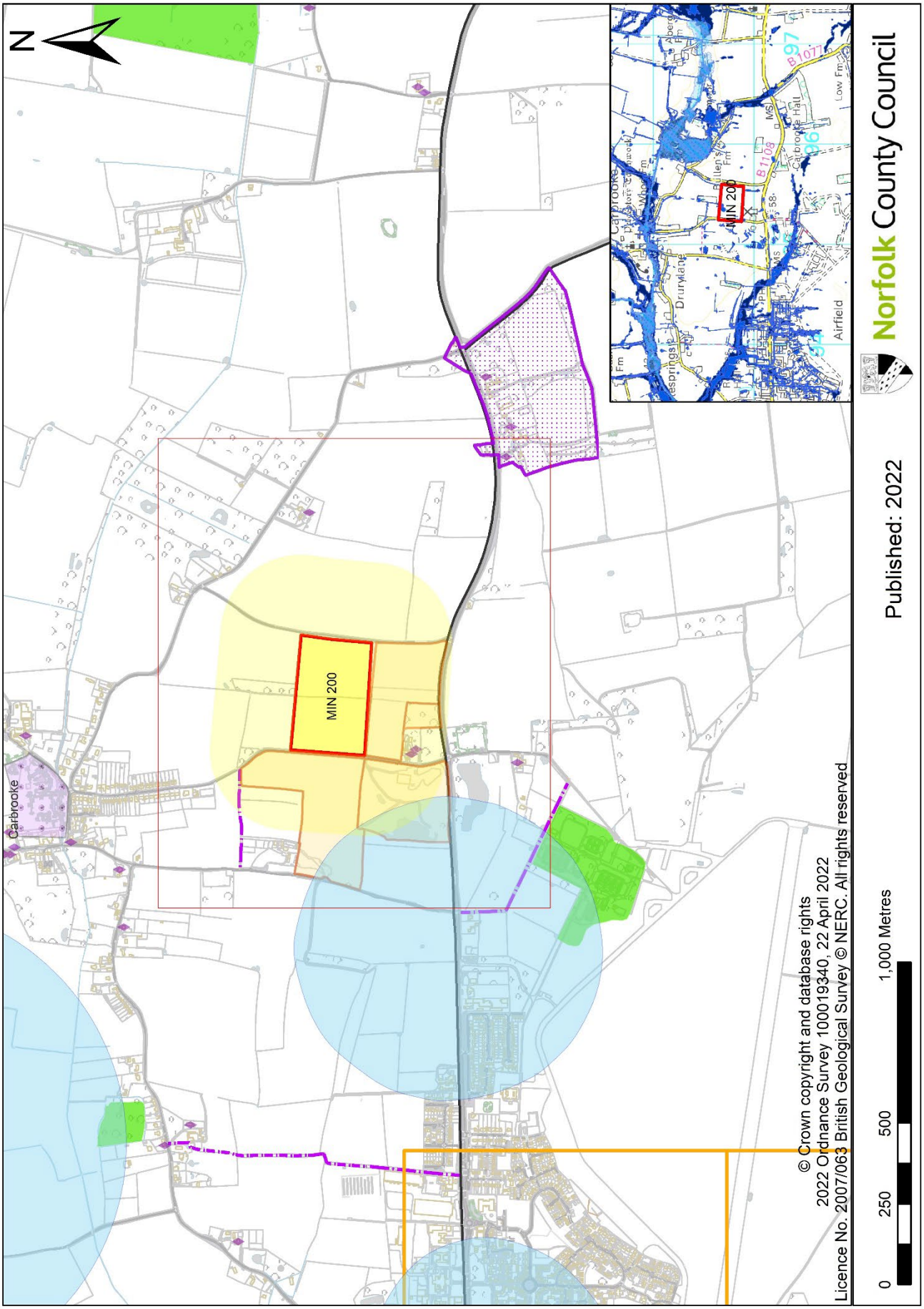
M200.1 Amenity: The nearest residential property is 144m from the site boundary, this is the only sensitive receptor within 250m of the site. The settlement of Carbrooke is 321m away. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M200.2 Highway access: The site would use the existing quarry access onto Mill Lane and then south onto the B1108 Norwich Road, which is a designated lorry route. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 10 (in and out) per day. The proposed highway access is considered to be suitable by the Highway Authority subject to the provision of passing places between the site and the B1108; use of the existing haul route and Mill Lane crossing to the processing plant, or provision of an appropriate alternative; and a routing agreement along with a weight limit will be required to protect Carbrooke settlement north of the site.

M200.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with boundary loss. The site is within a wider historic landscape character of Twentieth Century agriculture with enclosure and boundary loss, agriculture with 18th to 19th century piecemeal enclosure and enclosed wetland meadow. The wider historic landscape character also includes disused post-medieval military, agriculture with pre-18th century coaxial enclosure and 18th to 20th century plantation woodland.

M200.4 The nearest Listed Buildings are the Grade II Mill House and 'Windmill' which are 150m away. There are 27 Listed Buildings within 2km of the site. Carbrooke Conservation Area is 670m from the site, within which many of the Listed Buildings are contained. The only Scheduled Monument within 2km of the site is the 'Site of Commandry of St John of Jerusalem' which is 700m away. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M200.5 Archaeology: There are no Historic Environment records within the site boundary, however this may just be due to a lack of investigations. The site is in a wider landscape with a significant number of finds and features from multiple periods, especially to the north around the settlement of Carbrooke. A scatter of finds was found following investigations on the existing site. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.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M200.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site is within the landscape character area described as 'Wayland Plateau Farmland' in the Breckland Landscape Character Assessment. The site is a flat arable field bordered to the west by Mill Lane, to the east by Cuckoo Lane, with an existing permitted mineral extraction site to the south, and on the opposite of Mill Lane. To the north, there are arable fields with isolated woodland blocks up to the settlement of Carbrooke. There would be views from Mill Lane and Cuckoo Lane through gaps in the hedgerows; a screening scheme would need to address this issue together with longer views from the direction of Carbrooke.

M200.7 There are no Public Rights of Way within or adjacent to the site.

M200.8 Ecology: The site is 4.47m from Thompson Water, Carr and Common SSSI which is part of the Norfolk Valley Fens SAC and is outside the Impact Risk Zone for the SSSI. Due to this distance, no impacts on this SAC or SSSI are expected.

M200.9 Scoulton Mere SSSI is 2.72km from the site boundary. The SSSI citation states that the swamp, fen and bog communities that occur on island in the mere and around the shore support a diverse flora including several rare and uncommon plants. Whilst the site is within the Impact Risk Zone for the SSSI, provided that no dewatering is proposed as part of the working scheme, no impacts on this SSSI are expected.

M200.10 Wayland Wood, Watton SSSI is 2.78km from the site boundary. The SSSI citation states that the large wood contains entirely semi-natural stands and is still managed under a traditional coppicing system. The diverse flora is typical of ancient woodland and includes one national rarity. Whilst the site is within the Impact Risk Zone for the SSSI, provided that no dewatering is proposed as part of the working scheme, no impacts on this SSSI are expected.

M200.11 The nearest County Wildlife Site is CWS 2091 'Watton Airfield (Army training area) which is 610m from the site boundary. The CWS is an area of dense scrub with patches of unimproved basic grassland; crossed with tracks. Due to this distance, no impacts on this CWS are expected.

M200.12 The nearest ancient woodland sites are: Shepherds Fell, a Plantation on Ancient Woodland Site (PAWS) which is 2.34 km from the site boundary, Hazel Hurn, a PAWS and Ancient Semi-Natural Woodland (ASNW) which is 2.47 km from the site boundary. Due to this distance, no impacts on these sites are expected.

M200.13 Geodiversity: The site consists of the Lowestoft formation – diamicton, overlying chalk formations. The site is unlikely to contain geodiversity priority features. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application.

M200.14 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low risk of surface water flooding with two locations of surface water pooling in a 1 in 30-year rainfall event and a third location in a 1 in 1000 year rainfall event. Sand and gravel extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M200.15 Hydrogeology: The site is located over a Secondary aquifer (undifferentiated) (superficial deposits) and a principal aquifer (bedrock). The site is within groundwater Source Protection Zone 2. The site is expected to be worked dry (above the water table) and dewatering is not proposed at the site. Therefore, no adverse impacts on hydrogeology are expected. However, due to the location of the site within SPZ2, a planning application for mineral extraction at this site would need to include a Hydrogeological Impact Assessment to identify any potential impacts to groundwater and appropriate mitigation measures.

M200.16 Water Framework Directive: The site is approximately 700 metres from Watton Brook, which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards Watton Brook. MIN 200 and the existing adjacent processing plant, which the sand and

gravel would be transported to by internal haul route, are both some distance south of Watton Brook. Therefore, the sand and gravel to be processed would not be transported across this watercourse. Due to the distance of the site from Watton Brook, it is not expected that there would be a pathway for silt ingress into this waterbody from any future sand and gravel extraction within site MIN 200.

M200.17 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M200.18 Safeguarding aerodromes: The site is not within an aerodrome safeguarding zone.

M200.19 Restoration: The site is proposed to be restored to nature conservation with open grassland.

M200.20 Conclusion: Site MIN 200 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 200.

Specific Site Allocation Policy MIN 200 (land west of Cuckoo Lane, Carbrooke):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and meeting all the following requirements:

a. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
b. The existing haul route and Mill Lane crossing to the existing processing plant to be used, or provision of an appropriate alternative. An application will need to assess potential impacts on the highway network of any crossing of Mill Lane for unprocessed material to the existing plant site;
c. The existing highway access from the processing plant site to the B1108 to be used, subject to the provision of passing places between the site and the B1108. A routing agreement along with a weight limit will be required to protect Carbrooke settlement north of the site;
d. The site will need to be phased with the adjacent permitted site so that only one site is worked for extraction at a time in accordance with a phased and progressive working and restoration scheme;
e. The submission of an acceptable progressive restoration scheme to a nature conservation afteruse to provide landscape and biodiversity net gains;
f. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
g. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including Grade II Listed Mill House and windmill as well as other listed buildings, the Scheduled Monument Site of Commandry of St John of Jerusalem and the Carbrooke Conservation Area), assess the potential for impacts and identify appropriate mitigation measures if required;
h. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
i. The submission of an acceptable, detailed landscaping and screening scheme which ensure that views from Mill Lane, Cuckoo Lane and from the direction of Carbrooke, and the landscape generally, are acceptable and the settings of nearby listed buildings are protected;
j. The submission of an acceptable Hydrogeological Impact Assessment to identify any potential impacts to groundwater and appropriate mitigation measures if required; and
k. The site must be worked dry (above the water table).

Broadland sites

MIN 202 - land south of Reepham Road, Attlebridge

Site Characteristics

- The 17.36 hectare site is within the parish of Attlebridge
- The proposer of the site estimated the sand and gravel resource at the site to be 2,200,000 tonnes. However, this is based on a very deep extraction which, due to the shape and area of the site, may not be practicable to restore to a suitable landform. At a more reasonable extraction depth, the site would have an estimated mineral resource of around 1,000,000 tonnes. This site has previously received planning permission for the extraction of 545,000 tonnes of sand and gravel; however this planning permission has now expired as extraction was required to be completed and restored by 08/12/2013, which did not happen. The site has been partially extracted, but no operations have taken place since 2009.
- Based on a recent undetermined planning application (C/5/2018/5004) for mineral extraction at the site, it is considered that a mineral resource of 545,000 tonnes would be deliverable and therefore the proposed site has been assessed on that basis.
- The potential start date of the site is 2023 and estimated the extraction rate to be 140,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within 4 years which would be within the plan period.
- The site is proposed by Breedon Group as a depth extension to a previously permitted and partially extracted site.
- The site is a partially extracted mineral site, and woodland plantation. The Agricultural Land Classification scheme classifies the land as being non-agricultural.
- The site is 1.7km from the Norwich urban area

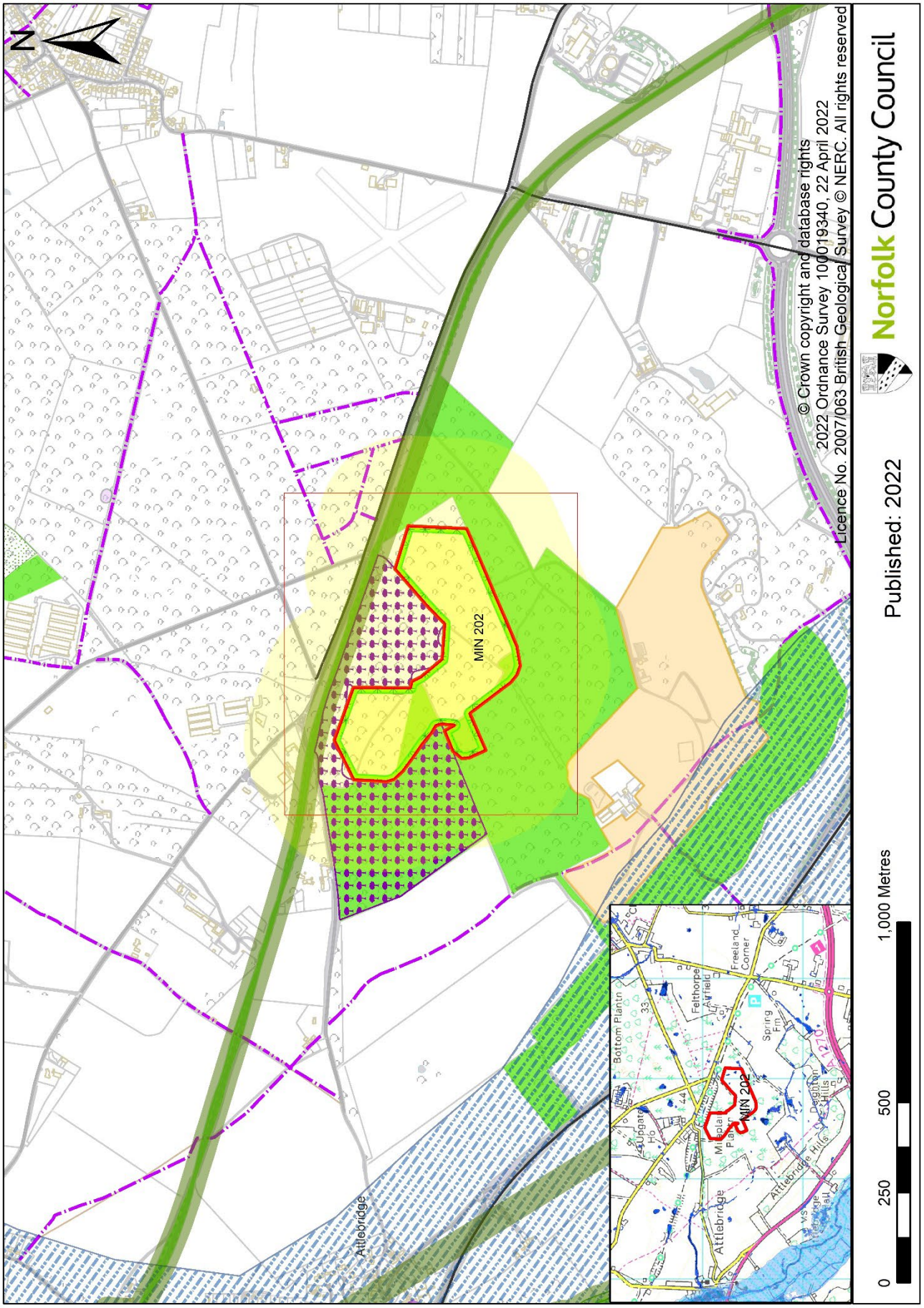
M202.1 Amenity: The nearest residential property is 126m from the site boundary. There are five sensitive receptors within 250m of the site boundary. The settlement of Update is 1km away and Attlebridge is 1.3km away. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M202.2 Highway access: This site would use the existing haul route to access the C261 Reepham Road (a designated lorry route) at the existing access. The site is not within an AQMA. The estimated number of HGV movements is 76 (in and out). The proposed highway access is considered to be suitable by the Highway Authority.

M202.3 Historic environment: The historic landscape character of the site is Twentieth century agriculture with enclosure. The site is within a wider historic landscape character of 20th century agriculture with enclosure, boundary loss and boundary loss with a relict element. The wider historic landscape character also includes agriculture with 18th to 19th century piecemeal enclosure, a common, mineral extraction, 18th to 20th century plantation woodland, and a civilian airfield.

M202.4 The nearest Listed Buildings are the Grade II* Church of St Andrew and Grade II Church Farmhouse, which are 1.45km away. There are 9 Listed Buildings within 2km of the site. The only Scheduled Monument within 2km of the site is 'Round Barrow North of Sandy Lane' which is 810m away. There are no Conservation Areas or Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M202.5 Archaeology: There are no Historic Environment records within the site boundary, however the lack of HE records may just be due to a lack of investigations. A number of nearby areas have been investigated previously and no archaeological evidence identified.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Norfolk County Council
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There have been isolated multi-period finds and the location of a deserted medieval settlement, in the wider landscape. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M202.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site is a partially extracted mineral site and a woodland plantation. The site is within the landscape character area described as 'Horsford Woodland Heath Mosaic' in the Broadland Landscape Character Assessment. The site is screened from views in all directions by woodland, the woodland surrounding the northwest segment of the site is a Plantation on Ancient Woodland (PAWs). Marriott's Way is located immediately north of the woodland, and is crossed by the access road. The potential for impacts on this amenity trail would need to be considered as part of any future application. The estimated mineral resource of 2.2 million tonnes is based upon a deep extraction. It is likely to be difficult to suitability restore a very deep extraction on this site. Therefore, the exact depth of a suitable extraction will need to be determined at the planning application stage.

M202.7 There are no Public Rights of Way within or adjacent to the site.

M202.8 Ecology: The site is 1.15km from the River Wensum SAC and is within the Impact Risk Zone for the River Wensum SSSI. The SSSI citation states that the River Wensum is an example of an enriched calcareous lowland river. With over 100 species of plants, a rich invertebrate fauna and a relatively natural corridor, it is probably the best whole river of its type in nature conservation terms. The site is in an elevated position in relation to the River Wensum and any working would be above the water table. Therefore, it is considered that mineral extraction would result in no adverse effects on the integrity of the SAC.

M202.9 Swannington Update Common SSSI is 0.96km from the site boundary. The SSSI citation states that the variations in soils and wetness and a variable topography on the site have provided conditions for the development of an exceptionally wide range of semi-natural vegetation including dry acidic heathland, wet heathland with acidic flushes, fen, birch and alder woodland, scrub, bracken, rough grassland and ponds. The proposed extraction site would be worked dry (above the water table) and is located up-gradient of the SSSI. Therefore, the SSSI would not be adversely affected.

M202.10 Alderford Common SSSI is 1.73km from the site boundary. The SSSI citation states that the site supports a wide range of habitats developed in response to variations in soils and topography. The habitats include species-rich chalk grassland, scrub, woodland, bracken heath, marshy grassland and ponds. There is also a bat roost and an outstanding assemblage of breeding birds. The proposed extraction site would be worked dry (above the water table) and is located up-gradient of the SSSI. Therefore, the SSSI would not be adversely affected.

M202.11 County Wildlife Site CWS 1344 'Triumph and Foxburrow Plantations' is partially within the site; it is a mixed broad-leaved woodland with rides. Therefore, mineral extraction within this site would lead to a loss of part of this CWS. CWS 2176 'Marriott's Way' is 50m from the site boundary; it follows a disused railway line with an unvegetated central track. Trees and scrub are the dominant vegetation of the track edges, forming an almost continuous corridor as far as Reepham. The site would be worked dry (above the water table) and therefore no adverse effects on the hydrology of the CWSs are expected. A potential impact could be dust deposition from extraction, if uncontrolled. Therefore, a dust assessment and identification of appropriate mitigation measures will be required as part of the planning application process, to ensure that the CWSs are not adversely affected.

M202.12 The nearest ancient woodland site is Mileplain Plantation, which is a Plantation on Ancient Woodland Site (PAWS) and is adjacent to the site boundary and in some places is within the site boundary. Ancient woodlands are irreplaceable habitats and therefore the proposed mineral

extraction must not result in the loss or deterioration of the ancient woodland. The working area of the site would therefore need to be set back from the ancient woodland by at least 15-metres to provide a buffer zone. The buffer zone should be planted with native tree species. The site would be worked dry (above the water table) and therefore no adverse effects on the hydrology of the PAWS are expected. A potential impact could be dust deposition from extraction, if uncontrolled. Therefore, an Arboricultural Impact Assessment and a dust assessment, including the identification of appropriate mitigation measures, will be required as part of the planning application process, to ensure that the PAWs is not adversely affected.

M202.13 Geodiversity: The site consists of the Sheringham Cliffs formation - sand and gravel, overlying Wroxham Crag. There is significant potential for vertebrate fossils within the Wroxham Crag. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M202.14 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low probability of surface water flooding, with small areas of surface water pooling in a 1 in 1000 year rainfall event. Sand and gravel extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M202.15 Hydrogeology: The site is located over a Secondary A aquifer (superficial deposits) and a principal aquifer (bedrock). The is within groundwater Source Protection Zone 3. The site would be worked dry (above the water table) and therefore no effect on water resources is expected.

M202.16 Water Framework Directive: The site is approximately 1.2km from Swannington Beck and 1.1km from the River Wensum (Wensum US Norwich) which are the nearest Water Framework Directive waterbodies. The groundwater level in this area is many metres below ground level and therefore overland flows are not expected from the site towards Swannington Beck or the River Wensum. If mineral is extracted from MIN 202 it is expected to be processed on site, therefore the sand and gravel to be processed would not be transported across these watercourses. Due to the distance of the site from Swannington Beck and the River Wensum, it is not expected that there would be a pathway for silt ingress into these waterbodies from any future sand and gravel extraction within site MIN 202.

M202.17 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M202.18 Safeguarding aerodromes: The site is within the zone where Norwich Airport must be consulted on developments with the potential to increase the number of birds and the 'bird strike' risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

M202.19 Restoration: The site is proposed to be restored to heathland. The depth of working will need to take into account how a suitable landform and habitat can be created on restoration. However, the estimated mineral resource at the site (of 2,200,000 tonnes) is based on a deep extraction. Even with the importation of materials, it would be very difficult to restore the proposed mineral working to a suitable landform. A more reasonable extraction depth would reduce the available mineral resource but would make the restoration of the site to a suitable landform easier.

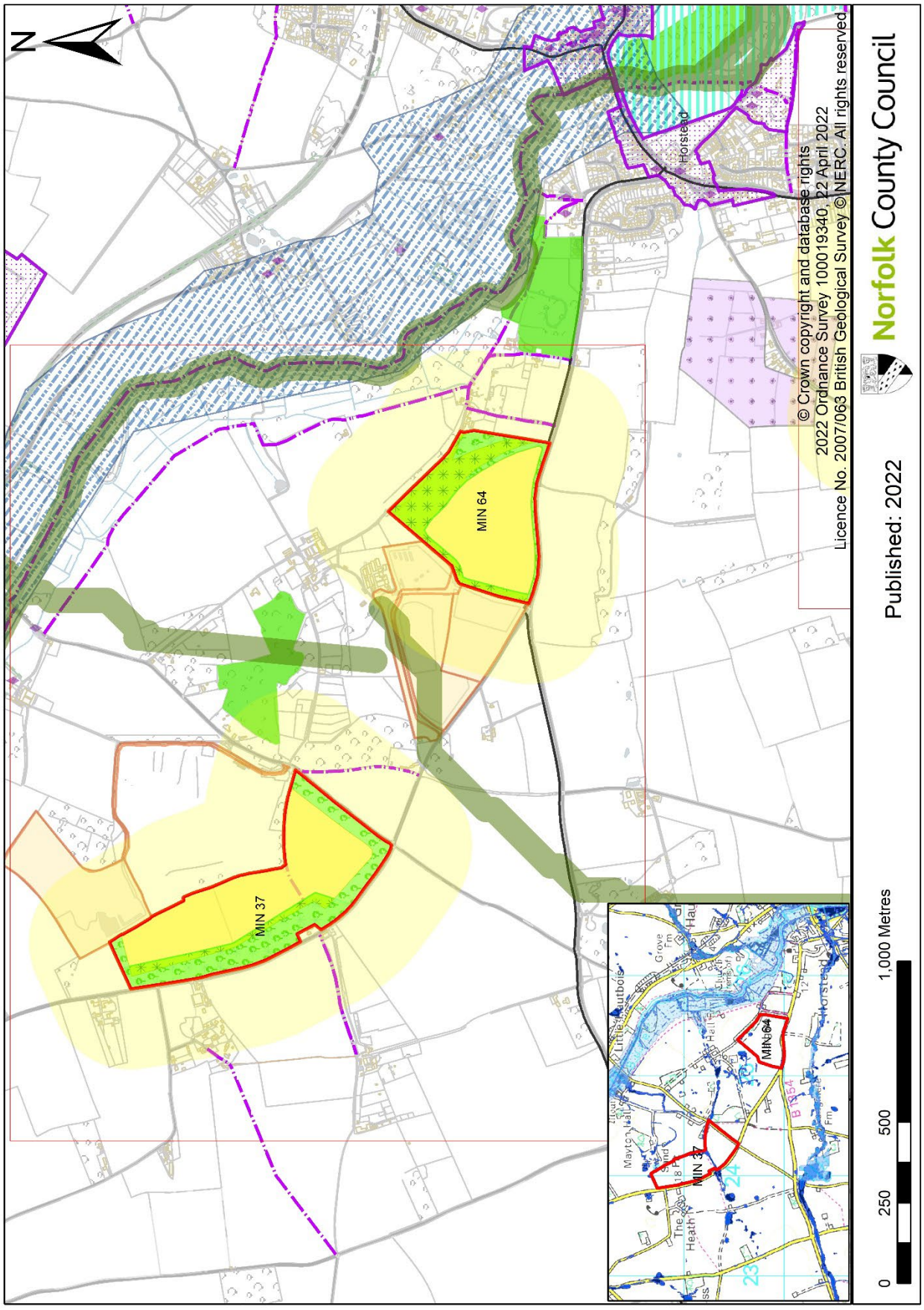
M202.20 Conclusion: Site MIN 202 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 202.

Specific Site Allocation Policy MIN 202 (land south of Reepham Road, Attlebridge):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and meeting all the following requirements:

a. The submission of an acceptable Landscape and Visual Impact Assessment which identifies any potential impacts to the wider landscape and suggests appropriate mitigation measures;
b. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
c. The submission of an acceptable Arboricultural Impact Assessment to identify the impact of the development on existing trees and identify appropriate mitigation measures if required;
d. A minimum of a 15-metre buffer to be left unworked adjacent to the ancient woodland and planted with native woodland species as part of the site restoration;
e. The submission of an acceptable progressive restoration scheme to heathland to provide landscape and biodiversity net gains;
f. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
g. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary;
h. The submission of an acceptable Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required;
i. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures; and
j. Use of the existing sites access onto the C261 Reepham Road and lorry routing via the A1270 Broadland Northway.

Map of proposed sites MIN 37 (Frettenham and Buxton) and MIN 64 (Horstead)



MIN 37 - land east of Coltishall Road, Buxton

Site Characteristics

- The 23.5 hectare site is within the parishes of Frettenham and Buxton with Lammas.
- The estimated sand and gravel resource at the site is 1,450,000 tonnes.
- Planning permission (FUL/2019/0043) was granted for mineral extraction at this site in June 2021 but had not been implemented by December 2021.
- The potential start date for the site is 2022 and the proposer of the site has estimated the extraction rate to be 100,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted in just under fifteen years, which would be within the plan period.
- The site is proposed by Mick George Ltd (Frimstone) as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 3.
- The site is 6.2km from Aylsham and 8.9km from North Walsham, which are the nearest towns. The site is 7.2km from the Norwich urban area

A reduced extraction area has been proposed of 17.36 hectares. This would provide a standoff area for the dwellings along the Coltishall Road.

M37.1 Amenity: The nearest residential property is 15m from the site boundary. There are 20 sensitive receptors within 250m of the site boundary and five of these are within 100m of the site boundary. The settlement of Buxton is 1.1km away. However, the proposed extraction area is set back from Coltishall Road and the nearest residential property is 96m from the extraction area. There are 13 sensitive receptors within 250m of the proposed extraction area (two of these are within 100m of the proposed extraction area). Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M37.2 Highway access: The site would use a new temporary access, joining the C494 Coltishall Road near the junction with Sandy Lane and then onto the B1354 which is designated as a main distributor route in the route hierarchy. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of two-way HGV movements is 40 per day. The proposed highway access using Coltishall Road is considered to be suitable by the Highway Authority.

M37.3 Historic environment: The historic landscape character of the site is agriculture with 18th to 19th Century piecemeal enclosure. The site is within a wider historic landscape character of 20th century agriculture with enclosure, boundary loss, and boundary loss with a relict element. The wider historic landscape character also includes agriculture with 18th to 19th century piecemeal enclosure, enclosed wetland meadow, mineral extraction, leisure/recreation, and 18th to 20th century plantation woodland.

M37.4 The nearest Listed Building is the Grade II Mayton Hall which is 870m away. There are 35 Listed Buildings within 2km of the site. There are 3 Scheduled Monuments within 2km of the site; Mayton Bridge is 0.92km away, Great Hautbois old Church is 1.63km away and the 'Roman camp and Settlement site West of Horstead' is 1.71km away. RAF Coltishall Conservation Area is 1.67km from the site. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M37.5 Archaeology: There are no Historic Environment records within the site boundary, however this may just be due to a lack of investigations. The site is in a wider landscape with a significant number of finds and features from multiple periods, including Bronze Age features and a post-

medieval fairground and market. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M37.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site comprises gently undulating arable land. The site is within the landscape character area described as 'Bure River Valley' in the Broadland Landscape Character Assessment. The site lies within a wider arable plateau above the River Bure. There is a restored landfill site to the east and an active mineral working to the north east.

M37.7 The site lies approximately 0.75km from the edge of Buxton village to the north, but is immediately opposite five isolated properties which lie along Buxton Road. The site would be difficult to screen from upstairs views from these properties, without a suitable standoff area incorporating advanced planting. Screening should take the form of tree belts with hedgerows closest to the boundaries of the site. This screening has the potential to provide a long term landscape gain by mitigating the differences in landform between the domed landfill and the mineral allocation. Any screening should make use of native species wherever possible; as an overuse of conifers in the landscape would be intrusive in its own right.

M37.8 There is a Public Right of Way crossing the site (Frettenham FP2).

M37.9 Ecology: The site is 4.23km from Crostwick Marsh SSSI, which is part of the Broads SAC, Broadland SPA and Ramsar site. It is outside the Impact Risk Zone for this SSSI, therefore no impacts on this site are expected.

M37.10 There are no SSSIs within 4km of the site boundary and the site is not within the Impact Risk Zone for any SSSI. Therefore, no impacts on SSSIs are expected.

M37.11 The nearest County Wildlife Site is CWS 1411 'Disused Gravel Pit' which is 90m from the site boundary. The CWS includes areas of broadleaved semi-natural woodland, acid grassland, scrub and sparsely vegetated bare mineral soils. The potential exists for impacts from mineral extraction at MIN 37, if uncontrolled. An assessment of potential impacts, including from dust deposition, together with appropriate mitigation would be required as part of any planning application.

M37.12 The nearest ancient woodland site is Clamp Wood which is a Plantation on Ancient Woodland Site (PAWS) and Ancient Semi-Natural Woodland (ASNW); it is 2.25km from the site boundary. Due to the distance from the ancient woodland site there would be no impacts from dust deposition. Due to the distance from the ancient woodland there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the ancient woodland would not be adversely affected.

M37.13 Geodiversity: The site consists of the Happisburgh glacigenic formation-sand and gravel, overlying Wroxham Crag-sand and gravel. There is significant potential for vertebrate fossils within the Wroxham Crag. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during the operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M37.14 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low risk of surface water flooding, with a two locations of surface water pooling in a 1 in 30 rainfall event. In a 1 in 1000 year rainfall event there is a surface water flow path across the widest part of the site west-east. Sand and gravel extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M37.15 Hydrogeology: The site is partially located over a Secondary B aquifer (superficial deposits) and a principal aquifer (bedrock). However, there are no groundwater Source Protection

Zones within the proposed site. The proposed extraction site would be worked dry (above the water table) and therefore no effect on water resources is expected.

M37.16 Water Framework Directive: The site is approximately 1km from the River Bure which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the River Bure. MIN 37 and the existing adjacent processing plant, which the sand and gravel would be transported to by internal haul route, are both a considerable distance west of the River Bure. Therefore, the sand and gravel to be processed would not be transported across this waterbody. Due to the distance of the site from the River Bure, it is not expected that there would be a pathway for silt ingress into this waterbody from any future sand and gravel extraction within site MIN 37.

M37.17 Utilities infrastructure: There are no Anglian Water sewerage assets within the site. There is a water main within the site and Anglian Water would require the standard protected easement widths for the water main and for any requests for alteration or removal to be conducted in accordance with the Water Industry Act 1991. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M37.18 Safeguarding aerodromes: The site is within the zone where Norwich Airport must be consulted on developments with the potential to increase the number of birds and the 'bird strike' risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

M37.19 Restoration: The restoration proposal is for a low-level restoration with some inert fill to provide an acceptable landform. The site would be restored to a mix of agricultural land, grassland, and some woodland. The proposer of the site has indicated that there may be the possibility of some enhanced public access to the site, as part of the restoration.

M37.20 Conclusion: Site MIN 37 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 37.

Specific Site Allocation Policy MIN 37 (land east of Coltishall Road, Buxton):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and meeting all the following requirements:

a. The submission of an acceptable Landscape and Visual Impact Assessment which will identify any potential impacts to the wider landscape and suggest appropriate mitigation measures; particularly regarding views from the five properties along the Buxton Road, the PROW, surrounding roads and protection of the setting of nearby listed buildings. The mitigation measures should include a combination of advance planting with native species and bunds;
b. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
c. The submission of an acceptable Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required;
d. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
e. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary;
f. The site will need to be phased with the adjacent permitted site so that only one site is worked for extraction at a time in accordance with a phased and progressive working and restoration scheme;
g. A sufficient stand-off distance around the water main that crosses the site or diversion of the water main at the developers costs and to the satisfaction of Anglian Water;
h. The submission of an acceptable scheme of working, including progressive restoration to a lower level with final restoration to provide biodiversity net gains and to mitigate landscape impacts, preferably by retention of the planting and creation of acid grassland;
i. Restoration of the extraction void to use the importation of inert materials only;
j. The depth of the extraction must be limited, to ensure that the extraction is worked dry, above the maximum level of the groundwater. A Hydrogeological Impact Assessment would be required to establish the maximum depth of working;
k. The provision of opportunities during working for any geodiversity assets to be studied and if compatible with the landscape and ecology objectives, an open face to be included within an restoration scheme for future scientific study; and
l. A new temporary access to be provided onto C494 Coltishall Road, and contributions to any highway improvements which would be required by the Highway Authority to ensure highway safety; and a routing agreement to ensure the site access onto the C474 Coltishall Road is then via the B1354 onto the A140.

MIN 64 - land at Grange Farm, Buxton Road, Horstead

Site Characteristics

- The 16.76 hectares site is within the parish of Horstead with Stanninghall
- The estimated sand and gravel resource at the site is 650,000 tonnes
- Planning permission (FUL/2020/0045) was granted for mineral extraction at this site in May 2021 but had not been implemented by December 2021.
- The potential start date for the site is 2022 and the proposer of the site has estimated the extraction rate to be 50,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within 13 years, which would be within the plan period.
- The site is proposed by Longwater Gravel Co Ltd as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 3
- The site is 7.9km from Aylsham and 9.3km from North Walsham, which are the nearest towns. The site is 6.9km from the Norwich urban area

A reduced extraction area of 10.2 hectares has been proposed. This provides a standoff from the properties to the NE of the site.

M64.1 Amenity: The nearest residential property is 61m from the site boundary. There are five sensitive receptors within 250m of the site boundary and four of these are within 100m of the site boundary. The settlement of Horstead is 453m away. The standoffs proposed for the reduced extraction area, mean that the nearest residential property is 182m from the extraction area, although there are still five residential properties within 250m. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M64.2 Highway access: The site would use the existing access route from the adjacent site onto the B1354 which is designated as a main distributor route in the route hierarchy, and then onto the A140. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 6 per day. The current working is limited by condition within its planning permission to a maximum extraction volume of 50,000 tonnes per annum and this would continue. A highway routing agreement would be required. The proposed highway access is considered to be suitable by the Highway Authority.

M64.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with enclosure. The site is within a wider historic landscape character of 20th century agriculture with enclosure and boundary loss, agriculture with 18th to 19th century piecemeal enclosure, and drained enclosed rectilinear grazing marsh (17th to 20th century enclosure). The wider historic landscape character also includes enclosed wetland meadow, mineral extraction, informal parkland, leisure/recreation, and 18th to 20th century plantation woodland.

M64.4 The nearest Listed Buildings is the Grade II* Church of St Theobald (which is also a Scheduled Monument) and is 580m away. There are 46 Listed Buildings within 2km of the site. 22 of these are within Coltishall and Horstead Conservation Area which is 850m from the site. RAF Coltishall Conservation Area is 1.29km from the site. The nearest Scheduled Monument is the 'Roman camp and settlement site west of Horstead' which is 460m away. There are 3 Scheduled Monuments within 2km of the site. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M64.5 Archaeology: The site is located within an area of interest, and there are Historic Environment records of isolated multi period finds and features including a probable bronze age barrow, within the site boundary. The site is close to the boundary of the historic parkland associated with Horstead Hall and is in a wider landscape with a significant number of finds and features from multiple periods. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M64.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site is a large flat arable field. The site is within the landscape character area described as 'Bure River Valley' in the Broadland Landscape Character Assessment. The site adjoins a permitted area of mineral working and lies within a wider area of arable farmland.

M64.7 A scheme of working has been proposed, which shows field boundary hedgerows and trees, and it would be important that any planting reinforces and enhances the existing hedgerows, so that they provide some mitigation to the soil storage bunds which could otherwise be intrusive in their own right. An area of woodland trees is proposed to be planted at the north-eastern end of the site to mitigate any landscape and amenity impacts to Largate Farm and the users of the PROW. It would be important that this planting takes place a sufficient period in advance of mineral operations to provide mitigation. Any agricultural land within a restoration scheme should incorporate wide field margins and the retention of the screen planting to provide long term landscape and biodiversity benefits.

M64.8 There are no Public Rights of Way within the site. There is a PRoW (Horstead with Stanninghall BR3) close to the eastern boundary of the site.

M64.9 Ecology: The site is 3.39km from Crostwick Marsh SSSI, which is part of The Broads SAC, Broadland SPA and Ramsar site. It is outside the Impact Risk Zone for this SSSI, therefore no impacts on this site are expected.

M64.10 There are no SSSIs within 3km of the site boundary and the site is not within the Impact Risk Zone for any SSSI. Therefore, no impacts on SSSIs are expected.

M64.11 County Wildlife Site CWS 1409 'Land adj. All Saint's Church' is 270m from the site boundary; it is a semi-improved neutral-acidic grassland with a diversity of forb species (herbaceous flowering plants) with a central oak and sycamore woodland. The proposed extraction site would be worked dry (above the water table), therefore, due to this distance, no impacts on this CWS are expected.

M64.12 CWS 1411 'Disused Gravel Pit' is 400m from the site boundary; it includes areas of broadleaved semi-natural woodland, acid grassland, scrub and sparsely vegetated bare mineral soils. The proposed extraction site would be worked dry (above the water table), therefore due to this distance, no impacts on this CWS are expected.

M64.13 The nearest ancient woodland site is Clamp Wood which is an Ancient Semi-Natural Woodland (ASNW) and Plantation on Ancient Woodland Site (PAWS); it is 1.6km from the site boundary. Due to the distance from the ancient woodland there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the ancient woodland would not be adversely affected.

M64.14 Geodiversity: The site consists of Head deposits - clay, silt and gravel, which are priority features due to their method of formation; Happisburgh glacigenic formation - sand and gravel, overlying Wroxham Crag - sand and gravel. There is significant potential for vertebrate fossils within the Wroxham Crag. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during the operational stages, and ideally after restoration, and have

a ‘watching brief’ during the extraction phase in case features of potential geodiversity interest are uncovered.

M64.15 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low risk of surface water flooding, with one location of surface water pooling in a 1 in 30-year rainfall event which extends in both the 1 in 1000 and 1 in 1000-year rainfall event. There are and two additional locations of surface water pooling in a 1 in 1000-year rainfall event. Sand and gravel extraction is considered to be a ‘water compatible’ land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M64.16 Hydrogeology: The site is partially located over a Secondary A aquifer (superficial deposits) and a principal aquifer (bedrock). The site is within groundwater Source Protection Zone 3. A planning application for mineral extraction at this site would need to include a Hydrogeological Impact Assessment to identify any potential impacts to groundwater and appropriate mitigation measures.

M64.17 Water Framework Directive: The site is approximately 200 metres from the River Bure which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the River Bure. MIN 64 and the existing adjacent processing plant, which the sand and gravel would be transported to by internal haul route, are both some distance west of the River Bure. Therefore, the sand and gravel to be processed would not be transported across this waterbody. Due to the distance of the site from the River Bure, it is not expected that there would be a pathway for silt ingress into this waterbody from any future sand and gravel extraction within site MIN 64.

M64.18 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M64.19 Safeguarding aerodromes: The site is within the zone where Norwich Airport must be consulted on developments with the potential to increase the number of birds and the ‘bird strike’ risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

M64.20 Restoration: The restoration proposal is for a low-level restoration scheme, mainly to arable agriculture with the retention of boundary hedges and the retention of woodland planting in the north-eastern part of the site. The addition of wide field margins, hedgerow formation and tree planting would provide appropriate landscape and biodiversity gains.

M64.21 Conclusion: Site MIN 64 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 64.

Specific Site Allocation Policy MIN 64 (land at Grange Farm, Buxton Road, Horstead):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and meeting all the following requirements:

a. A limit on the total annual extraction volume to a maximum of 50,000 tonnes per annum;
b. The submission of an acceptable Landscape and Visual Impact Assessment which will identify any potential impacts to the wider landscape and suggest appropriate mitigation measures, particularly regarding views from nearby properties and surrounding roads. The mitigation measures should include a combination of advance planting of boundary hedges and woodland planting with native species;
c. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
d. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including Grade II* Listed All Saints Church, Scheduled Monument Great Hautbois Old Church, Grade II* Listed Church of St Theobald and the Scheduled Monument of Roman Camp and Settlement site West of Horstead), assess the potential for impacts and identify appropriate mitigation measures if required;
e. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
f. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary;
g. The depth of the extraction must be limited, to ensure that the extraction is worked dry, above the maximum level of the groundwater. The findings of a Hydrogeological Impact Assessment would be required to establish the maximum depth of working;
h. The provision of opportunities during working for any geodiversity assets to be studied, and if compatible with the landscape and ecology objectives, an open face to be included within any restoration scheme for future scientific study;
i. The site will need to be phased with the adjacent permitted site so that only one site is worked for extraction at a time in accordance with a phased and progressive working and restoration scheme.
j. The submission of an acceptable restoration scheme to arable with wide field margins which incorporates the retention of screen planting (boundary hedges, trees and woodland) to provide landscape and biodiversity net gains; and
k. Contributions to any highway improvements which would be required by the Highway Authority to ensure highway safety, and a routing agreement to ensure the continued use of the existing access route onto the C474 Coltishall Road, then via the B1354 onto the A140.

MIN 65 - land north of Stanninghall Quarry

Site Characteristics

- The 52.48 hectare site is within the parish of Horstead with Stanninghall
- The estimated sand and gravel resource at the site is 3,745,000 tonnes
- Planning permission was granted for mineral extraction at this site in August 2021.
- The proposer of the site has given a potential start date of 2024 and estimated the extraction rate to be 300,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within 13 years, therefore 3,745,000 tonnes would be extracted within the plan period.
- The site is proposed by Tarmac Aggregates Ltd as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being a mixture of grades 2, 3a and 3b.
- The site is 9.1km from Aylsham, which are the nearest town. The site is 5.5km from the Norwich urban area.

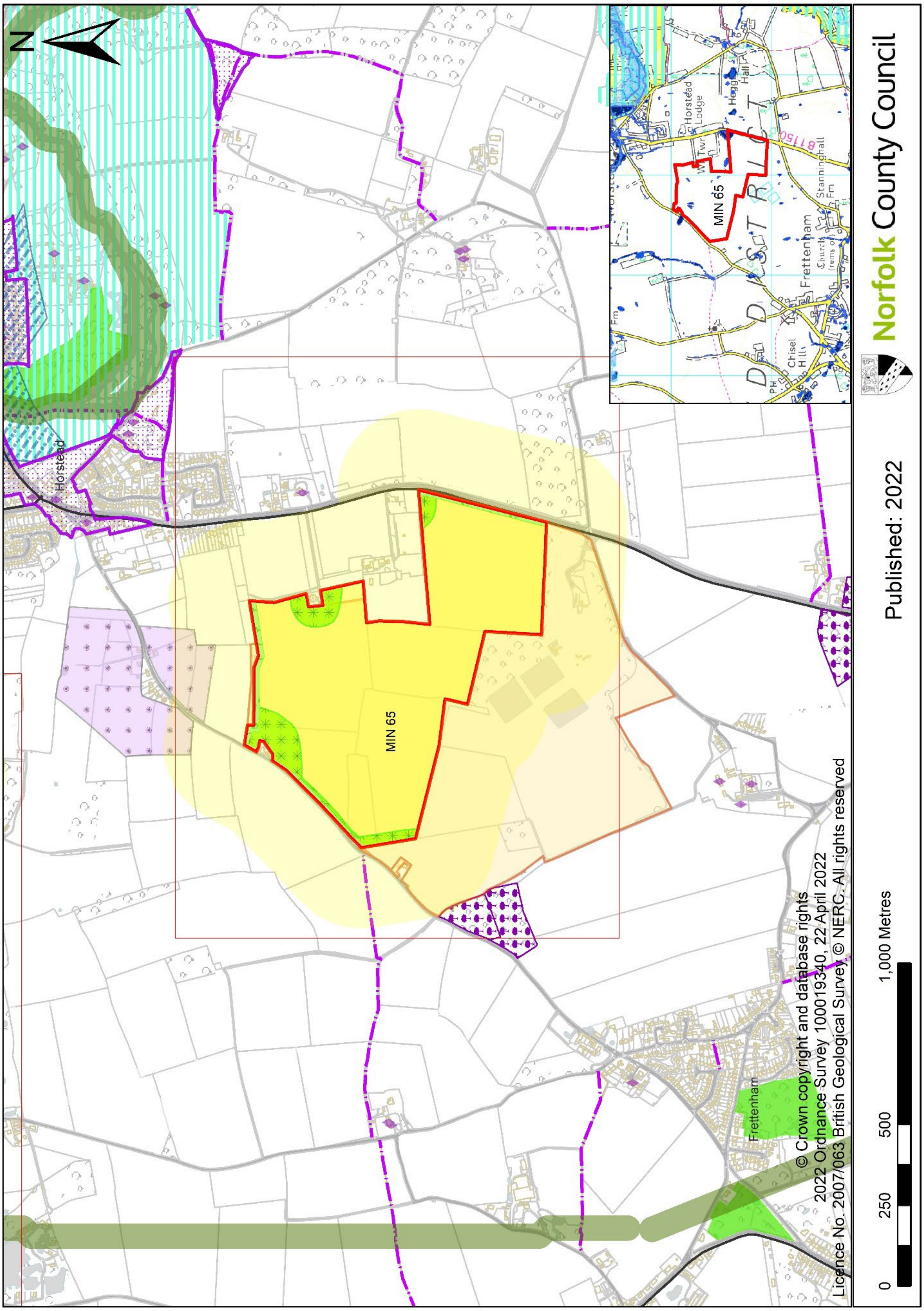
M65.1 Amenity: The nearest residential property is 13m from the site boundary. There are 13 sensitive receptors within 250m of the site boundary and four of these are within 100m of the site boundary. The settlement of Horstead is 239m away. The proposed development scheme would include standoff margins to the three properties located at the perimeter of the site, which would increase the distance of the proposed extraction area from these closest properties. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M65.2 Highway access: The site would use the existing processing plant and site access. The site access is via Quarry Road onto the B1150 Norwich Road, which is a designated lorry route. The site is not within an AQMA. The site is proposed as an extension to an existing site with an extraction rate of up to 300,000 tpa which would lead to an estimated 120 HGV movements of sand and gravel per day (60 in and 60 out). As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period of time. The proposed highway access is considered to be suitable by the Highway Authority.

M65.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with enclosure and agriculture with 18th to 19th century piecemeal enclosure. The site is within a wider historic landscape character of 20th century agriculture with enclosure and boundary loss, agriculture with 18th to 19th century piecemeal enclosure and estate fields. The wider historic landscape character also includes drained enclosed rectilinear grazing marsh (17th to 20th century enclosure), enclosed wetland meadow, informal parkland, and woodland (ancient woodland and 18th to 20th century plantation woodland).

M65.4 The nearest Listed Building is Grade II Horstead Lodge which is 310m away. There are 50 Listed Buildings within 2km of the site, 24 of these are within Coltishall and Horstead Conservation Area which is 380m from the site. The nearest Scheduled Monument is the 'Roman camp and settlement site west of Horstead, which is 140m away. There are 2 Scheduled Monuments within 2km of the site. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M65.5 Archaeology: There are Historic Environment records of multi-period features in the northern part of the site including a probable WW2 military site possibly a training site, within the site boundary. There is a WW2 Royal Observers Corp post on the site boundary. The site is in a wider landscape with a significant number of finds and features from multiple periods, including Roman features including a camp and probable trackway, and a possible settlement. Therefore, there is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MIN 65
Horstead
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Hogg Hall
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the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M65.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The northern boundary of the site is 670 metres from the Broads Authority Executive Area. The site comprises open arable plateau farmland divided by hedgerows with some boundary trees. The site is within the landscape character area described as 'Marsham and Hainford Wooded Estatelands' in the Broadland Landscape Character Assessment. The site lies within a wider area of arable farmland. The land to the south is an operational mineral working. Glimpses of the land can be seen from Frettenham Road to the west through gaps in boundary hedges. Views could also be seen from two properties which lie close to the site perimeter to the west and east respectively. The site is fairly level and it should be possible to design a scheme of working, incorporating screening, which would have an acceptable impact on the wider landscape. The proposal for the site indicates that screening and standoff areas would form part of the working scheme.

M65.7 There are no Public Rights of Way within the site. There is a PRoW (Frettenham BR4) close to the western site boundary at one point.

M65.8 Ecology: The site is 1.4km from Crostwick Marsh SSSI, which is part of The Broads SAC, Broadland SPA and Ramsar site. The SSSI citation states that the site forms an excellent example of unimproved valley meadow and supports a series of intergrading plant communities ranging from damp neutral grassland through species-rich fen grassland to tall fen in the valley bottom. A number of uncommon plants are present and there is additional ornithological interest. The proposed extraction site is in a different hydrological catchment to Crostwick Marsh SSSI and therefore would not adversely affect the hydrology of the designated sites. Due to the distance from the proposed extraction site to the SSSI the designated sites would not be affected by dust deposition and the birds on the designated sites would not be disturbed by noise or lighting from mineral extraction operations. Therefore, no adverse effects are expected on the SSSI, SPA, SAC or Ramsar site.

M65.9 The nearest County Wildlife Site is CWS 1409 'Land adj. All Saint's Church' which is 900m from the site boundary. It is a semi-improved neutral-acidic grassland with a diversity of forb species (herbaceous flowering plants) with a central oak and sycamore woodland. Due to distance, no impacts on County Wildlife Sites are expected.

M65.10 The nearest ancient woodland sites are: Clamp Wood, which is an Ancient Semi-Natural Woodland (ASNW) and Plantation on Ancient Woodland Site (PAWS) and is 0.27km from the site, and Stanninghall Wood which is a PAWS and is 0.89km from the site boundary. Due to the distance from the ancient woodland there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the ancient woodland would not be adversely affected.

M65.11 Geodiversity: This site consists of the Britons Lane sand and gravel member, Happisburgh glacigenic formation - sand and gravel, overlying Wroxham Crag formation - sand and gravel on the west of the site, Wroxham Crag Formation at the surface in the east of the site. There is significant potential for vertebrate fossils within the Wroxham Crag. The Britons Lane sands and gravels are known to contain priority features such as palaesols and erratics in other locations, and therefore they may occur on this site. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M65.12 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low probability of surface water flooding, with a few locations of surface water pooling in a 1 in 1000

year rainfall event. Sand and gravel extraction is considered to be a 'water compatible' land use that is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M65.13 Hydrogeology: The site is partially located over a Secondary B aquifer and a Secondary A aquifer (superficial deposits) and a principal aquifer (bedrock). The site is within groundwater Source Protection Zone 3. A planning application for mineral extraction at this site would need to include a Hydrogeological Impact Assessment to identify any potential impacts to groundwater and appropriate mitigation measures.

M65.14 Water Framework Directive: The site is approximately 700 metres from the River Bure which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the River Bure. The site proposal indicates that the working would not require dewatering, the current permitted site to the south has been worked 'dry'. MIN 65 and the existing adjacent processing plant, which the sand and gravel would be transported to by internal haul route, are both some distance west of the River Bure. Therefore, the sand and gravel to be processed would not be transported across this waterbody. Due to the distance of the site from the River Bure, it is not expected that there would be a pathway for silt ingress into this waterbody from any future sand and gravel extraction within site MIN 65.

M65.15 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure with the site. There are electricity distribution lines running approximately north to south through the site. There are no high-pressure gas pipelines within the site.

M65.16 Safeguarding aerodromes: The site is within the zone where Norwich Airport must be consulted on developments with the potential to increase the number of birds and the 'bird strike' risk to aircraft. Therefore a Bird Hazard Assessment would be required at the planning application stage.

M65.17 Restoration: The site is proposed to be restored to a combination of arable agriculture, grassland and woodland.

M65.18 Conclusion: Site MIN 65 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 65.

Specific Site Allocation Policy MIN 65 (land north of Stanninghall Quarry):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
b. The submission of an acceptable Landscape and Visual Impact Assessment to identify potential impacts and suggest appropriate screening and standoff areas to mitigate any identified impacts to an acceptable level, which will be included in any working scheme;
c. The submission of an acceptable progressive restoration scheme to an arable agriculture afteruse with wide field margins, grassland and woodland to provide landscape and biodiversity net gains;
d. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
e. The submission of an acceptable Hydrogeological Impact Assessment to identify any potential impacts to groundwater and appropriate mitigation measures if required;
f. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including Grade II Listed Horstead Lodge, Coltishall and Horstead Conservation Area and the Listed Buildings located within it, and the Scheduled Monument of 'Roman camp and settlement site west of Horstead'), assess the potential for impacts and identify appropriate mitigation measures if required;
g. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
h. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary;
i. The existing processing plant and highway access to be used; and
j. The site will need to be phased with the adjacent permitted site so that only one site is worked for extraction at a time in accordance with a phased and progressive working and restoration scheme.

MIN 96 - land at Grange Farm (between Spixworth Road and Coltishall Lane), Spixworth

Site Characteristics

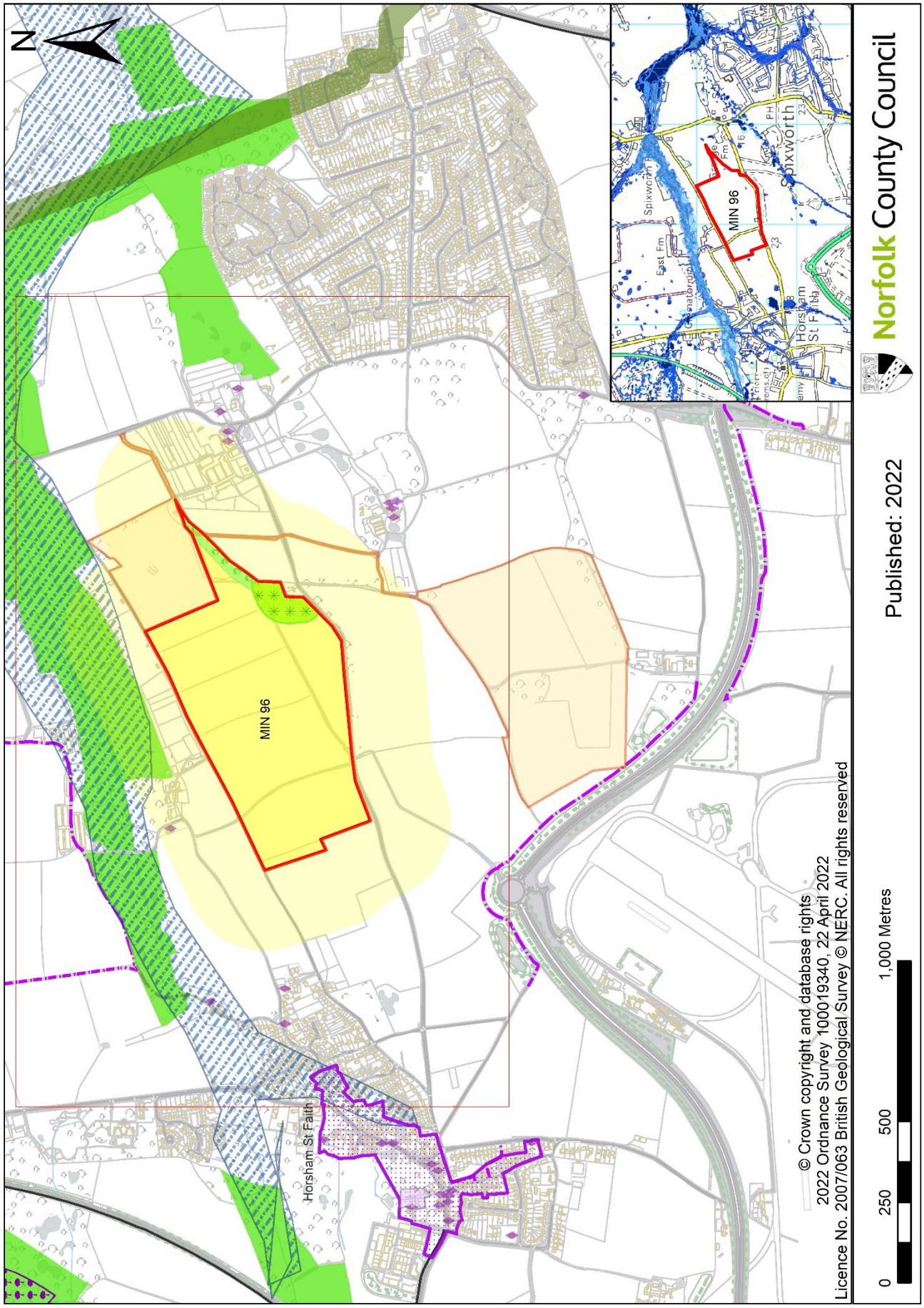
- The 39.03 hectare site is within the parishes of Spixworth, and Horsham St Faith and Newton St Faith
- The estimated sand and gravel resource at the site is 1,600,000 tonnes
- The potential start date of the site is 2023 and the proposer of the site has estimated the extraction rate to be 150,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within eleven years, which would be within the plan period.
- The site is proposed by Tarmac Aggregates Ltd as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 3
- The site is 2km from the Norwich urban area

M96.1 Amenity: The nearest residential property is 21m from the site boundary. There are five sensitive receptors within 250m of the site boundary and two of these are within 100m of the site boundary. A standoff area and screening would therefore be required in order to mitigate potential amenity impacts to the adjacent properties. The settlement of Horsham St Faith is 352m away. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M96.2 Highway access: The site would access the A1270 (Broadland Northway) via the roundabout north of Norwich Airport via a new off-highway haul route. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 60 per day (30 in and 30 out) for the sand and gravel extraction. The site is proposed to be restored by the importation of inert waste (600,000 cubic metres or 1.1 million tonnes per annum over eleven years). The use of inert waste for restoration would produce estimated additional 48 HGV movements (24 in and 24 out) per day. The proposed highway access is considered to be suitable by the Highway Authority subject to improvements to the roundabout to formalise access to the site, the removal of the existing HGV access at Buxton Road and relocation of the existing processing plant to the south of C250 Church Lane.

M96.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with boundary loss and agriculture with 18th to 19th Century piecemeal enclosure. The site is within a wider historic landscape character of 20th century agriculture with boundary loss and enclosure, and agriculture with 18th to 19th century piecemeal enclosure. The wider historic landscape character also includes Norwich Airport, industry, enclosed wetland meadow, informal parkland and 18th to 20th century plantation woodland.

M96.4 The nearest Listed Buildings are Grade II Meadow Farmhouse (210m away), Grade II Barn at Grange Farm (240m away), Grade II Grange Farmhouse (260m away) and Grade I Church of St Peter (300m away). There are 29 Listed Buildings within 2km of the site. 11 of these are within Horsham St Faiths Conservation Area, which is 650m from the site. The only Scheduled Monument within 2km of the site is 'St Faith Priory, which is 1.08km away. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.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M96.5 Archaeology: The site is located within an area of interest, and there are Historic Environment records of multi period finds, within the site boundary, and a possible medieval trackway crossing the site. The site is close to the boundary of the historic parkland associated with Spixworth Hall, and is in a wider landscape with a very significant number of finds and features from multiple periods. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M96.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site comprises arable land on gently undulating land above the valley of Crostwick Beck. It is divided by hedgerows with small field size in the east with many hedgerow trees. Field size increases to the west with fewer hedgerow trees. The western part of the site is bisected by Marketfield Lane a road used as a public path. The site is within the landscape character area described as 'Spixworth Wooded Estatelands' in the Broadland Landscape Character Assessment.

M96.7 The site forms part of a wider area of gently undulating arable land with the pasture lands of the valley of the Crostwick Beck to the north and the former parkland at Spixworth to the south. The NDR (Broadland Northway) runs approximately 500m to the southeast. The site is adjacent to an existing aggregate processing plant. The site lies approximately 0.5km from the edge of Spixworth and 0.6km from the edge of Horsham St Faiths. Working the eastern part of the site may also affect the setting of Spixworth church and the complex of properties around Grange Farm. Two semi-detached cottages also lie close to the southern boundary of the site, and a standoff area and screening would be required in order to mitigate potential amenity impacts. The site is a large area, however, and it is accepted that it may be possible to work parts of the site, with suitable screening without an unacceptable impact on either the wider landscape or views from property.

M96.8 There are no Public Rights of Way within or adjacent to the site.

M96.9 Ecology: The site is 2.22km from Crostwick Marsh SSSI, which is part of The Broads SAC, Broadland SPA and Ramsar site. The SSSI citation states that the site forms an excellent example of unimproved valley meadow and supports a series of intergrading plant communities ranging from damp neutral grassland through species-rich fen grassland to tall fen in the valley bottom. A number of uncommon plants are present and there is additional ornithological interest. The proposed extraction site is located up-gradient of the SSSI and therefore would not adversely affect the hydrology of the SSSI. Extraction is expected to take place at the same rate as the existing mineral working so there would not be an increase in traffic movements. Due to the distance from the SSSI dust emissions could be satisfactorily controlled to ensure that the SSSI is not affected by dust deposition. Due to the distance of the site from the SSSI noise and lighting would not disturb the birds on the SSSI. Therefore, no adverse effects are expected on the SSSI, SAC, SPA or Ramsar site.

M96.10 County Wildlife Site CWS 2205 'Spixworth Bridge Meadows' is 90m from the site boundary. It is a large area of mixed grassland, some very species rich, and there are many wet, damp and dry ditches. The CWS is in a valley with Spixworth Beck running though. The site is expected to be worked dry (above the water table), therefore adverse impacts to hydrology are not expected. A potential impact could be dust deposition from extraction, if uncontrolled. Therefore, a dust assessment and identification of appropriate mitigation measures will be required as part of the planning application process, to ensure that the CWS is not adversely affected.

M96.11 CWS 1396 'Spixworth Meadows' is 480m from the site boundary. The CWS contains three shallow valleys leading to a tributary of the River Bure. The majority is damp, species-poor, semi-improved grassland with areas divided by wet mesotrophic ditches which have a more diverse flora. The meadows are grazed. The site is expected to be worked dry (above the water table), therefore adverse impacts to hydrology are not expected. Due to this distance, no other impacts on this CWS are expected.

M96.12 The nearest ancient woodland site is The Wilderness, which is a Plantation on Ancient Woodland Site (PAWS) and is 1.47km from the site boundary. Due to this distance, no impacts on this PAWS are expected.

M96.13 Geodiversity: The site consists of the Sheringham Cliffs formation - sand and gravel, and Happisburgh glacigenic formation - sand and gravel. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M96.14 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low probability of surface water flooding, with two very small locations of surface water pooling in a 1 in 1000 year rainfall event. Sand and gravel extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M96.15 Hydrogeology: The site is not located over any superficial deposit aquifers. The site is located over a principal aquifer (bedrock). However, there are no groundwater Source Protection Zones within the proposed site.

M96.16 Water Framework Directive: The site is approximately 200 metres from the Spixworth Beck which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the Spixworth Beck. MIN 96 and the existing adjacent processing plant, which the sand and gravel would be transported to by internal haul route, are both some distance south of the Spixworth Beck. Therefore, the sand and gravel to be processed would not be transported across this waterbody. Due to the distance of the site from the Spixworth Beck, it is not expected that there would be a pathway for silt ingress into this waterbody from any future sand and gravel extraction within site MIN 96.

M96.17 Utilities infrastructure: There is an Anglian Water foul sewer which crosses the site as well as foul sewers and a pumping station adjacent to the site boundaries. There are no water assets within the site. Anglian Water would require the standard protected easement widths for the sewers and for any requests for alteration or removal to be conducted in accordance with the Water Industry Act 1991. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M96.18 Safeguarding aerodromes: The site is within the zone where Norwich Airport must be consulted on all development, including developments with the potential to increase the number of birds and the 'bird strike' risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

M96.19 Restoration: The site proposal does not contain any details regarding restoration. A restoration to agriculture with wide field margins, hedgerow formation and some woodland planting would provide biodiversity and landscape gains. The restoration scheme should seek to retain screen planting. It is recognised that in order to achieve a suitable landform, the importation of inert material is likely to be required and the proposal is for 600,000 cubic metres (1.1 million tonnes) of inert waste material to be used in the site restoration.

M96.20 Conclusion: Site MIN 96 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 96.

Specific Site Allocation Policy MIN 96 (land at Grange Farm, Spixworth):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of an acceptable Landscape and Visual Impact Assessment which will identify any potential impacts on the wider landscape and suggest appropriate mitigation measures, particularly regarding views from the nearby properties, Marketfield Lane, and surrounding roads, and provide protection of the setting of nearby listed buildings;
b. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts, including a standoff area and screening for properties 1 and 2 Church Lane;
c. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including the Grade II Listed Grange Farm House, Grade II Listed Barn at Grange Farm, Grade II Listed Meadow Farmhouse, Grade I Listed Church of St Peter, Grade I Listed Church of the Blessed Virgin and St Andrew, the Schedule and Grade I Listed St Faiths Priory, and the Horsham St Faiths Conservation Area), assess the potential for impacts and identify appropriate mitigation measures if required;
d. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
e. The site will need to be phased with the adjacent permitted site so that only one site is worked for extraction at a time in accordance with a phased and progressive working and restoration scheme;
f. The depth of the extraction must be limited, to ensure that the extraction is worked dry, above the maximum level of the groundwater;
g. The submission of an acceptable scheme of phased working and progressive restoration including the direction of working (to assist in the mitigation of amenity impacts), and landscaping;
h. Submission of an acceptable progressive restoration scheme to agriculture with wide field margins, hedgerow formation and some woodland planting to provide landscape and biodiversity net gains;
i. Restoration of the extraction void to use the importation of inert materials only;
j. The provision of opportunities during working for any geodiversity assets to be studied, and if compatible with the landscape and ecology objectives, an open face to be included within any restoration scheme for future scientific study;
k. A sufficient stand-off distance around the rising foul sewer that crosses the site or diversion of the sewer at the developer's cost and to the satisfaction of Anglian Water;
l. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary;
m. The submission of an acceptable Transport Assessment or Statement (as appropriate) to assess the impacts of HGV traffic along the access route, and appropriate mitigation for any potential impacts to the highway;
n. Highway access to be via A1270 Broadland Northway roundabout at Norwich Airport; improvements will be required at the roundabout to formalise access to the site; and
o. The removal of the HGV access at Buxton Road and relocation of the processing plant to south of C250 Church Lane.

King's Lynn and West Norfolk sites

MIN 6 - land off East Winch Road, Mill Drove, Middleton

Site Characteristics

- The 10.25 hectare site is within the parish of Middleton
- The estimated carstone resource at the site is 1,416,000 tonnes
- The proposer of the site has given a potential start date of 2025 and estimated the extraction rate to be 80,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within eighteen years, therefore, approximately 1,120,000 tonnes of carstone could be extracted within the plan period.
- The site is proposed by Middleton Aggregates Ltd as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 4.
- The site is 4.8km from King's Lynn, which is the nearest town.

Carstone is the only hard rock which occurs in Norfolk and the deposits are limited to a narrow band which runs north-south just to the east of King's Lynn. The quality of the deposit varies with the highest quality being used as a building stone in the vernacular architecture of the northwest part of Norfolk. However, the majority of the carstone deposit, including this site, is unsuitable for use as a building stone and is used in construction for engineering fill.

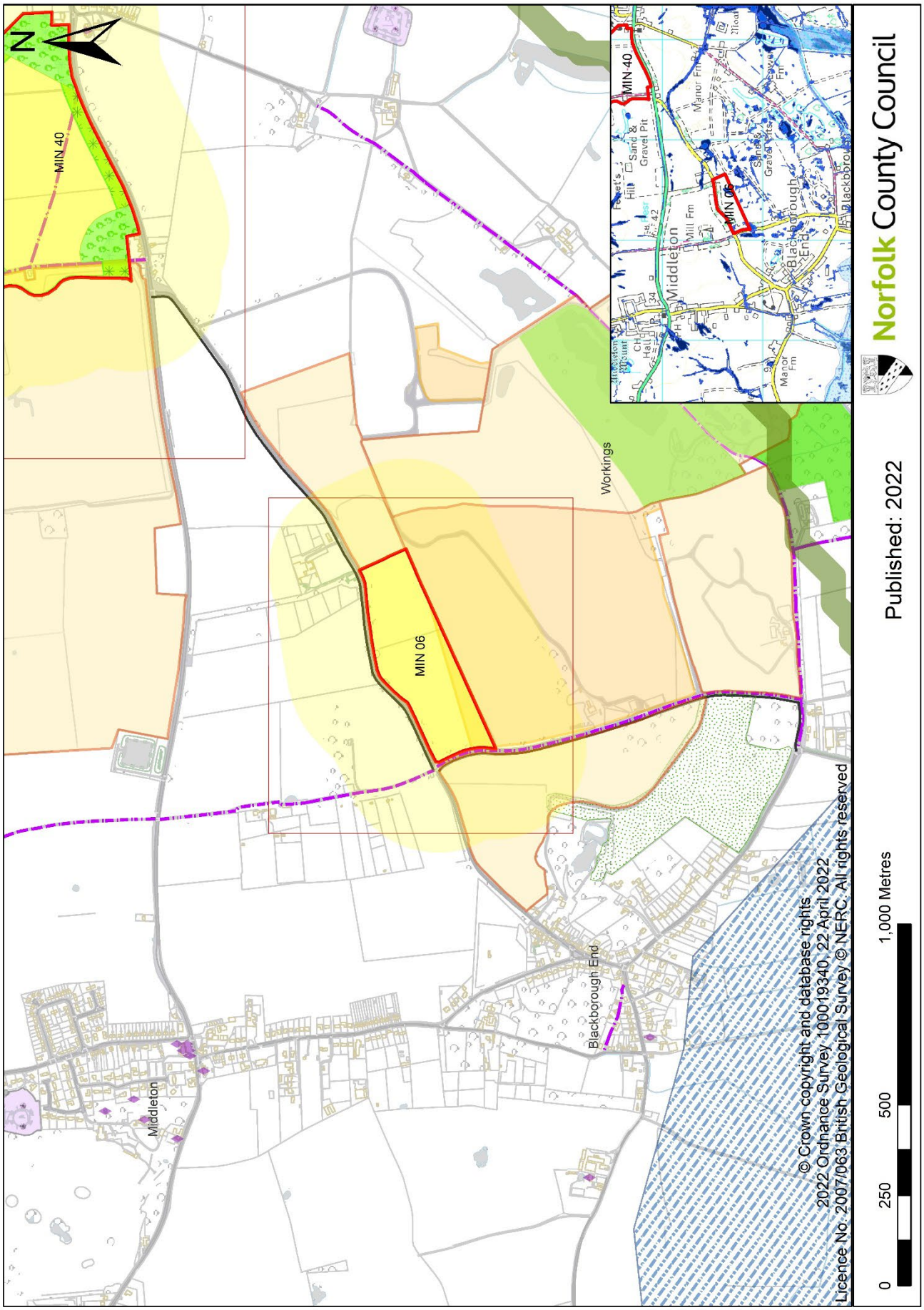
M6.1 Amenity: The nearest residential property is 480m from the site boundary. The settlement of Blackborough End is 481m away. Even without mitigation, adverse dust impacts from carstone sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M6.2 Highway access: The site would use the existing internal haul route to the existing quarry entrance on the East Winch Road (C57A) and then travel east of access the A47 Lynn Road at the existing junction, which are both designated lorry routes. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 30 (in and out) per day. Limited traffic may travel along the East Winch Road and Mill Drove as this is where workshop and storage facilities are located. The proposed highway access is considered to be suitable by the Highway Authority.

M6.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with enclosure. The site is within a wider historic landscape character of Twentieth century agriculture with enclosure and boundary loss, and agriculture with 18th to 19th century piecemeal enclosure. The wider historic landscape character also includes Pre-18th century drained fen enclosure, mineral extraction and 18th to 20th century woodland plantation.

M6.4 The nearest Listed Building is Grade II 'Mitre Farm Cottage and attached Oak Cottage', which are 910m away. There are 20 Listed Buildings within 2km of the site. The nearest Scheduled Monument is the Remains of Blackborough End Priory, which is 1.01km away. There are four Scheduled Monuments within 2km of the site. There are no Conservation Areas or Registered Historic Parks and Gardens within 2km of the site. No adverse effects on the historic environment are expected from the proposed mineral extraction.

M6.5 Archaeology: The site is located within an area of interest, and there are Historic Environment records of isolated multi period finds, within the site boundary. The site is in a wider landscape with a significant number of finds and features from multiple periods. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and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mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M6.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site is within the landscape character area described as 'Gayton and East Winch Farmland with woodland and wetland' in the King's Lynn and West Norfolk Landscape Character Assessment.

M6.7 The site is located on plateau land above the River Nar and is a fairly flat agricultural field with a tree belt along its northern edge and some hedgerow trees along its southern edge, and any workings would be screened from public view. The site is bounded by mineral workings to the east and a landfill site to the south. Further mineral workings lie across Mill Drove to the west and farmland lies north of East Winch Road.

M6.8 There is a Public Right of Way adjacent to the western boundary of the site (Middleton RB4).

M6.9 Ecology: The site is more than 5km from any SPA, SAC or Ramsar site. Therefore, there would be no likely significant effects on these sites.

M6.10 East Winch Common SSSI is 2.23km from the site boundary. The SSSI citation states that it is an area of predominantly wet acid heathland on shallow peat. Many wet hollows are present containing diverse fen and mire communities. One rare plant species occurs and also several uncommon species. The site is surrounded by young woodland. Due to the distance from proposed mineral extraction site, no adverse impacts are expected to the SSSI.

M6.11 River Nar SSSI is 1.57km from the site boundary. The SSSI citation states that the River combines the characteristics of a southern chalk stream and an East Anglian fen river. Together with the adjacent terrestrial habitats, the Nar is an outstanding river system of its type. Due to the distance from proposed mineral extraction site, no adverse impacts are expected to the SSSI.

M6.12 The nearest County Wildlife Site is CWS 434 'Disused Pit' which is 860m from the site. It is an area of open water, scrub, wet and dry woodland and acid grassland located on the site of former gravel workings. Much of the site is occupied by steep-sided, flooded gravel pits, with frequent trees and scrub around the edge of the lakes. Due to the distance from proposed mineral extraction site, no adverse impacts are expected to the CWS.

M6.13 There are no ancient woodland sites within 3km of the site.

M6.14 Geodiversity: The site consists of Lowestoft Formation - diamicton, overlying Carstone formation-sandstone and Gault Formation mudstone. The site is unlikely to contain geodiversity priority features. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application.

M6.15 Flood Risk: The site is in Flood Zone 1 (lowest risk) of flooding from rivers. The site has a low risk of surface water flooding with three locations of surface water pooling in a 1 in 30 and 1 in 100 year rainfall event. Carstone extraction is considered to be a 'less vulnerable' land use which is suitable in all flood zones, except zone 3b (the functional flood plain). The site is not in an Internal Drainage Board area.

M6.16 Hydrogeology: The site is partially located over a principal aquifer (bedrock) and partially over a Secondary (undifferentiated) aquifer (superficial deposits). However, there are no groundwater Source Protection Zones within the proposed site. The proposed extraction site would be worked dry (above the water table) and therefore no effect on water resources is expected. In order to ensure that extraction only takes place above the water table, a planning application for mineral extraction at this site would need to include a Hydrogeological Impact Assessment to identify any potential impacts to groundwater and appropriate mitigation measures.

M6.17 Water Framework Directive: The site is approximately 1.1km from the County Drain which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the County Drain. MIN 06 and the existing adjacent processing plant, which the carstone would be

transported to by internal haul route, are both located north of the County Drain. Therefore, the carstone to be processed would not be transported across this waterbody. Due to the distance of the site from the County Drain, it is not expected that there would be a pathway for silt ingress into this waterbody from any future carstone extraction within site MIN 06.

M6.18 Utilities infrastructure: There are no Anglian Water sewerage assets within the site. A public water main runs along part of the site boundary. Anglian Water would require the standard protected easement widths for the water main and for any requests for alteration or removal to be conducted in accordance with the Water Industry Act 1991. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M6.19 Safeguarding aerodromes: The site is within the zone for RAF Marham where the Defence Infrastructure Organisation must be consulted on developments with the potential to increase the number of birds and the 'bird strike' risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

M6.20 Restoration: The site is proposed to be restored to a lower level to a heathland habitat.

M6.21 Conclusion: Site MIN 06 is considered suitable to allocate for carstone extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 06.

Specific Site Allocation Policy MIN 06 (land off East Winch Road, Mill Drove, Middleton):

The site is allocated as a specific site for carstone extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. Phasing of the site with other carstone quarries nearby, so that extraction only commences on this site once extraction is completed on other workings;
b. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
c. The submission of an acceptable scheme of working, which mitigates landscape impacts, to include progressive restoration to a lower level with some inert fill, with final restoration to heathland habitat to provide biodiversity net gains;
d. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
e. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary;
f. A sufficient stand-off distance around the water main which runs along part of the site boundary or diversion of the water main at the developer's cost and to the satisfaction of Anglian Water;
g. Highway access to be via an internal haul route to the adjacent existing quarry entrance on the East Winch Road, and traffic routing via East Winch Road to the A47;
h. Contributions to any highway improvements which would be required by the Highway Authority to ensure highway safety;
i. The submission of an acceptable Transport Assessment or Statement to identify any capacity/safety issues at the East Winch Road/A47 junction and contributions towards any junction improvements required as a result; and
j. The depth of the extraction must be limited, to ensure that the extraction is worked dry, above the maximum level of the groundwater. A Hydrogeological Impact Assessment would be required to establish the maximum depth of working.

MIN 206 - land at Oak Field, west of Lynn Road, Tottenhill

Site Characteristics

- The 14.7 hectare site is within the parish of Tottenhill
- The estimated sand and gravel resource at the site is 750,000 tonnes
- The proposer of the site has given a potential start date of 2022 and estimated the extraction rate to be 90,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within nine years, which would be within the plan period.
- The site is proposed by Mick George Ltd (Frimstone) as an extension to an existing site. The Tottenhill sites would be worked sequentially to mitigate any cumulative impacts.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 3
- The site is 6.4km from King's Lynn and 7.2 km from Downham Market which are the nearest towns.

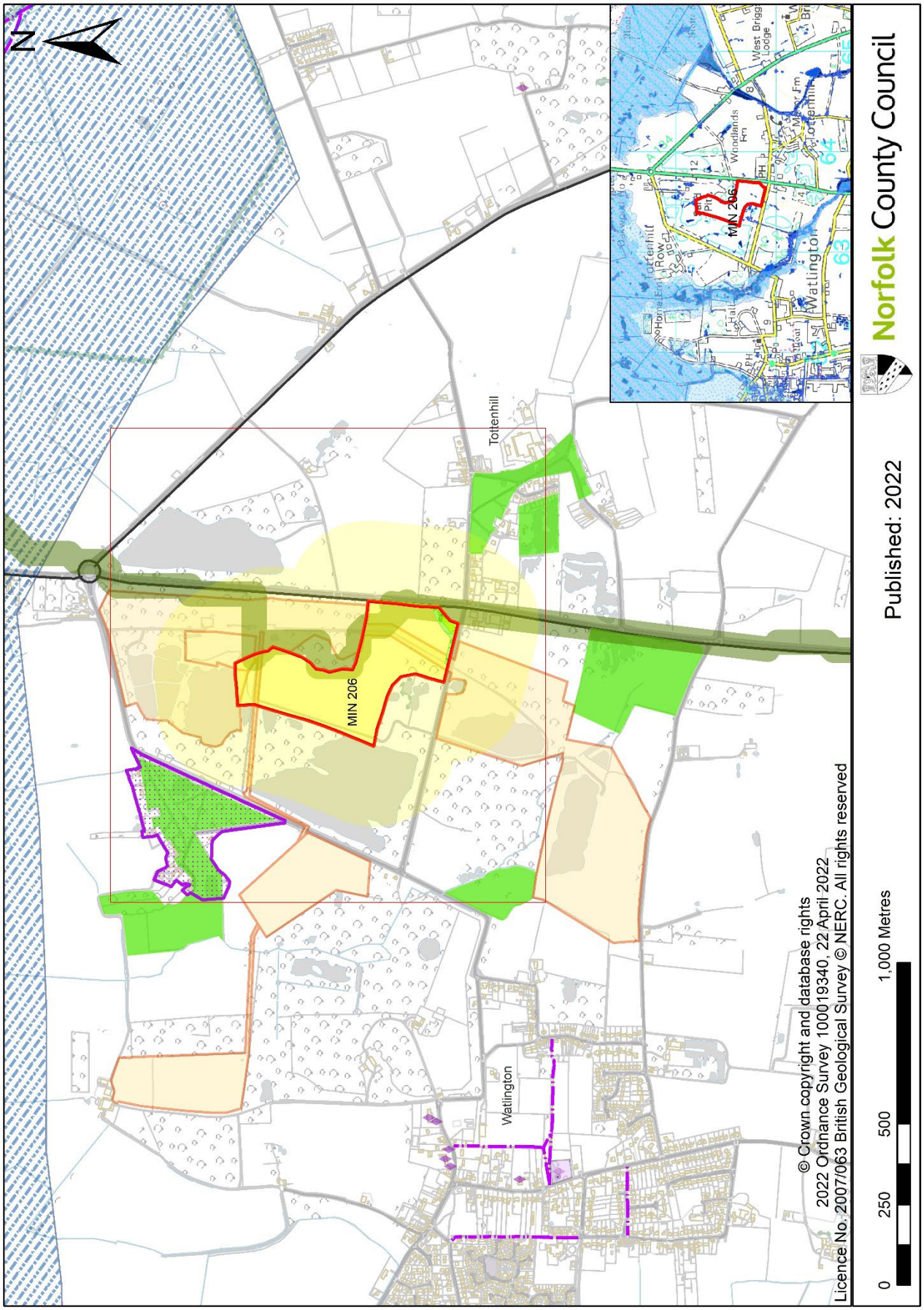
M206.1 Amenity: The nearest residential dwelling is 82m from the site boundary. There are 14 sensitive receptors within 250m of the site boundary and 2 of these are within 100m of the site boundary. The settlement of Tottenhill is 82m away. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M206.2 Highway access: The site is adjacent to the existing plant site which would be accessed by an internal haul route. From the plant site the site would use the existing plant access, along Watlington Road (C51) for about 150 metres before reaching the roundabout for the A10/A134), which is a designated lorry route. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 40 per day. The proposed highway access is considered to be suitable by the Highway Authority.

M206.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with enclosure. The site is within a wider historic landscape character of Twentieth Century agriculture with enclosure and boundary loss, agriculture with 18th to 19th Century piecemeal enclosure, unimproved rough pasture, and a common. The wider historic landscape character also includes informal parkland, 18th to 19th Century woodland plantation, a water reservoir and mineral extraction.

M206.4 The nearest Listed Building is the Grade I Church of St Peter and St Paul which is 1.17km away. There are 9 Listed Buildings within 2km of the site. The only Scheduled Monument within 2km of the site is the 'Moated site of Wormegay Priory' which is 1.73km away. Tottenhill Row Conservation Area is 260m from the site. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M206.5 Archaeology: The site is located within an area of interest, and there are Historic Environment records that features exist within the site boundary. There are no HE records indicating finds but this may be as a result of lack of investigations. The site is set in a wider landscape with a very significant number of finds and features from multiple periods associated with Fen edge settlement, including Iron Age/ Roman settlement to the south. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.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M206.7 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site is within the landscape character area described as 'Stow Bardolph settled farmland with plantations' in the King's Lynn and West Norfolk Landscape Character Assessment. The site is an agricultural field immediately to the south of the existing active mineral processing plant. The northern part of the site is bounded to the east and west by woodland belts, with a flooded former mineral working also to the west. The Lynn Road is approximately 125m to the east, for the northern part of the site, with the southern part of the site projecting eastwards up to the A10 (Lynn Road). The southern boundary of the site borders Whin Common Road. A mineral conveyor which goes between an active extraction area to the south and the processing plant runs through the southern part of the site. The site is generally well screened from public viewpoints except at the far south eastern corner where a field entrance provides a view northwards.

M206.8 There are no Public Rights of Way within or adjacent to the site.

M206.9 Ecology: The site is more than 5km from any SPA, SAC or Ramsar site. Therefore, there would be no likely significant effects on these sites.

M206.10 Setchey SSSI is 1.07km from the site boundary. The SSSI citation details the geological importance of the site for scientific study. The proposed extraction site is within the hydrological catchment for Setchey SSSI but it does not drain towards the SSSI. Therefore there would be no adverse impacts to the SSSI.

M206.11 River Nar SSSI is 1.64km from the site boundary. The SSSI citation states that the River combines the characteristics of a southern chalk stream and an East Anglian fen river. Together with the adjacent terrestrial habitats, the Nar is an outstanding river system of its type. The proposed extraction site is in a different hydrological catchment to the River Nar SSSI and therefore there would be no adverse impacts to the SSSI.

M206.12 The nearest County Wildlife Sites are: CWS 385 'Tottenhill Village Green' which is 190m from the site; it is an area of moderately species-rich neutral grassland containing three small ponds which are seasonally dry. CWS 387 'Tottenhill Row Common' which is 273m from the site; it contains different habitat types, the majority of the site is neutral semi-improved grassland, but contains two large ponds and to the southeast is extensive continuous bracken. CWS 384 'West of Tottenhill' is 282m away; it largely comprises ponds resulting from gravel extraction, surrounded by broadleaved woodland. CWS 381 'Thieves Bridge Meadow' is 407m away; it consists of a mixture of habitats situated on both sides of a flowing drain. The majority of the site is neutral grassland although to the northeast there is a large pond surrounded by woodland. The potential exists for hydrogeological impacts from mineral extraction at MIN 206, if uncontrolled. An assessment of potential impacts on hydrogeology, together with appropriate mitigation would be required as part of any planning application.

M206.13 There are no ancient woodland sites within 3km of the site.

M206.14 Geodiversity: The site consists of the Tottenhill gravel member-gravel, overlying Kimmeridge Clay formation-mudstone. There is a significant potential that geodiversity priority features may exist within the Tottenhill gravels due to the method of formation. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M206.15 Flood Risk: The site is in Flood Zone 1 (lowest risk) of flooding from rivers. The site has a low probability of surface water flooding, with one small location of surface water pooling in a 1 in 30-year rainfall event and a 1 in 100-year rainfall event. In a 1 in 1000-year rainfall event there are additional small areas of surface water pooling. Sand and gravel extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M206.16 Hydrogeology: The site is located over a Secondary A aquifer (superficial deposit). The site is not located over any bedrock aquifers. There are no groundwater Source Protection Zones within the proposed site. A planning application for mineral extraction at this site would need to include a Hydrogeological Impact Assessment to identify any potential impacts to groundwater and appropriate mitigation measures.

M206.17 Water Framework Directive: The site is approximately 450 metres from Hobb's Drain, which flows into the Polver Drain, which in turn flows into the Relief Channel which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards Hobb's Drain. MIN 206 and the existing processing plant, which the sand and gravel would be transported to by conveyor, are both located on the same side of Hobb's Drain and Polver Drain. Therefore, the sand and gravel to be processed would not be transported across the drains. Due to the distance of the site from the drains it is not expected that there would be a pathway for silt ingress into the Relief Channel from any future sand and gravel extraction within site MIN 206.

M206.18 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M206.19 Safeguarding aerodromes: The site is within the zone for RAF Marham where the Defence Infrastructure Organisation must be consulted on developments with the potential to increase the number of birds and the 'bird strike' risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

M206.20 Restoration: The site is proposed to be restored to an agricultural afteruse at original ground levels. Due to the expected depth of extraction, it is recognised that restoration to arable is likely to require the use of imported inert material to provide a suitable profile.

M206.21 Conclusion: Site MIN 206 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 206.

Specific Site Allocation Policy MIN 206 (land at Oak Field, Tottenhill):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
b. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including Tottenhill Row Conservation Area), assess the potential for impacts and identify appropriate mitigation measures if required;
c. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
d. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary;
e. The site must use the existing processing plant site, and existing highway access to the A10;
f. The site must be phased with other sites in the area so that only one site is worked for extraction at a time;
g. The submission of an acceptable Hydrogeological Impact Assessment to identify any potential impacts to groundwater and appropriate mitigation measures if required;
h. The submission of an acceptable Landscape and Visual Impact Assessment to include the identification of any areas where enhanced screening would be required to mitigate visual intrusion. Where enhanced planting is required, this should be retained in the restoration scheme wherever possible;
i. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
j. The submission of an acceptable progressive restoration scheme to an agricultural afteruse, with wide field margins and hedgerow planting to provide landscape and biodiversity net gains; and
k. Restoration of the extraction void to use the importation of inert materials only.

SILICA SAND

MIN 40 - land east of Grandcourt Farm, East Winch

Site Characteristics

- The 32.77 hectare site is within the parish of East Winch
- The estimated silica sand resource at the site is 3 million tonnes
- The potential start date of the site is 2022 and the proposer of the site has estimated the extraction rate to be 750,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within four years which would be within the plan period.
- The site is proposed by Sibelco UK as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 4.
- The site is approximately 1.8km from the Leziate processing plant. The mineral would be transported by an internal haul route to the processing plant.

A reduced extraction area has been proposed of 22.11 hectares. This proposal includes standoff areas between the extraction and the properties along the A47 and Gayton Road.

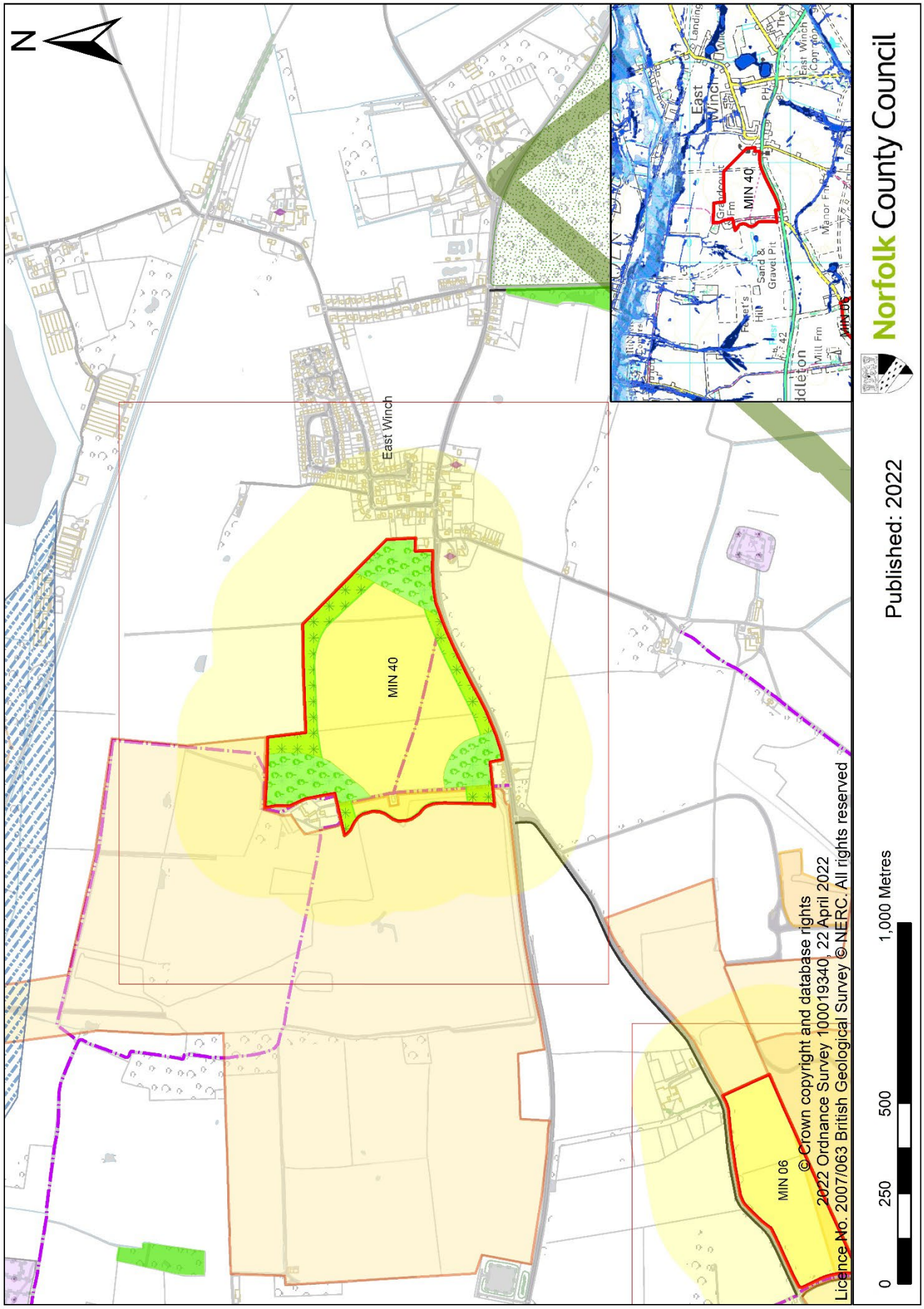
M40.1 Amenity: There is a residential property within the site, the next nearest residential property is 23m from the site boundary. There are 88 sensitive receptors within 250m of the site boundary and 25 of these are within 100m of the site boundary. The settlement of East Winch is 23m away. However, part of the site nearest to East Winch is not proposed to be extracted. Therefore, the nearest residential property is 84m from the extraction area and there are 54 sensitive receptors within 250m of the proposed extraction area (three of these are within 100m of the extraction area). Even without mitigation, adverse dust impacts from sand extraction sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M40.2 Highway access: It is proposed to access the site via the established internal haul route through the existing adjacent extraction area. Mineral would be taken from the site to the processing plant at Leziate using the internal haul route. The majority of processed mineral leaves the processing plant through the onsite railhead. The road transport of mineral would leave the processing plant via the existing access onto Station Road. The site is not within an AQMA. The proposed highway access is considered to be suitable by the Highway Authority.

M40.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with boundary loss. The site is within a wider historic landscape character of Twentieth century agriculture with enclosure and boundary loss, agriculture with 18th to 19th century piecemeal enclosure and a common. The wider historic landscape character also includes mineral extraction, informal parkland and 18th to 20th century woodland plantation.

M40.4 The nearest Listed Building is the Grade II* Church of All Saints, which is 50m away on the opposite side of the A47. The Grade II Hall Farmhouse (formally Church Farmhouse) is 250m away. There are 10 Listed Buildings within 2km of the site. The nearest Scheduled Monument is the 'Moated site of Crancourt Manor' which is 790m away. There are 2 Scheduled Monuments within 2km of the site. There are no Conservation Areas or Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M40.5 Archaeology: The site is located within an area of interest, and there are Historic Environment records of isolated multi period finds and features including a WW2 searchlight battery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and a former roadway, within the site boundary. The site is in a wider landscape with a significant number of finds and features from multiple periods, including an adjacent site, with an Iron Age settlement which has produced regionally significant finds assemblages. Significant archaeological investigations have been carried out as part of the extraction of the adjacent active site. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M40.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site comprises open arable gently undulating landscape. The site is within the landscape character area described as 'Gayton and East Winch Farmland with Woodland and Wetland' in the King's Lynn and West Norfolk Landscape Character Assessment. The eastern boundary of the site is adjacent to part of the village of East Winch, and the A47 (a strategic trunk road) runs along the southern boundary of the site. An active permitted silica sand extraction site is adjacent to the western boundary, and an internal haul route travels north to the processing plant site at Station Road, Leziate.

M40.7 There are filtered views over the site from the A47 and from the Public Right of Way along the western boundary. There are more open views of the site from the PRoW (East Winch FP2) which crosses the site and from the properties on the eastern edge of East Winch. There are also two isolated properties to the south-west corner of the site, adjacent to the A47 which would have views of the site. Based on the existing adjacent mineral working, it is considered that views of the site from the A47 could be sufficiently screened by bunding. The extraction area of the site will need to be set back from the properties in East Winch village and from properties in the south-west corner. A suitable screening scheme will also be required to mitigate the views of the site from these properties.

M40.8 There is a Public Right of Way along the western boundary of the site (East Winch BR1). There is also a PRoW running across the site (East Winch FP2). The PROW would need to be diverted during mineral extraction operations and reinstated as part of the restoration of the site.

M40.9 Ecology: East Walton and Adcock's Common SSSI, which is part of the Norfolk Valley Fens SAC, is 3.79km from the site boundary. The site is outside the 3km Impact Risk Zone for the SSSI and therefore there would be no adverse effects on the SSSI or Norfolk Valley Fens SAC from the proposed mineral extraction.

M40.10 East Winch Common SSSI is 0.74km from the site boundary. The SSSI citation states that it is an area of predominantly wet acid heathland on shallow peat. Many wet hollows are present containing diverse fen and mire communities. One rare plant species occurs and also several uncommon species. The site is surrounded by young woodland. The potential exists for impacts from mineral extraction at MIN 40, if uncontrolled. An assessment of potential hydrogeological impacts from dewatering, together with appropriate mitigation would be required as part of any planning application.

M40.11 River Nar SSSI is 2.89km from the site boundary. The SSSI citation states that the River combines the characteristics of a southern chalk stream and an East Anglian fen river. Together with the adjacent terrestrial habitats, the Nar is an outstanding river system of its type. Whilst the site is within the Impact Risk Zone for the SSSI, the site is not within the hydrological catchment for the River Nar and due to the distance, there would be no adverse impacts to the SSSI.

M40.12 The nearest County Wildlife Site is CWS 410 'East Winch Common' which is 740m away and is an area of broad-leaved woodland with a number of ponds across the site. The potential exists for impacts from mineral extraction at MIN 40, if uncontrolled. An assessment of potential hydrogeological impacts from dewatering, together with appropriate mitigation, would be required as part of any planning application.

M40.13 There are no ancient woodland sites within 3km of the site.

M40.14 Geodiversity: The site consists of Leziate member – sand and Carstone Formation – sandstone. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M40.15 Flood Risk: The site is in Flood Zone 1 (lowest risk) of flooding from rivers. The site has a low probability of flooding from surface water, with one small location of surface water pooling in a 1 in 1000-year rainfall event. Silica sand extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M40.16 Hydrogeology: The site is located over a principal aquifer (bedrock) and partially over a Secondary (undifferentiated) aquifer (superficial deposits). However, there are no groundwater Source Protection Zones within the proposed site.

M40.17 Water Framework Directive: The site is approximately 675 metres from the Mintlyn Stream/ Middleton Stop Drain, which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards Mintlyn Stream. MIN 40 and the existing processing plant to the north, which the sand would be transported to via an internal haul route, are located on either side of the Mintlyn Stream. The sand to be processed would be transported along an existing internal haul route which currently serves the existing extraction area adjacent to site MIN 40. The potential exists for silt ingress to the Mintlyn Stream from material transported by HGV on the haul route, unless conditions are required. Due to the continued use of the existing haul route, it is not considered that physical impacts on the Mintlyn Stream would occur, provided that the conditions regarding dust in relation to the haul route are replicated in any future planning permission for MIN 40. Due to the distance of the site from the Mintlyn Stream it is not expected that there would be a pathway for silt ingress into Mintlyn Stream from any future silica sand extraction within site MIN 40.

M40.18 Utilities infrastructure: There are no Anglian Water sewerage assets within the site. There are two water mains on the boundaries of the proposed extraction area. Anglian Water would require the standard protected easement widths for the water main and for any requests for alteration or removal to be conducted in accordance with the Water Industry Act 1991. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M40.19 Safeguarding aerodromes: The site is within the zone for RAF Marham where the Defence Infrastructure Organisation must be consulted on developments with the potential to increase the number of birds and the 'bird strike' risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

M40.20 Restoration: The site is proposed to be restored to a lake area with grassland, woodland and scrub, and an agricultural field with hedgerow reinforcement. The eastern field, which is closest to East winch and opposite All Saints' Church would be restored to an arable agricultural field.

M14.21 Conclusion: The site is considered suitable to allocate for silica sand extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 40.

Specific Site Allocation Policy MIN 40 (land east of Grandcourt Farm, East Winch):

The site is allocated as a specific site for silica sand extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise, dust and air quality assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
b. The submission of an acceptable Landscape and Visual Impact Assessment which will identify any potential impacts to the wider landscape and suggest appropriate mitigation measures, particularly regarding views from the properties along Gayton Road, the PROW and surrounding roads, and protecting of the setting of listed buildings, including All Saints' Church, East Winch;
c. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary;
d. The submission of an acceptable Arboricultural Impact Assessment to identify the impact of the development on existing trees and identify appropriate mitigation measures if required;
e. A sufficient stand-off distance around the water mains on the site boundary or diversion of the water mains at the developers costs and to the satisfaction of Anglian Water;
f. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including the Grade II* Listed All Saints' Church, East Winch), assess the potential for impacts and identify appropriate mitigation measures if required;
g. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
h. The submission of an acceptable Hydrogeological Impact Assessment, based on proportionate evidence,
    - to identify potential impacts to groundwater quality, quantity and levels during both the extraction and restoration of the site;
    - to include the potential for a perched water table to occur in the Carstone aquifer;
    - to propose appropriate mitigation to address any of these impacts and to protect any abstraction points, ecosystems and surface water features that are reliant on groundwater, in particular East Winch Common SSSI.
i. The provision of opportunities during working for any geodiversity assets to be studied;
j. The submission of an acceptable scheme of phased working and progressive restoration including the direction of working (to assist in the mitigation of amenity impacts) and landscaping;
k. The submission of an acceptable restoration scheme which minimises areas of open water, incorporates arable agricultural land with wide field margins and blocks of woodland, which provides biodiversity net gains and does not result in permanent dewatering of a perched water table in the carstone aquifer if one is identified in a hydrogeological impact assessment. In particular, the eastern field opposite All Saints' Church must be restored to arable agricultural land;
l. The submission of a suitable scheme for the temporary diversion and reinstatement of the PROW; and
m. The use of conveyor and/or internal haul routes to the current processing plant site.

SIL01 - land at Mintlyn South, Bawsey

Site Characteristics

- The 21 hectare site is within the parish of Bawsey
- The estimated silica sand resource at the site is 1,100,000 tonnes
- Planning permission was granted for mineral extraction at this site in August 2021.
- The site is part of a former mineral working which was partially extracted.
- The site is located in an area which has a history of mineral working and is adjacent to restored and permitted workings.
- The Agricultural Land Classification scheme classifies the land as being in 'Non-Agricultural' use.
- The site is approximately 700 metres from the Leziate processing plant and the proposer of the site has indicated that that mineral will be transferred by conveyor to the processing plant.

A reduced extraction area of 15.2 hectares is proposed which excludes land in the north-west corner.

S1.1 Amenity: The nearest residential property is approximately 280 metres from the site boundary. Even without mitigation, adverse dust impacts from sand extraction sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

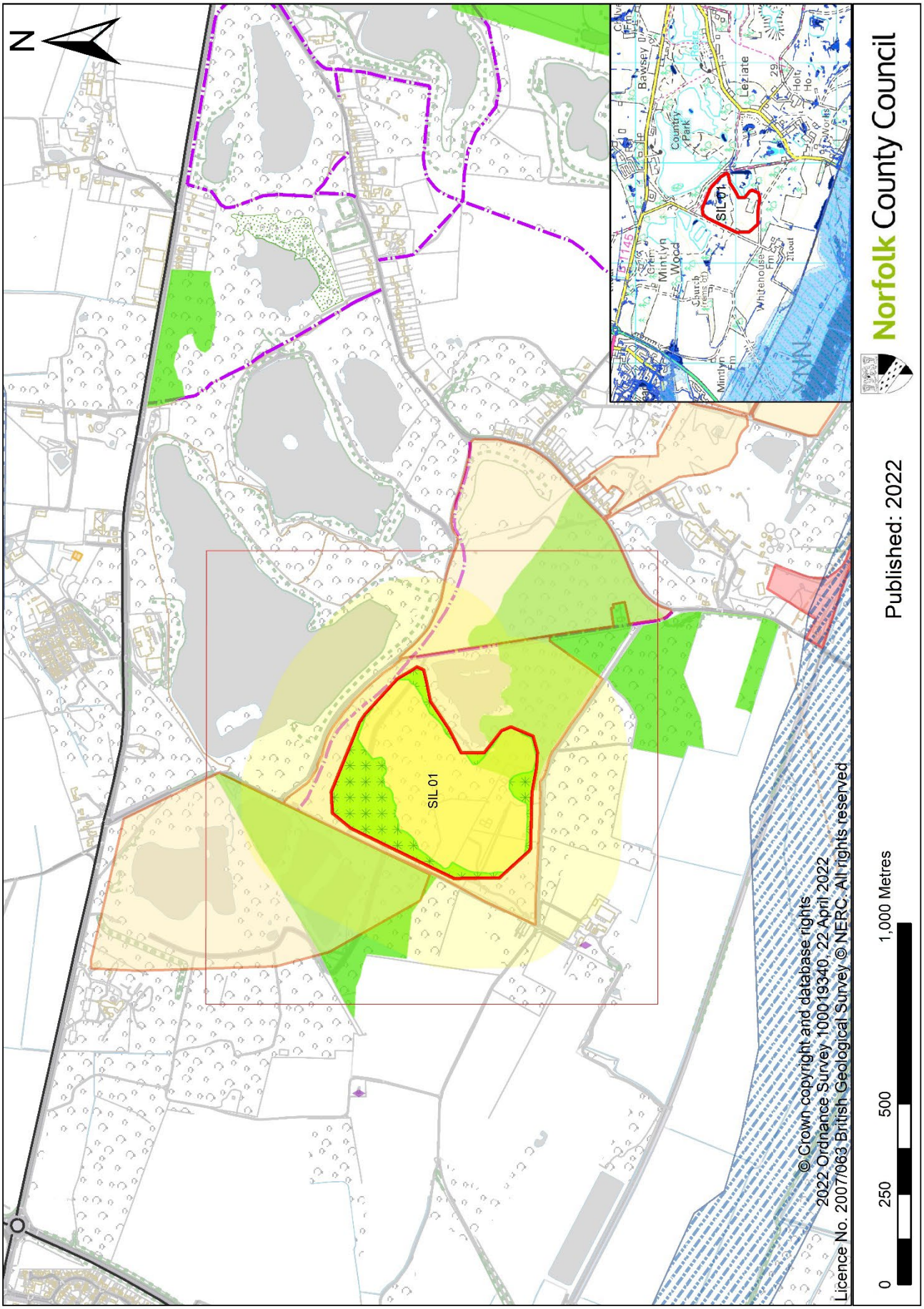
S1.2 Historic Environment: The historic landscape character of the site is mineral extraction. The site is within a wider historic landscape character of 20th century agriculture with enclosure and boundary loss, 18th and 19th century agriculture with piecemeal enclosure, mineral extraction, leisure/recreation, informal parkland, water reservoir, and 18th to 20th century plantation woodland.

S1.3 The site is set within a landscape which has evidence of former settlements. The nearest Listed Building is 'the font against south façade of Whitehouse Farmhouse' (Grade II) which is 302m away. The Ruins of Church of St Michael (Grade II*) Listed Building is just under 650 metres to the west of site SIL01. The majority of the site is screened from the ruins of the Church of St Michael by established woodland. Any future planning application would need to consider whether additional screening would be required for the southern part of the site to ensure that the setting of the church is not affected. There are 13 Listed Buildings within 2km of the site. The site is 1.24km from the nearest Scheduled Monument, which is the 'Moated site in Crow's Wood'. There are three Scheduled Monuments within 2km of the site. There are no Conservation Areas or Registered Historic Parks and Gardens within 2km of the site. Any future planning application for site SIL01 would need to include a Heritage Statement assessing the setting of heritage assets, addressing the potential for impacts and suggesting potential mitigation measures such as bunding and screen planting.

S1.4 Archaeology: SIL01 contains a series of cropmarks related to undated ditches and banks, together with a possible Bronze Age barrow. A detailed assessment of the significance of archaeological remains will be required by field evaluation at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site.

S1.5 Landscape: The site is set within a landscape which has been modified over time by the extraction of mineral, particularly silica sand and carstone. Extraction in the 19th and 20th century has resulted in a number of lakes and previously worked areas and the restored workings are important for biodiversity and recreation in the area.

S1.6 The site is on a flat-topped ridge between the valleys of the Gaywood River and the Mintlyn Stream (Middleton Stop Drain). The Gaywood River valley is just to the north of the site and the valley of the Middleton Stop Drain is to the south. The southern boundary of the site starts to gently fall away to the Middleton Stop Drain.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S1.7 The site is within a landscape characterised as 'Farmland with woodland and wetland'. This creates a landscape with different scales of enclosure created by the interaction between woodland blocks, agricultural fields and wetlands. Viewpoints of the site are generally limited by hedgerows and woodland over large parts of the area. It is considered that bunding and screen planting could provide successful mitigation if well designed. Any future planning application for site SIL01 will need to ensure that any proposed extraction is appropriately screened through the use of a Landscape and Visual Impact Assessment and appropriate mitigation.

S1.8 There are no Public Rights of Way within the site. There is a PROW (Bawsey RB8) close to the northern boundary of the site and PROW Bawsey RB9 is to the east of the site.

S1.9 Ecology: SIL01 is located 2.8km from Roydon Common SSSI (which forms part of Roydon Common and Dersingham Bog SAC and is also designated as Roydon Common Ramsar. SIL01 is 2.6km from Leziate, Sugar and Derby Fens SSSI. However, the majority of SIL01 is outside the hydrological catchment for both of these SSSIs and is down gradient of these sites. In addition, Bawsey Lakes are located between SIL01 and these SSSIs. Therefore, no adverse impacts are expected on these SSSIs and no likely significant effects are expected on the qualifying features of the SAC or Ramsar site.

S1.10 There is a County Wildlife Site partly within site SIL01 (CWS 416 '70 & 100 Plantations'), therefore part of CWS 416 would be directly affected by mineral extraction. There is also a CWS adjacent to this site (CWS 418 'Haverlesse Manor Plantation') on an area which has been subject to previous mineral working. Due to the proximity of these County Wildlife Sites to site SIL01, there is the potential for adverse impacts to be caused by mineral extraction which will need to be assessed as part of a planning application and mitigation measures proposed, including the provision of biodiversity net gains on restoration.

S1.11 The nearest ancient woodland site is Reffley Wood, which is a Plantation on Ancient Woodland Site (PAWS); it is 2.14km from the site boundary. Due to the distance from the ancient woodland there would be no impacts from dust deposition. There are no likely hydrological impacts on Reffley Wood because land within SIL01 does not drain towards the ancient woodland. Therefore, no adverse impacts to the ancient woodland site are expected from the proposed mineral extraction.

S1.12 Geodiversity: There is the potential for this site to contain examples of geodiversity priority features. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future planning application. There would be a preference for restoration to provide opportunities for further geological research of suitable exposures.

S1.13 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a medium risk of surface water flooding with a few locations of surface water pooling in a 1 in 100 and 1 in 1000-year rainfall event. Silica sand extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

S1.14 Hydrogeology: Site SIL01 is within the hydrological catchments of the Gaywood River and Middleton Stop Drain. The proposed site is located over a principal aquifer and partially over a secondary B aquifer; but it mainly overlays an unproductive secondary aquifer. There are no Groundwater Source Protection Zones within the proposed site. The Environment Agency have stated that there should be no dewatering on site below 13 metres AOD. If extraction below the watertable and/or dewatering is proposed a Hydrogeological Impact Assessment will be necessary to identify potential risks and appropriate mitigation.

S1.15 Water Framework Directive: Site SIL01 is approximately 910 metres from the Mintlyn Stream which is a Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore, overland flows are not expected from the site towards the stream. SIL01 and the existing processing plant at Leziate, which the silica sand would be transported to by conveyor, are both located north of Mintlyn Stream so the silica sand would not be transported across the Mintlyn Stream. Therefore, it is not expected that there would be a pathway for silt ingress into the Mintlyn Stream from future silica sand extraction within site SIL01.

S1.16 Utilities Infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

S1.17 Safeguarding Aerodromes: The site is within the zone for RAF Marham where the Defence Infrastructure Organisation must be consulted on developments with the potential to increase the number of birds and the 'bird strike' risk to aircraft. Therefore, a Bird Hazard Assessment would be required at the planning application stage.

S1.18 Restoration: The site is proposed to be restored primarily to a lake, with wildlife habitat (acid grassland / heath / inland dune) and an area of geological exposure.

S1.19 Conclusion: Site SIL01 is considered suitable to allocate for silica sand extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy SIL01.

Specific Site Allocation Policy SIL01 (land at Mintlyn South, Bawsey):

The site is allocated as a specific site for silica sand extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise, dust and air quality assessments and a programme of mitigation measures (e.g. standoff areas, screening and/or bunding) to deal appropriately with any amenity impacts;
b. The submission of an acceptable Landscape and Visual Impact assessment to identify potential landscape impacts. The LVIA will include Scheduled Monuments, Listed Buildings, archaeological assets and non-designated assets as affected and their settings, together with suitable mitigation measures to address the impacts and conserve the significance of those assets;
c. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including the Grade II* Ruins of Church of St Michael), assess the potential for impacts and identify appropriate mitigation if required. As a result of the historically complex and significant environment in which the mineral resource is present, applicants should consider the potential for early engagement with Historic England, the Norfolk Historic Environment Service and Conservation Officers in the preparation of the Heritage Statement;
d. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
e. The submission of an acceptable Hydrogeological Impact Assessment, based on proportionate evidence,
    - to identify potential impacts to groundwater quality, quantity and levels;
    - to propose appropriate mitigation to protect any abstraction points, ecosystems and surface water features that are reliant on groundwater, in particular SSSIs, SACs and SPAs.

    The assessment will need to consider the precautionary principle as it relates to European designations. The assessment should include a programme of mitigation measures to address identified potential impacts;
f. No dewatering to take place on site below 13 metres AOD;
g. The submission of an acceptable Biodiversity Survey and Report including assessment of the potential for impacts on environmental designations, together with suitable mitigation measures;
h. The submission of an acceptable Arboricultural Impact Assessment to identify the impact of the development on existing trees and identify appropriate mitigation measures if required;
i. The submission of an acceptable assessment to consider the potential for impacts on the Mintlyn Stream and Gaywood River, including from silt ingress and modification, and appropriate mitigation to prevent unacceptable adverse impacts.
j. A conveyor and/or internal haul routes must be used to transport mineral from the extraction area to the current processing plant site;
k. The submission of an acceptable comprehensive working and restoration plan, to minimise areas of open water, to include ecological enhancement and biodiversity net gains, to include provision of geological exposure for future study and to consider opportunities for the improvement of public access on restoration; and
l. The submission of an acceptable Bird Hazard Assessment report to identify the risk of bird hazard to the safe operation of aerodromes and aircraft, identify proposed mitigation of any identified risk, and include a Bird Hazard Management Plan if necessary.

North Norfolk sites

MIN 69 - land north of Holt Road, Aylmerton

Site Characteristics

- The 16.86 hectare site is within the parish of Aylmerton
- The estimated sand and gravel resource at the site is 2,000,000 tonnes
- Planning permission (FUL/2019/0001) was granted for 1 million tonnes of mineral extraction in the northern part only of this site in October 2020
- The potential start date of the site is 2022 and the proposer of the site has estimated the extraction rate to be 100,000 tonnes per annum. Based on this information approximately 1,700,000 tonnes could be extracted within the plan period.
- The site is proposed by Norfolk Gravels as an extension to an existing site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being a mixture of non-agricultural and grade 3.
- The site is 3.5km from Cromer and 7.9km from Holt, which are the nearest towns.

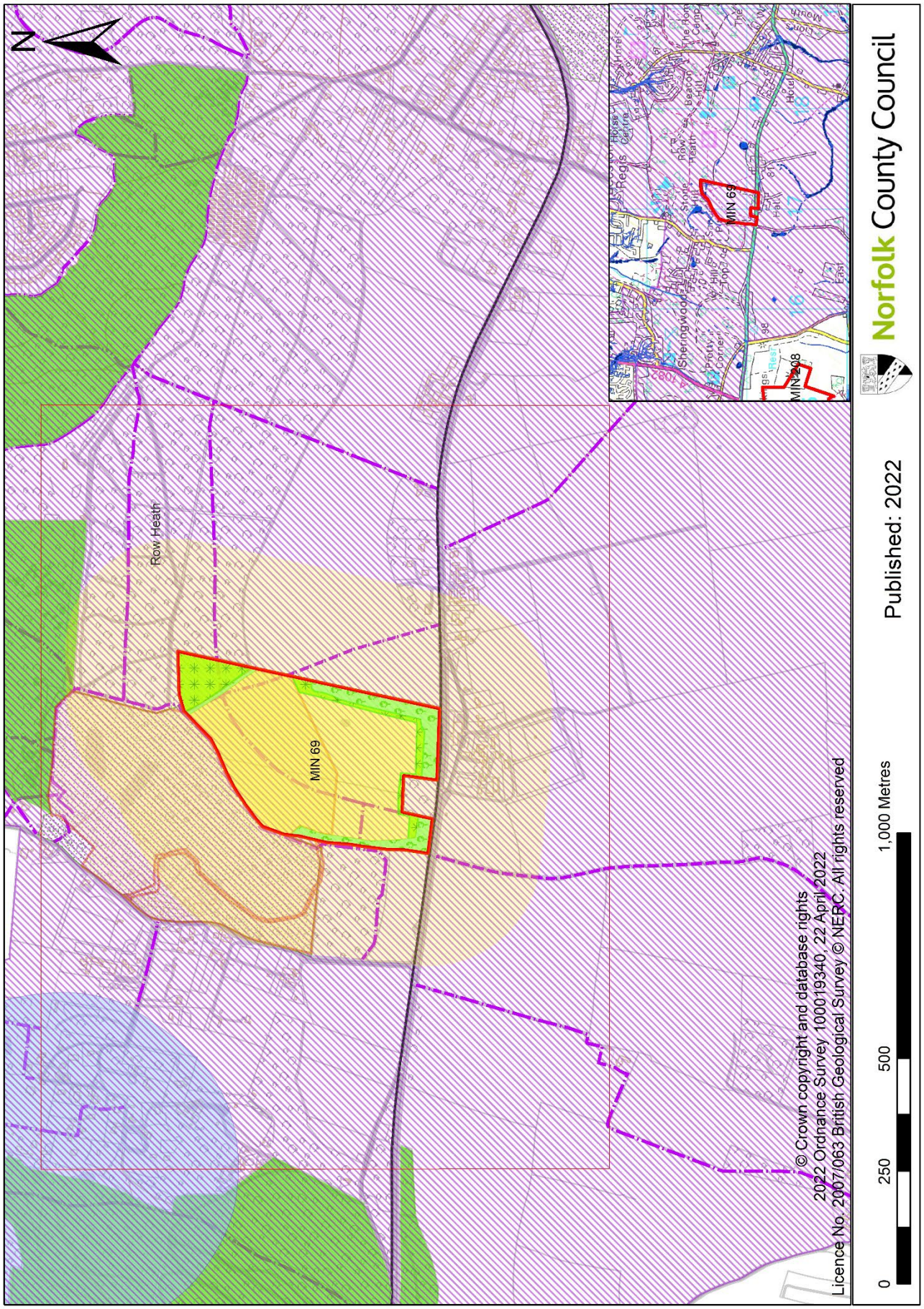
A reduced extraction area is proposed of 11.9 hectares, which excludes land to the south (nearest to the A148), the north-eastern corner and land on the south-east and south-west boundaries.

M69.1 Amenity: The nearest residential property is 85m from the site boundary. There are eight sensitive receptors within 250m of the site boundary and three of these are within 100m of the site boundary. The settlement of Beeston Regis is 624m away. However, a reduced extraction area is proposed, and the nearest residential property is 140m from the extraction area. There are eight sensitive receptors within 250m of the boundary of the extraction area and none of these are within 100m of the site boundary. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts. The A148 Holt Road is between the southern site boundary and seven of the sensitive receptors that are within 250m of the site boundary.

M69.2 Highway access: The site would access the existing adjacent plant site via an internal haul route and then use the existing site access along the C786 Briton's Lane to the A148 Holt Road, which is a designated lorry route. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 30 to 40 per day. The Highway Authority has concerns that Briton's Lane is substandard and narrow and that the junction onto the A148 is also substandard. Therefore, road improvements to Briton's Lane would be required, including a right-hand turn lane at the junction between Briton's Lane and the A148, to the satisfaction of the Highway Authority.

M69.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with enclosure. The site is within a wider historic landscape character of Twentieth century agriculture with enclosure and boundary loss, agriculture with 18th to 19th century piecemeal enclosure, common and heath. The wider historic landscape character also includes modern built-up areas of houses and small farm clusters, informal parkland, leisure/recreation, mineral extraction and woodland (carr woodland and 18th to 20th century plantation woodland).

M69.4 The nearest Listed Buildings are the Grade II Abbey Farmhouse, which is 1.37km away and the Grade II* Church of St John the Baptist which is 1.32km away. There are 9 Listed Buildings within 2km of the site. The only Scheduled Monument within 2km of the site is Beeston Regis Priory, which is 1.18km away. There are four Conservation Areas within 2km of the site, they are Sheringham (1.85km away), West Runton (1.02km away), Beeston Regis (1.17km away) and Upper Sheringham (1.69km away). Felbrigg Hall, a Registered Historic Park is 1.76km from the site. No adverse effects on the historic environment are expected from the proposed mineral extraction.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M69.5 Archaeology: There are no Historic Environment records within the site boundary, however the lack of HE records may just be due to a lack of investigations. The site is in a wider landscape with a number of finds and features, most as a result of medieval iron working activity, and WW2 defences immediately to the north. There are also historic earthwork and boundary bank features along the parish boundary between Aylmerton and Beeston Regis. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M69.6 Landscape: The site is located within the Norfolk Coast AONB. The site is a gently sloping arable field on the south side of the Cromer Ridge, and is adjacent to an active permitted sand and gravel extraction site. The site is within the landscape character area described as 'Wooded with parkland – Holt to Cromer'. The site is bounded by woodland except for a relatively small section of the eastern boundary. The site contains a small depression which may be the remains of a small scale historic mineral working. The southern boundary of the site is bounded by the A148, although views are screened by woodland, mainly in the form of advanced planting provided by Norfolk Gravels as a means of long-term visual mitigation.

M69.7 The site would form an extension to the existing quarry site, which has been operational since the 1940s and has an Interim Development Order (IDO) planning permission (which does not expire until 2042), with few conditions and limited control over restoration (notwithstanding an ongoing Renewal of Minerals Permission application to update the conditions). In addition, the current site contains a concrete production plant with a permanent planning permission.

M69.8 The whole of the site lies within the Norfolk Coast AONB and the NPPF states that local planning authorities should "as far as practicable, provide for the maintenance of landbanks of non-energy minerals from outside Areas of Outstanding Natural Beauty" however, the current site is well screened from public views and the extension site would be similarly screened, so the local landscape impacts are not considered to be significant.

M69.9 A very high-quality restoration proposal for both the existing site, and MIN 69, could offer the possibility of developing a large new area of heathland with greatly improved public access. Taking into account the following factors, it is considered that there are exceptional circumstances for allowing this mineral development within the AONB:

- The presence of the existing site with its permanent concrete plant and associated employment
- The limited local landscape and amenity harm
- The opportunity to facilitate a much-improved working and restoration scheme for the existing site and a high-quality biodiversity led restoration for site MIN 69.

M69.10 If any tree removal is required to facilitate the proposed operations, then the number of trees removed must be minimised and an Arboricultural Impact Assessment would be required at the planning application stage to identify the impact of the development on existing trees and identify appropriate mitigation measures if required.

M69.11 There is a Public Right of Way adjacent to the western boundary of the site (Beeston Regis BR10). There is a PRoW running through the site (north to south) (Aylmerton FP2). There is a PRoW within the site (Aylmerton FP1). There is a PRoW crossing the NE corner of the site (Aylmerton FP3). These PRoWs may need to be diverted during mineral extraction operations and reinstated as part of the restoration of the site.

M69.12 Ecology: The site is 0.65km from Sheringham and Beeston Regis Commons SSSI which is part of the Norfolk Valley Fens SAC. The SSSI citation states that the site is an area of acidic heathland containing area of species-rich calcareous spring fen on sloping ground. 'Mixed mire' vegetation has developed in seepage zones. These spring fen areas contain many wetland plants that are now locally uncommon. Dry heathland surrounds the fens and supports several species of breeding birds and reptiles. The proposed extraction site would be worked dry (above the water

table) and therefore the hydrology of the SSSI would not be adversely affected. Due to the distance of the proposed extraction site from the SSSI, the SSSI would not be adversely affected by dust deposition.

M69.13 Briton's Lane Gravel Pit SSSI is adjacent to the site boundary. The SSSI citation details the geological interest in the site and states that this pit provides excellent exposures in the Pleistocene Briton's Lane Gravels of the Cromer Ridge. The SSSI covers the whole of the existing mineral extraction site. There is the potential for the geological SSSI to be affected by the proposed mineral extraction site where the existing and proposed sites join along the site boundaries. Therefore, the area where mineral extraction in the existing and proposed site joins and is integrated should be minimised so that the SSSI is not adversely affected by the proposed mineral extraction.

M69.14 Felbrigg Woods SSSI is 1.43km from the site boundary. The SSSI citation states that the Great Wood is one of only two known sites for acid Beech stands in Norfolk. The ancient trees within the woodland and old deer park carry an interesting and diverse lichen flora. The site is also of considerable entomological and ornithological interest. The wood supports a wide range of breeding birds. The proposed extraction site would be worked dry (above the water table) and therefore the SSSI would not be adversely affected.

M69.15 Beeston Cliffs SSSI is 1.81km from the site boundary. The SSSI citation details the geological interest in the site and states that this is the type site for the Beestonian Stage of the Pleistocene and therefore is nationally important. A nationally rare plant, Purple Broomrape, is present in unimproved calcareous grassland on the cliff-top. The SSSI would not be adversely affected by the proposed mineral extraction site.

M69.16 Weybourne Cliffs SSSI is 2.86km from the site boundary. The SSSI citation details the geological interest in the site with outstanding Pleistocene sections of national importance and marine and vertebrate fossils. Additional biological interest is provided by colonies of sand martins in the cliff-face and of fulmars on the cliff ledges. The SSSI would not be adversely affected by the proposed mineral extraction site.

M69.17 The nearest County Wildlife Site is CWS 1147 'Roman Camp and Beeston Regis Heath' which is 230m from the site boundary. The CWS consists of a variety of habitats including broad-leaved coppice with standards woodland, dry dwarf shrub heath and unimproved acidic grassland. Due to the distance from the CWS there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the County Wildlife Site would not be adversely affected.

M69.18 The nearest ancient woodland site is Great Wood, a Plantation on Ancient Woodland Site (PAWS) and Ancient Semi-Natural Woodland (ASNW) which is 1.71km from the site boundary. Due to the distance from the ancient woodland there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the ancient woodland would not be adversely affected.

M69.19 Geodiversity: The site consists of the Briton's Lane sand and gravel member, overlying Wroxham Crag Formation-sand and gravel. The Briton's Lane sands and gravels are known to contain priority features such as palaesols and erratics in the adjacent existing quarry, and therefore they may occur on this site. The existing quarry is also the type-site for the Briton's Lane Formation. Briton's Lane Gravel Pit SSSI is designated for its glacial and glacio-fluvial sediments (part of Cromer Ridge) and could be impacted adversely by insensitive extraction. However, MIN 69 would be a very valuable site for geological study and if a section of the Cromer Ridge could be retained it could lead to the extension of the geological SSSI. Given the site's importance, a 'watching brief' during the extraction phase would be essential. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application.

M69.20 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low risk of surface water flooding, with one location of surface water pooling in a 1 in 30-year rainfall event, and two locations of surface water pooling in a 1 in 100-year rainfall event. Sand and gravel

extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M69.21 Hydrogeology: The site is located over a Secondary A aquifer (superficial deposits) and a principal aquifer (bedrock). The northern edge of the site is within groundwater Source Protection Zone 2. The rest of the site is within groundwater Source Protection Zone 3. The site would be worked dry (above the water table) and therefore no effect on water resources is expected.

M69.22 Water Framework Directive: The site is approximately 1km from unnamed streams within the catchment of Scarrow Beck, which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards Scarrow Beck. MIN 69 and the existing adjacent processing plant, which the sand and gravel would be transported to by internal haul route, are both a considerable distance north of Scarrow Beck. Therefore, the sand and gravel to be processed would not be transported across Scarrow Beck. Due to the distance of the site from the Scarrow Beck it is not expected that there would be a pathway for silt ingress into Scarrow Beck from any future sand and gravel extraction within site MIN 69.

M69.23 Utilities infrastructure: There are no Anglian Water sewerage assets within the site. There is water main along the site boundary. Anglian Water would require the standard protected easement widths for the water main and for any requests for alteration or removal to be conducted in accordance with the Water Industry Act 1991. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M69.24 Safeguarding aerodromes: The site is not within an aerodrome safeguarding zone.

M69.25 Restoration: The site would be a steeply sided valley restored to dry acid heathland with some woodland / scrub natural regeneration on the upper slopes with re-established public rights of way.

M69.26 Conclusion: Site MIN 69 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 69.

Specific Site Allocation Policy MIN 69 (land north of Holt Road, Aylmerton):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
b. The site must be worked 'dry' (i.e. above the water table), there should be no discharges into ground water, and site drainage should be via a settlement lagoon. It must be demonstrated that the mineral extraction operation would not have an adverse effect on the integrity of the Norfolk Valley Fens SAC;
c. The site will need to be phased with the adjacent permitted site so that only one site is worked for extraction at a time in accordance with a phased and progressive working and restoration scheme.
d. The current highways access along Briton's Lane to the A148 must continue to be used, with improvements to Briton's Lane and the A148 junction being upgraded with a right-turn lane to the satisfaction of the Highway Authority;
e. A sufficient stand-off distance around the water main that crosses the site or diversion of the water main at the developers costs and to the satisfaction of Anglian Water;
f. The submission of an acceptable Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required;

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g. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
h. The submission of an acceptable Landscape and Visual Impact Assessment to identify potential landscape impacts, with particular reference to the Norfolk Coast AONB, together with suitable mitigation measures to address the impacts;
i. The submission of an acceptable Arboricultural Impact Assessment to identify the impact of the development on existing trees and identify appropriate mitigation measures if required;
j. Advanced planting (or allowing current trees and hedges to thicken up) along the southern and eastern boundaries of land in the applicant's ownership (some of which would be outside the area of MIN 69) will be necessary to screen the site from public viewpoints, including views from the A148;
k. Existing woodland areas on land adjacent to the A148 and along the eastern boundary of site MIN 69 (as shown indicatively on the Policies Map) must be retained in order to screen the site from the A148;
l. The north-eastern corner of MIN 69 (as shown indicatively on the Policies Map) must be retained as a buffer zone to protect the setting and ecology of the adjacent woodland owned by the National Trust;
m. The submission of a very high-quality working and restoration scheme for MIN 69 and the existing site, showing clearly how the two sites could be worked and progressively restored together to minimise landscape and amenity harm during the operational stages and to maximise the benefits on restoration. Excessively steep 'walls' on the quarry boundary (a feature of the existing site) should be avoided, with gentler gradients necessary;
n. The restoration must be heathland-led (with some woodland), with a range of different habitats and micro-habitats being included (e.g. a variety of slope angles and aspects), to maximise the potential for plants, invertebrates, reptiles, birds and mammals. No importation of waste materials to assist with restoration will be permitted;
o. The provision of improved public access on restoration. Footpaths should only be diverted when necessary (e.g. for public safety reasons), and during both the operational stage and on restoration the footpaths should be of appropriate gradients to facilitate relatively easy access. Interpretation boards showing details of the glacial and peri-glacial geology of the site (the reason for the designation of the Briton's Lane Gravel Pit SSSI), heathland ecology and the AONB should be placed at suitable points in the site;
p. A section of the Cromer Ridge should be retained, if at all practicable, for geological study. The condition of the current geological SSSI (Briton's Lane Gravel Pit) should also be maintained or, where possible, improved. The arrangements at the current site – where academic and student study of the site's geology (by arrangement) is welcomed and facilitated by Carter Concrete – should continue, with the Norfolk Geodiversity Partnership being contacted in the event of interesting finds being made by the site operators; and
q. A formal aftercare period for at least 25 years after extraction has ceased must be secured through a section 106 legal agreement. These aftercare arrangements will need to include regular clearance of scrub vegetation to maintain heathland habitat and footpath maintenance.

MIN 115 - land at Lord Anson's Wood, near North Walsham

Site Characteristics

- The 16.88 hectare site is within the parish of North Walsham
- The estimated sand and gravel resource at the site is 1,100,000 tonnes
- The proposer of the site has estimated the extraction rate to be 60,000 tonnes per annum but has not given a potential start date for extraction. Based on this information the full mineral resource at the site could be extracted within 19 years. If mineral extraction started in 2023, then 960,000 tonnes could be extracted within the plan period.
- The site is proposed by R G Carter Ltd as a new site.
- The site is currently a plantation woodland.
- The Agricultural Land Classification scheme classifies the land as being non-agricultural.
- The site is 1.1km from North Walsham and 5.9km from Aylsham, which are the nearest towns.

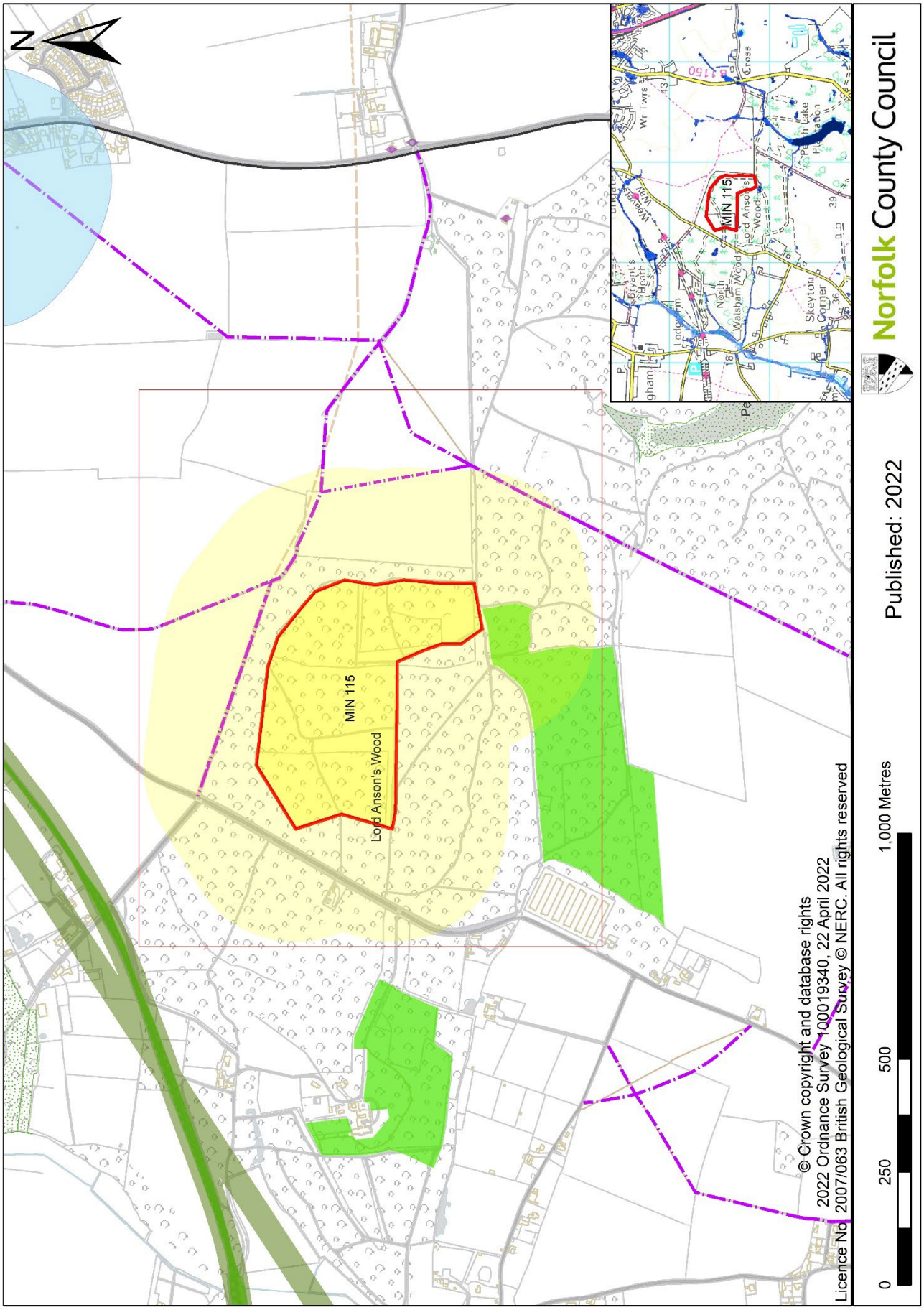
M115.1 Amenity: The nearest residential property is 352m from the site boundary. The settlement of North Walsham is 926m away. A 95-hectare extension to the west of North Walsham is proposed to provide approximately 1800 new homes, a primary school, public open space and employment land in the emerging North Norfolk Local Plan. The nearest boundary of this urban extension would be approximately 380m from the site boundary. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. Therefore, no adverse amenity impacts are expected from the proposed mineral extraction.

M115.2 Highway access: The proposed site access would be to the B1150 Norwich Road to the east, which is a designated lorry route. The haul route would potentially follow an existing track through the woodland before reaching the B1150. The Highway Authority considers that a suitable highway access could be formed to the B115, but it would need to include appropriate visibility sprays and be at a location on the B1150 with appropriate levels of forward visibility. Depending upon the results of a Transport Assessment, a right-turn lane may be needed. The site is not within an AQMA. The proposer of the site estimates that 6 to 8 HGV movements per day would be required.

M115.3 Historic environment: The historic landscape character of the site is 18th to 20th Century plantation woodland. The site is within a wider historic landscape character of 18th to 20th century plantation woodland, 20th century agriculture with enclosure and boundary loss (with and without a relict element), agriculture with 18th to 19th century piecemeal enclosure and heath. The wider historic landscape character also includes enclosed wetland meadow, a water reservoir, duck decoy pond, horticulture nursery and modern built up areas of small farm clusters.

M115.4 The nearest Listed Building is the Grade II Thatched cottage which is 810m away. There are 11 Listed Buildings within 2km of the site. The nearest Scheduled Monument is 'Cross 300m NW of Tollbar Cottages', which is 850m from the site. There are three Scheduled Monuments within 2km of the site. North Walsham Conservation Area is 1.97km from the site. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M115.5 Archaeology: The site contains a HE record for a WW2 aircraft crash site (B24 Liberator); no other HE records are noted however this may just be due to lack of investigations. The aircraft crash site is legally protected under the Protection of Military Remains Act (1986). The site is in a wider landscape with a number of finds and features with medieval iron working activity, and a battlefield site (the 1381 Battle of North Walsham) immediately to the east. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of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archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M115.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site is within the landscape character area described as 'Wooded with parkland – Wickmere and Swanton Abbott'. The site is an area of largely coniferous woodland, although there is some scrubby regrowth. Surrounding the site are areas of broadleaved woodland and further areas of conifer plantation, and the site is within a wider Parkland setting.

M115.7 The surrounding landscape setting along the access road is characterised by mature hedgerows field boundary mature oak trees and woodland edge of mixed coniferous and deciduous species. It is imperative that these existing landscape features are retained and enhanced.

M115.8 Retention of woodland buffer zones is proposed along northern and eastern boundaries with substantial areas of woodland surrounding the site on southern and western boundaries. The retention of woodland buffer zones would form a key requirement for this site to be satisfactory in landscape terms and visual impact terms.

M115.9 There are no Public Rights of Way within or adjacent to the site. There is a PROW close to the northern boundary of the site (north Walsham FP9). The haul road from the site to the B1150 would cross a PROW (Swanton Abbott FP11)

M115.10 Ecology: The site is more than 5km from any SPA, SAC or Ramsar site. Therefore, there would be no likely significant effects on these sites.

M115.11 Bryant's Heath, Felmingham SSSI is 0.7km from the site boundary. The SSSI citation states that the SSSI is an area of dry acidic heathland. The site encompasses a mix of dry heath, wet heath and fen communities. Rich plant communities have developed in the flushed areas and include several plants that are now uncommon in East Anglia. The proposed extraction site would be worked dry (above the water table) and therefore the SSSI would not be adversely affected.

M115.12 Westwick Lakes SSSI is 0.45km from the site boundary. The SSSI citation states that Westwick Lakes form a compact group of five secluded man-made lakes. The Perch Lake group is of a type rarely found in East Anglia and closely resembles nutrient-poor lakes found in the upland areas. The acidic waters support an unusual aquatic flora and plankton fauna. The other lakes are more typical with abundant water weeds. Large flocks of wildfowl overwinter in the lakes. The proposed extraction site would be worked dry (above the water table) and is located up-gradient of the SSSI. Therefore the SSSI would not be adversely affected.

M115.13 The nearest County Wildlife Sites are: CWS 1170 'Lord Anson's Wood' is adjacent to the site boundary and is an area of mature semi-natural woodland and of conifer plantation with broadleaved woodland regeneration. A potential impact could be dust deposition from extraction, if uncontrolled. Therefore, a dust assessment and identification of appropriate mitigation measures will be required as part of the planning application process, to ensure that the CWS are not adversely affected.

M115.14 CWS 1171 'North Walsham Wood' is 330m from the site boundary and is a mainly mature oak dominated semi-natural, broadleaved woodland with an understory of silver birch; there are also two areas of Scot's pine plantation. CWS 1172 'Weaver's Way' is 450m from the site boundary and is a stretch of dismantled railway comprising a mixture of recent semi-natural broadleaved woodland and species poor semi-improved neutral, well-drained grassland with scrub. The proposed mineral extraction site would be worked dry (above the water table) and therefore these County Wildlife Sites would not be adversely affected.

M115.15 There are no ancient woodland sites within 3km of the site.

M115.16 Geodiversity: This site consists of the Briton's Lane sand and gravel member, overlying Wroxham Crag Formation-sand and gravel. The Briton's Lane sands and gravels are known to contain priority features such as palaesols and erratics in other locations, and therefore they may

occur on this site. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M115.17 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low probability of surface water flooding with one very small location of surface water pooling in a 1 in 1000 year rainfall event. Sand and gravel extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M115.18 Hydrogeology: The site is located over a Secondary A aquifer (superficial deposits) and a principal aquifer (bedrock). The majority of the site is within groundwater Source Protection Zone 3. The western part of the site is not within a groundwater Source Protection Zone. The site would be worked dry (above the water table) and therefore no effect on water resources is expected.

M115.19 Water Framework Directive: The site is over 1km from watercourses within the catchment of the Tributary of the Bure and the King's Beck, which are the nearest Water Framework Directive waterbodies. The groundwater level in this area is many metres below ground level and therefore overland flows are not expected from the site towards the Tributary of the Bure or the King's Beck. If mineral is extracted from MIN 115 it is expected to be processed on site. Therefore, the sand and gravel to be processed would not be transported across the Tributary of the Bure and the King's Beck. Due to the distance of the site from the Tributary of the Bure and the King's Beck it is not expected that there would be a pathway for silt ingress into the Tributary of the Bure or the King's Beck from any future sand and gravel extraction within site MIN 115.

M115.20 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M115.21 Safeguarding aerodromes: The site is not within an aerodrome safeguarding zone.

M115.22 Restoration: No details on proposed restoration of the site have been provided. The preferred restoration for the site would be a mix of deciduous woodland and heathland, with public access.

M115.23 Conclusion: Site MIN 115 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 115.

Specific Site Allocation Policy MIN 115 (land at Lord Anson's Wood, near North Walsham):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of an acceptable Transport Assessment or Statement (as appropriate) to assess the impacts of HGV traffic along the access route, and appropriate mitigation for any potential impacts to the highway; and
b. The provision of an off-highway haul road from the site to access the B1150 to the east. A junction to the B1150 to be formed with appropriate visibility splays and levels of forward visibility to the satisfaction of the Highway Authority. Depending on the results of a Transport Assessment, a right-turn lane may be required;
c. The submission of an acceptable full biodiversity survey and report, including bat and badger surveys. Depending on the results of the survey, mitigation measures may be necessary to ensure that there would be no adverse impacts on protected species;
d. The submission of an acceptable Arboricultural Impact Assessment to identify the impact of the development on existing trees and identify appropriate mitigation measures if required;
e. An appropriately wide screen of trees to be left around the site to minimise amenity impacts on users of the footpath passing close to the north-west corner of Lord Ansons's Wood;
f. The site would need to be worked 'dry' (above the water table) to ensure there would be no adverse impacts on Westwick Lakes SSSI;
g. The submission of an acceptable progressive restoration to a mix of deciduous woodland and heathland with public access to provide biodiversity net gains;
h. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including the Grade II Listed Thatched cottage and the Scheduled Monument is 'Cross 300m NW of Tollbar Cottages'), assess the potential for impacts and identify appropriate mitigation measures if required;
i. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment would need to include potential impacts on the wartime military crash site and the 1381 Peasants' Revolt Battle of North Walsham site. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures; and
j. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study.

MIN 207 - land at Pinkney Field, Briston

Site Characteristics

- The 12.5 hectare site is within the parish of Edgefield
- The estimated sand and gravel resource at the site is 400,000 tonnes
- Planning permission (C/1/2018/1016) was granted for mineral extraction at this site in August 2019 but had not been implemented by December 2021.
- The potential start date for the site is 2022 and the extraction rate is expected to be 75,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within 6 years which would be within the plan period.
- The site is proposed by Mick George Ltd (Frimstone) as an extension to an existing site to form an agricultural reservoir.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being Grade 3
- The site is 3.7km from Holt which is the nearest town.

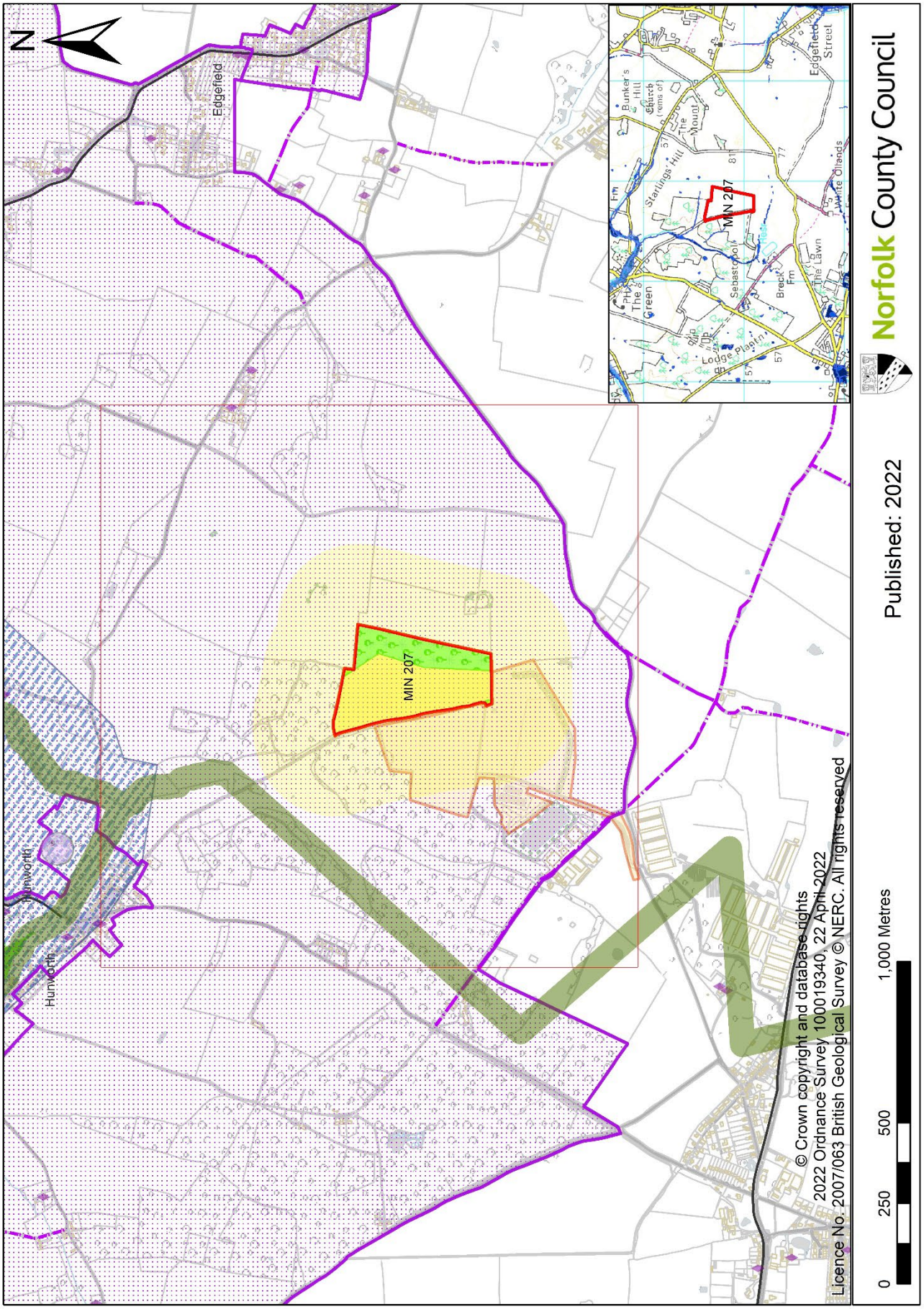
M207.1 Amenity: The nearest residential property is 280m from the site boundary. The settlement of Hunworth is 692m away. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M207.2 Highway access: The site would use the existing site off-highway haul route which crosses Edgefield Road C468 and joins the B1354 Norwich Road, which is a designated lorry route, at an existing access shortly after West End and Horseshoe Lane. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 30 to 40 per day. The proposed highway access is considered to be suitable by the Highway Authority.

M207.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with boundary loss. The site is within a wider historic landscape character of Twentieth century agriculture with enclosure and boundary loss (with and without a relict element), agriculture with 18th to 19th century piecemeal enclosure, and pre-18th century enclosure. The wider historic landscape character also includes leisure/recreation, water meadow, modern built-up areas of small farm clusters and houses, and 19th to 20th century plantation woodland.

M207.4 The nearest Listed Building is the Grade II* 'Remains of the church of St Peter and St Paul' which is 750m away. There are 36 Listed Buildings within 2km of the site. 13 of these are within the Hunworth Conservation Area, which is 0.73km from the site. The site is within the Glaven Valley Conservation Area. The site is 1.59km from Edgefield Conservation Area. There are 2 Scheduled Monuments within 2km of the site. The nearest Scheduled Monument is 'Castle Hill medieval ringwork, Hunworth', which is 0.88km away. There are no Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M207.5 Archaeology: There are no Historic Environment records within the site boundary, however the lack of HE records may just be due to a lack of investigations. The site immediately to the west has been investigated and no finds or features were identified. There are isolated multi-period finds in the wider landscape. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.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M207.6 Landscape: The site is not located within the AONB or a Core River Valley but is within the Glaven Valley Conservation Area. The site falls within two landscape character areas; the western part is within 'Wooded with parkland – Holt to Cromer' and the eastern part is within 'Tributary Farmland – Hempstead, Bodham, Aylmerton and Wickmere'. The western boundary of site MIN 207 is adjacent to an existing mineral extraction site, which is currently being restored to an agricultural reservoir in the north and will be restored to agricultural grassland in the south with some additional woodland planting. The NPPF states that local planning authorities should "as far as practicable, provide for the maintenance of landbanks of non-energy minerals from outside Conservation Areas" however, the purpose of the mineral extraction is to enable the formation of an agricultural reservoir and the site would be well screened from public views, so the local landscape impacts are not considered to be significant during the period of mineral extraction. Following mineral extraction, the western part of site MIN 207 would be restored to an agricultural reservoir and the eastern part would be restored to agricultural grassland. There is currently planning permission for two agricultural reservoirs to be formed on the adjacent western field, with associated mineral extraction. The agricultural reservoir to be formed within site MIN 207 would replace the proposed second agricultural reservoir in the adjacent field. Therefore, the landscape change on restoration would be similar to that already permitted on the adjacent land because there would be an agricultural reservoir formed on each site, instead of two agricultural reservoirs within one site as currently permitted.

M207.7 Woodland borders part of the northern boundary and screens the site from Hunworth. The eastern and southern boundaries border agricultural fields; however the rolling nature of the landscape, together with isolated woodland copses and hedgerows aid with screening from the Hunworth Road and the Edgefield Road, such that there are few very limited views of the site. Mill House, off the Hunworth Road, is approximately 350m east of the site boundary. Due to the orientation of the property, as well as intervening woodland, hedgerows, and the topography, Mill House would not have a view of the site.

M207.8 There are no Public Rights of Way within or adjacent to the site.

M207.9 Ecology: The site is 2.57km from Holt Lowes SSSI which is part of the Norfolk Valley Fens SAC. The SSSI citation states that this is an area of dry sandy heathland that grades into flushes slopes along the valley of the River Glaven. There is an excellent example of a mixed valley-mire in a small tributary valley that bisects the heath. The mixed mire communities are diverse and reflect the variations in alkalinity and nutrient availability in the drainage waters. Several uncommon plants and invertebrates are present. The proposed extraction site would be worked dry (above the water table) and is located up-gradient of the SSSI. Therefore, the SSSI and SAC would not be adversely affected.

M207.10 There are no County Wildlife Site within 1km of the site boundary.

M207.11 The nearest ancient woodland site is Lowes Farm Wood, a Plantation on Ancient Woodland Site (PAWS), which is 1.27km from the site boundary. Due to the distance from the ancient woodland site there would be no impacts from dust deposition. The proposed extraction site would be worked dry (above the water table) and therefore the ancient woodland would not be adversely affected.

M207.12 Geodiversity: The site consists of the Briton's Lane sand and gravel member, Lowestoft Formation - diamicton, overlying Chalk Formations. The Briton's Lane sands and gravels are known to contain priority features such as palaesols and erratics in other locations, and therefore they may occur on this site. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M207.13 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. No areas of the site are at risk of surface water flooding. The site is not in an Internal Drainage Board area.

M207.14 Hydrogeology: The site is partially located over a Secondary A aquifer and partially over a Secondary (undifferentiated) aquifer (superficial deposits). The site is also located over a principal aquifer (bedrock). However, there are no groundwater Source Protection Zones within the proposed site. The site would be worked dry (above the water table) and therefore no effect on water resources is expected.

M207.15 Water Framework Directive: The site is approximately 600 metres from the River Glaven, which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the River Glaven. MIN 207 and the existing adjacent processing plant, which the sand and gravel would be transported to by internal haul route, are both a considerable distance south of the River Glaven. Therefore, the sand and gravel to be processed would not be transported across the River Glaven. Due to the distance of the site from the River Glaven it is not expected that there would be a pathway for silt ingress into the River Glaven from any future sand and gravel extraction within site MIN 207.

M207.16 Utilities infrastructure: There are no Anglian Water sewerage assets or water assets within the site. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M207.17 Safeguarding aerodromes: The site is not within an aerodrome safeguarding zone.

M207.18 Restoration: The site is proposed to be restored to an agricultural reservoir, with the unworked part of the site restored to agricultural grassland. The reservoir would be a replacement for the permitted southern reservoir on the existing adjacent mineral extraction site to the southwest, which would instead be restored to agricultural grassland.

M207.19 Conclusion: Site MIN 207 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 207.

Specific Site Allocation Policy MIN 207 (land at Pinkney Field, Briston):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
b. The submission of an acceptable restoration scheme to an agricultural reservoir and grassland to provide biodiversity net gains;
c. Highway access to be via the existing off-highway haul route to the B1354 Norwich Road;
d. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
e. The submission of an acceptable Landscape and Visual Impact assessment to identify potential landscape impacts, with particular reference to the Glaven Valley Conservation Area, together with suitable mitigation measures to address the impacts;
f. The submission of an acceptable Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required; and
g. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures.

MIN 208 - land south of Holt Road, East Beckham

Site Characteristics

- The 16.56 hectare site is within the parish of East Beckham
- The estimated sand and gravel resource at the site is 1,320,000 tonnes
- The proposer of the site has given a potential start date of 2031 and estimated the extraction rate to be 100,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within fourteen years, therefore approximately 800,000 tonnes could be extracted within the plan period.
- The site is proposed by Gresham Gravel Ltd as an extension to an existing site.
- The site is currently in agricultural use and part of the site includes a solar farm. The Agricultural Land Classification scheme classifies the land as being 3a and 3b.
- The site is 5.5km from Cromer and 5.9km from Holt, which are the nearest towns.

M208.1 Amenity: The nearest residential property is 197m from the site boundary. There are three sensitive receptors within 250m of the site boundary. The settlement of East Beckham is 560m away. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

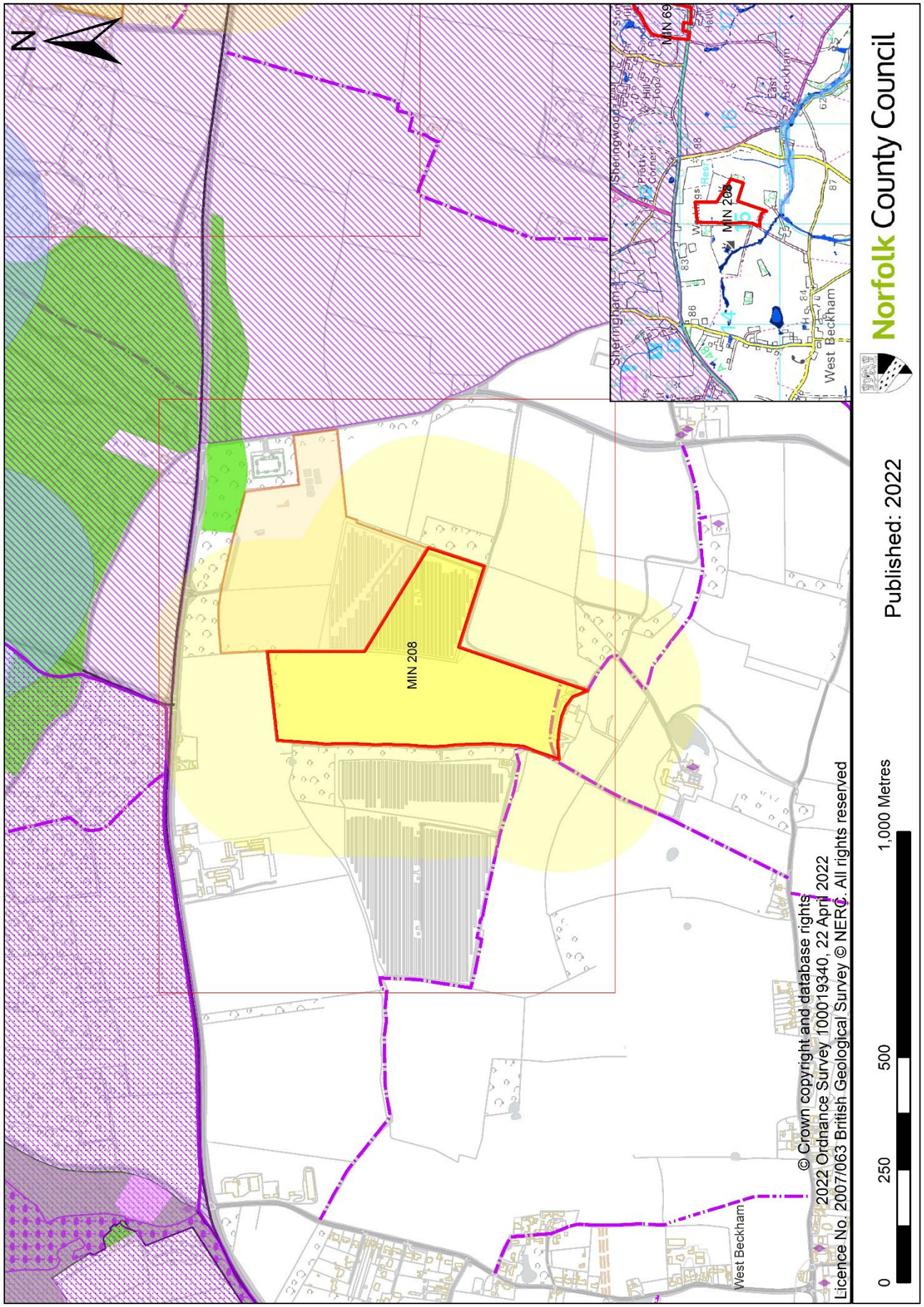
M208.2 Highway access: The site would use the existing site access onto the A148 Holt Road, which is a designated lorry route. The site is not within an AQMA. As a proposed extension to an existing site, the number of vehicle movements is expected to remain the same but continue for a longer period. The estimated number of HGV movements is 40 two-way movements per day. The proposed highway access is considered to be suitable by the Highway Authority.

M208.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with boundary loss and agriculture with 18th to 19th Century piecemeal enclosure. The site is within a wider historic landscape character of Twentieth Century agriculture with enclosure and boundary loss and agriculture with 18th to 19th Century piecemeal enclosure. The wider historic landscape character also includes heath, a water reservoir, carr woodland and 18th to 20th Century plantation woodland.

M208.4 The nearest Listed Building is Grade II Hall Farmhouse which is 270m away. There are 14 Listed buildings within 2km of the site, 9 of these are within the Upper Sheringham Conservation Area which is 250m from the site. The only Scheduled Monument within 2km of the site is the 'Oval barrow and bowl barrow known as Howe's Hill' which is 1.6km away. Sheringham Hall, a Registered Historic Park is 1.02km from the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M208.5 Archaeology: There are Historic Environment records of prehistoric flint finds and a medieval hollow way within the site boundary. The site is in a wider landscape with a significant number of finds and features from multiple periods. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M208.6 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. It is approximately 210 metres from the boundary of the Norfolk Coast AONB. The site is currently an agricultural field, and part of the field contains a solar farm. The site is within the landscape character area described as 'Tributary Farmland - Hempstead, Bodham, Aylmerton and Wickmere'.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M208.7 The site is a south-western extension to an active permitted sand and gravel working which is just south of the A148. MIN 208 is a southerly sloping site adjacent to a solar farm to the west. The village of West Beckham is approximately 670 metres southwest of the site boundary. The site is well screened from public roads, although a long view can be seen from the A149 to the north and from Sheringham Road and The Street, West Beckham to the west. Views can be seen from the Public Right of Way on the southern boundary of the site. The site is generally well screened and views from property would be confined to East Beckham Hall and possibly from the upstairs of Mill House. Therefore, suitable screening of the site would be required to mitigate any landscape impacts.

M208.8 There is a Public Right of Way adjacent to the southern boundary of the site (East Beckham FP2).

M208.9 Ecology: The site is 1.45km from Sheringham and Beeston Regis Commons SSSI, which is part of the Norfolk Valley Fens SAC. The SSSI citation states that the site is an area of acidic heathland containing area of species-rich calcareous spring fen on sloping ground. 'Mixed mire' vegetation has developed in seepage zones. These spring fen areas contain many wetland plants that are now locally uncommon. Dry heathland surrounds the fens and supports several species of breeding birds and reptiles. The proposed extraction site would be worked dry (above the water table) and is located in a different hydrological catchment to the SSSI and SAC. Therefore, there would be no adverse impacts on the SSSI and SAC.

M208.10 Weybourne Cliffs SSSI is 2.64km from the site. The SSSI citation details the geological interest in the site with outstanding Pleistocene sections of national importance and marine and vertebrate fossils. Additional biological interest is provided by colonies of sand martins in the cliff-face and of fulmars on the cliff ledges. The SSSI would not be adversely affected by the proposed mineral extraction site.

M208.11 The nearest County Wildlife Sites are: CWS 1146 'Pretty Corner and the Plains' is 400m from the site boundary and is a complex mosaic of semi-natural broadleaved woodland habitats with small areas of neutral, unimproved grassland and patches of dry heath. CWS 2077 'Sheringham Old Wood' is 480m from the site boundary and is mainly coniferous and mixed plantations with small remnant fragments of broadleaved semi-natural woodland, heathland and acidic grassland. CWS 1145 'Gibbet and Marlpit Plantations' is 270m from the site boundary and is an area of acid, oak dominated woodland. Due to the distance from the County Wildlife Sites there would be no impacts from dust deposition. The proposed extraction site would be worked dry and therefore the CWSs would not be adversely affected.

M208.12 The nearest ancient woodland site is a Plantation on Ancient Woodland Site (PAWS) and Ancient Semi-Natural Woodland (ASNW) (unnamed) in Upper Sheringham, which is 1.05km from the site boundary. Due to the distance from the ancient woodland there would be no impact from dust deposition. The proposed extraction site would be worked dry and therefore the ancient woodland would not be adversely affected.

M208.13 Geodiversity: The site consists of Head deposits-clay, silt, sand & gravel which are priority features due to their method of formation, Briton's Lane sand and gravel member, overlying Wroxham Crag Formation-sand and gravel. The Briton's Lane sands and gravels are known to contain priority features such as palaesols and erratics in other locations, and therefore they may occur on this site. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M208.14 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low risk of surface water flooding, with two small areas of surface water pooling in a 1 in 1000-year rainfall event. Sand and gravel is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M208.15 Hydrogeology: The site is partially located over a Secondary A aquifer and partially over a Secondary (undifferentiated) aquifer (superficial deposits). The site is also located over a principal aquifer (bedrock). The site is within groundwater Source Protection Zone 3. The site would be worked dry (above the water table) and therefore no effect on water resources is expected.

M208.16 Water Framework Directive: The site is approximately 100 metres from an unnamed stream within the catchment of Scarrow Beck, which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards the Beck. MIN 208 and the existing adjacent processing plant, which the sand and gravel would be transported to by internal haul route, are both a considerable distance north of the Scarrow Beck. Therefore, the sand and gravel to be processed would not be transported across Scarrow Beck. Due to the distance of the site from Scarrow Beck it is not expected that there would be a pathway for silt ingress into the Scarrow Beck from any future sand and gravel extraction within site MIN 208.

M208.17 Utilities infrastructure: There are no Anglian Water sewerage assets within the site. There are five water mains within the site and Anglian Water would require the standard protected easement widths for the water main and for any requests for alteration or removal to be conducted in accordance with the Water Industry Act 1991. There is no electricity transmission infrastructure within the site. There are no high-pressure gas pipelines within the site.

M208.18 Safeguarding aerodromes: The site is not within an aerodrome safeguarding zone.

M208.19 Restoration: The site is proposed to be restored to a mosaic of native woodland, scrub, acid grasslands and exposed faces.

M208.20 Conclusion: Site MIN 208 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 208.

Specific Site Allocation Policy MIN 208 (land south of Holt Road, East Beckham):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts;
b. The submission of an acceptable progressive restoration scheme to a nature conservation afteruse to provide landscape and biodiversity net gains;
c. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
d. The submission of an acceptable Heritage Statement to identify heritage assets and their settings(including the Upper Sheringham Conservation Area and heritage assets within it, as well as the Listed Buildings of Hall Farmhouse, Abbey Farmhouse, Outbuilding at Abbey Farm and the Church of St Helen), assess the potential for impacts and identify appropriate mitigation measures if required;
e. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
f. The submission of an acceptable Landscape and Visual Impact Assessment to identify any potential landscape or visual intrusion impacts and appropriate mitigation measures to address these, which will form part of the working scheme;
g. The site will need to be phased with the adjacent permitted site so that only one site is worked for extraction at a time;
h. The site will need to be worked without dewatering, unless a Hydrogeological Impact Assessment identifies either no unacceptable hydrogeological impacts or appropriate mitigation is identified to ensure no acceptable impact to hydrogeology;
i. A sufficient stand-off distance around the water mains that cross the site or diversion of the water mains at the developer's costs and to the satisfaction of Anglian Water; and
j. The existing processing plant site and highway access to be used.

South Norfolk sites

MIN 25 - land at Manor Farm (between Loddon Road and Thorpe Road), Haddiscoe

Site Characteristics

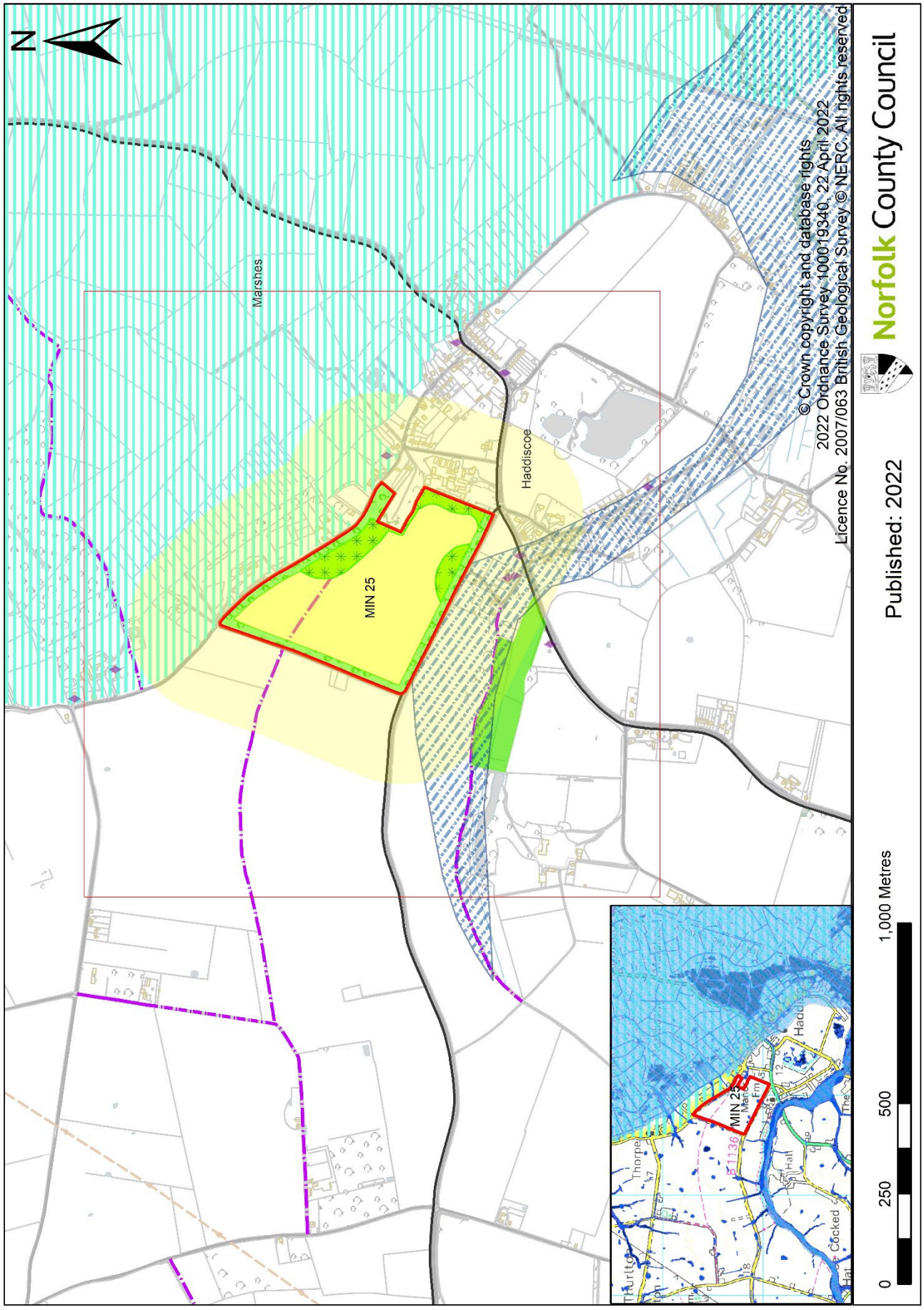
- The 21.95 hectare site is within the parish of Haddiscoe
- The estimated sand and gravel resource at the site is 1,300,000 tonnes
- The proposer of the site has given a potential start date of 2022 and estimated the extraction rate to be 150,000 tonnes per annum. Based on this information the full mineral resource at the site could be extracted within 9 years which would be within the plan period.
- The site is proposed by Breedon Group as a new site.
- The site is currently in agricultural use and the Agricultural Land Classification scheme classifies the land as being grade 3.
- The site is 11km from Great Yarmouth and 10.5km from Gorleston-on-Sea, which are the nearest towns.

M25.1 Amenity: The nearest residential property is 19m from the site boundary. There are 55 sensitive receptors within 250m of the site boundary and 15 of these are within 100m of the site boundary. Most of these properties are within the settlement of Haddiscoe, which is 55m away. Even without mitigation, adverse dust impacts from sand and gravel sites are uncommon beyond 250m from the nearest dust generating activities. The greatest impacts will be within 100 metres of a source, if uncontrolled. The operational area of the site would need to be set back approximately 100 metres from the nearest residential properties. A planning application for mineral extraction at this site would need to include noise and dust assessments and mitigation measures to deal appropriately with any amenity impacts.

M25.2 Highway access: The site would access Crab Apple Lane and then turn east onto the B1136 Loddon Road to the junction with the A143 Beccles Road, which are both designated lorry routes. However, if the mineral is transported to the existing mineral extraction site at Norton Subcourse for processing, then HGVs would turn west from Crab Apple Lane onto the B1136 Loddon Road, continue west along the B1136 Yarmouth Road and then turn north onto Ferry Road to access the existing off-highway haul route to the Norton Subcourse site. The site is not within an AQMA. The estimated number of HGV movements is 80 (in and out) per day. The proposed highway access is considered to be suitable by the Highway Authority, subject to appropriate road improvements along Crab Apple Lane.

M25.3 Historic environment: The historic landscape character of the site is Twentieth Century agriculture with boundary loss and agriculture with 18th to 19th Century piecemeal enclosure. The site is within a wider historic landscape character of 20th century agriculture with enclosure, boundary loss and boundary loss with a relict element; agriculture with 18th to 19th century piecemeal enclosure and modern built-up areas of small farm clusters and residential development. The wider historic landscape character also includes enclosed drained rectilinear grazing marsh (17th to 20th century enclosure), enclosed wetland meadow, mineral extraction, and woodland (carr woodland, regenerated alder carr woodland and 18th to 20th century plantation woodland).

M25.4 There are four Listed Building within 250m of the site; they are Grade II White House Farm (70m away), Grade I Church of St Mary (110m away), Grade II Monument to William Salter set in the churchyard wall (130m away) and Grade II Haddiscoe War Memorial (110m away). There are 13 Listed Buildings within 2km of the site. There are mature screen planting forming hedgerows on all sides of the site, except a section of the eastern boundary closest to Manor Farm; which is the landowner's property. The site is separated from the Church of St Mary by the B1136, Loddon Road, and the screen planting along the road. Views of the church from the road would not be affected by the mineral extraction. The site is enclosed by mature screen planting and users of the road would not have views of the mineral extraction when viewing the church. Due to the screen planting around the site, with the addition of bunding during the extraction phases, it is considered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that mineral extraction within this site would not adversely affect the setting of the Church, the monument in the churchyard wall, the War Memorial or White House Farm.

M25.5 There are no Scheduled Monuments, Conservation Areas or Registered Historic Parks and Gardens within 2km of the site. A planning application for mineral extraction at this site would need to include a Heritage Statement to identify heritage assets and their settings, assess the potential for impacts and identify appropriate mitigation measures if required.

M25.6 Archaeology: There are Historic Environment records of multi-period finds and features within the site boundary. The site is in a wider landscape with a significant number of finds and features from multiple periods. Therefore, there is the potential that unknown archaeology exists on the site and an assessment of the significance of archaeological remains will be required at the planning application stage, in order to protect and mitigate the impact of mineral extraction in this site. The archaeology assessment may initially be desk-based but may need to be followed up with field surveys and trial-trenching.

M25.7 Landscape: The site is not located within the AONB, a Core River Valley or any other designated landscape feature. The site is adjacent to a Core River Valley and is adjacent to the boundary of the Broads Authority Executive Area. The site comprises an arable agricultural field which slopes gently to the northeast, towards the Haddiscoe Marshes. The site is within the landscape character area described as 'Thurlton Tributary Farmland with Parkland' in the South Norfolk Landscape Character Assessment.

M25.8 There are mature screen planting forming hedgerows on all sides of the site, except a section of the eastern boundary closest to Manor Farm; which is the landowner's property. There is also a small area of amenity land (previously a mineral working) adjacent to part of the eastern boundary. The site is separated from the Grade I Listed Church by the B1136, Loddon Road, and the screen planting along the road. There are a number of properties along the northern boundary which borders Thorpe Road, however the mature screen planting will limit views of the site from these properties. The operational area of the site would need to be set back approximately 100 metres from the nearest residential properties and be screened by bunds as well as boundary hedge planting along all the site boundaries.

M25.9 This site, together with a processing plant site and extraction area to the south of the B1136 were the subject of an appeal against the refusal of planning permission, the appeal (APP/X2600/A/13/2197841) was dismissed in 2014. Impact on the setting of the Grade I Listed Church was one of the reasons the appeal was dismissed. Significant factors in the appeal decision were the location of the plant site to the south of the B1136 (the same side as the church), the open nature of the existing landscape on that side of the road, views along the road towards the church, and the expected length of extraction (21 years).

M25.10 The current proposal does not include any land to the south of the B1136. Therefore, views of the church from the road would not be affected by the mineral extraction. The site is enclosed by mature screen planting and users of the road would not have views of the mineral extraction when viewing the church. The appeal Inspector noted that the harm from the working to the south of the B1136 was increased by the longevity of the extraction and the fact that the plant site would be on that side of the road for the whole 21 years of the mineral working. The evidence to the appeal, noted in paragraph 26 of the appeal decision, states the land parcel "to the north, is well screened from Loddon Road and comprises low grade agricultural land, and attracts no landscape objection". In the current proposal, all mineral extraction and associated activity would only take place north of the B1136 and the estimated length of extraction is 9 years. Therefore, it is considered that the site is suitable in landscape terms.

M25.11 This is a Public Right of Way running across the site (from Thorpe Road to Crab Apple Lane) (Haddiscoe BR5). The PROW would need to be diverted during mineral extraction operations and reinstated as part of the restoration of the site.

M25.12 Ecology: The site is 3.84km from The Broads SAC and Broadland SPA and Ramsar site and is outside the 3km Impact Risk Zone for Halvergate Marshes SSSI and Standley and Alder

Carrs, Aldeby SSSI, which form part of these internationally designated sites. Therefore, there would not be any adverse effects on these designated sites.

M25.13 The site is 4.36 km from Breydon Water SPA and Ramsar site. Breyon Water is an inland tidal estuary and it has extensive areas of mud-flats that are exposed at low tide and these form the only tidal flats on the east coast of Norfolk. There are also extensive areas of floodplain grassland adjacent to the intertidal areas. Breydon Water is internationally important for wintering waterbirds, some of which feed in the Broadland SPA that adjoins this site at Halvergate Marshes. The proposed extraction site is within the 5km Impact Risk Zone for these designated sites, but outside the 3km Impact Risk Zone for Breydon Water SSSI. The proposed extraction site is located in a different hydrological catchment to Breydon Water and therefore would not adversely affect the hydrology of the designated sites. Due to the distance of the proposed extraction site to Breydon Water noise and lighting would not disturb the birds on the designated sites. Therefore, no adverse effects are expected on the SPA or Ramsar site.

M25.14 There are no SSSIs within 3km of the site boundary and the site is not within the Impact Risk Zone for any SSSIs. Therefore, no adverse effects are expected on SSSIs, SPAs, SACs or Ramsar sites.

M25.15 The nearest County Wildlife Site is CWS 2221 'Devil's End Meadow' which is 170m from the site boundary and is comprised of grassland with wet ditches, a small area of wet woodland and an area of dry woodland, lying along the Landspring Beck. The potential exists for impacts from mineral extraction at MIN 25, if uncontrolled. An assessment of potential impacts, including from dust deposition and hydrogeology, together with appropriate mitigation would be required as part of any planning application.

M25.16 The nearest ancient woodland site is Long Row Wood, an Ancient Semi-Natural Woodland (ASNW) which is 1.55km from the site boundary. Due to the distance from the ancient woodland there would be no impacts from dust deposition. The potential exists for hydrogeological impacts from mineral extraction at MIN 25, if uncontrolled. An assessment of potential hydrogeological impacts, together with appropriate mitigation would be required as part of any planning application.

M25.17 Geodiversity: The site consists of the Haddiscoe formation - sand and gravel, Corton formation-sand (undifferentiated), Lowestoft Formation - diamicton; overlying the Crag group. There is significant potential for vertebrate fossils within the Crag Group. It is likely that geological exposures at this site would be of academic interest. Potential impacts to geodiversity would need to be assessed and appropriate mitigation identified as part of any future application. It would be useful to retain some open faces for scientific study during operational stages, and ideally after restoration, and have a 'watching brief' during the extraction phase in case features of potential geodiversity interest are uncovered.

M25.18 Flood Risk: The site is in Flood Zone 1 (lowest risk) for flooding from rivers. The site has a low risk of surface water flooding with two areas of surface water pooling in a 1 in 30 and 1 in 100-year rainfall event. There are additional areas of surface water pooling in a 1 in 1000-year rainfall event. Sand and gravel extraction is considered to be a 'water compatible' land use which is suitable in all flood zones. The site is not in an Internal Drainage Board area.

M25.19 Hydrogeology: The site is located over a Secondary A aquifer (superficial deposits) and a principal aquifer (bedrock). However, there are no groundwater Source Protection Zones within the proposed site.

M25.20 Water Framework Directive: The site is approximately 700 metres from Landspring Beck, which is the nearest Water Framework Directive waterbody. The groundwater level in this area is several metres below ground level and therefore overland flows are not expected from the site towards Landspring Beck. If mineral is extracted from site MIN 25, it is expected to be dry screened on site. There is the potential that the mineral would then be transported to the existing mineral extraction site at Norton Subcourse for further processing. In either case, the sand and gravel to be processed would not be transported across the Landspring Beck. Due to the distance of the site

from Landspring Beck it is not expected that there would be a pathway for silt ingress into the Beck from any future sand and gravel extraction within site MIN 25.

M25.21 Utilities infrastructure: There are no Anglian Water sewerage assets within the site. There are two water mains within the site and Anglian Water would require the standard protected easement widths for the water mains and for any requests for alteration or removal to be conducted in accordance with the Water Industry Act 1991. Electricity distribution lines cross the site. There are no high-pressure gas pipelines within the site.

M25.22 Safeguarding aerodromes: The site is not within an aerodrome safeguarding zone.

M25.23 Restoration: The site is proposed to be restored to a combination of acid grassland, woodland planting and shallow wetland/pond.

M25.24 Conclusion: Site MIN 25 is considered suitable to allocate for sand and gravel extraction. Development will be subject to compliance with the relevant Minerals and Waste Local Plan Policies and Specific Site Allocation Policy MIN 25.

Specific Site Allocation Policy MIN 25 (land at Manor Farm, Haddiscoe):

The site is allocated as a specific site for sand and gravel extraction. Development will be subject to compliance with the Minerals and Waste Local Plan policies and all the following requirements:

a. The submission of acceptable noise and dust assessments and a programme of mitigation measures to deal appropriately with any amenity impacts; mitigation measures should include setting back the working area at least 100 metres from the nearest residential properties;
b. The submission of an acceptable Landscape and Visual Impact Assessment which will identify any potential impacts to the wider landscape and suggest appropriate mitigation measures; particularly regarding views from nearby properties, surrounding roads, and provide protection of the setting of nearby listed buildings. The mitigation measures should include a combination of advanced planting with native species and bunds;
c. The submission of an acceptable phased working and progressive restoration scheme to a nature conservation afteruse, including retention of boundary hedgerows and trees, to provide landscape and biodiversity net gains;
d. The provision of opportunities during working for any geodiversity assets to studied, and if compatible with the landscape and ecology objectives an open face to be included within any restoration scheme for future scientific study;
e. The submission of a suitable scheme for the temporary diversion and reinstatement of the Public Right of Way;
f. A sufficient stand-off distance around the water mains that cross the site or diversion of the water mains at the developer's costs and to the satisfaction of Anglian Water;
g. The submission of an acceptable Heritage Statement to identify heritage assets and their settings (including the Grade I Listed Church of St Mary, Grade II Listed monument in the churchyard wall, Grade II Listed Haddiscoe War Memorial and the Grade II Listed White House Farm), assess the potential for impacts and identify appropriate mitigation measures if required;
h. The submission of an appropriate archaeological assessment, which must be prepared in consultation with Norfolk County Council; this may initially be desk-based but may need to be followed up with field surveys and trial-trenching. The archaeological assessment will be used by Norfolk County Council/Historic Environment Service to agree appropriate mitigation measures;
i. The submission of an acceptable Transport Assessment or Statement (as appropriate) to assess the impacts of HGV traffic along the access route, and appropriate mitigation for any potential impacts to the highway; and
j. Provision of a highway access that is considered suitable by the Highway Authority.

APPENDICES

Appendix 1 – Existing Core Strategy and Development Management Policies

Policy	Replaced / deleted	New Local Plan Policy
Policy CS1: Minerals extraction	Replaced	Policy MP1: Provision for minerals extraction
Policy CS2: General locations for mineral extraction and associated facilities	Replaced	Policy MP2: Spatial strategy for minerals extraction
Policy CS3: Waste management capacity to be provided	Replaced	Policy WP1: New waste management capacity to be provided
Policy CS4: New waste management capacity to be provided	Replaced	Policy WP1: New waste management capacity to be provided
Policy CS5: General locations for waste management facilities	Replaced	Policy WP2: Spatial strategy for waste management facilities
Policy CS6: General waste management considerations	Replaced	Policy WP3: Land suitable for waste management facilities
Policy CS7: Recycling, composting, anaerobic digestion and waste transfer stations	Replaced	Policy WP4: Recycling or transfer of inert CD&E waste Policy WP5: Waste transfer stations, MRF, ELV facilities and WEEE recovery facilities Policy WP6: Transfer, storage, processing and treatment of hazardous waste Policy WP8: Composting Policy WP9: Anaerobic digestion
Policy CS8: Residual waste treatment facilities	Replaced	Policy WP10: Residual waste treatment facilities
Policy CS9: Inert waste landfill	Replaced	Policy WP11: Disposal of inert waste by landfill
Policy CS10: Non-hazardous and hazardous waste landfill	Replaced	Policy WP12: Non-hazardous and hazardous waste landfill
Policy CS11: wastewater / sewerage infrastructure and treatment facilities	Replaced	Policy WP14: Water recycling centres
Policy CS12: Whitlingham wastewater treatment works	Replaced	Policy WP15: Whitlingham WRC
Policy CS13: Climate change and renewable energy generation	Replaced	Policy MW3: Climate change adaption and mitigation
Policy CS14: Environmental protection	Replaced	Policy MW1: Development Management Criteria Policy MW4: Breckland SPA
Policy CS15: Transport	Replaced	Policy MW2: Transport

Policy	Replaced / deleted	New Local Plan Policy
Policy CS16: Safeguarding mineral and waste sites and mineral resources	Replaced	Policy MP10: Safeguarding mineral infrastructure Policy MP11: Safeguarding mineral resources Policy WP17: Safeguarding waste management facilities
Policy CS17: Use of secondary and recycling aggregates	Replaced	Policy WP4: Recycling or transfer of inert CD&E waste
Policy DM1: Nature conservation	Replaced	Policy MW1: Development Management Criteria
Policy DM2: Core river valleys	Replaced	Policy MP5: Core River Valleys
Policy DM3: Groundwater and surface water	Replaced	Policy MW1: Development Management Criteria
Policy DM4: Flood Risk	Replaced	Policy MW1: Development Management Criteria
Policy DM5: Borrow pits and agricultural or potable water reservoirs	Replaced	Policy MP3: Borrow pits Policy MP4: Agricultural or potable water reservoirs
Policy DM6: Household Waste Recycling Centres	Replaced	Policy WP7: Household Waste Recycling Centres
Policy DM7: Safeguarding aerodromes	Replaced	Policy MW1: Development Management Criteria
Policy DM8: Design, local landscape and townscape character	Replaced	Policy MW1: Development Management Criteria
Policy DM9: Archaeological sites	Replaced	Policy MW1: Development Management Criteria
Policy DM10: Transport	Replaced	Policy MW2: Transport
Policy DM11: Sustainable construction and operations	Replaced	Policy MW3: Climate change mitigation and adaption
Policy DM12: Amenity	Replaced	Policy MW1: Development Management Criteria
Policy DM13: Air Quality	Replaced	Policy MW1: Development Management Criteria
Policy DM14: Progressive working, restoration and afteruse	Replaced	Policy MP7: Progressive working, restoration and afteruse
Policy DM15: Cumulative impacts	Replaced	Policy MP6: Cumulative impacts and phasing of workings
Policy DM16: Soils	Replaced	Policy MW5: Agricultural soils

Appendix 2 – Existing Mineral Site Specific Allocations and Areas of Search Policies

Minerals SSA Policy **Site location**	**Mineral resource (tonnes)**	**Replaced / deleted**	**New Local Plan Policy**	**Reason for deletion**
SD1 – Sustainable Development N/A	N/A	Deleted	N/A	This policy repeats the presumption in favour of sustainable development in the NPPF and therefore is not necessary.
MIN 10 Land off Fakenham Road, Beetley	2,400,000 tonnes sand and gravel	Replaced	SSA Policy MIN 12: land north of Chapel Lane, Beetley	N/A
MIN 51 Land west of Bilney Road, Beetley	1,300,000 tonnes sand and gravel			
MIN 102 Land at North Farm, south of the River Thet, Snetterton	1,500,000 tonnes of sand and gravel	Deleted	N/A	The site is not allocated because of its proximity to Swangey Fen SSSI. There is the potential for unacceptable adverse effects on the SSSI from the proposed mineral extraction. The site is less deliverable than other proposed sites.
MIN 108 Land to the north of Hargham Road, Shropham	150,000 tonnes of sand and gravel	Deleted	N/A	The landowner no longer wants the site to be considered for mineral extraction
MIN 109 Land to the south of Honeypots Quarry, Shropham	350,000 to 400,000 tonnes of sand and gravel	Deleted	N/A	The landowner no longer wants the site to be considered for mineral extraction
MIN 110 Land to the south of Spong Lane, Shropham	150,000 tonnes of sand and gravel	Deleted	N/A	The landowner no longer wants the site to be considered for mineral extraction
MIN 37 Land at Mayton Wood, Coltishall Road, Frettenham	1,450,000 tonnes of sand and gravel	Replaced	SSA Policy MIN 37: land at Mayton Wood, Coltishall Road, Buxton	N/A

Minerals SSA Policy **Site location**	**Mineral resource (tonnes)**	**Replaced / deleted**	**New Local Plan Policy**	**Reason for deletion**
MIN 48 Swannington Bottom Plantation, Felthorpe	1,900,000 tonnes of sand and gravel	Deleted	N/A	The site is not allocated because of its proximity to Swannington Upgate Common SSSI. There is the potential for unacceptable adverse effects on the SSSI from the proposed mineral extraction. The site is less deliverable than other proposed sites.
MIN 55 Land at Keepers Cottage, Attlebridge	525,000 tonnes of sand and gravel	Deleted	N/A	The site is not allocated because it is less deliverable than other proposed sites due to its small area and being surrounded on most sides by a restored landfill site.
MIN 64 Horstead Quarry, Grange Farm, Horstead	950,000 tonnes of sand and gravel	Replaced	SSA Policy MIN 64: land at Grange Farm, Buxton Road, Horstead	N/A
MIN 96 Land at Grange Farm, Spixworth	1,000,000 tonnes of sand and gravel	Replaced	SSA Policy MIN 96: land at Grange Farm, Spixworth	N/A
MIN 6 Land off East Winch Road, Mill Drove, Middleton	1,416,000 tonnes of carstone	Replaced	SSA Policy MIN 6: land of East Winch Road, Mill Drove, Middleton	N/A
MIN 19 Eastern extension to Pentney Quarry	700,000 tonnes of sand and gravel	Deleted	N/A	The site is not allocated because it is within a Core River Valley and the restoration would not result in enhancement to the landscape sufficient to justify mineral extraction.
MIN 40 Land to the east of Grandcourt Farm, East Winch	3,000,000 tonnes of silica sand	Replaced	SSA Policy MIN 40: land east of Grandcourt Farm, East Winch	N/A

Minerals SSA Policy **Site location**	**Mineral resource (tonnes)**	**Replaced / deleted**	**New Local Plan Policy**	**Reason for deletion**
Policy MIN 45 Coxford Abbey Quarry, East Rudham	3,600,000 tonnes of sand and gravel	Deleted	N/A	Part of this site received planning permission in May 2014 which has been implemented. The remaining part of the site is not allocated because it is on a Plantation on Ancient Woodland and there are not wholly exceptional reasons for the development.
MIN 75 Home Farm, Watlington	335,000 tonnes of sand and gravel	Deleted	N/A	This site received planning permission in November 2015 and the permission has been implemented.
MIN 76 West Field, Watlington	285,000 tonnes of sand and gravel	Deleted	N/A	This site received planning permission in April 2019 and the permission has been implemented.
SIL01 Land at Mintlyn South, Bawsey	1,200,000 tonnes of silica sand	Replaced	SSA Policy SIL 01: land at Mintlyn South, Bawsey	N/A
Areas of Search Policy for silica sand extraction Marham, Runcton Holme, Tottenhill, Shouldham, Shouldham Thorpe, Stow Bardolph, Wormegay	Unknown – areas of search	Replaced	Policy MPSS1: silica sand extraction sites	N/A
MIN 69 Land north of Holt Road, Aylmerton	750,000 tonnes of sand and gravel	Replaced	SSA Policy MIN 69: land north of Holt Road, Aylmerton	N/A
MIN 71 Land to the west of Norwich Road, Lodge Farm, Holt	1,100,000 tonnes of sand and gravel	Deleted	N/A	The site is not allocated because of its proximity to Holt Lowes SSSI and its location in the Glaven Valley Conservation Area. There is the potential for unacceptable adverse effects on the SSSI from the proposed mineral extraction.

Minerals SSA Policy **Site location**	**Mineral resource (tonnes)**	**Replaced / deleted**	**New Local Plan Policy**	**Reason for deletion**
MIN 84 Land south of Holt Road, East Beckham	1,600,000 tonnes of sand and gravel	Deleted	N/A	This site received planning permission in August 2014 and the permission has been implemented
MIN 115 Land at Lord Anson's wood, near north Walsham	1,100,000 tonnes of sand and gravel	Replaced	SSA Policy MIN 115: land at Lord Anson's Wood, near North Walsham	N/A
MIN 79 Land north of Hickling Lane, Swardeston	1,750,000 tonnes of sand and gravel	Deleted	N/A	The site is not allocated because the proposed highway access is unacceptable.
MIN 80 Land south of Mangreen Hall Farm, Swardeston	760,000 tonnes of sand and gravel	Deleted	N/A	The mineral operator and landowner no longer want the site to be considered for mineral extraction.
MIN 81 Land south of Mangreen Lane, Stoke Holy Cross	955,000 tonnes of sand and gravel	Deleted	N/A	This site received planning permission in October 2015 and the permission has been implemented
MIN 83 Extension to Norton Subcourse Quarry, Loddon Road	674,000 tonnes of sand and gravel	Deleted	N/A	This site received planning permission in February 2015 and the permission has been implemented
MIN 90 Extension to Norton Subcourse Quarry, Loddon Road	511,000 tonnes of sand and gravel	Deleted	N/A	This site received planning permission in February 2015 and the permission has been implemented
MIN 91 Extension to Norton Subcourse Quarry, Loddon Road	1,146,000 tonnes of sand and gravel	Deleted	N/A	This site received planning permission in February 2015 and the permission has been implemented
MIN 118 Land at Hall Farm, Wymondham	600,000 tonnes of sand and gravel	Deleted	N/A	This site received planning permission in January 2014 and the permission has been implemented.

Appendix 3 – Existing Waste Site Specific Allocations Policies

Waste SSA Policy **Site location**	**Site Proposal**	**Replaced / deleted**	**Reason for deletion and/or replacement Local Plan policy**
Policy SD1 - Sustainable Development N/A	N/A	Deleted	The policy repeats the presumption in favour of sustainable development in the NPPF and therefore is not necessary.
WWTW1 Whitlingham Water Recycling Centre	Continued operation of the Water Recycling Centre	Replaced	Replaced by Policy WP15
WAS 01 Land at Beck Farm, East Bilney, East Dereham	Inert waste recycling and inert landfill	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The proposal is for a temporary use of land • If a planning application was to be submitted for this proposal, then criteria-based policies WP4 and WP11 would be relevant to the decision-making process
WAS 87 Land west of Bilney Road, Beetley	Inert waste recycling and inert landfill	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The proposal is for a temporary use of land • The proposal is associated with a specific site allocation for mineral extraction • If a planning application was to be submitted for this proposal, then criteria-based policies WP4 and WP11 and site allocation policy MIN 51/ MIN 13/ MIN 08 would be relevant to the decision-making process
WAS 06 Land off B1108 Norwich Road, Carbrooke	Inert recycling, and the reworking, removal and reuse of previously deposited foundry sand.	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • The proposal is for a temporary use of land • If a planning application was to be submitted for this proposal, then criteria-based policy WP4 would be relevant to the decision-making process

Waste SSA Policy **Site location**	**Site Proposal**	**Replaced / deleted**	**Reason for deletion and/or replacement Local Plan policy**
WAS 14 Land at Ashill Recycling Centre, Swaffham Road, Ashill	Composting, inert waste recycling and/or extension to the HWRC	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • If a planning application was to be submitted for this proposal, then criteria-based policies WP8, WP4 and/or WP7 would be relevant to the decision-making process
WAS 19 Land at Harling Road, Snetterton	composting, anaerobic digestion, processing of recyclables, inert waste recycling, HWRC and/or residual waste treatment processes, including energy-from-waste, thermal treatment and/or mixed waste processing	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • If a planning application was to be submitted for this proposal, then criteria-based policies WP8, WP9, WP4, WP5, WP7 and/or WP10 would be relevant to the decision-making process
WAS 32 Land at Thetford Transfer Station, Burrell Way, Thetford	processing of recyclables, mixed waste processing, inert waste recycling and/or HWRC	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is less than one hectare in size • The site is in existing waste management use • If a planning application was to be submitted for this proposal, then criteria-based policies WP4, WP5 and/or WP7 would be relevant to the decision-making process
WAS 47 Land at West Carr Road, Attleborough	Inert waste recycling and/or waste transfer	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • The site is partly in existing waste management use • If a planning application was to be submitted for this proposal, then criteria-based policies WP4 and/or WP5 would be relevant to the decision-making process

Waste SSA Policy Site location	Site Proposal	Replaced / deleted	Reason for deletion and/or replacement Local Plan policy
WAS 79 Land at North Farm, Snetterton	Inert landfill and secondary aggregate recycling	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • The proposal is for a temporary use of land • The site is not allocated for prior mineral extraction • If a planning application was to be submitted for this proposal, then criteria-based policies WP4 and WP11 would be relevant to the decision-making process
WAS 17 Land at Mayton Wood closed landfill site, Little Hautbois Road	Household waste recycling centre	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is less than one hectare in size • The site proposal is estimated to have a throughput of less than 50,000 tpa • The majority of the site is in existing waste management use • If a planning application was to be submitted for this proposal, then criteria-based policy WP7 would be relevant to the decision-making process.
WAS 68 Land near Mayton Wood closed landfill site, Coltishall Road	Inert landfill	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • The proposal is for a temporary use of land • If a planning application was to be submitted for this proposal, then criteria-based policy WP11 and site allocation policy MIN 37 would be relevant to the decision-making process
WAS 24 Land at Keeper's Cottage, Attlebridge	Composting, inert landfill or non-hazardous landfill	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • The site is not allocated for prior mineral extraction • If a planning application was to be submitted for this proposal, then criteria-based policies WP8, WP11 and/or WP12 would be relevant to the decision-making process

Waste SSA Policy Site location	Site Proposal	Replaced / deleted	Reason for deletion and/or replacement Local Plan policy
WAS 76 Land at SPC Atlas Works, Lenwade	Scrap metal recycling facility	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is less than one hectare in size • If a planning application was to be submitted for this proposal, then criteria-based policy WP5 would be relevant to the decision-making process
WAS 78 Land at SPC Atlas Works, Lenwade	mixed waste processing, metal recycling, inert waste recycling, in-vessel composting, physical, chemical, and/or mechanical/ biological treatment of household waste, waste transfer, and other forms of residual waste treatment (excluding thermal treatment)	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • If a planning application was to be submitted for this proposal, then criteria-based policies WP8, WP9, WP10, WP5 and/or WP4 would be relevant to the decision-making process
WAS 49 Land at Old Lindgreat Site, Harfreys Road, Great Yarmouth	processing of recyclables, mixed waste processing, inert waste recycling, household waste recycling centre, and/or waste transfer	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is less than one hectare in size • The estimated site throughput is less than 50,000tpa • If a planning application was to be submitted for this proposal, then criteria-based policies WP4, WP5 and/or WP7 would be relevant to the decision-making process
WAS 66 Land at Harfreys Road, Harfreys Industrial state, Great Yarmouth	household waste recycling centre, or for processing of recyclables, mixed waste processing, inert waste recycling, and/or waste transfer	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • If a planning application was to be submitted for this proposal, then criteria-based policies WP4, WP5 and/or WP7 would be relevant to the decision-making process

Waste SSA Policy **Site location**	**Site Proposal**	**Replaced / deleted**	**Reason for deletion and/or replacement Local Plan policy**
WAS 70 Land at Town Lands, Harfrey's Industrial Estate, Great Yarmouth	waste recycling and processing, and wood shredding	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is in existing waste management use. • If a planning application was to be submitted for this proposal, then criteria-based policy WP5 would be relevant to the decision-making process
WAS 05 Land at Estuary Road, King's Lynn	processing of recyclables, mixed waste processing, thermal treatment and other forms of residual waste treatment	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • If a planning application was to be submitted for this proposal, then criteria-based policies WP5 and/or WP10 would be relevant to the decision-making process
WAS 25 Land off East Winch Road / Mill Drove, Middleton	Inert landfill	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The estimated annual input to the site is less than 50,000 tonnes • The proposal is for a temporary use of land • If a planning application was to be submitted for this proposal, then criteria-based policy WP11 and site allocation policy MIN 06 would be relevant to the decision-making process
WAS 36 Land at Blackborough End landfill site, Mill Drove, Middleton	temporary uses comprising composting, processing of recyclables (materials recovery facility), inert waste recycling and/or waste transfer	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The proposal is for a temporary use of land • The site is in existing waste management use • If a planning application was to be submitted for this proposal, then criteria-based policies WP8, WP4 and/or WP5 would be relevant to the decision-making process

Waste SSA Policy **Site location**	**Site Proposal**	**Replaced / deleted**	**Reason for deletion and/or replacement Local Plan policy**
WAS 40 Land off Mill Drove, Blackborough End	Inert landfill and inert waste recycling	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The proposal is for a temporary use of land • If a planning application was to be submitted for this proposal, then criteria-based policies WP4 and WP11 would be relevant to the decision-making process
WAS 37 Land at Feltwell landfill site, Lodge Road, Feltwell	Temporary composting	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • The proposal is for a temporary use of land • The site has an existing waste management use as a landfill site. • If a planning application was to be submitted for this proposal, then criteria-based policy WP8 would be relevant to the decision-making process
WAS 45 Land off the B1454, Docking Common, Docking	composting	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is less than one hectare in size • The site proposal is estimated to have a throughput of less than 50,000 tpa • If a planning application was to be submitted for this proposal, then criteria-based policy WP8 would be relevant to the decision-making process
WAS 65 Land at the Willows Business Park, Saddlebow, King's Lynn	composting, recycling/processing, anaerobic digestion, thermal treatment and other forms of residual waste treatment	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • Norfolk County Council as the landowner of the site is no longer promoting the site for thermal treatment of waste. • If a planning application was to be submitted for this proposal, then criteria-based policies WP8, WP9, WP5 and/or WP10 would be relevant to the decision-making process

Waste SSA Policy **Site location**	**Site Proposal**	**Replaced / deleted**	**Reason for deletion and/or replacement Local Plan policy**
WAS 30 Land at Folgate Road, Lyngate Industrial Estate, North Walsham	composting, processing of recyclables, mixed waste processing and/or waste transfer	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is in existing waste management use • If a planning application was to be submitted for this proposal, then criteria-based policies WP8 and/or WP5 would be relevant to the decision-making process
WAS 94 Land off Folgate Road and Cornish Way, North Walsham	Composting or anaerobic digestion	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • The majority of this site is in existing waste management use • If a planning application was to be submitted for this proposal, then criteria-based policies WP8 or WP9 would be relevant to the decision-making process
WAS 90 Land at 49 Hurricane Way, Norwich	Recycling centre	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is less than one hectare in size • The site proposal is estimated to have a throughput of less than 50,000 tpa • If a planning application was to be submitted for this proposal, then criteria-based policy WP5 would be relevant to the decision-making process
WAS 31 Costessey Transfer Station, Longwater Business Park, Costessey	Residual waste treatment (excluding thermal treatment)	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is in existing waste management use • If a planning application was to be submitted for this proposal, then criteria-based policy WP10 would be relevant to the decision-making process

Waste SSA Policy **Site location**	**Site Proposal**	**Replaced / deleted**	**Reason for deletion and/or replacement Local Plan policy**
WAS 58 Land at Longwater Industrial Estate, Costessey	Processing of recyclables and/or inert waste recycling	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site is less than 1 hectare in size • The site proposal is estimated to have a throughput of less than 50,000 tpa • If a planning application was to be submitted for this proposal, then criteria-based policies WP4 and/or WP5 would be relevant to the decision-making process
WAS 33 Land at Pulham Market Transfer Station, Station Road, Tivetshall St Margaret	Household waste recycling centre	Deleted	• Specific site allocations for waste management facilities are not required because there is sufficient existing capacity during the Plan period • The site proposal is estimated to have a throughput of less than 50,000 tpa • If a planning application was to be submitted for this proposal, then criteria-based policy WP7 would be relevant to the decision-making process

Appendix 4 - Development excluded from safeguarding provisions

In accordance with Policies WP17, MP10 and MP11, Local Planning Authorities in Norfolk should consult Norfolk County Council on planning applications within Minerals Consultation Areas and Waste Consultation Areas.

It is neither practicable nor necessary for consultation to occur on all developments proposed through planning applications. Therefore, it is proposed to restrict the type of developments requiring consultation to those with significant potential for affecting the future use of areas and sites referred to above.

The following developments will be excluded from the consultation process:

1. Proposals for minor infilling of development in towns and villages within the defined settlement limits identified in adopted local development plan documents
2. Applications for householder development including:

    Construction of a replacement dwelling where the new dwelling occupies the same or similar footprint to the building being replaced;

    Minor extensions to existing dwellings or properties where they lie within the immediate curtilage;

    Proposals for the provision of incidental and non-habitable structures lying within the curtilage of an existing dwelling (such as driveways, garages, carparks and hard standing).
3. Advertisement applications
4. Applications related to existing permissions, such as reserved matters, or for minor amendments to current permissions.
5. Applications for new or improved accesses.
6. Applications for listed building consent or Conservation Area consent
7. ‘Minor’ extensions/alterations to existing buildings
8. Applications for ‘temporary’ buildings, structures or uses (for up to five years)
9. Proposals for the erection of agricultural buildings immediately adjacent to an existing working farmstead.
10. Proposals for ‘minor’ works such as fencing or bus shelters
11. Proposals for the demolition of a residential or other building
12. Extensions to existing settlements of no greater than 2 hectares, unless the extension is within 250 metres of a safeguarded minerals or waste site, or 400 metres of a safeguarded water recycling centre.

Appendix 5 - Safeguarded mineral infrastructure - railheads and wharfs (December 2021)

District	Operator and site address	Facility	Mineral type
King's Lynn and West Norfolk	Sibelco UK Ltd Station Road, Leziate, King's Lynn, PE32 1EJ	Railhead	Silica Sand
Norwich	Tarmac Trading Ltd Old Station Yard, Trowse, Norwich, NR1 2EG	Railhead	Crushed Rock
Great Yarmouth	Silverton Aggregates Ltd Palgrave Wharf, Great Yarmouth, NR31 0JJ	Wharf	Crushed Rock

Appendix 6 - Safeguarded mineral extraction sites by district (December 2021)

District	Town or Parish	Operator and site address	Mineral Type
Breckland	Beeston With Bittering & Stanfield	East Anglian Stone Ltd Punch Farm Quarry, Watery Lane, Litcham	sand and gravel
Breckland	Beeston With Bittering & Longham	McLeod Aggregates Ltd Bittering / Longham Quarry, Reed Lane, Longham, Dereham	sand and gravel
Breckland	Beetley	Middleton Aggregates Ltd East Bilney Quarry, Rawhall Lane, East Bilney, Dereham	sand and gravel
Breckland	Carbrooke	Four Leaf Enterprises Ltd Carbrooke Quarry, Mill Lane, Carbooke	sand and gravel
Breckland	Carbrooke	Mick George Ltd (Frimstone) Carbrooke Quarry, Summer Lane, Carbrooke	sand and gravel
Breckland	Newton by Castle Acre	Needham Chalks (HAM) Ltd Castle Acre Quarry, Dunham Road, Castle Acre, Swaffham	chalk
Broadland	Buxton With Lammas	Mick George Ltd (Frimstone) Mayton Wood Quarry, Little Hautbois, Coltishall	sand and gravel
Broadland	Horstead With Stanninghall	Longwater Gravel Co Ltd Horstead Quarry, Buxton Road, Horstead	sand and gravel
Broadland	Horstead With Stanninghall	Tarmac Trading Ltd Stanninghall Quarry, Norwich Road, Horstead	sand and gravel
Broadland	Spixworth	Tarmac Trading Ltd Spixworth Quarry, Church Lane, Spixworth	sand and gravel
Great Yarmouth	Burgh Castle	Folkes Plant & Aggregates Ltd Welcome Pit, Butt Lane, Burgh Castle, Great Yarmouth	sand and gravel
King's Lynn & West Norfolk	Congham	West Norfolk Lime Ltd Hillington Chalk Quarry, Grimston Road, Hillington, King's Lynn	chalk

District	Town or Parish	Operator and site address	Mineral Type
King's Lynn & West Norfolk	East Rudham	Longwater Gravel Co Ltd Coxford Abbey Quarry, Docking Road, Syderstone, Fakenham	sand and gravel
King's Lynn & West Norfolk	East Winch	Middleton Aggregates Ltd Land East of Mill Drove, Blackborough End, King's Lynn	sand and gravel
King's Lynn & West Norfolk	East Winch	Middleton Aggregates Ltd Land east of Mill Drove, Blackborough End, King's Lynn	carstone
King's Lynn & West Norfolk	East Winch & Leziate	Sibelco UK Ltd Grandcourt Farm Quarry, Leziate Works, Station Road, Leziate, King's Lynn	Silica sand
King's Lynn & West Norfolk	Feltwell	L P Pallett Quarry (Feltwell) Ltd Feltwell Quarry, Lodge Road, Feltwell, Thetford	sand and gravel
King's Lynn & West Norfolk	Middleton & North Runcton	Middleton Aggregates Ltd Setch Road, Middleton, King's Lynn	clay
King's Lynn & West Norfolk	Middleton	Middleton Aggregates Ltd Land west of Mill Drove, Blackborough End, King's Lynn	carstone
King's Lynn & West Norfolk	Middleton	William George Sand and Gravel Ltd Land off Mill Drove, Blackborough End, King's Lynn	sand and gravel
King's Lynn & West Norfolk	Pentney	Middleton Aggregates Ltd Pentney Quarry, Abbey Road, Pentney	sand and gravel
King's Lynn & West Norfolk	Snettisham	Mick George Ltd (Frimstone) Snettisham Quarry, Norton Hill, Snettisham	Carstone
King's Lynn & West Norfolk	Tottenhill & Watlington	Mick George Ltd (Frimstone) Watlington Quarry, Watlington Road, Tottenhill	sand and gravel
King's Lynn & West Norfolk	West Dereham	Mick George Ltd (Frimstone) Crimplesham Quarry, Ashcraft Farm, Main Road, Crimplesham	sand and gravel
King's Lynn & West Norfolk	Wormegay	None (inactive site) Park Farm, Wormegay, King's Lynn	sand and gravel
North Norfolk	Beeston Regis	Norfolk Gravel Ltd Briton's Lane, Beeston Regis, Sheringham	sand and gravel
North Norfolk	East Beckham	Gresham Gravel Ltd East Beckham Quarry, Holt Road, Upper Sheringham	sand and gravel
North Norfolk	Holt	Breedon Group Holt Quarry, Hunworth Road, Hotl	sand and gravel
North Norfolk	Stody	Mick George Ltd (Frimstone) Briston Stody Estate, Breck Farm, Stody	sand and gravel

District	Town or Parish	Operator and site address	Mineral Type
South Norfolk	Caistor St Edmund	Needham Chalks (HAM) Ltd Norwich Road, Caister St Edmund, Norwich	Chalk
South Norfolk	Earsham	Earsham Gravels Ltd Earsham Quarry, Bath Hills Road, Earsham	sand and gravel
South Norfolk	Easton	Breedon Group Costessey Quarry, Alex Moorhouse Way, Longwater Industrial Estate, Costessey	sand and gravel
South Norfolk	Kirby Cane	The Lyndon Pallett Group Ltd Yarmouth Road, Kirby Cane, Bungay	sand and gravel
South Norfolk	Norton Subcourse	Breedon Group Norton Subcourse Quarry, Loddon Road, Hales	sand and gravel
South Norfolk	Stoke Holy Cross	Tarmac Trading Ltd Mangreen Quarry, Ipswich Road, Swardeston, Norwich	sand and gravel
South Norfolk	Wymondham	Longwater Gravel Co Ltd Wymondham Quarry, Stanfield Road, Wymondham	sand and gravel

Appendix 7 - Safeguarded waste management sites by district (December 2021)

District	Town or Parish	Operator	Main Waste Operation
Breckland	Attleborough	Anglian Demolition & Asbestos Ltd	Transfer / Treatment
Breckland	Attleborough	Attleborough AD Plant Ltd	Anaerobic Digestion
Breckland	Besthorpe	Baldwin Skip Hire Ltd	Transfer
Breckland	Bridgham	Fibrophos Ltd	Transfer
Breckland	Carbrooke	Mick George Ltd (Frimstone)	Inert recycling
Breckland	Carlton Rode	None	Composting (inactive)
Breckland	Cranworth	FCC Environment (UK) Ltd	Transfer/Treatment
Breckland	Hockering	Norman Wenn Skip Hire	Transfer/Treatment
Breckland	Hockering	Pips Skips	Transfer/Treatment
Breckland	Longham	McLeod Aggregates Ltd	Inert recycling
Breckland	Stow Bedon	R Childerhouse	Inert recycling
Breckland	Thetford	FCC Environment (UK) Ltd	HWRC
Breckland	Thetford	Fibrophos Ltd	Transfer/Treatment
Breckland	Thetford	Viridor Ltd	Transfer/Treatment
Breckland	Weston Longville	TMA Bark Supplies	Composting
Breckland	Wretham	Viridor Ltd	Transfer/Treatment
Broadland	Attlebridge	Biffa Waste Services	Non-hazardous landfill (in aftercare)
Broadland	Aylsham	Aylsham Plant Hire Ltd	Inert recycling

District	Town or Parish	Operator	Main Waste Operation
Broadland	Aylsham	Norse Environmental Waste Services Ltd	Transfer/Treatment
Broadland	Buxton With Lammas	Mick George Ltd (Frimstone)	Inert recycling
Broadland	Cantley	British Sugar PLC	Inert landfill
Broadland	Horsford	M & C Skip Hire and AKS	Transfer/Treatment
Broadland	Horsham St Faith & Newton St Faith	Norse Environmental Waste Services Ltd	HWRC
Broadland	Lenwade (Morton On The Hill)	European Metal Recycling Ltd	Metal recycling
Broadland	Marsham	None	Composting
Broadland	Rackheath	PSH Environmental Ltd	Transfer/Treatment
Great Yarmouth	Belton With Browston	E E Green & Son	Inert recycling
Great Yarmouth	Burgh Castle	Folkes Plant & Aggregates Ltd	Inert recycling
Great Yarmouth	Great Yarmouth	E E Green & Son	Inert recycling
Great Yarmouth	Great Yarmouth	East Coast Waste Recycling	Transfer/Treatment
Great Yarmouth	Great Yarmouth	Enviroco Ltd	Transfer
Great Yarmouth	Great Yarmouth	European Metal Recycling Ltd	Metal recycling
Great Yarmouth	Great Yarmouth	Folkes Plant & Aggregates Ltd	Transfer/Treatment
Great Yarmouth	Great Yarmouth	M T Skips	Transfer/Treatment
Great Yarmouth	West Caister	Norfolk County Council	Transfer/Treatment
Great Yarmouth	West Caister	Norse Environmental Waste Services Ltd	HWRC
King’s Lynn & West Norfolk	Bawsey	P Bacon Recycling Ltd	Metal recycling
King’s Lynn & West Norfolk	Feltwell	FCC Environmental (UK) Ltd	Non-hazardous landfill (inactive)
King’s Lynn & West Norfolk	Hockwold Cum Wilton	Freedom Recycling Ltd	Transfer/Treatment
King’s Lynn & West Norfolk	King's Lynn	Norse Environmental Waste Services Ltd	HWRC
King’s Lynn & West Norfolk	King's Lynn	Norse Environmental Waste Services Ltd	Transfer/Treatment
King’s Lynn & West Norfolk	Methwold	EFFG Woodlark	Anaerobic digestion
King’s Lynn & West Norfolk	Middleton	FCC Environment (UK) Ltd	Non-hazardous landfill
King’s Lynn & West Norfolk	Middleton	Middleton Aggregates Ltd	Inert recycling
King’s Lynn & West Norfolk	Middleton	Middleton Aggregates Ltd	Inert landfill
King’s Lynn & West Norfolk	Snettisham	Mick George Ltd (Frimstone)	Inert recycling and landfill
King’s Lynn & West Norfolk	South Wootton	Greenworld Sales Ltd	Composting

District	Town or Parish	Operator	Main Waste Operation
King's Lynn & West Norfolk	Wereham	British Sugar PLC	Soil recycling
King's Lynn & West Norfolk	Wereham	British Sugar PLC	Composting
King's Lynn & West Norfolk	West Dereham	Mick George Ltd (Frimstone)	Inert landfill
King's Lynn & West Norfolk	West Dereham	Mick George Ltd (Frimstone)	Inert recycling
King's Lynn & West Norfolk	West Dereham	Glazewing Ltd	Transfer/Treatment
North Norfolk	Beeston Regis	Carter Concrete Ltd	Inert storage
North Norfolk	Briston	Morrissey Builders Ltd	Inert recycling
North Norfolk	Holt	Breedon Group	Inert recycling
North Norfolk	Letheringsett With Glandford	Glaven Pits Ltd	Inert recycling
North Norfolk	North Walsham	Mr M Drury	Transfer/Treatment
North Norfolk	Tattersett	TP9 Limited	Tyre baling
North Norfolk	Worstead	Carl Bird Ltd	Transfer/Treatment
South Norfolk	Bracon Ash	Greencomp	Composting
South Norfolk	Costessey	FCC Environment (UK) Ltd	Transfer/Treatment
South Norfolk	Costessey	Jays Total Waste Management Ltd	Transfer/Treatment
South Norfolk	Costessey	Norse Environmental Waste Services Ltd	Transfer/Treatment
South Norfolk	Costessey	Veolia ES Ltd	Transfer
South Norfolk	Ketteringham	M W White Ltd	Transfer/Treatment
South Norfolk	Kirby Bedon	Anglian Water Plc	Composting
South Norfolk	Morningthorpe With Fritton	Richardson Recycling Ltd	Inert landfill
South Norfolk	Pulham Market	AR Kent & Son	Transfer/Treatment
South Norfolk	Thurlton	M Gaze & Co Ltd	Composting
South Norfolk	Tivetshall St Margaret	None	Transfer/Treatment (inactive)
Norwich	Norwich	FCC Environment (UK) Ltd	Transfer/Treatment

Appendix 8 - Safeguarded Water Recycling Centres (December 2021)

All WRC are operated by Anglian Water Services Ltd

District	Town or Parish	Address	Grid reference (XY coordinates)
Broadland	Acle	Acle WRC, Damgate Lane, Acle, Norwich, NR13 3DJ	640782, 309837
Breckland	Attleborough	Attleborough WRC, Off Long Street, Attleborough, NR17 1AW	602842, 295144
Broadland	Aylsham	Aylsham WRC, Burgh Road, Aylsham, Norwich, NR11 6AR	620638, 326813
Broadland	Belaugh	Belaugh WRC, Top Road, Belaugh, Norwich, NR12 8UX	629347, 318445
North Norfolk	Briston	Briston WRC, Hell Pit Lane, Briston, Melton Constable, NR24 2JH	607318, 331430
King's Lynn & West Norfolk	Burnham Thorpe	Burnham Market WRC, John Short Lane, Burnham Market, King's Lynn, PE31 8HJ	584471, 342257
Breckland	Bylaugh	Bylaugh WRC, Bylaugh Park, Bylaugh, Dereham, NR20 4RL	603698, 318261
North Norfolk	Cley-Next-the-Sea	Cley-next-the Sea WRC, Glandford Road, Cley-next-the-sea, NR25 7TW	604671, 342381
Breckland	Dereham	Dereham WRC, Rush Meadow, East Dereham, NR19 2XR	597699, 313735
King's Lynn & West Norfolk	Downham Market	Downham Market WRC, Downham Market, PE38 9GN	560627, 304200
King's Lynn & West Norfolk	Feltwell	Feltwell WRC, Lenards Lane, Feltwell, IP26 4AY	570060, 290820
King's Lynn & West Norfolk	Grimston	Grimston WRC, Watery Lane, Grimston, King's Lynn, PE32 1BQ	571232, 321016
King's Lynn & West Norfolk	Heacham	Heacham WRC, Fenway, Heacham, King's Lynn, PE31 7LB	566747, 336313
North Norfolk	Holt and Letheringsett with Glandford	Holt WRC, Off Holt Road, Holt, NR25 6RZ	606882, 338946
North Norfolk	Horning	Horning Knackers Wood WRC, Knackers Wood, Horning, Norwich, NR12 8XU	635585, 317868
King's Lynn & West Norfolk	Ingoldisthorpe	Ingoldisthorpe WRC, Shernborne Road, Ingoldisthorpe, King's Lynn, PE31 6PE	569827, 332625
King's Lynn & West Norfolk	King's Lynn	King's Lynn WRC, Clockcase Road, Clenchwarton, King's Lynn, PE34 4BZ	560349, 322174
South Norfolk	Kirby Bedon	Whitlingham WRC, Whitlingham Lane, Trowse, Norwich, NR14 8TZ	627670, 307311

District	Town or Parish	Address	Grid reference (XY coordinates)
North Norfolk	Knapton	Mundesley-Knapton Road WRC, Knapton Road, Mundesley, NR11 8LA	631045, 335582
Breckland	Little Cressingham	Great Cressingham WRC, Priory Drove, Great Cressingham, Thetford, IP25 6NJ	588596, 300095
North Norfolk	Ludham	Ludham WRC, Walton Hall, Catfield Road, Ludham, NR29 5QU	638947, 319480
Breckland	Mattishall	Mattishall WRC, Stone Road, Mattishall, NR20 3PG	602577, 312086
South Norfolk	Morningthorpe and Fritton	Hempnall WRC, Field Lane, Hempnall, Norwich, NR15 2QX	623212, 294598
North Norfolk	North Walsham	North Walsham WRC, Marshgate, North Walsham, NR28 9LG	629626, 330752
Breckland	Old Buckenham	Old Buckenham WRC, Abbey Road, Old Buckenham, Attleborough, NR17 1PZ	606143, 290517
South Norfolk	Poringland	Poringland WRC, Dove Lane, Poringland, Norwich, NR14 7ND	628334, 300894
North Norfolk	Pudding Norton	Fakenham WRC, Dereham Road, Fakenham, NR21 7NA	591942, 328913
Breckland	Quidenham	East Harling WRC, East Harling, Eccles, NR16 2JR	601057, 288208
South Norfolk	Redenhall with Harleston	Harleston WRC, Works Road, Harleston, IP20 9HF	625002, 284119
Broadland	Reepham	Reepham WRC, Norwich Road, Reepham, Norwich, NR10 4NR	610446, 322659
North Norfolk	Runton	Cromer WRC, Middlebrook Way, East Runton, Cromer, NR27 9PH	620566, 341990
South Norfolk	Saxlingham Nethergate	Saxlingham WRC, Elmer's Lane, Saxlingham Nethergate, Newton Flotman, NR15 1UE	621900, 272644
South Norfolk	Sisland	Sisland (Loddon) WRC, Nursery Road, Chedgrave, Norwich, NR14 6BF	634301, 299303
Breckland	Sporle with Palgrave	Necton (Sporle) WRC, Sporle, Off A47, PE32 2EG	586203, 309232
North Norfolk	Stalham	Stalham WRC, Wayford Road, Stalham, Norwich, NR12 9LQ	635874, 325186
Breckland	Swaffham	Swaffham STW, South Pickenham Road, Swaffham, PE37 8DA	583566, 306547
South Norfolk	Swardeston	Swardeston WRC, Swardeston, Norwich, NR14 8EB	619647, 302736

District	Town or Parish	Address	Grid reference (XY coordinates)
South Norfolk	Tharston and Hapton	Long Stratton WRC, Picton Road, Tharston, Norwich, NR15 2YD	619301, 293594
Breckland	Thetford	Thetford STW, Thetford, IP24 1DT	585519, 283614
King's Lynn & West Norfolk	Watlington	Watlington WRC, Station Road, Watlington, King's Lynn, PE33 0JG	560328, 311875
North Norfolk	Wells-Next-the-Sea	Wells-next-the-Sea WRC, Freeman Street, Wells-next-the-Sea, NR23 1FD	591217, 344053
Great Yarmouth	West Caister	Caister WRC, Pump Lane, Caister-on-Sea, Great Yarmouth, NR30 5TE	651961, 311047
Kings Lynn & West Norfolk	West Walton	Wisbech (West Walton) WRC, West Walton, Wisbech, PE14 7EY	545974, 314296
South Norfolk	Wymondham	Wymondham WRC, Chapel Lane, Wymondham, NR18 0DL	609572, 302834

Appendix 9 – Schedule of requirements of a Minerals Infrastructure Impact Assessment (MIIA) and Waste Management Facilities Impact Assessment (WMFIA)

Minerals Infrastructure Impact Assessment and Waste Management Facilities Impact Assessment Components	**Information requirements and sources**
Site location, boundaries and area	• Application site area in relation to safeguarded site(s) • Description of proposed development • Timescale of proposed development
Description of infrastructure / waste management facility potentially affected	• Type of safeguarded facility eg wharf, rail depot, concrete batching plant, asphalt plant, recycled aggregate site, or waste management facility type • Type of material or waste handled / processed / supplied • Throughput / capacity
Potential sensitivity of proposed development as a result of the operation of existing safeguarded infrastructure or waste management facility (with or without mitigation)	• Distance of the development from the safeguarded site at its closest point, to include the safeguarded facility and any access routes, • The presence of any existing buildings or other features which naturally screen the proposed development from the safeguarded facility • Evidence addressing the ability of vehicle traffic to access, operate within and vacate the safeguarded development in line with extant planning permission • Impacts on the proposed development in relation to: noise, dust, odour, traffic, visual, light.
Potential impact of proposed development on the effective working of the safeguarded infrastructure or waste management facility	• Loss of capacity – none, partial or total, • Potential constraint on operation of facility – none or partial
Mitigation measures to be included by the proposed development to reduce impact from existing safeguarded infrastructure or waste management facility	• External and internal design & orientation e.g., landscaping; living and sleeping areas facing away from the facility, • Fabric and features e.g., acoustic screening & insulation; non-opening windows; active ventilation.
Conclusions	• How the MIIA / WMFIA informed the final layout of the proposed development. • Potential sensitivity of proposed development to effects of operation of the safeguarded infrastructure/ facility and how these can be mitigated satisfactorily; or If there is a loss of site or capacity or constraint on operations, or Mineral infrastructure / waste management facility can be re-located or provided elsewhere.

An MIIA or WMFIA is expected to be evidence based and informed by quantified information. It is recognised that the requirements of an MIIA or WMFIA may be addressed through other evidence-based documents, such as those addressing transport, odour and noise issues. In these instances, it would be acceptable for the MIIA or WMFIA to signpost to the relevant section of complementary evidence supporting the planning application.

Appendix 10 - Implementation of Mineral Safeguarding Areas and Mineral Consultation Areas Policy

A10.1 General process to be followed for non-mineral applications on Mineral Safeguarding Areas / Mineral Consultation Areas (MSAs/MCAs)

A10.1.1 This appendix should be read in conjunction with Mineral and Waste Local Plan policy MP11 and its associated supporting text.

A10.1.2 Where land in an MSA/MCA are proposed for allocation through the Local Plan process, the Mineral Planning Authority (MPA) would welcome early engagement with the Local Planning Authority (LPA) to understand how mineral safeguarding matters have been addressed in the site selection process ahead of any formal consultation procedure.

A10.1.3 Where any proposed allocations or applications for large-scale multi-phase built developments, such as sustainable urban extensions or garden towns, fall with an MSA/MCA; full consideration of mineral safeguarding issues should be investigated early in the process. Non-mineral development may not be planned to come forward for several years, providing the opportunity for more comprehensive mineral extraction to take place well in advance of such development. Such extraction proposals are likely to be County Matters in two-tier areas given that any application would need to be a standalone minerals application rather than linked to the primary built development proposal. Under this scenario, two applications would be required to be submitted: one to the LPA and one to the MPA.

A10.1.4 Consultation by the applicant with local mineral operators can help to determine any commercial interest in undertaking prior extraction of the resource based on its quantity, quality and viability of prior extraction, both as a standalone activity and in the context of having to restore the site to facilitate the primary development.

A10.1.5 As with any planning applications, such applications may be refused or granted permission. In addition, consideration should be given to whether planning permission is required for the acceptance of the mineral at a processing plant at an existing mineral working as receipt of this material may extend the life of the existing working.

A10.1.6 For clarity and consistency, Norfolk's LPAs should identify any mineral and waste safeguarded sites on their own Policies Map for their relevant administrative area.

A10.1.7 It is important that Mineral Safeguarding issues are recognised on a site as early in the planning process as possible. The potential for prior extraction should be recognised and built into the master-planning process. A comprehensive design process that recognises where viable mineral resources occur may influence the design of a site, especially in relation to site topography and sustainable drainage system design.

A10.2 When a Mineral Resource Assessment (MRA) is required (Policy MP11)

A10.2.1 Appendix 4 of this document contains a list of proposed development which would be exempt from the requirements of M&W Local Plan Policy MP11. If a prospective development does not fall within these exemptions applicants/proposers should consult the mapping of MSAs either through the interactive mineral resources map, or the printed Policies Map.

A10.2.2 If the redline application area of the prospective development falls wholly or partly within an MSA then the applicant should follow the process for preparing an MRA set out below. If an application which is exempt from the requirements of Policy MP11 is submitted to Norfolk County Council, in its capacity as the MPA, for a mineral safeguarding response, no response will normally be sent to either the LPA or applicant.

A10.2.3 Where the policy tests and thresholds of Policy MP11 are met, whether it be the preparation of a Local Plan, Masterplan or planning application, the need for a MRA is expected to form part of pre-application discussions between the relevant LPA, the prospective developer and/or

the MPA as relevant. The MPA requires an MRA to be undertaken as soon as practical, and at such a time that it can shape and inform the early stages of a Master Plan/planning application.

A10.2.4 The Norfolk County Council (as the MPA) is keen for prior extraction not to be seen or viewed as an undue barrier for development coming forward. In this respect, it is stressed that potential applicants should undertake an MRA (when required) as soon as possible and seek to get agreement on the conclusions of this with the MPA.

A10.2.5 For the majority of non-mineral and non-waste developments (excluding large developments as mentioned previously) the LPA will be the district or borough council. Any prior extraction of mineral to meet the requirements of Policy MP11 is likely to be considered ancillary to the proposed non-mineral development, in the same way as other construction works such as sustainable drainage systems and bunds.

A10.2.6 An inadequate or absent MRA when required by policy, or any other failure to demonstrate compliance with safeguarding policy, would likely be considered by the MPA as being out of conformity with the Development Plan as it would be contrary to Policy MP11, and inconsistent with national policy and guidance; and should be advertised as a departure application. In this instance, Norfolk County Council, in its capacity as the MPA would also be likely to be raise a statutory objection. These would be material considerations of considerable weight in the determination of the application by the LPA.

A10.2.7 In that respect, it is considered that LPAs should include the need for MRAs within their Validation Checklists and highlight their need in pre-application discussions.

A10.2.8 Each response from the MPA will take into account factors such as the mineral importance of the MSA resource, the particular use of a safeguarded mineral site, the nature of the proposed development, whether viability has been properly assessed and the compatibility or degree of conflict. Any mitigation which could address any adverse impacts would also be relevant.

A10.3 The Scope and Level of Detail of a Mineral Resource Assessment

A10.3.1 The general process below provides an outline of how prospective developers should address safeguarding issues related to MSAs. This advice is general in nature and may be supplemented or amended by specific advice on individual sites. It is recommended that prospective applicants engage in discussions regarding safeguarding with the MPA early in the planning process.

A10.3.2 The NPPF (paragraph 212) is clear that LPAs should not normally permit other development proposals in MSAs if it might constrain potential future use for mineral working. However, the prior extraction of these minerals would mean that implementation of the proposed non-mineral development would no longer constrain any such potential future use for mineral working, and therefore this NPPF principle would be satisfied.

A10.3.3 If a proposed development is located on a MSA then there are two main issues to be addressed in formulating a safeguarding response:

- the applicant should carry out investigations to identify whether the resource is viable for mineral extraction, and
- if the mineral resource is viable, the applicant considers whether it could be extracted economically prior to development taking place.

A10.4 Ground investigations and testing

A10.4.1 Applicants may find it useful as part of their discussions with the MPA to provide a draft trial pit/borehole location plan which can be agreed with the MPA at an early stage. This will ensure that the subsequent investigations and assessment are derived from an appropriate distribution of trial pits/boreholes. This would help in preventing additional work later in the application process as the result of an objection from the MPA.

A10.4.2 Either the Environmental Statement or, in the case of non-EIA applications, the Planning Statement should address relevant mineral safeguarding issues for the proposed development, through the inclusion of a Mineral Resource Assessment.

A10.4.3 The mineral deposits found in Norfolk are highly variable, and the data used to define the MSAs is general in nature. Therefore, site investigations are required to prove the exact location of any deposits, assess the quality of any mineral and the depth of any overburden present. These factors principally determine the viability of the site.

A10.4.4 The nature of any potential prior mineral extraction would be likely to be shallow in comparison with dedicated sand and gravel workings, because of the intended final use of a site for non-mineral development. There would be differences in the likely depth of extraction depending on several factors. These factors may include whether the proposed non-mineral use of the site would be residential or non-residential, as well as the topography of the site and whether grading or levelling of the site is required for the proposed non-mineral use. There may be opportunities for more general mineral extraction in areas proposed for industrial uses, where construction at a lower level would reduce any potential amenity impacts from these buildings, such as reducing any visual intrusion from the scale of the buildings.

A10.4.5 The scope of the MRA, including a schedule of proposed borehole locations, should be agreed with the MPA before commencement. It is expected that the MRA be carried out by a competent person, such as a minerals surveyor. Information must be representative of the whole site as reliance on limited data, for example poor borehole log coverage, is likely to result in an inaccurate assessment being undertaken. It is acceptable to utilise existing borehole information where this exists, but this may be required to be supplemented by additional borehole logs to provide the required level of site-specific detail.

A10.4.6 The MPA will not always require prior extraction to take place across the full extent of the development site, nor to the full depth of the resource. However, the maximum amount of extraction considered viable in the context of the development is encouraged to minimise the amount of resource sterilised.

A10.4.7 The scope and level of detail of a MRA will be influenced by the specific characteristics of the site's location and its geology, as well as the nature of the development being applied for. Therefore, it is considered that mineral investigations, either as boreholes or trial pits to a depth of 2.5m-3.5m, would be appropriate for residential developments. This range of depths has been used for investigations on other proposed residential developments in Norfolk. For non-residential developments a greater depth may be appropriate depending on the likely founding and groundworks depths.

A10.4.8 The spacing of trial pits and/or boreholes is important to ensure that a thorough assessment of the mineral resource across a site can be made. An initial spacing of approximately 100m-150m centre to centre should be considered, with additional locations if required to determine the extent of deposits on site.

A10.4.9 Logs for trial pits and/or boreholes should be completed to an accepted industry standard, such as the Pan-European Standard for Reporting of Exploration Results, Mineral Resources and Reserves (PERC) Standard, and must note the depth of the water table if this a significant consideration in determining viability.

A10.4.10 The boreholes/trial pits for mineral investigations could be linked to the investigations normally required as part of the geotechnical study to support a Flood Risk Assessment (FRA) which would normally be to a similar depth.

A10.4.11 The assessment of the onsite mineral resources would require the addition of Particle Size Distribution (PSD) tests on batches of any sand and gravel bearing deposits recovered, although this is often carried out for the FRA. Assessment of the results of the Particle Size Distribution testing should refer to material class types in Table 6/1 of the Manual of Contract

Documents for Highway Works: vol. 1: Specification for Highway Works Series 600, to identify potential suitability for use in the construction phases.

A10.5 Concluding on the Findings of the Minerals Resource Assessment

A10.5.1 An MRA is expected to be evidence based and informed by quantified information based on the site investigations, testing and assessment. If no viable deposits were found at the depths likely to be considered appropriate there would only need to be a short statement to this effect and the submission of borehole logs and PSD results as evidence.

A10.5.2 If mineral investigations were to prove a viable deposit, an assessment would be required to determine the quantities of material which could be recovered, this should make use of details of the layout of the proposed development. The MRA should provide conclusions on the practicality of prior extraction, which should be made in the context of the viability of the non-mineral development that is creating the sterilisation risk. Assessing the practicality of prior extraction as a standalone operation is to assess a false premise.

A10.5.3 The conclusion should consider the environs surrounding the site including the presence or absence of constraints to prior extraction, such as existing residential development. However, in doing so it should recognise that generally the shallow nature of prior extraction, or the reuse of material extracted as part of the groundworks is likely to be less than would normally be the case for a commercial mineral working. It is considered that, in general, conditions and mitigation measures could reduce impacts to the levels likely for any other part of the construction project; and should propose mitigation such as buffers accordingly.

A10.5.4 The assessment will need to consider whether there are areas of the site where viable mineral resources exist which would not be built on as part of the proposed development and from which mineral could not be extracted. For example, areas of mature woodland which would remain as part of the development.

A10.5.5 The National Planning Practice Guidance provides detail on the methodology and mitigation for noise and dust assessments for mineral workings. This would be a matter for the detailed assessment at the planning application stage.

A10.5.6 The methodology for the practical implementation of prior extraction could take the form of a Materials Management Plan – Minerals (MMP-M). For areas of construction, the MMP-M will estimate the potential quantities and types of materials that would be potentially recoverable from areas such as groundworks, sustainable drainage systems, and landscaping areas.

A10.5.7 The aim of the MMP-M should be, as a minimum, to balance as far as possible the mineral recovered from these operations with site construction activity which would consume aggregate, such as road sub-bases, granular fill, and bunding required etc.

A10.5.8 The MMP-M should consider the extent to which onsite material recovered would meet the specifications required for the construction phases. There is usually potential for significant amounts of material recovered to be reused on site. However, there is likely to be a need for some grades of material from traditional sources. There is also likely to be material recovered from the site which is ‘Out of Grade’ for onsite use could be sent to the supplier of aggregate as a return run, where it could be processed and used; this has been an approach taken by other developments in Norfolk.

A10.5.9 There are benefits in terms of sustainability which could accrue from the use of onsite materials, and there may be cost benefits resulting from the reuse of onsite resources in terms of reduced demand for import and export of material, and the associated costs of transport.

A10.5.10 On some sites where more general extraction takes place, there may be opportunities for a net export of material, this would be encouraged subject to no unacceptable impacts after appropriate mitigation measures are taken into account. The MMP-M should contain measures to ensure that the export of such materials is recorded, and such records are available to the LPA/MPA for monitoring purposes.

A10.6 Additional requirements for sites underlain by silica sand resources

A10.6.1 The above process is sufficient for those sites underlain by sand and gravel and carstone safeguarding areas. Sand and gravel and carstone are relatively low value aggregate minerals which have local to regional importance. However, the silica sand found in Norfolk is used in industrial processes such as glassmaking. It is a high value mineral of national importance and is scarce in England. Therefore, the potential sterilisation of silica sand resources has a far greater sensitivity than for aggregate minerals.

A10.6.2 Site investigations on sites where the underlying mineral resources are silica sand will need to be far more detailed. Boreholes should be used to prove the depth of the mineral resource. The location of boreholes should be placed across the site to ensure that a comprehensive picture of the resource underlying the whole of the site is obtained. Samples from various depths in each borehole will be necessary to ensure identification of silica sand deposits within the resource which are of suitable specifications for industrial uses. It vital that proposers of such sites engage with the MPA at an early stage, and that site investigations are carried out as part of the preliminary work in preparing an application or site allocation.

A10.6.3 As part of these site investigations, contact should be made with only silica sand operator in Norfolk (Sibelco UK Ltd), as they will be able to determine whether onsite resources are of commercial importance. If following investigations, testing and communication with the mineral operator it is determined that the silica sand does not meet the specifications for industrial uses, then it should be treated in the same manner as for aggregate minerals. If the silica sand resource is proved to be of importance as an industrial mineral, the MRA will need to take into account the national importance of the mineral resource in determining the quantity of mineral that will be recovered from the site. The MRA should seek to balance the relative importance of these valuable and scarce mineral resources with the need for the non-mineral development. In determining non-mineral applications on sites with such proven silica sand resources the LPA must take into account NPPF paragraph 212 in coming to a decision. The MPA would expect that it would be necessary for the non-mineral development to be of at least national importance in order to override mineral safeguarding of commercially viable silica sand.

Appendix 11 – Forecast Waste Arisings

Year	Local Authority Collected Waste ('000 tonnes)	Commercial and industrial waste ('000 tonnes)	Inert waste ('000 tonnes)	Hazardous waste ('000 tonnes)	Total Forecast waste arisings ('000 tonnes)
2019/20	408	1,539	1,100	90	**3,137**
2020/21	413	1,560	1,100	90	**3,163**
2021/22	418	1,581	1,100	90	**3,189**
2022/23	424	1,602	1,100	90	**3,216**
2023/24	429	1,624	1,100	90	**3,243**
2024/25	434	1,645	1,100	90	**3,269**
2025/26	439	1,668	1,100	90	**3,297**
2026/27	444	1,690	1,100	90	**3,324**
2027/28	450	1,713	1,100	90	**3,353**
2028/29	455	1,736	1,100	90	**3,381**
2029/30	460	1,760	1,100	90	**3,410**
2030/31	465	1,783	1,100	90	**3,438**
2031/32	471	1,807	1,100	90	**3,468**
2032/33	476	1,838	1,100	90	**3,504**
2033/34	481	1,857	1,100	90	**3,528**
2034/35	486	1,882	1,100	90	**3,558**
2035/36	491	1,907	1,100	90	**3,588**
2036/37	497	1,933	1,100	90	**3,620**
2037/38	502	1,959	1,100	90	**3,651**

Appendix 12 - Glossary

Air Quality Management Areas (AQMAs): Areas designated by local authorities because they are not likely to achieve national air quality objectives by the relevant deadlines.

Aftercare: The treatment of land for a period (usually five years) following restoration to bring the land to the required standard so that it is fit for its agreed after-use.

Afteruse: the use (usually for agriculture, forestry or amenity) that land is put to once restored following mineral working, or temporary waste management operations such as landfill.

Aggregates: Materials such as sand and gravel and crushed rock, used in the construction industry for purposes such as concrete, mortar or roadstone.

Agricultural waste: Waste that is specifically generated by agricultural activities. It includes manure and other wastes from farms, poultry houses and slaughter houses; harvest waste, and pesticides.

Amenity: a positive element or elements that contribute to the overall character or enjoyment of an area.

Anaerobic Digestion: Anaerobic digestion is the biological treatment of biodegradable organic waste in the absence of oxygen, utilising microbial activity to break down the waste in a controlled environment. Anaerobic digestion results in the generation of:
- Biogas, which is rich in methane and can be used to generate heat and/or electricity;
- Fibre, (or digestate) which is nutrient rich and can potentially be used as a soil conditioner; and
- Liquor, which can potentially be used as a liquid fertiliser.

Ancient Woodland: An area of woodland which has had a continuous history of tree cover since at least 1600.

Appropriate Assessment: *Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora* requires an Appropriate Assessment to be undertaken to assess the impacts of a land-use plan against the conservation objectives of a European Site and to ascertain whether it would adversely affect the integrity of that site.

Area of Outstanding Natural Beauty (AONB): 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.

Area 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. If it is not possible to designate Specific Sites, or Preferred Areas, the alternative way to plan for the steady and adequate supply of minerals is to designate Areas of Search.

Biodegradable waste: any waste that is capable of undergoing natural decomposition, such as food and garden waste, paper and cardboard.

Biodiversity: The variety of all life on earth (mammals, birds, fish, invertebrates, plants etc).

Borrow pit: A temporary mineral working to supply material for a specific construction project.

Brownfield land Also known as “previously-developed land”. Land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure. This excludes: land that is or has been occupied by agricultural or forestry buildings; land that has been developed for minerals extraction or waste disposal by landfill purposes where provision for restoration has been made through development control procedures; land in built-up areas such as private residential gardens, parks, recreation grounds and allotments; and land that was previously-developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape in the process of time.

Buffer: Buffers are areas of land within the allocation which would remain unworked for mineral extraction to mitigate potential impacts (for example, on amenity, landscape or ecology). Where a

buffer is included in a site allocations policy or map it is 'indicative' and is intended only to illustrate where assessment at this stage has indicated that there may be impacts which, in principle, are likely to require buffers to mitigate them. The exact distances and coverage of any buffer, if required, would be determined following assessment of the detail of potential impacts as part of any future planning application.

Carstone: Carstone is a ferrunginous brown sandstone quarried in West Norfolk. It is used primarily for construction fill. When the iron content is high it can meet higher specifications. Traditionally in West Norfolk it was used as a building material.

Climate change: Changes in climate resulting from an increase in greenhouse gases in the atmosphere (e.g. emissions from transport and industry), global changes to land surface, such as from deforestation, and an increase in atmospheric concentrations of aerosols.

Composting: A process where organic wastes (such as garden and kitchen waste) are broken down aerobically (in the presence of air) to create a product that can be applied to land to improve soil structure and enrich the nutrient content of the soil.

Conservation Area: An area designated by the Local Planning Authority under the Planning (Listed Buildings and Conservation Areas) Act 1990 as possessing special architectural or historical interest.

Construction, Demolition and Excavation waste (CD&E): CD&E waste can be in the form of certain types of: Construction wastes (e.g. surplus supplies of materials specifically required for a single project as well as waste originating from site preparation), Demolition wastes (e.g. used material resulting from demolition activities); or Excavation wastes (e.g. usually consisting of soils and stones which cannot be used beneficially, such as from tunnelling operations, the soil component may not be inert).

Commercial and industrial waste (C&I): Waste from shops, industrial and business premises.

County Wildlife Site: A site of local importance for wildlife. Outside SSSIs, County Wildlife Sites are the best sites for wildlife in Norfolk. Sites are designated using stringent criteria, by a committee composed of the Norfolk Wildlife Trust, Norfolk County Council, Natural England, the Norfolk Biological Records Centre, and the Norfolk Biodiversity Partnership.

Cumulative Impact: The combined impacts of a number of developments on the environment, amenity, health, traffic etc.

Development Management: The process through which the Council determines whether a proposal for development should be granted planning permission, taking into account the development plan and any other material considerations.

Development Plan: Statutory documents described in 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.

Development Plan Documents: A term brought in by the Planning and Compulsory Purchase Act 2004. They set out spatial planning policies and proposals for an area. Development Plan Documents are also referred to as Local Plans.

Disposal: Waste disposal operations include: deposit into or onto land (e.g. landfill), incineration, permanent storage, treatment operations where the final compound or mixture will be disposed of.

Ecological network: Areas of semi-natural habitat that are linked by corridors or "stepping stones", and thus enable wildlife to move through the wider landscape.

Energy from Waste (EfW): Utilising the embodied energy of waste materials to generate electricity and heat through direct combustion or indirect combustion of biogas.

Energy recovery: The generation of heat and power from the thermal treatment of waste, the production of fuels from other forms of treatment and the combustion of landfill gas and gas from anaerobic digestion to create electricity.

Examination: The Local Plan will be subject to an independent examination by an independent planning inspector. The recommendations in the Inspectors report will inform the final adopted version, but are no longer legally-binding.

Gasification: A process whereby carbon based wastes are heated in the presence of air or steam to produce fuel-rich gases.

Geodiversity: The variety of rocks, minerals, fossils, soils and landforms, together with the natural processes which shape the landscape.

Geomorphology: The study of landforms and the formative processes that shape the physical landscape.

Green Infrastructure: A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.

Greenhouse gas: Gases such as carbon dioxide and methane which, when their atmospheric concentrations exceed certain levels, can contribute to climate changes buy forming a barrier in the earth's atmosphere that traps the sun's heat.

Gross Value Added (GVA): the value generated by any business or organisation that produces goods or services. The calculation for GVA is: value of goods and services produced, minus the costs of production in terms of raw materials and other direct costs. It does not take into account the effects of taxation or subsidies. This can be measured across a geographical area, industry or sector, and can used as a measure of productivity and growth.

Groundwater Source Protection Zones: The Environment Agency divides groundwater source catchments into four zones. These are based on the number of days taken by any pollutant to flow to the borehole. Source Protection Zone 1 is defined as a zone within which any contamination would reach the borehole within 50 days. This applies to groundwater at and below the water table. This zone also has a minimum 50 metre protection radius around the borehole. These zones are designed to provide control over activities taking place near boreholes which could result in contamination reaching the public water supply.

Groundwater: Water within soil, sediments or rocks below the ground surface. Water contained within underground strata is referred to as an aquifer.

Habitats Regulations Assessment (Appropriate Assessment): *Directive 92/43/EEC (the Habitats Directive) on the Conservation of Natural Habitats and of Wild Fauna and Flora* requires an Appropriate Assessment to be undertaken to assess the impacts of a land-use plan against the conservation objectives of a European Site and to ascertain whether it would adversely affect the integrity of that site.

Hazardous waste: As defined by The List of Wastes Regulations 2005, eg asbestos, acids, oils, petroleum products, paint, mercury, solvents, un-depolluted end-of-life vehicles. It is waste that poses potential threats to public health or the environment (when improperly treated, stored, transported or disposed). This can be due to the quantity, concentration or characteristics of the waste. This type of waste includes elements of healthcare waste.

Heritage asset: A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions because of its heritage interest. Designated heritage assets include World Heritage Sites, Scheduled Monuments, Listed Buildings, Protected Wreck Sites, Registered Parks and Gardens, Registered Battlefields and Conservation Areas. Heritage assets can also be non-designated.

Historic Environment: All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora

Household waste: Household waste includes all mixed waste that is collected from households; all materials taken to local bring banks or collected at the doorstep or kerbside for recycling and composting; all waste (apart from rubble) that is taken to the County Council operated Recycling Centres; litter and street sweepings.

Household waste recycling centres: Provided by Waste Disposal Authorities as places where the public can deliver their household waste for recycling or disposal. These sites usually incorporate skips, collection areas for waste refrigeration and metal appliances, and recycling banks. Some sites have containers for materials such as waste batteries, paint, oil and wood. These facilities do not generally accept trade waste.

Incineration plant: Any stationary or mobile technical unit and equipment dedicated to the thermal treatment of waste with or without recovery of the combustion heat generated This includes the incineration by oxidation of waste as well as other thermal treatment processes such as pyrolysis, gasification or plasma processes in so far as the substances resulting from the treatment are subsequently incinerated.

Inert waste: Waste that does not undergo any significant physical, chemical or biological, transformations; does not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health; and, in particular, does not endanger the quality of any surface water or groundwater.

Inert waste recycling: Includes the recycling of secondary aggregates at centralised processing facilities or where the material arises. Material is delivered by skip or bulk vehicle for crushing, screening and grading for re-use. Unusable residues may be used in landfill engineering. Hardstanding is required for stockpiles of material, and for locating crushing, screening and grading machinery. Some elements of the operation and storage may be enclosed, but it is mostly undertaken in the open air.

In-Vessel Composting: The aerobic decomposition of shredded and mixed organic waste within an enclosed container, where the control systems for material degradation are fully automated. Moisture, temperature and odour can be regulated, and a stable compost can be produced much more quickly than outdoor windrow composting.

Initial Consultation: A stage of the Local Plan preparation process where community engagement is sought from individuals and organisations to inform the identification of key issues and the potential options for addressing them.

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

Landfill: The term landfill relates to waste disposal mainly below ground level whereas landraise, also generically referred to as landfill, refers to waste disposal mainly above pre-existing ground levels. Modern landfill practice requires a significant degree of engineering in order to contain the waste, control emissions and minimise potential environmental effects. The primary by-products of landfilling, where biodegradable materials are disposed of, are landfill gas and leachate (a liquor resulting from water passing through the waste mass) and much landfill engineering is geared towards dealing with these substances. As such, landfill sites require containment lining systems and abstraction systems for both landfill gas and leachate.

Landfill gas: A by-product from the decomposition of biodegradable wastes. The gas is a mixture of up to 65% methane and 35% carbon dioxide plus trace gases and vapours.

Landscape character: A distinct and consistent pattern of elements in the landscape that makes one landscape different to another.

Leachate: A liquor resulting from water passing through the waste mass and therefore containing contaminants.

Listed building: A building or other structure officially designated as being of special architectural, historical or cultural significance using provisions under the Planning (Listed Buildings and

Conservation Areas) Act 1990. A listed building may not be demolished, extended or altered without special permission being granted by the Local Planning Authority. The Local Planning Authority must also consider if development nearby could cause adverse impacts to the listed building, and whether mitigation could address these impacts.

Local Authority Collected Waste (LACW): Waste collected from households and some business premises by local authorities, including waste from household waste recycling centres, public parks and public bins.

Local Development Scheme: Describes the Local Development Documents which the authority intends to prepare and the timetable for their preparation.

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 would be considered to be development plan documents, form part of the Local Plan. The term includes old policies which have been saved under the 2004 Act.

Local Planning Authority: An organisation with statutory planning powers, ie the relevant County, District, Borough or Unitary Council.

Local Transport Plan: A document produced by Local Highway Authorities that describes its transport policies and its broad implementation programme.

Materials Recycling Facility: A specialised building for separating, processing and storing recyclable materials from waste collected either separately or mixed.

Mechanical Biological Treatment (MBT): A form of waste processing facility that combines a sorting facility (the 'mechanical' element) with a form of biological treatment such as composting or anaerobic digestion.

Methane: A colourless, odourless, flammable gas, formed during the decomposition of biodegradable waste.

Mineral Consultation Area: An area identified in order to ensure consultation between the relevant LPA and the Mineral Planning Authority before certain non-mineral planning applications made within the area are determined.

Mineral Safeguarding Area: An area defined by the Mineral Planning Authority to identify a mineral resource which would be subject to safeguarding to prevent unnecessary sterilisation by non-mineral developments; used in conjunction with Mineral Consultation Area.

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

Mitigation: Measures used to reduce, avoid or remedy any adverse impacts caused by development.

Mixed waste processing: Operations, primarily of a mechanical and/or biological nature, to process residual municipal waste (household or similar commercial and industrial waste). Residual waste is what is left following the separation of recyclables / food waste / green garden waste either at source or centrally. The nature of mixed waste processing operations depends on the needs of downstream waste management practices. For example, refuse derived fuel (RDF) can be produced from mixed waste and the RDF can then be used to produce heat and power. Alternatively, organic waste can be separated for biological treatment. Various physical separation and waste reduction techniques can be used, sometimes in combination. Such processes include: trommel screen (typically a tilted rotating drum used to screen waste according to size and density), shredders, RDF plant and pelletisers; hand picking stations; biological stabilisation; ball mills; other mechanical reduction techniques (crushing, pulverising etc.) The term 'mechanical biological treatment' (MBT) describes a hybrid process combining mechanical and biological techniques to sort

and separate mixed municipal waste. Mixed waste processing can also be undertaken within an integrated facility which may also include composting and thermal treatment.

Monitoring Report: Records progress in implementing the Local Development Scheme and the performance of policies against targets in the Local Plan. Indicates what action an authority needs to take if it is not on track or policies need to be revised/ replaced.

Municipal Waste: Waste arising from households as well as other waste (such as commercial and industrial waste) which because of its nature or composition is similar to waste from households.

National Planning Policy Framework (NPPF): This document sets out the Government's planning policies for England. 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 (PPG): A web-based resource published by the Department for Communities and Local Government (DCLG) on 6 March 2014 and updated as needed.

Non-hazardous waste: All non-hazardous waste as defined by The List of Wastes Regulations 2005. Included are for example municipal (household), commercial and industrial wastes.

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

Planning Conditions: Conditions attached to a planning permission for the purpose of regulating and controlling the development.

Preferred Areas: If it is not possible to designate Specific Sites, the next way to plan for a steady and adequate supply of minerals is to designate preferred areas, which are areas of known resources where planning permission might reasonably be anticipated. Such areas may also include essential operations associated with mineral extraction.

Primary aggregates: Naturally occurring sand, gravel and crushed rock used for construction purposes.

Principal Aquifers: These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

Processing of Recyclables: Processing of recyclables will include all those operations that are designed to accept source-separated recyclate for processing and bulking-up prior to transport to downstream specialist re-processors. The recyclate is likely to originate from kerbside collection of materials that have been separated by individual householders and businesses, and also material from centralised recycling facilities (bottle banks, CA sites etc).

Pyrolysis: During pyrolysis organic waste is heated in the absence of air to produce a mixture of gaseous and liquid fuels and a solid inert residue (mainly carbon). Pyrolysis generally requires a consistent waste stream to produce a usable fuel product.

Radioactive waste: Radioactive wastes contain radioactive elements. Radioactive waste is categorised into nuclear and non-nuclear wastes. Nuclear wastes are from the nuclear power industry, while 'non-nuclear' wastes are generally from medical facilities and educational establishments. The majority of radioactive waste is 'low level waste' meaning that it has low levels of radioactivity.

Ramsar Site: A Site of Special Scientific Interest of international importance as waterfowl habitat designated under the Ramsar International Convention on Wetlands (1971).

Recovery: Includes recycling and composting operations as well as anaerobic digestion, thermal treatment operations which produce energy from waste (including fuel, heat and power) and some backfilling operations.

Recycled aggregates: Aggregates produced from recycled construction waste such as crushed concrete, planings from road surfacing etc.

Recycling: The process by which materials are collected and used as 'raw' materials for new products.

Refuse Derived Fuel (RDF): consists of residual waste that complies with the specifications in a written contract between the producer of the RDF and a permitted end-user for the thermal treatment of the waste in an energy from waste facility or a facility undertaking co-incineration such as cement and lime kilns. The written contract must include the end-user's technical specifications relating as a minimum to the calorific value, the moisture content, the form and quantity of the RDF.

Registered Parks and Gardens: Sites included in the *Register of Parks and Gardens of special historic interest in England,* compiled by Historic England via the Historic Buildings and Ancient Monuments Act 1953. The main purpose of this register is to help ensure that the features and qualities which make the landscapes registered to be of national importance are safeguarded during ongoing management or if any change is being considered which could affect them.

Renewable energy: Renewable energy is energy derived from resources that are regenerative (e.g. biomass) or for all practical purposes cannot be depleted (e.g. solar or wind power).

Residual waste: The elements of the waste stream that are left over after the segregation of recyclables and organic waste for biological treatment (such as composting or anaerobic digestion).

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 or waste disposal. Involves the reinstatement of land by contouring, the spreading of soils or soil making materials etc.

Route hierarchy: Norfolk County Council's route hierarchy categorises roads by use, or desired use, influencing signage, improvement programmes, and maintenance priorities. At the top of the hierarchy are the:

- Principal Roads (generally A roads); followed by
- Distributor Roads (generally B roads); followed by
- Local Access
- HGV (heavy goods vehicle) access
- Tourist accesses (generally class C roads)
- Other roads (normally unclassified or C roads)

Safeguarding: Protecting existing, permitted and allocated sites that have potential for relevant development (waste and minerals) from other incompatible development.

Scheduled Monuments: Nationally important monuments and archaeological areas protected under the Ancient Monuments and Archaeological Areas Act

Screening: Screening may take a number of forms, which may include bunds, or planting, or a combination of these and may in some circumstances incorporate a standoff to ensure that the screening is not itself intrusive. Where screening is included in a site allocations policy or map it is 'indicative' and is intended only to illustrate where assessment at this stage has indicated that there may be impacts (for example on amenity or landscape) which, in principle, could require some form of screening to mitigate them. The form of screening which would be appropriate, if required, along with the distances and coverage of any screening would be determined following assessment of the detail of potential impacts, as part of any future planning application

Secondary aggregates: aggregates obtained as a by-product of other quarrying and mining operations, or aggregates obtained as a by-product of other industrial processes, such as coal fired power station ash, incinerator ash and spent foundry sand.

Secondary Aquifers: These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types:

Secondary A - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers;

Secondary B - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

Secondary Undifferentiated - has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

Setting of a heritage asset: The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

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.

Sites of Special Scientific Interest (SSSIs): Sites notified and protected under the Wildlife and Countryside Act 1981 on account of their flora, fauna, geological or physiographical features.

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

Special Protection Area: An SSSI of international importance designated under the EC Directive on the Conservation of Wild Birds.

Statement of Community Involvement: A document that sets out a Local Planning Authority's intended consultation strategy for different elements of the planning process. This is a requirement brought in by the Planning and Compulsory Purchase Act 2004.

Strategic Environmental Assessment: A procedure (set out in the Environmental Assessment of Plans and Programmes Regulations 2004) which requires the formal environmental assessment of certain plans and programmes which are likely to have significant effects on the environment.

Surface water: All lakes, rivers, streams, springs, ponds, impounding reservoirs, wetlands, marshes, water sources, drainage systems on the Earth's surface.

Sustainability Appraisal: An evaluation process for assessing the environmental, social, economic and other sustainability effects of plans and programmes. This is a statutory requirement.

Sustainable development: Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

Thermal treatment: Can include incineration, gasification and pyrolysis. Techniques used include various moving grate systems and fluidised bed processes.

Transport assessment: This is a process which considers total travel demand; patterns of public transport in the area; how development impacts upon them; and if required how infrastructure or services could be improved to address the impacts (of a development).

Transport statement: Where transport issues are such that a full Transport Assessment is not required, a Transport Statement may be acceptable

Treatment: Involves the physical, chemical or biological processing of waste to reduce their volume, for segregation to reduce the harmfulness of the waste.

Waste arisings: The amount of waste generated in any given locality over a given period of time.

Waste Collection Authority: A local authority with a statutory responsibility to provide a waste collection service to each household in its area, and on request, to local businesses; in Norfolk the relevant district, borough or city council is the WCA.

Waste Disposal Authority: A local authority that is legally responsible for the safe disposal of municipal waste collected by the WCAs and the provision of Household Waste and Recycling Sites; in Norfolk the County Council is the WDA.

Waste management: The means of dealing with waste, including waste disposal, transfer, processing, recovery/recycling operations, incineration and other technologies.

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

Waste transfer: Waste transfer is the process by which waste is taken from waste producers for treatment, recycling and/or disposal. Then, to minimise the cost of transport and to reduce environmental impacts, transfer stations are used to sort waste and to transfer it to larger vehicles for onward transport. The waste is usually sorted into wastes that can be recycled (such as metal, wood, soil and rubble) and the remaining waste that will be landfilled.

Wastewater (sewage): Comprises liquid and solid waste discharged by domestic residences, commercial properties, industry and agricultural activities, which is then carried to Water Recycling Centre via a network of foul sewers.

Windrow Composting: The aerobic decomposition of shredded and mixed organic waste using open linear heaps known as ‘windrows’, which are approximately three metres high and four to six metres across. The process involves mechanical turning of the waste until the desired temperature and residence times are achieved to enable effective degradation. This results in a bulk-reduced, stabilised residue known as compost. Windrow composting can take place outdoors or within a large building and the process takes around three months.