



Norfolk County Council
at your service

Norfolk Minerals and Waste Development Framework

Core Strategy and Minerals and Waste Development Management Policies Development Plan Document 2010-2026



Adopted September 2011

Norfolk County Council

Norfolk Minerals and Waste Local Development Framework

Core Strategy and Minerals and Waste Development Management Policies Development Plan Document 2010 - 2026

September 2011

M. Jackson

Director of Environment, Transport and Development
Norfolk County Council

Martineau Lane
Norwich
NR1 2SG

www.norfolk.gov.uk



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

TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
1. THE MINERALS AND WASTE DEVELOPMENT FRAMEWORK.....	9
2. NORFOLK SPATIAL PORTRAIT	13
3. KEY DATA, ASSUMPTIONS AND PROJECTIONS	21
4. FUTURE WASTE MANAGEMENT CAPACITY NEEDS	29
5. VISIONS, AIMS AND OBJECTIVES	34
6. SPATIAL STRATEGY	40
POLICY CS1 – Minerals extraction.....	41
POLICY CS2 – General locations for mineral extraction and associated facilities	42
POLICY CS3 – Waste management capacity to be provided	45
POLICY CS4 – New waste management capacity to be provided	46
POLICY CS5 – General location of waste management facilities	48
POLICY CS6 – General waste management considerations.....	50
POLICY CS7 – Recycling, composting, anaerobic digestion and waste transfer stations.....	52
POLICY CS8 – Residual waste treatment facilities	53
POLICY CS9 – Inert waste landfill	54
POLICY CS10 – Non-hazardous and hazardous waste landfill	55
POLICY CS11 – Waste water/sewage infrastructure and treatment facilities	56
POLICY CS12 – Whitlingham Waste Water treatment works	58
POLICY CS13 – Climate change and renewable energy generation	59
POLICY CS14 – Environmental protection	61
POLICY CS15 - Transport.....	63
POLICY CS16 – Safeguarding mineral and waste sites and mineral resources.....	65
POLICY CS17 – Use of secondary and recycled aggregates	67
7. DEVELOPMENT MANAGEMENT POLICIES	71
POLICY DM1 – Nature conservation	72
POLICY DM2 – Core river valleys	73
POLICY DM3 – Groundwater and surface water	74
POLICY DM4 – Flood risk.....	76
POLICY DM5 – Borrow pits and agricultural or potable water reservoirs ..	78
POLICY DM6 – Household waste recycling centres	77
POLICY DM7 – Safeguarding aerodromes.....	79
POLICY DM8 – Design, local landscape and townscape character.....	81
POLICY DM9 – Archaeological sites	82

POLICY DM10 - Transport	84
POLICY DM11 – Sustainable construction and operations	85
POLICY DM12 - Amenity	86
POLICY DM13 – Air quality	87
POLICY DM14 – Progressive working, restoration and after-use	88
POLICY DM15 – Cumulative impacts	89
POLICY DM16 - Soils	90
8. MONITORING AND IMPLEMENTATION	91

KEY DIAGRAM	69
--------------------------	-----------

APPENDICES

Appendix A: FORECAST WASTE QUANTITIES FOR NORFOLK	103
Appendix B: MINOR DEVELOPMENT AND SEWAGE/SLUDGE FACILITIES	106
Appendix C: SAFEGUARDING CONSULTATION PROCEDURE	107
Appendix D: REPLACEMENT OF SAVED LOCAL PLAN POLICIES	108
Appendix E: ENVIRONMENT AGENCY INDICATIVE RESPONSES TO POTENTIAL NORFOLK LANDFILL LOCATIONS	114
Appendix F: GLOSSARY	116

EXECUTIVE SUMMARY

0.1 This document, the Norfolk Core Strategy and Minerals and Waste Development Management Policies Development Plan Document (DPD), runs for a 17-year period from 1 January 2010 to 31 December 2026, as required by Planning Policy Statement 12: *Local Spatial Planning* (PPS12), to enable the time period of the Core Strategy to be 15 years from the date of adoption. This document is described throughout as the 'Core Strategy'.

0.2 The Core Strategy, along with the Proposals Map, sets out the spatial vision for future mineral extraction and associated development and waste management facilities in Norfolk. It also contains strategic objectives and policies that make clear where, in broad terms, mineral extraction and associated development and waste management facilities should be located in Norfolk, and conversely where they should not be located. It also sets out Development Management policies that will be used to ensure that the development of mineral extraction and associated development and waste management facilities can happen in a sustainable way at those locations assessed as being appropriate for development. When it is adopted it will become part of the Local Development Framework (LDF) for Norfolk.

0.3 The East of England Plan requires Norfolk to accommodate a minimum of 78,700 new homes and plan for an indicative figure of 55,000 new jobs between 2001 and 2021. Related to this, the population is projected to rise to around 969,700 in 2021 (from 798,600 in 2001). The increasing population and the growth Norfolk needs to accommodate will both have major implications for the development of mineral extraction and associated development and waste management facilities.

0.4 Every person produces waste, and the amount produced has been growing over the years, most of which has been sent to landfill. Whilst waste cannot be eliminated, how much is produced, how it is managed, and what can be done with it can – indeed, must – be altered. Managing waste in a more sustainable way, for example by optimising recycling, as well as limiting production of waste, forms a core part of Government policy to protect the environment. Although waste is often thought of as being mainly produced by households, this actually comprises only a small proportion (approximately nine percent) of the waste produced, with much larger amounts generated by businesses, through construction and demolition, and inert waste generated by mineral extraction and associated development.

0.5 Aggregate minerals are the main raw materials used by the construction industry. Aggregates are used in a variety of ways including the production of concrete, road construction and manufactured building products such as concrete blocks, pipes and kerbs. Primary aggregates comprise naturally occurring materials, such as sand and gravel, which are extracted directly from the earth. Secondary aggregates are waste or by-products from minerals processing or other industrial processes, used with or without processing, whereas recycled aggregates are produced from recycled construction waste such as concrete and planings from tarmac road surfaces. Both secondary and recycled aggregates can be used by the construction industry (e.g. for use as sub-base material) but for some uses only primary aggregates are appropriate.

0.6 The Core Strategy plans for facilities to manage the waste that is expected to arise and also where to extract the minerals that are needed over the Plan period to the end of 2026. The purpose of the Minerals and Waste Development Framework is to plan for mineral extraction and associated development and waste management facilities in the most sustainable way that minimises adverse impacts on amenity and the environment.

0.7 The overall **spatial strategy** sets out the locational principles in the form of broad areas where mineral extraction and associated development and waste management facilities will be preferred. Although minerals can only be extracted where they occur, if there is a choice of potential site allocations then Policies CS2 (minerals) and CS5 (waste) give a locational preference: close and/or well-related to the Norwich Policy Area, Great Yarmouth urban area, King's Lynn or Thetford or the main market towns (Attleborough, Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Hunstanton, North Walsham, Sheringham, Swaffham and Watton), taking into account any significant environmental constraints near these settlements.

0.8 The strategy for **waste management** conforms to the Waste Strategy for England 2007 and the national waste hierarchy. The Minerals & Waste LDF will therefore, where practicable, allocate sufficient sites to provide facilities to deliver increased rates of recycling, composting and energy recovery. The County Council will work closely with Norfolk's district councils to secure an appropriate level of developer contributions towards the provision of improvements to the household waste recycling centre network. For waste resource and energy recovery, Policy CS13 will ensure that new waste management proposals minimise the carbon footprint in their own energy use, and capture energy generated from the thermal treatment of waste.

0.9 Any proposals for new landfill sites for hazardous waste will be limited to providing capacity only for Norfolk's disposal requirements, if suitable sites can be found. Current permitted non-hazardous landfill sites are likely to be sufficient to provide capacity until the end of 2023/24. Planning permission was resolved to be granted, by Norfolk County Council's Planning (Regulatory) Committee in December 2010 for a 1,000,000 m³ extension to Attlebridge landfill site. With this extension, Norfolk's non-hazardous landfill capacity will meet the forecast needs up to the end of 2026/27. Additional inert landfill capacity is also needed for Norfolk, but it will only be permitted where it provides net benefits in terms of restoration.

0.10 For **minerals supply**, the sand and gravel landbank will be maintained at between 7 and 10 years' supply, save for exceptional circumstances, such as borrow pits for major infrastructure needs. The landbank for carstone will be maintained as close to 10 years' supply as is practicable. An initial 15 year landbank for silica sand reserves will be allocated, with a minimum landbank of 10 years maintained. No landbank will be maintained for other minerals.

0.11 There will be minerals and waste **Safeguarding Areas** and **Consultation Areas** to protect existing, permitted and allocated sites from other development. Sand and gravel, silica sand and carstone resources will also be protected, using the British Geological Survey mineral resources map as a guide. Specific civil and military aerodromes and technical sites will also be subject to safeguarding

from mineral extraction and associated development and waste management facilities within specific areas that could inhibit their operation or development.

0.12 In terms of **environmental protection** and Norfolk's natural and cultural heritage, mineral extraction and associated development and waste management facilities will avoid significant adverse impacts on protected and sensitive areas of the county, such as SACs, SPAs, SSSIs, designated local nature conservation and geodiversity sites, listed buildings, Historic Parks and Gardens, archaeological sites, conservation areas and Groundwater Source Protection Zones. The constraints of developing within or near the Breckland SPA (stone curlew habitat) are highlighted particularly. This generally means that allocations for mineral extraction and associated development and waste management facilities will be avoided in or adjacent to such areas, whilst balancing this against the need to provide sufficient allocations to meet the minerals and waste apportionments specified in policies CS1 and CS3. Developers and operators will also be required to show that they will minimise their impact on the environment through appropriate construction and management measures at the planning application stage.

0.13 Mineral extraction and associated development and waste management facilities must preserve or, where possible, enhance the **landscape** and **townscape character**. This will be supplemented with consideration of **good design** principles for new development.

0.14 The impact on **transport and traffic** will be assessed and managed by requiring the submission of a Transport Statement and, where appropriate, a Transport Assessment depending on the scale and impact of the development. Through these, developers will need to show how accessibility and sustainable transport opportunities are being maximised and impacts on congestion, air quality and road safety minimised, the latter supported by road safety audits. To promote a shift from road freight transport to rail and water transport, site allocations near rail freight facilities and wharves will be encouraged. For residual lorry traffic, the use of unsuitable roads will be reduced, primarily by encouraging potential site allocations with good access to roads high up the route hierarchy.

0.15 With regard to **amenity and well being**, clear adverse impacts on human health will be avoided. This means that Core Strategy policy opposes allocating sites in Air Quality Management Areas, where the development would have a detrimental affect on the air quality objectives of the AQMA, and areas also where the impact of a new minerals or waste development could potentially lead to a new AQMA being declared. Consideration will also be given to potential impacts to people in close proximity to site allocations. A development management policy will require developers to minimise individual and cumulative amenity impacts. The cumulative impact of development that is co-located will need to be mitigated, although there is recognition of synergistic benefits for the co-location of facilities.

0.16 Landfill and minerals extraction offer opportunities for beneficial **restoration**, and although these opportunities will be assessed on a case by case basis, priority will be given to restoration that helps develop Norfolk's ecological network (and hence its biodiversity) and the creation of new, high quality, distinctive landscapes. Continuing to preserve good quality **agricultural land** is important and will also be considered.

0.17 In addition to local impacts, mineral extraction and associated development and waste management facilities can have wider scale implications, in particular on the emissions of greenhouse gases, which can lead to **climate change**. Their industrial processes are almost always energy intensive, and the combustion of fossil fuels to produce this energy leads to carbon dioxide (CO₂) emissions. Additionally, transportation of minerals and waste is typically undertaken by heavy goods vehicles, which require a significant amount of fuel. Climate change is integrated within a number of policies in the Core Strategy, with the aim of minimising greenhouse gas emissions from mineral extraction and associated development, waste management facilities and associated activities as much as possible.

0.18 Minerals and waste planning technical terms and concepts used throughout this Core Strategy can be found in the glossary in Appendix F.

1. THE MINERALS AND WASTE DEVELOPMENT FRAMEWORK

1.1 The Norfolk Core Strategy and Minerals and Waste Development Management Policies Development Plan Document, is for a 17 year period from 2010 to the end of 2026, as required by Planning Policy Statement 12: *Local Spatial Planning* (PPS12), to enable the time period of the Core Strategy to be 15 years from the date of adoption. This document will be described throughout as the 'Core Strategy'.

1.2 The Core Strategy, along with the Proposals Map, sets out the spatial vision for future mineral extraction and associated development and waste management facilities in Norfolk. It also contains strategic objectives and policies that make clear where, in broad terms, mineral extraction and associated development and waste management facilities should be located in Norfolk, and conversely where they should not be located. It also sets out Development Management policies that will be used to ensure that the development of mineral extraction and associated development and waste management facilities can happen in a sustainable way at those locations assessed as being appropriate for development. When it is adopted it will become part of the Local Development Framework for Norfolk.

1.3 Planning for mineral extraction and associated development and waste management facilities is carried out through the production of the Minerals and Waste Development Framework, which is required by the Planning and Compulsory Purchase Act 2004. The Core Strategy is required to be accompanied by a Sustainability Appraisal, Appropriate Assessment and Evidence Base to ensure a robust approach. These documents are explained under the appropriate heading below. The Core Strategy, together with national policies contained in Planning Policy Statements, form the overall framework for taking decisions on applications for planning permission for mineral extraction and associated development and waste management facilities.

1.4 As well as the Core Strategy and Minerals and Waste Development Management Policies DPD, the Local Development Framework comprises:

- **Site Specific Allocations DPDs.** The Allocation Sites are suitable, as well as available, for mineral extraction and associated development or waste management facilities as assessed against the Core Strategy policies, the sustainability appraisal, appropriate assessment and consultation feedback. Separate DPDs for Waste Site Specific Allocations and for Minerals Site Specific Allocations are being produced. The Site Specific Allocations will be referred to as 'Allocation Sites' throughout the Core Strategy.
- **The Statement of Community Involvement,** which sets out the ways in which local stakeholders will be consulted in the production of DPDs and in the determination of planning applications.
- **Minerals and Waste Development Scheme.** The various documents within the framework are being prepared at different times through a continuous process, the timing of which is described in the Minerals and Waste Development Scheme.
- **Annual Monitoring Report.** This describes progress in producing the DPDs, implementation of the Core Strategy and the performance of the policies.

Planning and Sustainable Development

1.5 The Core Strategy and supporting documents have been developed to ensure that mineral extraction and associated development and waste management facilities are delivered in a sustainable manner. The Government's sustainable development strategy in Planning Policy Statement 1: *Delivering Sustainable Development* (PPS1) is the core principle underpinning planning, aiming to deliver a sustainable, innovative and productive economy with high levels of employment, and a just society that promotes social inclusion, sustainable communities and personal well-being in ways that protect and enhance the physical environment and optimise resources and energy use.

Overall National and Regional Minerals and Waste Policy

1.6 The main thrust of the national minerals policy in Minerals Policy Statement 1: *Planning and Minerals* (MPS1) is to secure adequate and steady supplies of the minerals needed by society and the economy, reducing the demand for primary extraction through increasingly promoting efficient reuse and recycling of suitable materials such as demolition waste.

1.7 There are many European directives which the UK is required to comply with. Most notable, in terms of requirements for waste management facilities, is the *Landfill Directive 1999/31/EC*, which bans the co-disposal of hazardous and non-hazardous waste, requires the treatment of waste (with limited exceptions) prior to landfill, and sets targets for the reduction of biodegradable waste sent to landfill.

1.8 The Waste Strategy for England 2007 aims to reduce the amount of waste produced and to reduce the amount and proportion of waste disposed of to landfill, in accordance with the waste hierarchy, to meet the Landfill Directive targets. The hierarchy gives top priority to waste prevention, followed by preparing for reuse, then recycling, then other recovery, with disposal being the final option. National waste management policy in Planning Policy Statement 10: *Planning for Sustainable Waste Management* (PPS10) also rests on the waste hierarchy, setting out the preferred order in which options for waste management should be considered, with waste being seen as a resource from which value should be recovered.

1.9 The adopted East of England Plan (2008) sets out the amount of mineral extraction and waste management that Norfolk County Council needs to plan for, called 'apportionments', between 2001 and 2021. The Core Strategy uses more up-to-date data and projections than contained in the adopted East of England Plan, however, taking some information from the now abandoned Revision to the East of England Plan (2010), revised national minerals apportionment figures, and the latest municipal waste projections.

Supporting Documents - Sustainability Appraisal, Appropriate Assessment, Evidence Base and Equality Impact Assessment

1.10 Sustainable development is central to the planning system. The purpose of sustainability appraisal, which is mandatory under the Planning and Compulsory Purchase Act 2004, is to promote sustainable development through the integration of social, environmental and economic considerations in the

preparation of new or revised DPDs and Supplementary Planning Documents. Sustainability appraisal is therefore an integral element of the preparation of the Core Strategy, informing in a comprehensive way of the likely impacts of the proposed policies.

1.11 At the Issues and Options stage, every option was assessed in the initial Sustainability Appraisal and the most sustainable option to address each issue was highlighted in the Issues and Options consultation document. The Sustainability Appraisal from the Issues and Options stage was taken into account, along with the public consultation feedback, when the preferred options were selected. At the Preferred Options stage, the preferred policy option for each issue was assessed in the draft Sustainability Appraisal and, where relevant, mitigation measures were suggested for inclusion in the final policy wording.

1.12 The policy wording within this document has taken into account the findings of the Sustainability Appraisal from the Preferred Options Stage and the Pre-submission stage of May-July 2010. A Sustainability Appraisal has also been carried out on the policies within this document. The Draft Sustainability Appraisal states that: *“The assessment of the Core Strategy policies highlighted that the majority will have either no significant effect or a positive effect. The majority of the policies for development management showed either no significant effect or a positive effect. This is most likely due to the nature of development control to mitigate the negative effects of development and enhance the positive effects of development. In developing the policy wording, the Issues and Options and Preferred Options have undergone SA and mitigation has been incorporated in the policy wording, because of this there were very few negative effects. Whilst not every policy scores positively against all the sustainability criteria, taken together, the policies will ensure future minerals and waste sites are allocated in appropriate locations in Norfolk and permitted to operate in the most ‘sustainable’ manner”*. The Sustainability Appraisal forms part of the evidence base for the development of the Core Strategy.

1.13 An Appropriate Assessment has been carried out on the Core Strategy in accordance with the *Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna* (the Habitats Directive). An Appropriate Assessment is undertaken to assess the impacts of a land-use plan against the conservation objectives of a European-designated nature conservation site and to ascertain whether it would adversely affect the integrity of the site and, if so, how to amend the plan to avoid any potential damaging affects. The Appropriate Assessment forms part of the evidence base for the development of the Core Strategy.

1.14 Also forming the evidence base for the development of the Core Strategy are a number of other documents containing relevant technical information that underpins the Core Strategy.

1.15 An Equality Impact Assessment (EqIA) as been carried out on the Core Strategy. The need for an EqIA stems from the general duty placed on public authorities to eliminate unlawful discrimination in carrying out its functions, and promote equality of opportunity between men and women, different racial groups, and other equality groups. The EqIA has been prepared to satisfy all relevant legal and policy requirements for the assessment. It has been completed in line

with best practice guidance published by Central Government¹, and the County Council's own guidance for undertaking EqlAs².

¹ ODPM (2005) Diversity and Equality in planning: A good practice guide

² Norfolk County Council. Equality and Human Rights Impact Assessments

2. NORFOLK SPATIAL PORTRAIT

2.1 Norfolk is a largely rural county. It has 90 miles of coast, 250 miles of waterways, 6,329 miles of roads and 541 parishes. There are over 200 conservation areas, more than 10,000 listed buildings and more than 350 scheduled monuments. The Broads covers 303 square kilometres of Norfolk (and a small part of Suffolk), and has a population of around 6,000.

2.2 The population of Norfolk is estimated to be 853,400 in mid-2009, compared with 796,700 in the 2001 Census. Its area is 549,751 hectares (fifth largest of the 34 non-metropolitan counties in England) and the population density is 1.57 people per hectare (tenth lowest). Norfolk's population has a relatively elderly age profile; compared to England and Wales it has higher proportions of people aged 50-54 and over, and lower proportions in all the younger age groups.

2.3 Around 38 per cent of the county's population live in the three major built up areas of Norwich (207,000), Great Yarmouth (68,400) and King's Lynn (42,800), and a further 19 per cent (158,000) in the market towns. Around 40 per cent live in parishes of more than 300 residents, and the remaining 3 per cent in parishes with fewer than 300 residents.

2.4 Norfolk has a broadly-based economy. Traditional activities such as agriculture, manufacturing and tourism are still very important, but the county also has the Norwich Research Park (one of Europe's largest concentrations of research in health, food and environmental sciences), the cutting-edge motorsport engineering complex based around Snetterton, the new deep-water Outer Harbour at Great Yarmouth (to help bolster the marine and offshore oil and gas industry) and the new £400m Palm Paper plant at King's Lynn.

2.5 The East of England Plan set targets for housing growth in the East of England up to 2021. Between 2001 and 2021 Norfolk as a whole was expected to accommodate a minimum of 78,700 new dwellings. The majority of these were planned to be in the Norwich Policy Area (including Norwich City and parts of Broadland and South Norfolk) where 33,000 dwellings were allocated. King's Lynn and West Norfolk was to provide for 12,000 dwellings and Great Yarmouth for 6,000 dwellings over the same period. Breckland was to provide 15,200 dwellings (of which 6,000 would be at Thetford) and North Norfolk 8,000 dwellings between 2001 and 2021. Whilst the level of these housing numbers might be altered by Norfolk's districts through reviews of their Local Development Frameworks, at the current time there are no public plans to do so.

2.6 Norfolk's district councils are currently preparing their Local Development Frameworks. Of particular significance is the Joint Core Strategy, being prepared by Norwich City, Broadland District and South Norfolk District (with assistance from Norfolk County Council). The Joint Core Strategy was adopted in March 2011. Both North Norfolk and Breckland have adopted Core Strategies. King's Lynn & West Norfolk's Core Strategy has been submitted, and the public examination took place in February 2011. Great Yarmouth's Core Strategy is still at the Issues and Options stage.

2.7 The Norwich Policy Area extends beyond the built-up area of Norwich and encompasses a number of villages as well as the market towns of Wymondham and Long Stratton and the Old Catton-Sprowston-Rackheath-Thorpe St Andrew

'growth triangle' (which is planned for a minimum of 7,000 dwellings). The settlement 'hierarchy' for Norfolk is divided into two classes for the purposes of the Core Strategy, firstly the main settlements of Norwich/Norwich Policy Area, Great Yarmouth urban area, King's Lynn and Thetford (the settlements of Gorleston, Bradwell and Caister-on-Sea are virtually contiguous with Great Yarmouth and therefore are considered to form part of the Great Yarmouth urban area). In addition to the settlements within the Norwich Policy Area, there are a number of market towns in Norfolk that either have a current population of over 7,000 or are expected to reach 7,000 through proposed new housing allocations. These towns, which form the second tier of the hierarchy for the purposes of the Core Strategy, are: Attleborough, Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Hunstanton, North Walsham, Sheringham, Swaffham and Watton.

2.8 As part of the infrastructure requirements for the Joint Core Strategy, the Norwich Northern Distributor Road is planned. The other significant road improvement planned in the county is the dualling of the last single-carriageway stretch of the A11, from Thetford (in Norfolk) to Mildenhall (in Suffolk). In late 2010 it was announced in the Comprehensive Spending Review for the years to 2014/15 that the A11 dualling will take place, and final approval under the Highways Act was granted in March 2011. Construction is expected to start during the financial year 2012-13.

2.9 Norfolk is a county rich in important wildlife and designated landscapes. There are 12 Special Protection Areas (SPAs), seven Special Areas of Conservation (SACs) and 162 Sites of Special Scientific Interest (SSSIs). Significant habitats include the Wash, the Broads, the Brecks and the Fens. The Norfolk Coast Area of Outstanding Natural Beauty (AONB) runs, with a few breaks, from King's Lynn in the west along the coast to Winterton in the east, and covers 450 square km.

MINERAL SPATIAL PORTRAIT AND STRATEGIC FOCUS

2.10 Mineral deposits can only be worked where they occur and so the options for a spatial strategy for mineral extraction and associated development are prescribed to a large extent by the geological distribution of mineral resources within Norfolk. The Norfolk Mineral Resources map, published in 2004 by the British Geological Survey (BGS), includes a breakdown of mineral types and distribution. The Key Diagram shows the broad locations of carstone and silica sand resources, as well as the locations of sand and gravel resources that are well-related to settlements.

Sand and Gravel

2.11 The BGS map demonstrates that sand and gravel is abundant and located throughout large areas of Norfolk. Sand and gravel is 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. In 2010, there were 33 active sand and gravel mineral workings in Norfolk (see the 2009/10 Annual Monitoring Report). The distribution of existing sand and gravel sites throughout Norfolk is widespread with a relatively large number of small operators. There are, however, particular clusters of sand and gravel workings near to King's Lynn, in the north of the Breckland District and around Norwich.

2.12 Norfolk's sand and gravel apportionment figure, which was agreed by the East of England Aggregates Working Party (EERAWP), refers only to land-won aggregates. Marine aggregate dredging is carried out by companies on behalf of the Crown Estate and the sites are licensed by Defra; therefore, Norfolk County Council does not have any planning involvement in marine aggregates and they do not form part of the county's aggregate apportionment. Aggregates from marine dredging are not currently received at any ports or wharves in Norfolk.

2.13 The main alternative source of aggregates is recycled construction and demolition waste. Whilst MPS1 (paragraph 18) requires Minerals Planning Authorities to reduce the reliance on land won aggregates with increased substitution of recycled and secondary aggregates, the production of secondary and recycled aggregates is in addition to the apportionment figures.

Silica Sand

2.14 Silica sand is an essential raw material for many industrial processes, including the manufacture of glass. Norfolk is one of the most important sources of silica sand in Britain, accounting for over 10 per cent of total output and a much larger proportion of glass sand production. The majority of the resources of silica sand are to the east of King's Lynn from upper Sandringham to the west of Hunstanton, southwards to Ryston (near Downham Market) in south-west Norfolk (see Key Diagram).

2.15 At present, there is only one company (Sibelco) extracting silica sand in Norfolk. This operation is located at a site in Leziate, east of King's Lynn, which includes plant for initial processing and a rail head to export the mineral from the county for advanced processing elsewhere. The site at Leziate has a current production rate of 609,000 tonnes per year, although this is expected to increase to 750,000 tonnes per year from 2011.

Carstone

2.16 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 hoggin (in embankments and as fill); therefore, it is often used in the construction of roads. In 2010, there were four carstone quarries operating in Norfolk.

Other minerals

2.17 Several other minerals are extracted in Norfolk, including clay (used in the engineering of landfill sites and in flood protection schemes), chalk (used primarily used as a liming agent for farmland) and peat (used in the horticulture industry).

2.18 In 2010 there were three active chalk quarries, located at Hillington, Castle Acre and Caistor St Edmund; one peat working, at Oxborough, and one active clay working, at Middleton.

WASTE SPATIAL PORTRAIT AND STRATEGIC FOCUS

Introduction

2.19 The treatment and disposal of waste in Norfolk was historically based on fairly limited recycling of certain waste types (such as scrap metal), followed by landfilling of most of the remainder, particularly municipal (household) waste. More recent years have seen an increased focus on waste reduction, and the recycling, composting and recovery of value from wastes through the application of the principles of the Waste Hierarchy (prevention – preparing for reuse – recycling – other recovery – disposal). Guided by increases in taxation, the landfilling of all waste types is becoming increasingly expensive and, therefore, undesirable, but it may remain the most cost effective solution for some types of waste.

2.20 The County Council relies heavily on the annual survey returns from the waste management industry for an up-to-date picture for Norfolk. This is clearly important not just so that it is known how much waste has been recycled, treated or managed, but especially how much landfill capacity remains for the ultimate disposal of non-hazardous waste that cannot be treated any further.

2.21 The Waste Evidence Base document contains details of the principal waste types in Norfolk (principally inert, hazardous, and various types of non-hazardous waste, such as municipal waste) including the amount of waste arising, how and where it is treated (if relevant), and how and where it is disposed of (if relevant). This information is summarised below.

Current Waste Management Infrastructure

2.22 A total of 1,910,000 tonnes of waste was handled in Norfolk during the year 2008/9 (see 2008/9 AMR). This total includes:

- Waste disposal to non-hazardous waste landfill sites: 482,000 tonnes;
- Non-hazardous waste recycled: 684,000 tonnes;
- Inert landfill and quarry restoration: 210,000 tonnes; and
- Inert waste recycling: 512,000 tonnes.

Hazardous wastes

2.23 There are many different types of hazardous waste, ranging from waste electronic equipment and paints, to oily wastes, asbestos and clinical waste. 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; and
- waste electrical and electronic equipment, including televisions and fluorescent tubes.

2.24 Hazardous wastes usually require specialised treatment and disposal facilities, and given the relatively low levels of waste produced, the catchment area of such plants is often wider than a single county. For this reason, given its geographical remoteness, Norfolk is clearly not ideally suited to host regional or national level waste treatment plants, and there is a net outflow of hazardous waste from the county.

2.25 Since the banning of the co-disposal of hazardous wastes with non-hazardous wastes to landfill in July 2004, Norfolk does not now landfill any hazardous waste (with the exception of an engineered asbestos 'cell' in Attlebridge landfill site) and there are therefore no hazardous waste landfills in Norfolk.

2.26 Environment Agency figures from 2009 show that, of the 72,000 tonnes of hazardous waste produced in Norfolk, more than 41,000 tonnes was exported for treatment/disposal outside the county. Examples of hazardous waste exported outside Norfolk include:

- asbestos being transported to King's Cliffe landfill site in Northamptonshire (near Peterborough) for disposal;
- clinical waste being transferred to Ipswich Hospital for incineration; and
- waste batteries (collected at Household Waste Recycling Centres) being sent to the H J Enthoven plant near Matlock in Derbyshire for recycling.

2.27 The total quantities of hazardous waste arising in Norfolk, and received in Norfolk, in the past three years were as follows:

Year	Waste arising in Norfolk (tonnes)	Waste received in Norfolk (tonnes)
2007	95,000	50,000
2008	77,000	61,000
2009	72,000	56,000

Of the total hazardous waste arising in Norfolk, the following quantities were hazardous construction and demolition wastes:

2007: 15,609 tonnes (5,757 tonnes asbestos)

2008: 8,583 tonnes (5,004 tonnes asbestos)

2009: 6,115 tonnes (4,960 tonnes asbestos)

Therefore it is assumed that about 5,000 tonnes annual capacity needs to be made available to dispose of asbestos of Norfolk (assuming complete self-sufficiency).

Non-hazardous wastes

2.28 Many types of municipal and commercial & industrial (C&I) waste fall into the category of non-hazardous waste.

2.29 Untreated or unsorted non-hazardous waste streams can contain a wide range of materials, including food waste, plastics, paper, metals and garden wastes. The separate collection of recyclable and compostable fractions of municipal (household and, to some extent, C&I) waste is well-established, and thus most residual non-hazardous waste contains a relatively small fraction of recyclables and compostables.

2.30 Norfolk's district councils all collect recyclables direct from householders, and this waste is taken to the county's main Materials Recycling Facility, which is based at Costessey, for sorting and processing. Those districts which offer a collection service for household garden waste take the material for composting to a number of different composting plants in the county.

2.31 C&I waste is compositionally similar to municipal waste, and can thus be subject to the same type of source-separation of recyclables and compostables, with the residual fraction being treated and disposed of the same ways.

2.32 The 2008/9 Annual Monitoring Report figures show that the Norfolk's five non-hazardous landfills (Blackborough End, Feltwell, Attlebridge, Aldeby and Edgefield) received over 482,000 tonnes of waste during that year, with a remaining permitted voidspace capacity of approximately 8.5 million tonnes (8.5 million m³). The bulk of the remaining capacity in Norfolk's landfills is found in Blackborough End, in the west of the county.

2.33 There are currently no large-scale residual waste treatment plants in the county, although there are a number of smaller-scale operations, such as anaerobic digestion plants.

2.34 No municipal waste from London is currently being treated and/or landfilled in Norfolk, although an annual quantum of this waste is apportioned to Norfolk in Policy WM3 of the East of England Plan.

Inert wastes

2.35 Broadly speaking, inert waste types are materials that will not degrade or decay, such as glass, sub-soils, brick and concrete, although the list of materials which are acceptable for disposal at inert-only landfill sites is more restricted (excluding, for example, topsoil and peat). Almost all inert waste (glass excepted) arises from construction & demolition activities.

2.36 Current recycling levels of inert waste are high, because the material often has value as a sub-base material or for other uses. For this reason, it is not thought likely that there will be a significant increase in recycling over the period of the Core Strategy.

2.37 Only two inert-only landfills in Norfolk accepted waste in 2008/9, totalling about 42,000 tonnes. However, this figure masks the real situation because much inert waste is also used for engineering works, including the capping of non-

hazardous landfill sites and the restoration of mineral workings. In 2008/09 over 168,000 tonnes of inert waste was used in the restoration of quarries and the restoration of two closed non-hazardous landfill sites, whilst over 31,000 tonnes of inert waste was disposed of to non-hazardous landfill sites.

2.38 Although there is annual variability, figures from the years 2004-2009 (see the “Inert waste management addendum to the Revised Waste Data Evidence Base”) show that approximately 60 per cent of inert waste is recycled, 5 per cent is used for engineering purposes on landfills (cap and cover), 25-30 per cent is used to backfill/restore quarries and the remaining 5-10 per cent is sent to inert landfill sites. The six-year average for material sent to inert landfills and used for quarry restoration is approximately 346,000 tonnes.

Other waste management infrastructure capacity

2.39 2008/9 figures show that there was a net import into Norfolk’s waste transfer stations and recovery facilities of about 305,000 tonnes of waste (all waste types, including hazardous and clinical wastes, combined).

2.40 Norfolk currently has 19 Household Waste Recycling Centres, which accept over 73,000 tonnes of waste per annum. In 2008/9 58.5 per cent of the household waste received at these facilities was recycled or recovered at other facilities and the remaining 41.5 per cent of the waste was disposed of to landfill.

2.41 There is one main Materials Recovery Facility (MRF) in the county, at Costessey near Norwich, which sorts kerbside-collected source-separated dry materials for recycling. This facility has a capacity of 90,000 tonnes per annum. Several other, smaller, MRFs deal with C&I waste streams (such as fluorescent light tubes), but Freedom Recycling’s plant at Thetford also handles some of Essex’s kerbside-collected dry materials for recycling.

2.42 Norfolk has six large composting facilities, as well as a few smaller sites, including community composting facilities. The large composting facilities in Norfolk received over 115,000 tonnes of waste in 2008/09, with community composting sites receiving over 100 tonnes.

2.43 There are four large metal recycling facilities, at Costessey, Great Yarmouth, Lenwade and King’s Lynn, and over 50 small sites accepting scrap metal or end-of-life vehicles. The metal recycling facilities in Norfolk received over 236,200 tonnes of waste in 2008/09.

Agricultural waste

2.44 Substantial quantities of agricultural waste are produced in Norfolk, which is a largely rural county. However, the majority of agricultural waste produced does not need to be treated or disposed of at permitted waste management facilities; it is usually dealt with on farms, principally by spreading slurries to land.

2.45 Some quantities of agricultural waste are treated at larger plants, however. A good example is the chicken litter-fuelled power station at Thetford, which consumes 420,000 tonnes of chicken litter per year, producing a high quality fertiliser. There has also been increased interest in, and development of, on-farm waste processing plants in recent years, with anaerobic digestion plants and larger-scale composting plants becoming more common.

Waste water and sewerage

2.46 Large volumes of sewerage and waste water are produced and treated in Norfolk, as in all other counties. There are a significant number of sewage and waste water treatment plants in the county (see the Waste Evidence Base), but the principal wastewater treatment plant is at Whitlingham, just south of Norwich, which treats waste water from Norwich and the surrounding area, and also accepts sewage sludges from other plants in the county.

3. KEY DATA, ASSUMPTIONS AND PROJECTIONS

Minerals

Sand and gravel

3.1 The CLG document *National and regional guidelines for aggregates provision in England 2005-2020* was published in June 2009, and updates the previous guidance, which ran from 2001-2016. The original 2001-2016 figures were apportioned to sub-regional areas by the East of England RAWP (Regional Aggregates Working Party), and apportioned Norfolk 2.98 million tonnes of sand & gravel per year. The revised national guidelines recommend lower levels of provision, and the East of England RAWP used the same methodology to re-apportion the quantity allocated to the East of England. Norfolk's revised apportionment figure is now 2.57 million tonnes per year.

3.2 Sand and gravel production in Norfolk has averaged 2.29 million tonnes per year in the ten years up to and including 2009, compared to the 2.57 million tonnes per annum apportionment figure. At the end of 2009 the permitted reserve of sand and gravel was sufficient to meet the county's needs for 7 years (until the end of 2016). This just meets the minimum 7-year landbank that the County Council seeks to maintain in accordance with paragraph 4.1 of Annex A of MPS1: *Planning & Minerals*. Consequently a minimum of a further 10 years' supply therefore needs to be provided to meet the apportionment figure. Paragraph 4.2 of Annex A of MPS1 advises that where regular reviews and updates would take place – as planned for the Core Strategy – then maintaining a landbank beyond the end of the Plan period is not an issue.

3.3 Given the need to 'roll forward' the annual apportionment figure to 2026, the minimum total to be allocated is shown in Table 3.1.

Table 3.1: Sand and gravel requirement and shortfall

		Million tonnes
A	Norfolk apportionment 2010 to 2019 (10 years x 2.57 million tonnes)	25.7
B	Roll forward from 2020 to 2026 (7 years x 2.57 million tonnes)	17.99
C	Total apportionment requirement	43.69
D	Sand and gravel reserve at 31/12/2009	18.02
E	Total shortfall (C – D) and therefore minimum quantity to be allocated	25.67

Silica sand

3.4 MPG15: *Provision of Silica Sand in England* stresses the national importance of silica sand resources, and the need to ensure that adequate resources are provided for; paragraph 47 says that landbanks of at least 10 years should be aimed for. However, paragraph 48 advises that landbanks significantly in excess of 15 years may be justified where major investment in infrastructure and/or processing facilities is planned or necessary.

3.5 Silica sand resources in Norfolk are therefore considered to be of national strategic importance. Minerals company Sibelco (the only silica sand operator in Norfolk) has indicated that they expect to make further investment in the area, with production expected to increase from the recent (2007-9) average of 609,000 tonnes per year to 750,000 tonnes per year from 2011 (due in part to the impending closure of another Sibelco site elsewhere in the country).

3.6 In assessing the appropriate quantity of silica sand to plan for, the long-term needs of Sibelco's interests are recognised, but the County Council is also mindful of the need to avoid apportioning an excessive quantity of resources, which would reduce certainty for local residents as to the likelihood and timing of individual sites coming forward for planning applications. The Core Strategy will be reviewed by 2016 at the latest, and so ensuring a silica sand landbank that would last far beyond the end of 2026 is not justified (paragraph 4.2, Annex A, MPS1).

Table 3.2: Silica sand requirement and shortfall

	Million tonnes
Requirement: one year x three-year average from 2007 to 2009 (609,000 tonnes production in the year 2010) + 16 years x expected average from 2011-2026 (750,000 tonnes) = 12,000,000 tonnes	12.6
Silica sand reserve estimated at 31/12/2009	6.2
Total shortfall	6.4
The total shortfall of 6.4 million tonnes is equivalent to a need for about 8.5 years' additional supply over the period of the Core Strategy (using the expected production rate from 2011 onwards)	

Carstone

3.7 Crushed rock is also part of the national apportionment exercise. Norfolk's apportioned figure for 2005-2020 for carstone is 0.2 million tonnes per annum (which remains unchanged from the 2001-2016). Carstone production in the period 1990 to 2009 averaged 0.23 million tonnes per year. However, production averaged just 0.16 million tonnes in the period 2000-2009. As at 31 December 2009, the landbank in Norfolk for permitted carstone reserves stood at 9.6 years; sufficient until 2019.

Table 3.3: Carstone requirement and shortfall

	Million tonnes
A Norfolk apportionment 2010 to 2019 (10 years x 0.2 million tonnes)	2
B Roll forward from 2020 to 2026 (7 years x 0.2 million tonnes)	1.4
C Total requirement	3.4
D Carstone reserve at 31/12/2009	1.925
Total shortfall (D – C)	1.475
The total shortfall of 1.475 million tonnes is equivalent to a need for 7.4 years' further supply over the period of the Core Strategy	

Other minerals

3.8 Other minerals, such as chalk, clay and peat, are considered to be abundant in Norfolk relative to demand. There is no requirement to maintain a landbank for any of these minerals and as a result, it is considered that there is no need to allocate additional sites for these minerals over the plan period. Any planning applications coming forward will be considered on their merits.

Waste

3.9 The capacity of Norfolk's waste management facilities is not easy to quantify, due to unreliable, inconsistent or absent annual survey returns, multiple different waste uses on a single site (e.g. a transfer station, inert waste recycling and metals recycling) and the same waste often being handled at more than one facility (for example, the waste segregated at a waste transfer station will then be sent to more specialised facilities, such as compost sites, metal recycling sites and inert waste recycling sites) leading to the same waste being counted at each facility. Therefore, in order to calculate the current capacity for different waste streams, assumptions often need to be made. Key assumptions are set out in the paragraphs below.

Hazardous waste

3.10 Environment Agency figures from 2008 (the most recent available) show that 77,000 tonnes of hazardous waste was produced in Norfolk, although due to considerable uncertainties in the data, with the high potential for 'double-counting' of tonnages (i.e. where hazardous waste passes through more than one waste management facility), it is likely that the actual total is significantly less than this. Nonetheless, it is clear that a significant majority (44,700 tonnes of the 77,000 tonnes mentioned above) was exported for treatment/disposal outside the county. Examples of the destination for some hazardous waste exports are listed in paragraph 2.26.

3.11 Of the remaining 32,300 tonnes, 27,200 tonnes was transferred for subsequent treatment or disposal, probably also out of the county. This is because, in Norfolk, just 30 tonnes of hazardous waste was incinerated, 1,000 tonnes disposed of to landfill, 3,100 tonnes recycled or re-used and 810 tonnes treated.

3.12 All the main types of hazardous waste (with the exception of clinical waste) are sent to more than one facility, so there is a 'fall-back' should one particular facility or landfill stop taking that type of waste.

3.13 Much of Norfolk is hydrogeologically unsuitable to locate a hazardous waste landfill site, and those areas of the county which are hydrogeologically suitable often have other constraints, such as large areas of land in Flood Zone 3, nationally-designated nature conservation or landscape sites, and/or poor access to the major highways routes. There are no hazardous waste landfills in the county. However, the Blackborough End non-hazardous landfill has been proposed (through the Waste Site Specific Allocations DPD) for, amongst other waste uses, hazardous waste landfill. The types of hazardous waste have not

been specified, but the Environment Agency has indicated there may be potential only for a separate 'asbestos-only' landfill cell to be engineered on the site.

3.14 No other potential hazardous-only landfill sites have been proposed through the Waste Site Specific Allocations DPD. Although Core Strategy policy treats any new proposals positively, locations in more hydrogeologically suitable and geographically central locations in the region (such as Cambridgeshire and Bedfordshire) are thought to be more likely to be deliverable.

Non-hazardous waste

Municipal and commercial & industrial waste

3.15 Waste Strategy for England 2007 includes minimum recycling/ composting targets for household waste, rising from 40% in 2010 to 45% in 2015 and 50% in 2020. It also includes recovery targets for municipal waste: 53% by 2010, 67% by 2015 and 75% by 2020. Norfolk had a household waste recycling/ composting/ reuse rate of 43.5% in 2009/10, and it is assumed that this will increase to 47% by 2011/12 (when an expansion of kitchen waste collection by Norfolk's districts is likely to take place) and reach 50% by 2018/19.

3.16 The municipal and commercial & industrial waste projections in the East of England Plan can now be seen to be very much higher than the actual out-turn figures. As a result, it is considered that the most appropriate projection of future municipal waste arising is that made by the County Council's Waste Management team. Norfolk's municipal waste arisings in 2009/10 were 395,412 tonnes. This continues the recent trend of a reduction in annual municipal waste arisings. An assumption of zero growth in municipal waste arisings has been made for 2010/11 and 2011/12, followed by annual growth in line with housing projections.

3.17 Commercial & industrial (C&I) waste is compositionally similar to municipal waste, and can thus be managed in similar ways. The County Council does not have any better or more up-to-date information on projected C&I waste arisings, so will use the information prepared for the Review of the East of England Plan. The Review projects that there will be a year-on-year reduction in C&I waste arisings, rather than the significant (around 3%) annual increase projected in the East of England Plan. Appendix A contains details of the forecast annual C&I waste arisings.

Recovery rates

3.18 *Waste Strategy for England 2007* sets the following recovery targets for municipal waste: 53% by 2010, 67% by 2015 and 75% by 2020. It is expected that the target can be met from 2012, with a significant increase in recovery capacity from 2015, when the Waste PFI plant in King's Lynn is planned, if it is granted planning permission and an environmental permit, to be operational.

3.19 The evidence base for the review of the East of England Plan concluded that the recovery rate for C&I waste should be 53% in 2010/11, rising to 84% by 2026/27. In the absence of national recovery targets for C&I waste these targets will be used.

3.20 The evidence base for the review of the East of England Plan included an apportionment of London's residual waste to Norfolk. The quantity of London's residual waste apportioned to Waste Planning Authorities in the East of England

was based on the expectation that London would treat municipal and C&I waste arisings in the most intensive manner practicable and only send the residue to landfill. Therefore Waste Planning Authorities in the East of England were only expected to plan to landfill the residual waste from London and not to recycle/compost or recover any of it.

Recycling and composting

3.21 As over 680,000 tonnes of non-hazardous waste were recycled/ composted in Norfolk in 2008/9, it is assumed that the county has at least this annual capacity. It is likely that the total theoretical capacity is somewhat higher, however, because some operations could handle higher volumes of waste either by operations that are more intensive i.e. longer operating hours, more waste handling equipment or by extending operations within existing site boundaries. Further planning permissions during 2008/9 have added to this capacity, with a new 20,000-tonne compost facility at Bracon Ash. Therefore Norfolk has at least an existing recycling/composting capacity of 700,000 tonnes.

3.22 Further recycling and composting infrastructure will be needed over the period of the Core Strategy in order to meet the recycling and composting targets set out in *Waste Strategy 2007*. The 40 per cent target for 2010 has already been exceeded for household waste as the current (2009/10) rate was over 43%. *Waste Strategy 2007* also sets household waste recycling/composting targets of at least 45% by 2015 and 50% by 2020. Municipal waste recovery targets in *Waste Strategy 2007* are 53% by 2010, 67% by 2015 and 75% by 2020.

3.23 Norfolk's MSW recycling levels are already fairly high, and it is thought likely that there may be 'easier' gains in increasing future composting (e.g. by collecting kitchen waste from more households). It is therefore assumed that the ratio of new composting and recycling facilities over the Core Strategy period will be roughly 50:50.

Landfill and residual waste treatment plants

3.24 At the end of 2008/9, the non-hazardous landfill landbank stood at 8.48 million m³. Using the 1:1 conversion ratio used by the Environment Agency, this equates to capacity to accept 8.48 million tonnes of non-hazardous waste. However, about 11 per cent of the voidspace at non-hazardous landfills, measured over the previous three years, is taken up with inert waste used for engineering fill, cap and cover, so approximately 0.933 million m³ needs to be subtracted from the voidspace figure, leaving a total of approximately 7.549 million m³.

3.25 As noted in paragraph 2.32 above, the bulk of Norfolk's current voidspace is located at Blackborough End, in the borough of King's Lynn & West Norfolk. Two of the current non-hazardous landfill sites – at Aldeby and Edgefield – are expected to be full before 2015. A planning application to provide an additional 1 million m³ of voidspace at Attlebridge was resolved to be granted permission in October 2010, and the signing of the Section 106 agreement - and thus the issuing of the planning permission - is expected to be completed in 2011.

3.26 With the planning application at Attlebridge expected to be granted permission in 2011, there would be sufficient non-hazardous landfill capacity until the end of the plan period (see Table 3.4).

Table 3.4: Maximum landfill requirement

		tonnes or m³
A	Norfolk forecast of MSW and C&I waste disposal from 2009/10 to 2026/27	8,236,285
B	Non-hazardous landfill capacity at 31/03/2009	8,482,000
C	Void space expected to be used for inert/C&D waste = 11 per cent (based on previous 3 year average)	933,020
D	Voidspace available for MSW and C&I waste (B-C)	7,548,980
E	Additional voidspace available following grant of planning permission at Attlebridge landfill site (1 million tonnes/m ³) minus 11% potentially used for inert waste = 890,000 tonnes	1,000,000 total 890,000 net
	Maximum total <u>surplus</u> (D+E) - A	<u>202.695</u>

3.27 The European Landfill Directive requires the progressive reduction of biodegradable municipal waste (BMW) sent to landfill. All Waste Disposal Authorities have targets under the Landfill Allowance Trading Scheme (LATS) for the years through to 2019/20.

3.28 In order to meet the LATS targets, Norfolk County Council (as the Waste Disposal Authority) is procuring a residual waste treatment Private Finance Initiative contract (the Waste PFI) to secure services that will recover value from residual municipal solid waste (MSW). The Waste PFI is a procurement to secure a service to treat about 170,000 tonnes of residual MSW per annum; it is expected that any facility for the Waste PFI would become fully operational in 2015.

3.29 The Waste PFI is of considerable importance, and in 2008 the County Council identified and purchased a site at the Willows Business Park on the Saddlebow Industrial Estate, to the south of King's Lynn. The site was made available to all bidders to use – if they wished – when they were developing proposals for the Waste PFI. The preferred bidder, Cory Wheelabrator, undertook an assessment of all potential sites in Norfolk, but concluded that the Willows site was the most suitable for their needs. A planning application is being prepared, and is expected to be submitted in May 2011.

3.30 To meet its medium-term requirements (i.e. up until 2015), the County Council is procuring new waste transfer, treatment and disposal services. In December 2010, the County Council's Cabinet agreed to award a total of six contracts, five to WRG (for sites within Norfolk) and one to Donarbon, which runs an MBT plant at Waterbeach, Cambs. Letting these new contracts will enable the County Council to comply with its LATS targets up to 2015.

3.31 To supplement residual waste treatment the County Council is also evaluating (with the other local authority members of the Norfolk Waste Partnership) how it can incentivise the further development of source separated kitchen waste collections, which would divert more biodegradable waste away from landfill. Broadland District Council has commenced a source-segregated kitchen waste collection scheme, and Norwich City Council now also has a kitchen waste collection scheme for householders.

3.32 These activities are all underpinned by a very strong focus on waste reduction, re-use and recycling; the County Council's waste and recycling figures over recent years compare very well with other local authorities and Norfolk has a particularly low rate of residual waste per head of population (see the Evidence Base).

Inert waste

3.33 The *Scoping Review of Waste Management in the Construction & Civil Engineering Sector in the East of England*, prepared for the East of England Regional Assembly in 2007, reports in paragraph 1.6 that a typical new house generates approximately 9.6 tonnes of waste in its construction. New offices will generate slightly waste less per square metre than houses; schools slightly more.

3.34 Non-residential construction and demolition (C&D) waste is by far the most significant source of inert waste in Norfolk, as would be expected given that the annualised quantities of inert waste sent to landfill or used for quarry restoration over the past six years average 346,000 tonnes (see paragraph 2.38).

3.35 Paragraph 1.3 of the *Scoping Review of Waste Management in the Construction & Civil Engineering Sector in the East of England* calculates that the recycling rate for C&D waste in the East of England is approximately 52%, with approximately 21% of inert waste used for either quarry restoration or disposed of to inert landfill.

3.36 Taking into account:

- the absence of any other published information on the quantities of inert waste likely to arise in Norfolk over the period of the Core Strategy;
- the presumption, given the high costs of transporting and disposing of inert wastes, that re-use and recycling levels for inert waste are already close to the maximum; and
- that a 2003 survey by the former Office of the Deputy Prime Minister (now part of the Department of Communities & Local Government) notes that C&D waste is expected to increase by about 40 per cent from 2002/3 to 2021;

it is expected that, by assuming the 40 per cent increase runs from 2010 to 2026), by the end of 2026, the annual inert waste produced (requiring disposal) will have risen from an average of 346,000 tonnes to 485,000 tonnes.

3.37 Aggregated over the 17 years of the Core Strategy, the total quantity of inert material requiring landfill voidspace/quarry restoration space is approximately 7,060,000 tonnes. Using the inert waste conversion factor of 1 tonne:0.67 m³, this equates to approximately 4,730,000 m³. Taking into account the existing

voidspace and the projected rate of increase of inert waste production, an additional 2,059,000 m³ voidspace/quarry restoration space is required.

3.38 Additional inert waste recycling infrastructure is likely to be needed over the period of the Core Strategy, in line with the expected growth in inert waste arisings. However, a substantial – but unknown – fraction of the inert waste arisings is likely to continue to be recycled and re-used on large construction sites using mobile plant (because the quantities of waste processed in this way are commonly not measured).

3.39 The most reliable guide as to the quantitative need for inert waste processing plants is therefore likely to be potential new plant sites submitted by minerals and waste operators. Paragraph 22 of PPS10: *Planning for Sustainable Waste Management* states that: “*When proposals [planning applications] are consistent with an up-to-date development plan, waste planning authorities should not require applicants for new or enhanced waste management facilities to demonstrate a quantitative or market need for their proposal*”, so new proposals for waste recycling plants will be considered in that light.

4. FUTURE WASTE MANAGEMENT CAPACITY NEEDS

Hazardous wastes

4.1 As noted in paragraph 2.24, many hazardous waste facilities often require large catchment areas – bigger than individual counties – to work effectively and economically, and Norfolk is not well located in this regard. Nonetheless, Norfolk should attempt to provide as many facilities as possible to deal with its own hazardous waste arisings.

4.2 The *Hazardous Waste Study for The East of England - Final Study Report* (2007) provides information on current hazardous waste arisings, current waste management capacity, likely future waste arisings and therefore likely waste management infrastructure capacity for the East of England. Paragraph 8.4.3 of the *Hazardous Waste Study* concludes that there is a particular need for the following facilities during the next 10-15 years:

- new hazardous waste landfill capacity;
- additional stable non-reactive hazardous waste landfill capacity (principally for asbestos and gypsum);
- additional clinical waste incineration capacity;
- additional combustion capacity for ‘problematic’ wastes; and
- additional capacity for the collection and onward transfer of household hazardous waste.

Hazardous Waste Landfill

4.3 It is considered unlikely that any hydrogeologically suitable landfill sites will be proposed for hazardous waste disposal. As noted in paragraph 3.13, Blackborough End is the only landfill proposed for (amongst other waste types) hazardous waste through the Waste Site Specific Allocations DPD to date.

Stable Non-Reactive Hazardous Waste Landfill

4.4 Although it is not thought likely that there will be any new hazardous waste landfills, there may, however, be more potential for developing new ‘cells’ for asbestos and gypsum in non-hazardous landfills. Attlebridge landfill currently has such a cell, and it is possible that a new cell could be engineered at Blackborough End landfill. However, the Environment Agency has stated that at Blackborough End they would not accept any landfilling of gypsum which, due to high groundwater levels, could lead to a risk of hydrogen sulphide (a toxic gas) being produced.

Clinical Waste Incinerators and Additional Combustion Capacity for ‘Problematic’ Wastes

4.5 Other than a small number of pet incinerators, some transfer stations, and the incineration of very small quantities of clinical waste (collected from care homes and nursing homes), there is no clinical waste treatment infrastructure in Norfolk. The clinical waste produced in the county’s hospitals is transferred to Ipswich Hospital for incineration.

4.6 'Problematic' hazardous waste types are those which historically were landfilled or treated via 'mixing-pits' (now effectively prohibited) and are most likely to consist of contaminated packaging, oil-residues, treated timber and organic-rich filter-cakes. The *Hazardous Waste Study* concludes (at paragraph 8.2.2) that these wastes will need to be treated in future by some form of thermal processing.

4.7 No potential sites for a clinical incinerator have been proposed by the East of England Strategic Health Authority, or either of Norfolk's Primary Care Trusts (NHS Norfolk and Great Yarmouth and Waveney PCT). Neither has a requirement for such a site been brought to the County Council's attention by anyone else. It is not therefore proposed that a site for a clinical waste incinerator be allocated but the policies of the Core Strategy will enable any proposals to be considered favourably if they emerge in the future.

4.8 No specific sites for the thermal treatment of hazardous wastes have been proposed, but the 'technology neutral' requirement of PPS10 means that the criteria-based policies of the Core Strategy will enable appropriate allocated (and unallocated) sites to be considered favourably if they emerge in the future.

Household Hazardous Waste

4.9 Hazardous waste from households in Norfolk comprises a small amount in total, less than 200 tonnes per annum. This waste is varied in type and includes small quantities of oils, domestic/garden chemicals and asbestos (not from demolition of buildings). Householders arrange with their Waste Collection Authority for the waste to be collected, usually by specialist contractors on the District Council's behalf. Due to the small quantity of waste involved it is not considered necessary to plan specifically for additional capacity for the collection and onward transfer of household hazardous waste.

Radioactive Wastes

4.10 The volumes of low and very low level radioactive wastes arising in Norfolk are not considered to be significant. The main sources of such wastes are likely to be the Norfolk and Norwich University Hospital, The Queen Elizabeth Hospital in King's Lynn, the University of East Anglia and various life and food science institutes in and around Norwich. There is no evidence suggesting that there is currently a problem with the management or disposal of radioactive waste arising in Norfolk. Therefore no specific provision will be made for radioactive waste in the Core Strategy.

4.11 Under the Environment Agency's guidance, low volume, very low level radioactive waste (defined as 'dustbin loads' in size) is "radioactive waste which can be safely disposed of to an unspecified destination with municipal, commercial or industrial waste ("dustbin disposal"), each 0.1 m³ of waste containing less than 44 kilobecquerels (kBq) of total activity or single items containing less than 40 kBq of total activity." High-volume, very low level radioactive waste, and low level radioactive waste, must be disposed of to a specified landfill site which holds a Radioactive Substances Act 1993 permit. Should any planning applications be made for the disposal of Low Volume Very Low Level Radioactive Waste or Low Level Radioactive Waste in Norfolk, they

would be considered against the relevant policies of the Core Strategy, particularly policy CS10, and the advice in PPS10.

Non-hazardous wastes

Non-hazardous landfill

4.12 The current permitted and consented non-hazardous landfill voidspace in Norfolk, as at 31 March 2009, is approximately 8.48 million m³ (which, using the 1:1 ratio of tonnes:cubic metres for non-hazardous waste, equates to 8.48 million tonnes). Taking into account the forecast arisings for municipal waste and C&I waste, as well as planning to manage a proportion of waste arising outside the county, this therefore leaves a theoretical landfill shortfall of about 690,000 m³, if the maximum possible disposal levels are reached.

4.13 Norfolk County Council's Planning (Regulatory) Committee resolved to grant planning permission, subject to conditions and the signing of a section 106 legal agreement, for an extension to Attlebridge landfill site. This extension provides an additional 1 million tonnes landfill capacity. The permitting of this additional landfill capacity means that there will be sufficient landfill capacity throughout the plan period.

Recovery facilities

4.14 In order to help drive the management of waste up the waste hierarchy, additional plants to recover value from waste will also be needed. Taking into account:

- the recovery targets in Waste Strategy for England 2007 and the recovery assumptions in the evidence base for the review of the East of England Plan;
- the current recycling & composting infrastructure of a minimum of 700,000 tonnes of non-hazardous waste pa;

there is likely to be a need for a minimum of about 866,000 tonnes annual capacity of new recycling/composting/anaerobic digestion/other recovery (i.e. thermal treatment or similar) waste management infrastructure.

4.15 Given that the County Council intends to procure a waste plant to deal with about 170,000 tonnes of waste per year, the shortfall reduces to about 696,000 tonnes.

4.16 The *Waste Strategy for England 2007* sets out, in section XII of the Executive Summary, minimum national targets for the recycling and composting of household waste: 40 per cent by 2010; 45 per cent by 2015 and 50 per cent by 2020. The Norfolk Joint Municipal Waste Management Strategy (March 2006) supports these targets.

4.17 Table A.2 in Appendix A illustrates the effect of applying recycling/composting targets to the municipal waste arisings forecast by Norfolk County Council and commercial & industrial waste arisings forecast in the evidence base to the draft review of the East of England Plan. For municipal waste, Table A.2

uses the *Waste Strategy 2007* target of 50 per cent recycling/composting, for 2018/19 onwards. Higher recycling/composting targets are used for the commercial & industrial waste stream. Using the current recycling and composting capacity of 700,000 tonnes (2008/9), no additional recycling/composting/ source-segregated-anaerobic digestion facilities will be needed by 2015, but 51,000 tonnes of additional capacity will be needed by 2020, and a further 112,000 tonnes by 2026. As well as new recycling/ composting, source-segregated anaerobic digestion facilities, recovery facilities to treat the residual waste will also be required. Norfolk does not have any facilities providing treatment capacity for the recovery of waste. Forecasts in Table A.2 show the treatment capacity forecast to be required for each year. 370,000 tonnes of treatment capacity will be required between 2010-2015 and a further 330,000 tonnes of treatment capacity will be required between 2015-2020. No additional treatment is expected to be needed after 2020 due to a continuing reduction in waste arisings and a continuing increase in waste recycling and composting.

Inert wastes

Inert landfill

4.18 As noted in paragraph 2.38, approximately 30 per cent of the inert waste stream is disposed of to either inert waste landfills or for quarry restoration, and paragraph 3.37 concludes that approximately 4,730,000 m³ of voidspace capacity will need to be provided.

4.19 The current (2009/10) existing voidspace figure is approximately 2,672,500 m³, which reduces the amount of new voidspace which will need to be provided to approximately 2,059,000 m³.

Inert recycling

4.20 Additional inert recycling facilities are needed, but as noted in paragraph 3.38, the quantity needed is uncertain. Given the high cost of transporting inert wastes, an important factor in the assessment of potential sites will be ensuring there is adequate capacity at a sub-county level as well as Norfolk overall. The evidence base for the review of the East of England Plan stated that in 2008 arisings of construction and demolition waste in Norfolk were 1,065,000 tonnes. Norfolk's 2008/09 Annual Monitoring Report found that 488,000 tonnes of inert and construction and demolition waste arising in Norfolk was received at transfer stations, treatment and recovery facilities in Norfolk. 447,000 tonnes of this waste was recycled or recovered. 210,000 tonnes of inert waste was received at inert landfill sites or for quarry restoration. 24,000 tonnes of inert waste was received at non-hazardous landfill sites. The quantities of inert and construction and demolition waste managed in Norfolk in 2008/09 were lower than in previous years. Based on an estimated increase in C&D waste of 40% over the period of the Core Strategy, the annual quantity of C&D waste recycled or used in engineering projects is forecast to increase from 689,000 tonnes in 2010, to 775,000 tonnes by 2015, 861,000 tonnes by 2020 and 965,000 tonnes by 2026. A large proportion of construction and demolition waste will also be reused on construction sites, for example as hardcore, and therefore will never be received at a waste management facility.

Agricultural waste

4.21 Based on the information available, the County Council does not consider that there is a particular need for large new waste facilities to treat agricultural waste. The criteria based policies in the Core Strategy will enable the location of facilities close to sources of agricultural waste arisings. Best practice for controlled waste will apply.

Waste water

4.22 Correspondence from Anglian Water states that there is no clear need for any new waste water treatment plants in the county during the period of the Core Strategy, although some replacement plants may be required during the later years. However, Water Cycle Studies, prepared to support the districts' LDFs, have concluded that significant investment will be needed to ensure that water quality targets will be met, for instance at Attleborough.

4.23 In particular, the Stage 2b Water Cycle Study (September 2009), prepared to support the Joint Core Strategy, concludes that a strategic wastewater interceptor sewer passing around the southern boundary of Norwich to connect to Whitlingham Waste Water Treatment Plant will be necessary to deliver growth in Norwich City and any larger-scale growth to the south and south-west of Norwich (in South Norfolk district). Significant improvements to the treatment quality at Whitlingham will also be needed (such as reducing ammonia levels).

5. VISION, AIMS AND OBJECTIVES

5.1 The vision, aims and objectives that will guide the development of mineral extraction and associated development and waste management facilities in Norfolk up to 2026 are derived from *Norfolk Ambition - The Sustainable Community Strategy - 2003 to 2023*, the seven district councils' Sustainable Community Strategies Local Area Agreement Outcomes and issues raised during preparation of the Core Strategy and Development Management Policies DPD. The aims and objectives will be achieved through the Core Strategy spatial policies and detailed development management policies. Chapter 8 'Monitoring and Implementation' outlines the implementation and monitoring proposed, covering these objectives in more detail and showing how they relate to particular policies.

Norfolk Ambition 2003-23

5.2 *Norfolk Ambition* is the Sustainable Community Strategy for Norfolk, which was refreshed and updated in 2008. Its Vision comprises three strands, the third of which is particularly relevant to the Core Strategy: *Norfolk is on England's frontline in tackling climatic change and sustainability*. In reaching its Vision by 2023, *Norfolk Ambition* wants Norfolk to be recognised as a county, *inter alia*:

- where all individuals have the opportunity to achieve a good quality of life; and
- where the high quality environment is respected and enhanced for everyone's enjoyment and is matched by a strong reputation for renewable energies.

The Sustainable Community Strategy for Breckland 2008-2011

5.3 The Vision of the Sustainable Community Strategy is: "Breckland is a place in which we take great pride, where our communities, organisations and businesses work in partnership within an outstanding rural environment to bring about sustainable success and wellbeing for all. We want everyone who chooses Breckland as a place to live or work, to meet their aspirations and enjoy an excellent quality of life".

5.4 Priority 6 of the six priorities states: "Achieve environmental sustainability: So that Breckland's outstanding rural environment is respected and that action is taken to enhance and sustainably manage the local environment".

The Broadland Community Strategy 2004-2014: Action Plan 2008-2011

5.5 The Broadland Community Strategy's Action Plan has five Cross Cutting Themes, of which Theme 5: *A Sustainable Broadland* is the most relevant to the Core Strategy. Various objectives within Theme 5 are particularly pertinent:

(1) "to protect, conserve and enhance our natural and built environment and its biodiversity"; and (2) "to improve the environmental performance of all partner organisations, and the wider Broadland community, so that the quality of life of future generations is not compromised".

A Long-Term Vision and a Sustainable Community Strategy for Great Yarmouth for 2008-2011

5.6 The overall vision is: “We want our community to offer a high quality of life and a secure future for all our residents”. Of the four key themes to implement, the most relevant to the Core Strategy is “The Natural Environment”. Aspirations under this theme include:

- Protecting and enhancing wildlife habitats, with designated wildlife sites being maintained to a high standard;
- Carbon reduction targets for Great Yarmouth drawn up by DEFRA will have been achieved and 60% of materials will be recycled as required under the Landfill Directive;
- The principles of the Nottingham Declaration on Climate Change will have been upheld and expanded;
- All sewage generation will be treated to the highest EU standards; and
- Residents and businesses will have a clear understanding of the causes of climate change and will be taking action to mitigate and adapt to its effects. They will be helping to maintain a clean environment and making full use of recycling facilities.

North Norfolk’s Sustainable Community Strategy 2008-2011

5.7 The Vision of North Norfolk’s Sustainable Community Strategy comprises five objectives, with Objective 5 being the most relevant: “North Norfolk is a place...where the environment is protected and where the identity and special character of the area is retained”.

A New Vision for Norwich: The Sustainable Community Strategy 2008-2020

5.8 Norwich’s Sustainable Community Strategy has a Vision “To make Norwich a world-class city in which to live, work, learn and visit” and of the six Themes to implement the Vision, Theme 2, City of Environmental Excellence, is most relevant:

- to become a low-carbon city;
- to minimise our use of global resources; and
- to become a model city for the management of the natural and historic environments.

Your Sustainable Community Strategy for South Norfolk 2008-2018

5.9 South Norfolk's Community Strategy focuses on eight themes. Theme 4, Environmental Sustainability, is the most relevant to the Core Strategy. This theme has a 10-year vision:

- Achieve carbon reduction targets for South Norfolk based on Defra targets for the district of 11.4% by 2020.
- Working to achieve the Landfill Directive of 60% of materials recycled by 2020.
- Continuing to protect and enhance our natural environment and its biodiversity.
- Residents and businesses have a clear understanding of the causes of climate change and the actions they can take to mitigate and adapt to its effects.

5.10 In addition to the 10-year vision, there are three 3-year goals:

- Reduce carbon dioxide emissions in South Norfolk by 2.8% by 2010, from domestic housing, business and transport activities;
- Minimise waste and increase recycling and composting to meet the target for 25% of biodegradable waste diverted from landfill by 2010. Double the number of green garden waste customers from 7,500 to 14,000 by mid-2009; and
- Implement the Norfolk Biodiversity Action Plan with Norfolk Wildlife Trust and the Norfolk Biodiversity Partnership, identifying, protecting and restoring species and habitats in South Norfolk. Develop management plans for all council owned countryside sites.

Transforming West Norfolk: Working Together - Making a Difference 2007-2030

5.11 West Norfolk's Sustainable Community Strategy has six aims, the most relevant of which is *Attractive & Sustainable*. With this aim, there are six objectives, the most relevant of which are: 5. Tackle Climate Change - reduce carbon dioxide emissions in West Norfolk; and 6. Protect and improve biodiversity

Vision

5.12 The spatial vision for the Minerals and Waste Development Framework is:

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. In line with the East of England Plan, Norfolk will make a diminishing contribution to the disposal of that fraction of London's waste that is exported to the East of England. Save for this exception, the County Council will aim to manage the equivalent of the amount of waste expected to arise in the county (subject to considerations such as the availability of treatment facilities, distance travelled and mode of transport used).

Over the period to 2026, Norfolk will be a leader in waste prevention and increasing the recycling of resources and recovery of energy from waste. There will be a significant increase of over 160,000 tonnes of additional recycling and composting capacity and over 700,000 tonnes of residual waste treatment capacity, which will ensure a large reduction in the quantity of non-hazardous waste being disposed of to landfill. Norfolk's residents and businesses will have played a full part in achieving these reductions, with a 'culture change' in waste minimisation practices observable.

Norfolk will also be a place where the needs of society and the economy for minerals are met through the county having allocated sufficient sites to meet the annual apportionment of 2,570,000 tonnes of sand and gravel and 200,000 tonnes of carstone rock. However, the county will have also increased the proportion of aggregates needs met through the use of secondary and recycled aggregates. This will have helped to reduce the need for primary extraction of aggregates and also maximised the diversion of waste from inert landfill.

Large and medium-sized facilities for minerals extraction and waste management will be preferentially located close to the Norwich Policy Area, Great Yarmouth urban area, King's Lynn or Thetford. Medium-sized facilities will be preferentially located close to the market towns of Attleborough, Aylsham, Cromer, Diss, Downham Market, Fakenham, Hunstanton, North Walsham, Sheringham, Swaffham or Watton. In particular, the expected development of 32,000 dwellings in the Norwich Policy Area, and the planned development and construction of the Norwich Northern Distributor Road, will, as far as is practicable, be supported through appropriately-located minerals extraction and waste management facilities.

All mineral workings will be covered by progressive restoration schemes; the enhancement of Norfolk's biodiversity (particularly Norfolk Biodiversity Action Plan habitats and species) and the creation of new, high quality, distinctive landscapes will be strongly supported.

The key actions outlined above will make a valuable contribution to climate change adaptation, whilst also reducing greenhouse gas emissions in Norfolk.

5.13 In planning for mineral extraction and waste management facilities to meet Norfolk's future needs in the most sustainable way, the Core Strategy will:

- Help to reduce emissions of greenhouse gases and thus mitigate climate change and ensure that Norfolk is seen as a leader in this area;
- Protect Norfolk's special and distinctive natural and cultural heritage, especially in areas such as the Broads, the North Norfolk Coast and the Brecks, and help to develop the county's ecological network;
- Minimise adverse impacts on the transport system and promote opportunities for more sustainable transport; and
- Maintain the amenity and well being of people living in close proximity to mineral extraction and associated development and waste management facilities through effective mitigation measures and provide long term benefits through restoration.

- Safeguard important and finite mineral resources from inappropriate development, particularly the nationally-significant deposits of silica sand in the county.

Aims and Objectives

Table 5.1: Aims and Objectives

Aims	Objectives	Local Area Agreement Outcomes
To meet minerals and waste requirements in a sustainable manner and help to deliver sustainable growth	Ensure steady and adequate provision of primary, and increasingly recycled and secondary, minerals to meet requirements	Improving housing Thriving economy Environmental sustainability
	Increase the proportion of waste recycling, composting and energy recovery	Environmental sustainability Thriving economy
	Minimise the amount of waste sent to landfill	Environmental sustainability
To reduce the impact of mineral extraction and associated development and waste management facilities on the transport system	Ensure mineral working takes place as close as reasonably possible to where these resources are used, and that waste is treated as close as reasonably possible to where it is generated	Thriving economy Environmental sustainability
	Increase the use and availability of sustainable transport in accessing waste and minerals facilities	Healthier lifestyles Stronger communities Thriving economy Environmental sustainability
	Mitigate the adverse traffic impacts of mineral extraction and associated development and waste management facilities	Healthier lifestyles Safer communities Thriving economy Environmental sustainability
To protect and enhance the natural, historic and built environment in relation to mineral extraction and associated development and waste management facilities	Minimise the impact of mineral extraction and associated development and waste management facilities on the environment by promoting opportunities to enhance and protect biodiversity, landscape and geodiversity, water supply, the wider countryside, and cultural heritage	Healthier lifestyles Thriving economy Environmental sustainability
	Minimise soil and water contamination and flood risk arising from minerals and waste activities	Healthier lifestyles Environmental sustainability

Aims	Objectives	Local Area Agreement Outcomes
To mitigate climate change	Reduce methane and carbon dioxide emissions from mineral extraction and associated development and waste management facilities	Healthier lifestyles Environmental sustainability
	Contribute to the Renewables Obligation and regional targets for renewable energy by increasing the proportion of energy recovery from waste.	Healthier lifestyles Thriving economy Environmental sustainability
To promote social inclusion, and human health and well being	Improve employment opportunities, particularly for those most in need	Stronger communities Thriving economy
	Ensure that mineral extraction and associated development and waste management facilities and associated transportation do not lead to Air Quality Management Areas and that emissions are reduced	Healthier lifestyles Environmental sustainability
	Mitigate adverse impacts on amenity resulting from mineral extraction and associated development and waste management facilities	Healthier lifestyles Stronger communities

6. SPATIAL STRATEGY

6.1 The main purpose of the Core Strategy is to plan for the timely provision of sufficient mineral extraction and associated development and waste management facilities that meet the needs of the economy and society, whilst not causing significant adverse impacts on environmental assets and amenity. In the first instance, this will be achieved by meeting the minerals apportionments for Norfolk made by the East of England Regional Aggregates Working Party (RAWP) and by planning to meet the expected quantities of municipal waste (assessed by Norfolk County Council's Waste Management division) and commercial & industrial waste (taken from the evidence base that informed the preparation of the Review of the East of England Plan).

Spatial Planning for Mineral Extraction

6.2 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) and potential new sites have been put forward through the Minerals Site Specific Allocations DPD by a number of different landowners and/or minerals companies. Given that MPS1 (paragraph 4.1, Annex 1) requires that the landbank for sand and gravel resources should be "at least 7 years", and that PPS12 (paragraph 4.46) seeks flexibility in Core Strategies, there is therefore a case for providing some additional flexibility in the allocated landbank, to cover for:

- Unexpectedly low quality and/or quantity of aggregate on an allocated site; or
- Changing economic and/or business circumstances meaning that some minerals companies may either not wish to take up an option to develop an allocated site, or wish to mothball an existing operation part-way through.

6.3 An additional year's apportionment (2.57 million tonnes) will therefore be added to the total allocation for sand and gravel (see Policy CS1). Further flexibility comes from the fact that sand and gravel production over the past 10 years has averaged 2.15 million tonnes per year, 420,000 tonnes below the apportionment figure; the last time the current apportionment figure was exceeded was in 2002. A maximum landbank, of 10 years' supply, is considered necessary to ensure that an excessive reserve of sand and gravel is not permitted for extraction at any one time. This is to provide a satisfactory degree of confidence that there will not be undue delays in the final cessation of extraction and eventual restoration at permitted sites, thereby increasing certainty for local residents. Historically, a number of sites in 'investigation areas' have been permitted, and occasional borrow pits have also been permitted. Although 'investigation areas' will not be carried forward into the LDF, it is realistic to expect that a number of borrow pits in association with major developments are likely to come forward during the Core Strategy period to 2026 (see Development Management Policy DM5).

6.4 Carstone and silica sand deposits are located in very limited areas of Norfolk, with the current and likely future sites under the control of single companies. Given the relatively low apportionment figure for carstone, and large size of the required landbank for both carstone and silica sand, it is not proposed to 'over-

allocate' carstone sites or silica sand sites (for flexibility), because there is a realistic expectation that the sites allocated will be taken up during the lifetime of the Core Strategy (to the end of 2026).

Core Strategy Policy CS1 – Minerals extraction

The strategy for minerals extraction is to allocate sufficient sites to meet the annual apportionment figures agreed by the East of England Regional Aggregates Working Party, rolled forward to 2026, for both sand & gravel and hard rock (carstone).

For **sand and gravel**, a minimum of 25.67 million tonnes of resources needs to be allocated. However, an additional year's apportionment (2.57 million tonnes, approximately 10 per cent) will also be allocated to introduce a degree of flexibility, so sites and/or Areas of Search delivering a total of approximately **28.24 million tonnes** of sand and gravel will be allocated. The sand and gravel landbank will be maintained at between 7 and 10 years' supply (excluding any contribution from borrow pits for major construction projects).

For **silica sand**, given the industry's stated intention to make further investment in infrastructure, sufficient sites and/or Areas of Search to provide a minimum 15-year landbank at the start of the Plan period (based on the average production rate from 2007-2009 and then the expected production rate from 2011) will be allocated. This equates to a site or sites to deliver a minimum of **6.4 million tonnes** of silica sand. Given the commitment to review the Core Strategy regularly, a minimum 10-year landbank thereafter will be maintained.

For **carstone**, a site or sites to deliver a minimum of **1.475 million tonnes** of resources will be allocated. It is likely (from the work undertaken so far on the Minerals Site Specific Allocations DPD) that only one further carstone site will be required. The landbank for carstone will be maintained at 10 years' supply.

Given the size of the existing landbanks and the lack of requirement in national guidance for apportionment figures, no new allocations will be made for **clay, topsoil, chalk, peat and hoggin**.

General locations for mineral extraction and associated facilities

6.5 The distribution of mineral extraction facilities in Norfolk will be aligned as closely as is practicable with the growth and regeneration areas, because there will be an increased need to supply local aggregates for growth-related infrastructure. With the exception of silica sand – most of which is exported out of Norfolk for ceramics and glass production – most of the demand for sand & gravel and related products (such as concrete) will be used in the four largest settlements (Norwich, King's Lynn, Thetford and Great Yarmouth). The market towns with a current population of 7,000 or more, or which are expected to reach 7,000 through proposed new housing allocations, are likely to be the next largest users of minerals.

6.6 The Key Diagram shows that sand and gravel resources are located widely in Norfolk, and also shows the location of current operational sites. Although there is

a spread of current sites, certain settlements are better-served than others (see Evidence Base for Policy CS2). Due to commercial confidentiality it is not possible to set out the expected lifetimes of existing quarries, but as the current sand & gravel landbank is only seven years, it can be assumed that there is a need for new sites in most areas of the county.

6.7 There are a number of environmental constraints in the Norfolk (see paragraphs 6.69-6.75 and Policy CS14), in particular the Broads area and its associated Natura 2000 sites (SACs and SPAs), the Brecks SPA and SAC, the River Wensum SAC and the North Norfolk Area of Outstanding Natural Beauty. Whilst none of these designations necessarily imposes an absolute restriction on minerals development, they need to be considered when the assessment of potential sites is being made, with the Breckland SPA being of particular sensitivity. The key environmental constraints for the main settlements are listed in Policy CS2.

6.8 Policy CS2 states that there is a preference for sites which are “close and/or particularly well-related” to the main settlements of the county. For this purpose, the distance meant as “close” is 10 miles or less. However, this measure is not intended to be applied rigidly in all circumstances, because:

- Sand & gravel can only be extracted where reserves exist;
- The Minerals Planning Authority does not need, or intend, to identify and allocate sites in the Core Strategy (because sufficient have been proposed through the Minerals Site Specific Allocations DPD process); and/or
- Sites nearer than 10 miles may be accessible only by inappropriate rural roads, whereas sites 11 miles distant may lie very close to a Principal Road (e.g. A11 or A140)

Core Strategy Policy CS2 – General locations for mineral extraction and associated facilities

Resource areas for key minerals are shown on the key diagram. Areas of search and/or sites specific allocations will be identified based on these areas.

Sand & gravel production

Sand and gravel resources are located widely throughout the county. However, there will be a clear preference for sites which are close and/or particularly well-related via appropriate transport infrastructure, to the Norwich Policy Area, Great Yarmouth urban area, Thetford or King’s Lynn or the main market towns (Attleborough, Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Hunstanton, North Walsham, Sheringham, Swaffham and Watton). Extensions to existing sites will be preferred to new sites.

Carstone and silica sand production

Carstone and silica sand resources are located only in a north/south band in the west of Norfolk. Preference will be given to extensions to existing sites over new sites. Given the national significance of Norfolk’s silica sand resources, appropriate weighting will be given in decisions on which sites are to be allocated and permitted, and sites which would be able to access the existing processing plant and railhead at Leziat via conveyor or off-public highways

routes will be preferred.

Significant environmental constraints affecting the major settlements

Whilst every potential minerals site allocation and planning application will be considered on its own merits, significant international ecological and national landscape constraints affecting the four main Norfolk settlements are detailed below:

- *Norwich Policy Area:* The valley of the River Yare falls within the Broads, which has a status equivalent to that of a National Park. On the eastern edge of the NPA, the river valley is also classed as the Broadland SPA and Broads SAC. The River Wensum is classed as a SAC from (broadly) New Costessey westwards. There is therefore a preference for new minerals sites away from the Wensum and Yare valley areas and the Broads area.
- *Great Yarmouth urban area:* Much of the borough surrounding the urban areas is within the Broads, with Breydon Water SPA and Broadland SPA also close by. In addition, Great Yarmouth North Denes SPA is located on the dunes to the north of Great Yarmouth and also at Winterton-on-Sea and Horsey. The coast between Sea Palling and Winterton lies within the Norfolk Coast Area of Outstanding Natural Beauty (AONB). There is therefore a preference for locations for new minerals sites away from these protected areas.
- *King's Lynn:* The Norfolk Coast Area of Outstanding Natural Beauty lies to the north and north-east of King's Lynn. Roydon Common & Dersingham Bog SAC lies a short distance to the east of the town, with East Walton & Adcock's Common SSSI (which forms part of the Norfolk Valley Fen SAC) lying about six miles to the south-east. There is therefore a preference for locations for new minerals sites avoiding these areas (although the very limited extent of silica sand in Norfolk is recognised in this context).
- *Thetford:* Development in or near Thetford is highly constrained by the presence of the Breckland SPA and Breckland SAC, which cover large parts of the surrounding area. Detailed work undertaken for the preparation of the (adopted) Breckland Core Strategy has meant that there is a restrictive approach to development within 1500m of those parts of the Breckland SPA that support stone curlew populations, and within 400m of those parts of the Breckland SPA that support woodlark or nightjar populations (see Policy CS14). Given the noise and disturbance of minerals extraction and processing operations, any new minerals sites close to Thetford are likely to be more acceptable in the area immediately east of Thetford only (areas to the south and west falling largely within Suffolk).

Spatial Planning for Waste Development

6.9 The Waste Evidence Base and Chapters 3 & 4 and Appendix A set out the annual tonnages of municipal and commercial & industrial waste to be managed to the end of 2026. Meeting these targets will ensure that the requirement for a minimum of 10 years' waste management capacity (set out in PPS10) is met.

6.10 Information on the quantities of inert waste and hazardous waste expected to arise during the Core Strategy period is less certain (see Chapters 3 & 4), but reasonable projections can still be made. Norfolk will plan to be self-sufficient in inert waste recycling and disposal capacity and, as far as practicable, in hazardous waste management capacity.

6.11 London has historically exported large quantities of waste to the South-East and East of England regions for landfilling; in the East of England, Thurrock, Essex and Bedfordshire have historically taken the vast majority of such wastes.

6.12 The East of England Plan recognises that, with the declining availability of landfill voidspace in Thurrock, Essex and Bedfordshire, there is an urgent need for London to manage increasing quantities of its own waste. However, it was recognised that improved infrastructure will take some years to develop, and so in the interim it was decided to apportion a quantum of London waste to each East of England Waste Planning Authority.

6.13 In the draft review of the East of England Plan (March 2010) Norfolk was apportioned the lowest figure of all East of England authorities, with 116,000 tonnes of London waste apportioned for 2009/10, falling to 19,000 tonnes in 2026/27 onwards. Data from Defra and the Environment Agency shows that Norfolk has not received any non-hazardous waste from London for landfill in the last five years and there is no evidence that Norfolk is likely to receive any London waste directly in the years ahead either.

6.14 None of the planning permissions for Norfolk's non-hazardous landfills (Edgefield, Attlebridge, Aldeby, Feltwell and Blackborough End) contain any catchment restrictions limiting the distance that waste can travel to reach the site, and they could not realistically be altered to have such a restriction imposed (unless a new planning application was submitted). These sites can therefore legitimately accept waste from anywhere in the country.

6.15 It is therefore considered prudent to plan to accept an amount of additional waste, which could either be waste direct from London, or 'displaced' waste from adjoining counties (see Table A.1). The quantity of London waste detailed in Table A.1 is in accordance with the evidence base for the draft review of the East of England Plan >2031.

Core Strategy Policy CS3 – Waste management capacity to be provided

The strategy for waste management is to provide sufficient waste management capacity to meet the expected arisings of municipal and commercial & industrial waste, and also to ensure that appropriate capacity is provided for inert waste recycling and disposal. Appropriate handling, transfer and management capacity will also be provided for hazardous waste, but it is recognised that the specialised facilities required to treat and/or dispose of different hazardous waste streams may not be practicable to develop in Norfolk.

Provision will be made to manage the quantities of non-hazardous waste set out in Appendix A. As a minimum, the targets for recycling, composting, reuse, recovery and landfill diversion set out in the Waste Strategy for England 2007, and Local Area Agreement targets for municipal waste (and, where relevant, commercial and industrial waste) will be met.

A small allowance will be made for the disposal to landfill of the equivalent of the amount of London's waste that is apportioned to Norfolk.

6.16 A substantial volume of new recycling, composting and residual waste treatment facilities, and inert landfill voidspace, is required over the Core Strategy period. Table A.2, in Appendix A, illustrates the effect of applying both recycling/composting targets and recovery targets to the waste quantities forecast for Norfolk and forms the basis for the new waste management capacity to be provided in Norfolk over the period of the Core Strategy, as detailed in policy CS4. The assumptions used to calculate the additional waste management capacity required in Policy CS4 are as follows:

- Waste from London will only be accepted for landfill disposal, no waste from London is planned to be received for recycling, composting or other treatment.
- The municipal waste recycling rate in 2009/10 was over 42%. This is expected to increase to over 49% from 2018/19 onwards. No residual municipal waste was treated in 2009/10. From 2011/12 up to and including 2013/14, 50,000 tonnes of municipal waste are expected to be treated. All residual municipal waste is planned to be treated from 2014/15 onwards.
- The commercial and industrial waste recycling and composting rate starts at 40% in 2009/10 and is expected to increase by one to two per cent per year, up to a rate of 67% in 2026/27. From 2009/10 up to and including 2014/15 150,000 tonnes of commercial and industrial waste arisings are planned to be treated. From 2015/16 all C&I waste that has not been recycled/composted will be treated.
- The existing recycling and composting capacity in Norfolk is calculated to be 700,000 tonnes per annum. Therefore, from 2017/18 onwards, additional recycling and composting capacity will be required.

6.17 Norfolk does not have any facilities providing treatment capacity for the recovery of waste. Forecasts in Table A.2 show that a maximum of 368,859 tonnes of treatment capacity will be required between 2010 – 2015. This has been rounded to 370,000 tonnes of new treatment capacity in policy CS4. Table

A.2 shows that a maximum of 702,484 tonnes of treatment capacity will be required between 2015-2020. This is 332,484 tonnes more treatment capacity than planned for in the period 2010-2015. Therefore an additional 333,000 tonnes of treatment capacity is planned for the period 2015-2020 in Policy CS4. In the period from 2020-2026/7 less treatment capacity is forecast to be required because the quantity of commercial and industrial waste is forecast to continue to reduce, whilst the quantity of waste recycled and composted continues to increase. Therefore no additional treatment capacity is required between 2020-2026.

6.18 In order to ‘convert’ the tonnages required to an indicative number of plants, the guidance in the Communities & Local Government publication *Planning for Waste Management Facilities* has been followed. *Planning for Waste Management Facilities* reports that composting plants can generally receive 1,000-40,000 tonnes of biodegradable material per year. An example plant of 25,000 tonnes per year would require a site area of 2-3 hectares. The size of recycling plants can also vary significantly, but an example plant with an annual capacity of 50,000 tonnes would cover 1-2 hectares.

6.19 The capacity of larger residual waste treatment plants (as opposed to smaller, on-site plants) can also vary significantly, from about 50,000 tonnes (1-2 hectares) to 250,000 tonnes or more (5-10 hectares).

Core Strategy Policy CS4 – New waste management capacity to be provided	
By the end of 2026, there is a need to provide about 163,000 tonnes of new recycling, composting and source-segregated-anaerobic digestion capacity, about 703,000 tonnes of recovery infrastructure and about 2,060,000 tonnes of new inert landfill/quarry restoration voidspace. This will be delivered as follows:	
2010-2015	<ul style="list-style-type: none"> • 370,000 tonnes of recovery (residual treatment) facilities (an indicative 3 x 75,000-tonne plants, or 4-5 x 50,000-tonne plants)
2015-2020	<ul style="list-style-type: none"> • 51,000 tonnes of recycling and composting facilities (an indicative 1 composting plant and 1 recycling plant); • 333,000 tonnes of recovery (residual treatment) facilities (an indicative 3 x 100,000-tonne plants and 1 x 33,000-tonne plants or 6-7 x 50,000-tonne plants) • 198,000 m³ inert landfill/quarry restoration voidspace required
2020-2026	<ul style="list-style-type: none"> • 112,000 tonnes of recycling and composting facilities (an indicative 1-2 composting plants and 1 recycling plants); • 1,861,000 m³ inert landfill / quarry restoration voidspace required.

General locations for waste management facilities

6.20 The production (and therefore, through the proximity principle, the management and disposal) of waste is likely to be concentrated in the county's larger settlements. "Strategic" or "major" waste sites – those which are either of significant size or of significant importance – are listed below with an indicative minimum threshold of 10,000 tonnes annual throughput:

- Materials Recycling Facilities;
- Composting facilities;
- Metal recycling facilities;
- Landfills;
- Residual waste treatment plants (e.g. anaerobic digestion, pyrolysis, energy-from-waste etc); and
- Co-located and synergistic waste facilities (e.g. two or more of the above plants at the same site).

6.21 As noted in Chapters 2 and 3 and the Evidence Base for Policy CS5, the existing "strategic" facilities in Norfolk are limited to the five non-hazardous landfills, the MRF at Costessey, six large composting facilities and four large metal recycling facilities. Most of these are located within, or close to, the four main Norfolk settlements.

6.22 There is only a need for additional non-hazardous landfill voidspace to be allocated towards the end of the plan period (although it is recognised, in paragraph 6.49, that there may be sustainability benefits from new landfill voidspace in the east of the county). The quantitative need for new large-scale treatment facilities is identified in Policy CS4.

6.23 It is currently expected that the County Council's proposed PFI project site at King's Lynn (see paragraph 3.29) would, if granted planning permission and an environmental permit, provide up to 275,000 tonnes of waste treatment capacity. These figures would appear to indicate that there is a particular need for new recovery (residual waste treatment) capacity to serve the Norwich Policy Area, Thetford and Great Yarmouth urban area, although further capacity will also be needed to serve King's Lynn.

6.24 There are no unimplemented permissions or forthcoming planning applications expected for new composting or recycling plants, so there is a need for new sites close to all four main settlements.

6.25 Policy CS5 below states that waste facilities should preferably be "well-related" to the main four settlements and/or the main market towns. In this context, "well-related" is intended to mean: 10 miles or less from the four main settlements (apart from the Norwich Policy Area, which due to its size would not have such a zone), and five miles or less from the main market towns (the location for "non-strategic" sites). However, it is not intended that these distances must be adhered to rigidly in all circumstances, without any potential flexibility. For instance, there may be potential sites which are nine miles away from, say, King's Lynn, but accessible to the town largely or only by minor (and potentially unsuitable) roads, whereas a site 11 miles distant may be linked directly by the A47.

6.26 The specific situation pertaining to Household Waste Recycling Centres is covered by policy DM6.

Core Strategy Policy CS5 – General location of waste management facilities

“Strategic” or “major” waste management facilities (see paragraph 6.20) should be well-related to the Norwich Policy Area, Great Yarmouth urban area, King’s Lynn or Thetford. There is a particular need for recovery (residual waste treatment) capacity to manage the waste arising from these settlements.

“Non-strategic” waste facilities – which will include most of the other types of waste facilities – should be well-related to one of these main settlements or to the main market towns of Attleborough, Aylsham, Cromer, Dereham, Diss, Downham Market, Fakenham, Hunstanton, North Walsham, Sheringham, Swaffham, or Watton.

Notwithstanding the general locational preference above, given the largely rural nature of Norfolk, it is acknowledged that there may also be some potential sites which are less well related to the major centres of population. Proposals in these locations should demonstrate that they would:

- i) be well-related to the major road network; or
- ii) take advantage of cross border opportunities for the efficient management of waste; or
- iii) enable the re-use of brownfield sites unsuitable for other uses.

Agricultural waste treatment plants, windrow (open-air) composting plants, community composting plants, small scale local facilities (including “bring” sites for the collection of recyclables) will, due to their characteristics, be acceptable in locations more distant from the county’s main settlements. Such proposals will still need to be in compliance with other relevant Core Strategy policies.

Waste water treatment sites/pumping stations can normally only be located on or adjacent to watercourses, so they will normally only be acceptable in such locations.

Significant environmental constraints affecting the major settlements

Whilst every potential waste site allocation and planning application will be considered on its own merits, significant international ecological and national landscape constraints affecting the four main Norfolk settlements are detailed below. However, if waste management activity could take place on a permitted or allocated industrial estate (use class B2), particularly if contained within a building, the impacts may be little different to any other general industrial use (even though the waste development may be classed as *sui generis*):

- *Norwich Policy Area*: The valley of the River Yare falls within the Broads, which has a status equivalent to that of a National Park. On the eastern edge of the NPA, the river valley is also classed as the Broadland SPA and Broads SAC. The River Wensum is classed as a

SAC from (broadly) New Costessey westwards. There is therefore a preference for new waste management facilities away from the Wensum and Yare valley areas and the Broads area

- *Great Yarmouth urban area:* Much of the borough surrounding the urban areas is within the Broads, with Breydon Water SPA and Broadland SPA also close by. In addition, Great Yarmouth North Denes SPA is located on the dunes to the north of Great Yarmouth and also at Winterton-on-Sea and Horsey. The coast between Sea Palling and Winterton lies within the Norfolk Coast Area of Outstanding Natural Beauty (AONB). There is therefore a preference for locations for new waste management facilities away from these protected areas
- *King's Lynn:* The Norfolk Coast Area of Outstanding Natural Beauty lies to the north and north-east of King's Lynn. Roydon Common & Dersingham Bog SAC lies a short distance to the east of the town, with East Walton & Adcock's Common SSSI (which forms part of the Norfolk Valley Fen SAC) lying about six miles to the south-east. There is therefore a preference for locations for new waste management facilities avoiding these areas
- *Thetford:* Development in or near Thetford (and also Swaffham and Watton) is highly constrained by the presence of the Breckland SPA and Breckland SAC, which cover large parts of the surrounding area. Detailed work undertaken for the preparation of the (adopted) Breckland Core Strategy has meant that there is a restrictive approach to development within 1500m of those parts of the Breckland SPA that support stone curlew populations, and within 400m of those parts of the Breckland SPA that support woodlark or nightjar populations (see Policy CS14). Given the noise and disturbance of waste management operations, any new waste management facilities close to Thetford are likely to be more acceptable in the area immediately east of Thetford only (areas to the south and west falling largely within Suffolk).

General waste management considerations

6.27 Waste management provision will be achieved in accordance with the spatial strategy for strategic and non-strategic sites as expressed above. Modern waste management development can require purpose-designed buildings and structures which in most instances are suited to industrial areas. Opportunities for integrated waste management will be encouraged, where various waste management options can be co-located to reduce transport requirements and assist improved levels of waste recovery with the main urban areas.

Core Strategy Policy CS6 – General waste management considerations

Waste sites will need to be developed in accordance with policy CS3 and will be acceptable, provided they would not cause unacceptable environmental impacts, on the following types of land:

- a) land already in waste management use;
- b) existing industrial/employment land or land identified for these uses in a Local Plan or Development Plan Document;
- c) other previously-developed land; and
- d) contaminated or derelict land.

Sites at existing mineral workings and landfill sites will also be acceptable in principle, but will be restricted to a temporary permission(s) lasting until the cessation date for the mineral operation or landfill site.

Unused and under-used agricultural and forestry buildings and their curtilages will also be suitable, in principle, for waste management uses, subject to impacts on the rural environment being acceptable.

Waste reuse, recycling and composting

6.28 After waste prevention, the preferred means of managing waste in the hierarchy is reuse. This involves putting used products or materials, without alteration or processing, to the same use again or for a different purpose. It can result in added value and utility before final disposal. The waste stream where there is the most potential for reuse is construction & demolition waste. Road planings can be reused without further processing and some excavated materials can be directly reused as fill in construction projects or as a site engineering material.

6.29 The next step on the hierarchy is recycling and composting. Recycling involves the separation of waste materials to put them through a process so that they can be used again either for the same or an alternative purpose. Materials commonly recycled include paper, cardboard, glass, cans, some plastics, textiles, wood, metal, brick, stone, concrete, soils.

6.30 Materials Recovery Facilities (MRFs) sort and grade waste either manually or mechanically, usually within a building. The separated materials are then sent elsewhere for re-use or recycling. A large building is usually required with some outdoor storage space.

6.31 The purpose of waste transfer stations is essentially to bulk up wastes and reduce the overall transport requirements of waste collection. However, they increasingly involve an element of sorting to separate materials for recycling, recovery and/or treatment.

6.32 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. There are two forms of composting: open-windrow and in-vessel. With open-windrow, green waste (vegetation) 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, and because of concerns about the effects on health from the generation of bio-aerosols, as well as potential impacts from smell, dust, vermin and birds, it may need to be located away from residential areas and other sensitive land uses. The requirement for a bio-aerosol risk assessment mentioned in Policy CS7 reflects the Environment Agency's formal policy position on composting and potential health effects from bio-aerosols (published in October 2007). The Environment Agency's formal policy position can be downloaded from <http://www.environment-agency.gov.uk/research/library/position/41211.aspx> (autumn 2010).

6.33 In-vessel composting refers to a group of composting systems ranging from closed halls to containers, which aim to achieve a higher degree of control over and accelerate the process. In-vessel composting can take wastes other than green waste, such as food. It often also requires some form of outdoor maturation.

6.34 There is reasonable coverage of waste transfer stations in Norfolk, but a need for a significant expansion in recycling and composting facilities to meet higher recycling/composting/recovery targets set in *Waste Strategy 2007* and other documents.

Anaerobic digestion

6.35 Anaerobic digestion (AD) is essentially an anaerobic equivalent of composting, converting biodegradable materials into a nutrient-rich digestate (which can be used as a fertiliser if produced from source-segregated biodegradable waste) and producing biogas (which can be combusted to produce energy). AD can operate at a range of scales, from the very small to the very large, from a range of feedstocks, and is thus a flexible technology.

6.36 The Government is keen to promote the benefits of AD. Defra's *Anaerobic Digestion – Shared Goals* (published in 2009) has a vision of AD diverting waste away from landfill, producing significant quantities of renewable energy, with the UK being a "world leader" in the technology. Defra's *Accelerating the Uptake of Anaerobic Digestion in England: an Implementation Plan* was published in 2010 and highlighted a series of key actions to deliver major growth in AD provision, including training for planners and councillors to address an apparent lack of expertise.

6.37 Alongside the use of other existing, emerging and yet-to-emerge technologies, the Waste Planning Authority will therefore support the use of AD, and will work closely with the Environment Agency and farmers/landowners/developers to maximise the delivery of new AD plants.

Core Strategy Policy CS7 – Recycling, composting, anaerobic digestion and waste transfer stations

The expansion of, or development of new, recycling, composting and anaerobic digestion facilities, and waste transfer stations to handle all types of waste (inert, hazardous and non-hazardous), will be considered favourably, so long as they would not cause unacceptable environmental, amenity and/or highways impacts.

Proposals for composting plants (both enclosed and open-air) will need to be accompanied by a site-specific risk assessment based on clear evidence 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.

Residual waste treatment facilities

6.38 As outlined in Chapter 2, there is a clear and pressing need to divert non-hazardous waste away from landfill in Norfolk, both to avoid potential LATS fines and also because future new non-hazardous landfill voidspace in Norfolk is likely to be very limited (due to adverse hydrogeological conditions across much of the county).

6.39 For wastes where no (further) treatment is practicable following re-use and initial recovery (i.e. recycling and composting), some form of energy/value recovery is the next preferable solution in waste hierarchy terms. As well as reducing considerably the quantity of waste requiring eventual disposal, energy recovery processes can also generate heat and/or power, for example through a Combined Heat and Power (CHP) plant and/or district heating system.

6.40 There is a range of different energy recovery technologies available, including energy-from waste (EfW, thermal treatment with energy recovery), mechanical biological treatment (MBT, with or without thermal treatment of the fuel produced through the MBT process), mechanical heat treatment (MHT), advanced thermal treatment (ATT) and the production of electricity from the biogas produced during anaerobic digestion. However, PPS 10 advises against over-specific allocations which might stifle innovation in line with the waste hierarchy. For this reason, Policy CS8 does not specify any particular recovery processes, instead keeping the policy generic in consideration.

6.41 The Core Strategy does not express a view on whether the policy for residual waste management facilities should be to centralise larger sites in a small number of locations, or disperse a larger number of smaller sites across Norfolk; these matters will be for 'the market' to determine.

6.42 In line with paragraph 17 of PPS10, Norfolk will plan to manage its own waste management needs (i.e. be as self-sufficient as possible). However, where there could be benefits in land-use and sustainability terms, the importation of wastes might be justified. Whilst there are a number of small-scale waste facilities in locations close to Norfolk (e.g. in Lowestoft and Wisbech), there are only two large sites which could potentially play a future role in recovery of some of Norfolk's waste: land at the Eye Airfield Industrial Estate in Suffolk (allocated in

Suffolk's Waste Core Strategy) and the operational Donarbon MBT plant in Waterbeach, Cambridgeshire. Given Norfolk's boundaries with Suffolk, Lincolnshire and Cambridgeshire, opportunities for cross-border arrangements may exist and are therefore not ruled out.

6.43 Any proposals for hazardous waste treatment facilities will be judged against the locational criteria (both site specific and more general) of policies CS5 and CS8.

Core Strategy Policy CS8 – Residual waste treatment facilities

A number of Residual Waste Treatment Facilities (RWTFs) to serve the needs of the county and with sufficient capacity to cater for the projected amount of residual municipal and commercial & industrial waste will be needed during the period of the Core Strategy (see Policy CS4). When considering planning applications, regard will be had to the need for such facilities by reference to other Core Strategy policies, national planning guidance and the contribution made by existing RWTFs at that time.

RWTFs will be acceptable where the proposed facility is:

- a) In use as a waste management site; or
- b) In existing general industrial use (B2), in storage and distribution use (B8) or identified for these uses in a Local Plan or Development Plan Document; or
- c) On a brownfield site; or
- d) Located in redundant agricultural buildings;

so long as it would not cause unacceptable environmental, amenity and/or highways impacts.

All facilities must provide for the recovery of energy and, where practicable, heat, and the use of combined heat and power and/or district heating systems will be encouraged.

Applications for RWTFs which would result in an over-provision of residual waste treatment capacity (based on the figures in Policy CS4) will not be permitted unless clear sustainability benefits to treating waste arising outside Norfolk can be demonstrated.

Landfill

6.44 The majority of waste generated in Norfolk is currently disposed of to landfill, whether inert (inert landfills or quarry restoration) or non-hazardous (there are no hazardous waste landfills). Although landfill is the least preferred option within the waste hierarchy, it will continue to need to be used throughout the Core Strategy period to dispose of waste for which no other treatment method is practicable.

6.45 Although many inert wastes can be re-used and recycled (e.g. for use as sub-base material), other types, such as sub-soils, cannot practicably be recycled, and disposal to either inert waste landfill, or for quarry restoration, is needed.

6.46 Although quarry restoration will consume significant quantities of inert waste, the existing inert waste landfill voidspace figure is low (less than five years), so this may be indicative of a genuine shortfall in capacity.

Core Strategy Policy CS9 – Inert waste landfill

Proposals for new inert waste landfill voidspace (as distinct from the use of inert material in the restoration of minerals sites, which would normally be conditioned as part of a minerals planning permission) will not be acceptable unless there is a clear need for additional voidspace, based on a lack of genuinely available landfill voidspace and/or a lack of demand for quarry restoration (taken as being less than five years' capacity). These considerations should be assessed at a sub-county level to have regard to any geographic imbalance of voidspace within Norfolk.

Any new proposals will need to demonstrate that they will have advantages (during the operation phase and/or on restoration) for one or (preferably) more of: amenity, landscape, wildlife or similar benefits.

6.47 After applying the targets for waste recovery (including recycling, composting, anaerobic digestion and energy recovery) detailed in Appendix A, there remains a significant volume of non-hazardous waste that will require disposal to landfill. Whilst provision is to be made and proposals encouraged for other recovery waste management facilities, which would reduce the landfilling of non-hazardous wastes, it is likely that it will take a number of years for these installations to become established and start diverting a significant volume of waste.

6.48 Increased levels of recycling, composting and other recovery, as set out in Policy CS3, will reduce the amount of non-hazardous waste requiring disposal to landfill. Based on these figures, there is sufficient voidspace in Norfolk's non-hazardous landfills until the end of the plan period.

6.49 However, the majority of the voidspace, particularly beyond 2020, is concentrated at Blackborough End landfill, which is close to King's Lynn in the west of Norfolk. There would therefore be proximity benefits to providing additional voidspace in the east of the county. The Environment Agency's map of indicative suitability of Norfolk for non-hazardous landfill (reproduced in Appendix E) appears to show severe limitations in Broadland or Great Yarmouth, whereas in much of South Norfolk there may be more potential.

6.50 Given the absence of hazardous waste-only landfills in Norfolk, and the need for landfill capacity for hazardous wastes (including for stable non-reactive wastes such as asbestos), new proposals will be considered favourably where it is demonstrated that they can be operated without unacceptable environmental risks.

Core Strategy Policy CS10 – Non-hazardous and hazardous waste landfill

New non-hazardous landfill voidspace will be only granted permission if:

- i) It is located in the east of Norfolk (ideally in the districts of Broadland, South Norfolk or Great Yarmouth);
- ii) It could be designed, built, operated and restored without unacceptable risk to groundwater quality and air quality
- iii) It would accept only pre-treated wastes; and
- iv) It would not prejudice the movement of waste up the waste hierarchy by providing excessive landfill capacity.

Proposals for hazardous waste-only landfills (or fully contained cells within a non-hazardous landfill for stable non-reactive wastes) will be granted permission if:

- i) It could be designed, built, operated and restored without unacceptable risk to groundwater quality and air quality;
- ii) It would accept only pre-treated wastes (except where pre-treatment is not feasible or necessary, e.g. for asbestos);
- iii) It would not prejudice the movement of waste up the waste hierarchy by providing excessive landfill capacity.

Waste water and sewage treatment infrastructure

6.51 Waste water treatment plants or works are a vital part of community infrastructure and are necessary to protect human health and water quality. Existing waste water treatment plants will be safeguarded through the application of Policy CS16.

6.52 As a largely rural county, Norfolk's "non-network" sewage load is more significant than many other counties. It is therefore sensible to site new development so as to maximise the potential capacity within the existing waste water treatment infrastructure and so minimise the need for improvements to existing infrastructure or new sewage treatment plants. This is reflected within the emerging Local Development Frameworks within the county, in which major growth is directed to existing major urban centres and key market towns.

6.53 No specific proposals for new or relocated waste water treatment plants have been proposed by Anglian Water as part of the "call for sites" for the Waste Site Specific Allocations DPD, but it is likely that new and/or extended facilities to cater for the proposed levels of growth projected to occur in Norfolk over the life of the Core Strategy will be necessary. Anglian Water has indicated that, for example, the relocation of Downham Market, Wymondham and Thetford treatment works may be necessary during the lifetime of the Core Strategy. However, water cycle studies that have been, or are being, prepared by the Norfolk district councils to inform the development of their DPDs examine the capacity of individual waste water treatment plants in detail.

6.54 The Stage 2b Water Cycle Study Final Report for the Greater Norwich Development Partnership (February 2010) concludes that Whitlingham Waste

Water Treatment Plant “has the largest amount of treatment ‘headroom’ and as such, much of the wastewater generated by the additional housing [in the Greater Norwich area] will need to be transferred [there]”. Large new interceptor sewers running from the west of Norwich to the south and north will also be required to provide additional waste water network capacity.

6.55 The Core Strategy supports the provision of new or improved waste water/sewerage infrastructure, particularly in connection to new housing growth, provided it does not give rise to unacceptable environmental, amenity and highways impacts.

6.56 Anaerobic digestion plants can sometimes be co-located with waste water treatment plants to recover energy from sewage sludges.

Core Strategy Policy CS11 – Waste water/sewage infrastructure and treatment facilities

New or extended waste water/sewage infrastructure and treatment facilities will be acceptable where such proposals aim to:

- 1) treat a greater quantity of wastewater; and/or
- 2) improve the quality of discharged water; and/or
- 3) reduce the environmental impact of operation.

The developer will be required to demonstrate that the proposal can be located and operated without giving rise to unacceptable environmental, amenity and highways impacts.

The co-location of anaerobic digestion plants with waste water/sewage treatment facilities will normally be acceptable, subject to the tests of policy CS7 being met.

Whitlingham Waste Water Treatment Works

6.57 Whitlingham Waste Water & Sewage Treatment Works, located to the south of Norwich (in South Norfolk district) is the largest such plant in Norfolk. It handles the sewage from Norwich and the surrounding rural area and also takes in sewage wastes (such as various cakes and sludges) for treatment from a wider area (including from outside Norfolk). Whitlingham WWTW is therefore a vital piece of infrastructure for the implementation of the growth envisaged in the Joint Core Strategy; of the 32,000 new dwellings proposed for the Norwich Policy Area, almost all will feed in to Whitlingham WWTW. There is room for Whitlingham WWTW to expand to meet any increased future needs, based on Anglian Water’s landholdings, but the bulk of future work is largely thought to be necessary for water quality improvements, rather than volumetric (capacity) increases.

6.58 However, the operation of the site raises frequent concerns from some local residents, particularly on grounds of HGV movements 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, but in the absence of a longer-term masterplan or vision for the future development of

the site, it is not easy to assess the strategic significance of individual proposals, and the cumulative impact of a number of separate (but linked) proposals.

6.59 It is acknowledged that Anglian Water's strategic budget is set by OFWAT through the Assessment Management Planning (AMP) process in five-year tranches, with the next period (AMP 5) running from 2010-2015. Anglian Water has proposed spending £443m to meet the growth in population, and another £440m to fund environmental and drinking water quality improvements during AMP 5 (although these amounts have been reduced by OFWAT in the final decision in November 2009) but the company does not know how much money it will have to spend on improvements during the remainder of the Core Strategy (AMPs 6 and 7). There is no public information as to how much money will be spent at Whitlingham.

6.60 It is proposed that the existing Whitlingham Liaison Group, which debates ongoing operational matters and allows Anglian Water to discuss its future plans for the site, should be expanded. Invited members of the Liaison Group should include local residents, Kirby Bedon and Trowse parish councils, Anglian Water, the Environment Agency, South Norfolk District Council, Norfolk County Council and the Broads Authority, with meetings taking place on a regular basis (perhaps quarterly or six-monthly).

6.61 Anglian Water is encouraged to discuss and agree a longer-term masterplan/vision/implementation strategy for the site with the local authorities of the Greater Norwich Development Partnership and the Environment Agency so that the strategic importance and cumulative impact of individual development proposals at Whitlingham WWTW can be most effectively understood and assessed.

6.62 A more detailed policy setting out the considerations for future development of the site will be included in the Waste Site Specific Allocations DPD, with the aim of minimising the impact on nearby dwellings and the Broads area whilst recognising the strategic significance of Whitlingham WWTW for housing and employment growth in the Norwich Policy Area.

Core Strategy Policy CS12 – Whitlingham Waste Water Treatment Works

Whitlingham Waste Water Treatment Works is one of Anglian Water's strategic works of particular significance for Norfolk in general, and the Greater Norwich area in particular (with a wider sub-regional role also recognised). Future improvements, whether to increase the physical capacity or to increase the treatment standard of waste waters, will be vital to successful delivery of the aims of the Joint Core Strategy 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. Anglian Water is strongly encouraged to:

- develop and agree a longer-term vision for Whitlingham WWTW in collaboration with the constituent authorities of the Greater Norwich Development Partnership and the Environment Agency; and
- extend the existing Local Liaison Group to include the bodies mentioned in paragraph 6.60 above. The Local Liaison Group should continue to meet regularly to discuss operational issues and planned site improvements.

Climate change & renewable energy generation

6.63 The Government's Energy White Paper in 2003 set out a 10 per cent target for electricity generated from renewable energy sources by 2010, with an aspiration to double this to 20 per cent by 2020. The PPS1 Supplement: *Planning and Climate Change* states that Core Strategies "should provide a framework that promotes and encourages renewable and low-carbon energy generation".

6.64 Whilst it is recognised that it may be more difficult to viably locate renewable energy infrastructure on minerals sites than waste sites, all minerals and waste developments may have the potential to generate renewable electricity (e.g. through solar panels, wind turbines, ground source heat pumps etc) which could meet some or all of their electricity needs.

6.65 A 10 per cent minimum figure for renewable energy generation (above a given development threshold) is commonly used in many Core Strategies. Given the rural location of almost all minerals sites, and some waste sites, it is not considered practicable to seek a higher minimum threshold than this.

6.66 The treatment of residual waste can also generate low-carbon electricity and heat so, as set out in Policy CS8, combined heat and power (CHP) plants and/or district heating systems will be encouraged.

6.67 As well as reducing greenhouse gas emissions directly, it is important for minerals and waste developments to also minimise the impacts of climate change. Sand and gravel and silica sand sites are classed as 'water compatible' in PPS25: *Development and Flood Risk*, but carstone extraction sites and waste developments must not be at unacceptable risk of flooding themselves, and all minerals and waste developments must not generate increased risks of flooding 'downstream'.

6.68 Proposals for the new Rackheath Eco-Community to the north-east of Norwich include the objective of incorporating CHP facilities to use locally-produced biodegradable waste to generate power for local consumption. This is consistent with the Planning Policy Statement 1 supplement on Eco-Towns. The development of such facilities at Rackheath, which would have its own, more rigorous, targets for waste production, recycling and landfill diversion, will act as an exemplar for waste management practice in the county.

Core Strategy Policy CS13 – Climate change and renewable energy generation

All opportunities for new minerals and waste developments (both brand new sites and extensions to existing sites) to generate renewable energy on-site will be welcomed and should be explored fully, with a minimum of 10 per cent generated from decentralised and renewable or low-carbon sources, wherever this is practicable. Where it is not considered practicable to meet this 10 per cent minimum – perhaps because of financial reasons, site size, physiographical restraints of a site, and/or other environmental considerations/constraints (e.g. landscape impacts) – appropriate evidence must be provided to the County Planning Authority.

All new residual waste treatment plants and any new non-hazardous landfill sites will need to generate electricity and/or capture heat, unless it can be demonstrated that this is not practicable. An example of where this requirement might not be appropriate would be for a plant producing refuse-derived fuel (through an MBT process), where this fuel was combusted at a different plant elsewhere.

The co-location of large waste plants generating heat and/or electricity with other nearby industrial and/or residential users of the heat and/or energy will be supported. Waste treatment facilities accepting biomass waste will be required to generate renewable energy.

Potential minerals and waste developers will need to demonstrate that, in line with PPS25, the sites can be developed, operated and (where relevant) restored without unacceptable flood risk to the site itself, and also to 'downstream' land uses, taking into account potential climate change impacts (e.g. higher future rainfall rates).

Environmental considerations

6.69 Norfolk is well endowed with designated landscapes and nature conservation sites. The Norfolk Coast Area of Outstanding Natural Beauty (AONB) covers 450km², with the majority of the AONB within King's Lynn & West Norfolk and North Norfolk districts, and only a very small section at Winterton in Great Yarmouth borough. As well as its national importance for landscape quality and character and the national and international importance of its biodiversity and geodiversity, the Norfolk Coast AONB is a critical part of the tourism 'offer' of Norfolk, and the maintenance of its integrity is therefore extremely important. In line with the guidance in PPS7: *Sustainable Development in Rural Areas*, significant new minerals and waste developments will not normally be appropriate in the AONB.

6.70 As noted in Chapter 2, there are 12 Special Protection Areas (SPAs), seven Special Areas of Conservation (SACs) and 162 SSSIs. In addition to the Wash, which is internationally important for its bird life, Norfolk also contains the majority of the area of the Broads, which has a status equivalent to that of a National Park. PPS9: *Biodiversity and geological conservation* sets out the high level of protection given to nature conservation and geological/geomorphological sites of national and international importance.

6.71 As part of the preparation of the Breckland Core Strategy, significant work was undertaken to assess the implications of development within or near the Breckland SPA, which is designated for stone curlew, nightjar and woodlark. The Appropriate Assessment carried out on the Breckland Core Strategy concluded that there should be a buffer zone of 1500m extending from those parts of the SPA which support – or are capable of supporting – stone curlew populations. Policy CP10 of the Breckland Core Strategy and its supporting text set out how development proposals potentially impacting on the SPA will be considered, with the map of the 1500m buffer zone shown as Map 3.1 of the Breckland Core Strategy. The relevant paragraphs of Policy CP10, in the Breckland Core Strategy, have been included within policy CS14 to ensure potential minerals or waste developments within or near the Breckland SPA will not adversely affect the integrity of the SPA.

6.72 One of the priorities of Norfolk's Sustainable Community Strategy is the development of the county's ecological network. The aim of developing the Norfolk Ecological Network is to contribute toward ensuring the long-term protection of wildlife and natural resources in defined areas, with potential benefits beyond these areas. The Norfolk Ecological Network (see Figure 6.1 below) comprises the following elements:

- **Core Areas:** These are the most important existing areas for wildlife in the county, and include the Broads, the Brecks, many river valleys and much of the North Norfolk coast. In these areas, the priority is to protect and manage existing wildlife sites. It will also be important to “buffer” wildlife sites from the impacts of adjacent and often unsympathetic land use, e.g., agricultural spray drift.
- **Heath, Grassland and Woodland Enhancement Areas:** These areas denote a zone where it would be desirable to create a mosaic of heathland, grassland and woodlands.
- **Wetland Creation Areas:** These areas comprise a zone where large-scale wetland creation and enhancement is desired.
- **General Enhancement Areas:** Areas where wildlife is currently impoverished and where there would be a focus on general habitat enhancement and creation (but no particular habitats are recommended).

6.73 Norfolk County Council has long had a policy protecting the special landscape qualities of Norfolk's smaller and more 'upland' river valleys. The county's river valleys were surveyed 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 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.

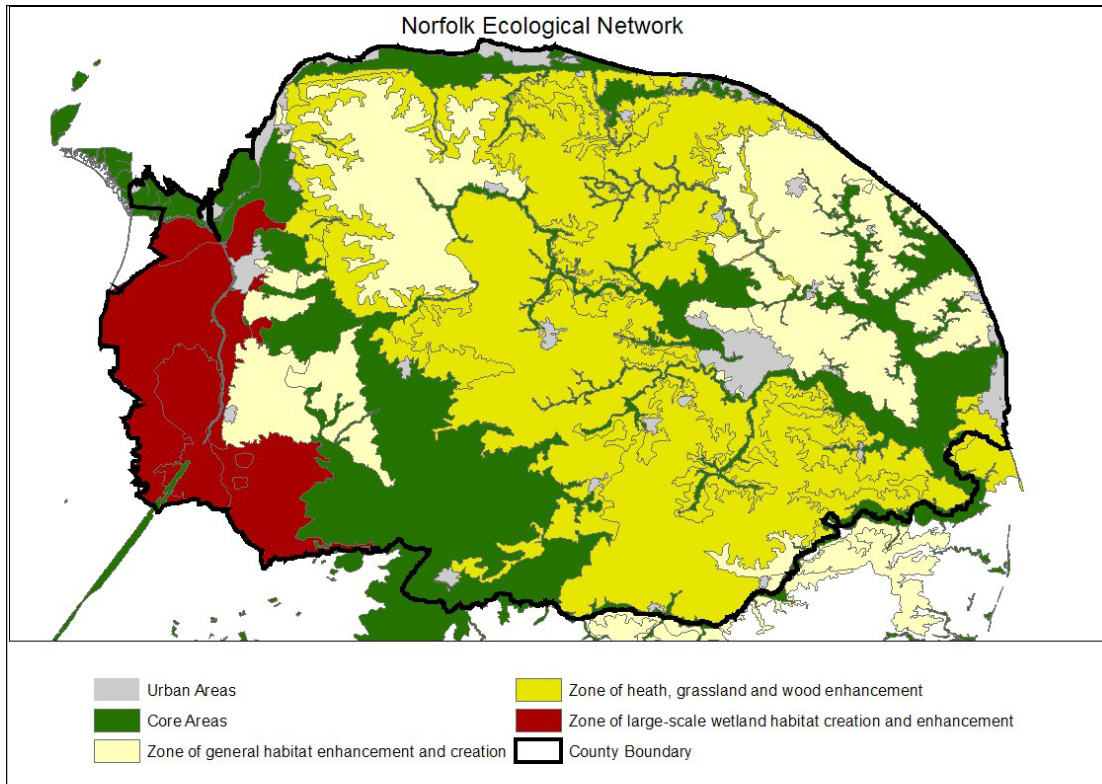


Figure 6.1: Norfolk Ecological Network map

6.74 Many of these river valleys – the upper reaches of the Nar and Wensum are good examples – have historically been attractive locations for sand and gravel extraction, but such extraction can change the local landscape character significantly, for instance by leaving large areas of open water in a more traditionally ‘closed’ landscape. Protecting these Core River Valleys from inappropriate minerals development will help to preserve the unique and rich quality of Norfolk’s landscape and natural heritage.

6.75 Norfolk is also particularly rich in cultural heritage, with many archaeological sites, listed buildings, historic parks & gardens and conservation areas. Ensuring that minerals and waste developments do not adversely affect the county’s cultural heritage is therefore of considerable importance.

Core Strategy Policy CS14 – Environmental protection

The protection and enhancement of Norfolk’s natural and built environments is a vital consideration for future minerals extraction and associated development and waste management facilities in the county. In particular, developments must ensure that there are no unacceptable adverse impacts on, and ideally improvements to:

- Natural resources, including water, air and soil;
- The character and quality of the landscape and townscape, including nationally designated landscapes (the Norfolk Coast Area of Outstanding Natural Beauty and the Norfolk and Suffolk Broads);
- Biodiversity and geodiversity, including nationally and internationally designated sites and species, habitats and sites identified in

Biodiversity and Geodiversity Action Plans;

- Heritage assets and their setting, and cultural assets; and
- Residential amenity e.g. noise, vibration, dust, lighting, and visual intrusion.

Where any development proposals would potentially have adverse impacts on any of the assets listed above, the adequacy of any proposed mitigation measures will be assessed on a case-by-case basis.

The highest standards of design, operation and (where relevant) restoration and aftercare of sites must be practised.

Breckland SPA

The Council will require suitable information to be provided to enable it to undertake an Appropriate Assessment of all proposals for development that are likely to have a significant effect on the Breckland Special Protection Area (SPA) and will only permit development that will not adversely affect the integrity of the SPA. A buffer zone has been defined (indicated in red hatching on the Proposals Map) that extends 1,500m from the edge of those parts of the SPA that support or are capable of supporting stone curlews, within which:-

- a) Permission may be granted for the re-use of existing buildings and for development which will be completely masked by existing development; alternatively
- b) Permission may be granted for development provided it is demonstrated by an appropriate assessment the development will not adversely affect the integrity of the SPA.

In other locations, indicated in orange hatching on the Proposals Map, the Council will apply the policy set out above to afford protection to other land supporting the qualifying features of the SPA.

Where it can be shown that proposals to mitigate the effects of development would avoid or overcome an adverse impact on the integrity of the SPA or qualifying features, planning permission may be granted provided the County Planning Authority is satisfied those proposals will be implemented.

The Council will consider the need for an appropriate assessment to determine the implications of development on other interest features of the SPA (i.e. nightjar and woodlark) on a case by case basis.

Transport

6.76 A key aim of the Norfolk Local Transport Plan (LTP) is to try to secure 'modal shift' from road transport to greater use of public transport (including railways), walking and cycling. Most current minerals and waste sites are served by Heavy Goods Vehicles (HGVs) using the local road network, although Sibelco's silica sand complex at Leziat exports processed silica sand by rail.

6.77 The movement of HGVs to and from minerals and waste sites can have significant effects on roads, other road users, the natural and built environments and local communities. 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.

6.78 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, as much of the damage done to roads is caused by lorries. A large proportion of Norfolk's unclassified road network is of unsuitable construction and alignment to cater for significant HGV traffic and in addition there can be localised amenity and environmental impacts from HGV transport.

6.79 The County Council has, for many years, designated every non-trunk road in Norfolk as one 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 for new minerals and waste sites is to ensure that HGVs take the shortest practicable route (avoiding inappropriate junctions and travel through settlements where appropriate) to the nearest Principal Road or Main Distributor Road.

6.80 The Highways Agency is responsible for managing the trunk roads in Norfolk (the A11, A47 and the A12) and agrees that the tests of Policy CS15 apply equally to trunk roads. However, in relation to minerals and waste transport, the Agency's particular concern is the suitability of junctions on the trunk road network to accommodate increased use by HGVs.

Core Strategy Policy CS15- Transport

All proposed minerals extraction and waste management facilities must assess and consider positively the potential for non-HGV transportation of materials to and/or from the facilities, principally by rail or water. This assessment must be included within the Transport Statement/Transport Assessment, if one is required (see Policy DM10).

The County Council will consider minerals and waste development proposals to be satisfactory in terms of access where anticipated HGV movements, taking into account 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) and residential and rural amenity, including from odour and noise;
- d) Unacceptable impacts on the natural and historic environment; and
- e) Unacceptable physical impacts on the highway network (e.g. road or kerbside damage).

Safeguarding minerals and waste sites

6.81 The limited availability of suitable sites for minerals and waste facilities means that it is essential for the stock of existing and proposed sites to be safeguarded. The safeguarding of mineral 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. The purpose of safeguarding existing and proposed sites is not necessarily to prevent other forms of development from taking place in proximity to existing or potential mineral extraction and associated development or waste management facilities, but to ensure that issues of compatibility across the differing forms of development are taken into account in the planning process.

6.82 Minerals are a finite natural resource and clearly can only be worked where they exist. Mineral working is becoming increasingly constrained by the need to protect the key environmental, heritage and amenity assets of Norfolk, which limits the amount of resource available in practice. The primary evidence base for Mineral Safeguarding Areas (MSAs) for mineral resources is Norfolk Mineral Resources Map 2004 (as amended) prepared by the British Geological Survey. Chalk, clay and peat are either so extensive in Norfolk or demand for them is so low (relatively) that safeguarding such deposits is not considered necessary. Therefore, only sand and gravel, silica sand and carstone resources are safeguarded. Given the national significance of silica sand (see paragraph 3.4), the safeguarding of silica sand resources will be given particular importance. The broad extent of the MSA is shown on the key diagram in the Core Strategy. The boundaries of MSAs will be delineated on the Proposals Map accompanying the Minerals Site Specific Allocations DPD. In the period prior to the adoption of the Mineral Site Specific Allocations DPD the Mineral Consultation Areas from the Minerals Local Plan (2004) will continue to be used and shown on the Proposals Map. The Mineral Consultation Areas from the Minerals Local Plan (2004) will be superseded by the Mineral Safeguarding Areas and Minerals Consultation Areas in the Mineral Site Specific Allocations DPD on its adoption.

6.83 Where proposals for non-minerals or non-waste development might prejudice the implementation of the Core Strategy, consideration should be given to how they could be amended to make them acceptable or, where this is not practicable, to refusing planning permission. As well as minerals extraction and waste developments themselves, it also includes related infrastructure such as concrete batching, the manufacture of coated materials, sites for the handling, processing and distribution of substitute, recycled and secondary aggregate material and the storage, handling and processing facilities at railheads (Trowse and Leziate) and wharves (Great Yarmouth and King's Lynn). The boundaries of safeguarded mineral and waste sites will be delineated on the Proposals Map accompanying the Core Strategy. The boundaries of safeguarded mineral and waste site specific allocations and areas of search will be delineated on the Proposals Map accompanying the Mineral Site Specific Allocations DPD and the Waste Site Specific Allocations DPD.

6.84 The distance to the boundary of a Consultation Area around key wastewater and sludge treatment facilities may be relaxed, following consultation with Anglian Water, on a case by case basis, depending on the nature of the works and the sensitivity of its location.

6.85 Appendix C sets out advice to the District and Borough planning authorities on the forms of development on which consultation with the County Planning Authority should take place before planning applications are determined. The authorities will be requested to consult the County Planning Authority if the development is within 250 metres of a safeguarded site, with the exception of wastewater treatment facilities where the distance will be 400 metres. Incompatible development will not be supported. Decisions on whether a proposed development would prevent or prejudice the continued use of a safeguarded site and would therefore raise an objection from Norfolk County Council, will be made by 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.

6.86 For safeguarding mineral resources, the Minerals Planning Authority has determined that the Minerals Consultation Area (MCA) is the same defined area as the MSA, which requires the District and Borough Councils to consult the County Planning Authority on applications for any form of development received within these areas, which are likely to affect or be affected by mineral working and meet the criteria outlined in Appendix C.

6.87 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 may be appropriate to undertake mineral extraction in advance of development.

MPS1 (paragraph 13) states that planning authorities should encourage the prior extraction of minerals, where practicable, if it is necessary for non-mineral development to take place in MSAs.

Core Strategy Policy CS16 – Safeguarding mineral and waste sites and mineral resources

The County Council will safeguard existing, permitted and allocated mineral extraction and associated development and waste management facilities, within the following categories:

- Waste management facilities with a permitted input of over 20,000 tonnes per annum;
- Key wastewater and sludge treatment facilities (listed in the Waste Site Specific Allocations DPD);
- Waste water pumping stations;
- All mineral extraction sites that are active, and sites with planning permission and allocated sites; and
- Infrastructure located at railheads, wharves and quarries which can transport or handle minerals.

Consultation areas will be delineated on the Proposals Map and extend to 250 metres from each safeguarded site, apart from the key wastewater and sludge treatment facilities, for which the consultation distance will be 400 metres.

In addition, any development proposed within 50 metres of a pumping station (as identified through the planning application) will be subject to consultation with the relevant wastewater management company by the planning authority responsible for determining the application.

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.

Mineral Safeguarding Areas and Mineral Consultation Areas

Silica sand

Given that silica sand is a nationally important but scarce resource, Norfolk's silica sand resources will be safeguarding from inappropriate development proposals. The Mineral Planning Authority should be consulted on all development proposals within Mineral Consultation Areas, except for the 12 excluded development types set out in Appendix C. In line with advice in MPG15 (paragraph 2), 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 district council to decide whether there are compelling planning reasons for over-riding this safeguarding.

Carstone and sand & gravel

Carstone and sand & gravel resources are not as nationally important and scarce as silica sand, but MPS1 (paragraph 13) cautions against proven mineral resources being "needlessly" sterilised by non-mineral development. The conservation benefits of carstone will be a consideration in safeguarding resources.

The Mineral Planning Authority should be consulted on all development proposals within Mineral Consultation Areas, except for the 12 excluded development types set out in Appendix C. For other development types within Mineral Consultation Areas (i.e. non-minor development outside settlement boundaries), 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 material could be economically extracted prior to the development taking place.

Secondary and recycled aggregates

6.88 The revised Government *National and regional guidelines for aggregates provision in England 2005-2020* assumes that the East of England will produce a total of 117 million tonnes of 'alternative materials' (essentially recycled and secondary aggregates), a 9% increase on the previous figure. The use of secondary and recycled aggregates (such as by-products from quarrying, planings from tarmac road surfacing and crushed concrete from construction waste) helps to reduce the demand for primary mineral extraction and should have less adverse impact on the environment and amenity. The County Council will therefore encourage an increase in the production and use of secondary and recycled aggregates.

6.89 It is not easy to monitor accurately the production and use of recycled and secondary aggregates. Whilst it is possible to measure the production of some sources of recycled and secondary aggregates, particularly where this occurs at

mineral extraction sites (e.g. concrete crushing), other sources are much more difficult to quantify. These would include output from mobile crushing plants at building and road development sites, where material is processed, recycled and sometimes re-used on site (e.g. as sub-base material), and inert waste material which passes through waste transfer stations.

6.90 Levels of recycled and secondary aggregate were reported in Norfolk County Council's 2008/9 AMR at 512,000 tonnes, compared to 638,000 tonnes in 2007/8. Over the last six years, a maximum of 70% of the inert and construction and demolition waste managed in Norfolk has been recycled. The majority of this waste is understood to be recycled for use as aggregates. It is expected that the levels will increase again once the current economic recession ends and the construction industry regains some strength.

6.91 In terms of promoting the use of secondary and recycled aggregate, the County Council only has direct influence through its own development (such as schools, libraries and road schemes), and as a planning authority through planning for mineral extraction and associated development and waste management facilities. Planning for residential, industrial and commercial developments is the responsibility of the district, borough and city councils. The use of recycled and secondary aggregates in the development of new minerals sites and waste management facilities, and associated transport infrastructure, is promoted in Policy DM11. However, restricting this approach just to mineral extraction and waste management facilities would miss significant opportunities to influence the sustainability of mainstream development.

Core Strategy Policy CS17 – Use of secondary and recycled aggregates

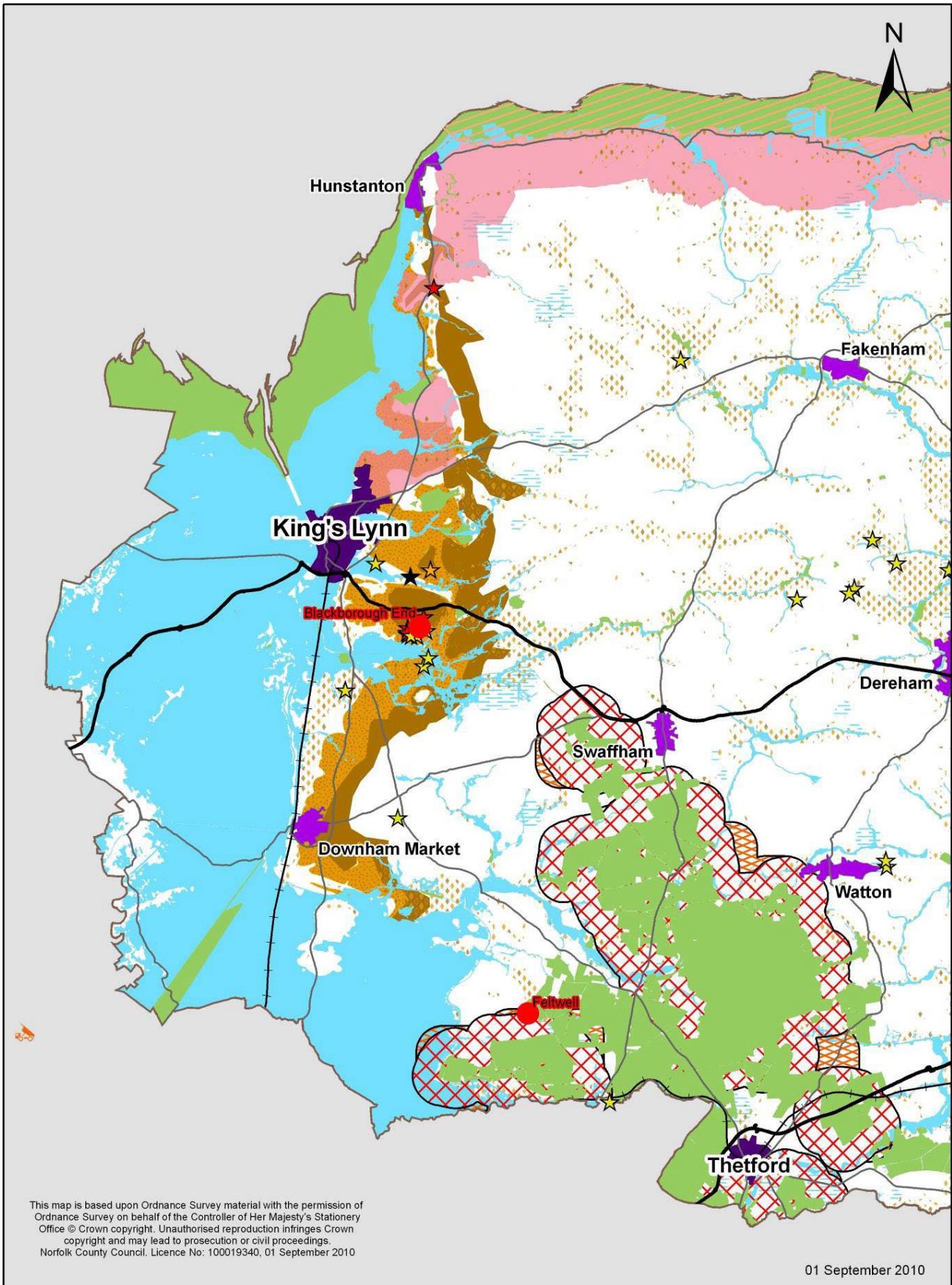
The County Council will promote the use of secondary and recycled aggregates in all developments and encourages all local authorities within Norfolk to require, as part of their own Local Development Frameworks, the use of recycled and secondary aggregates in development (where practicable). Applicants will be required to demonstrate the consideration of the use, where practicable, of secondary and recycled aggregates.

Although a 'target' figure cannot be set for the production of secondary and recycled aggregates, the County Council will aim to achieve a year-on-year increase in the percentage of inert and construction and demolition waste managed in Norfolk that is recycled, starting with the baseline of 70%.

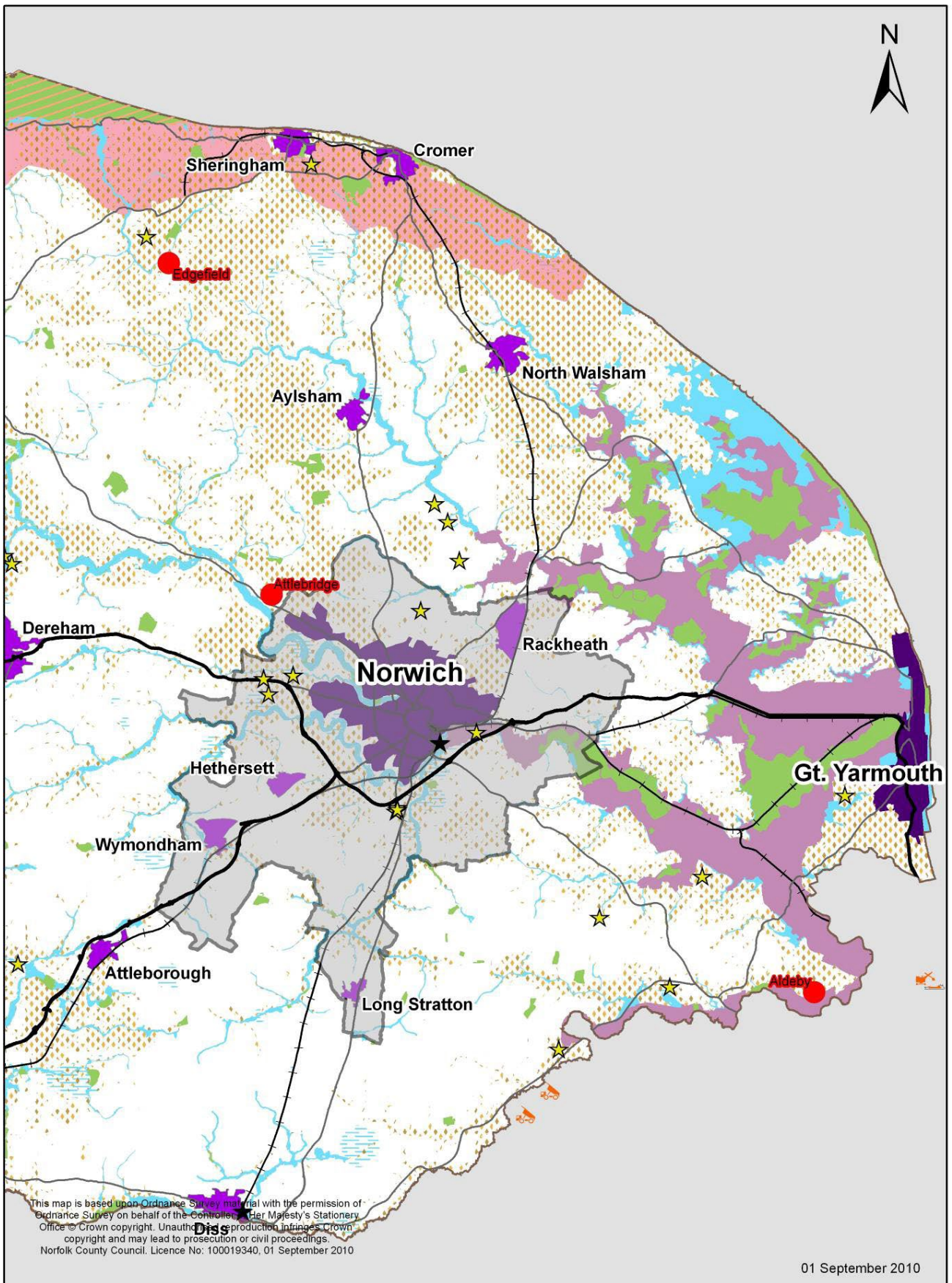
Key diagram

6.92 The key diagram overleaf shows the four largest settlements and Market Towns in Norfolk, highlighting sand and gravel resources and areas for waste management facilities which are well-related to these settlements,. The diagram also illustrates the silica sand and carstone resources, key landscape and environmental constraints, trunk roads, A-roads, railway lines and the location of existing quarries and current non-hazardous landfill sites.





Key diagram



Key diagram

7. DEVELOPMENT MANAGEMENT POLICIES

Nature conservation

7.1 The County Council is committed to protecting and, wherever possible, enhancing biodiversity and geodiversity throughout the county. Norfolk is home to a significant number of areas statutorily designated as sites of international, national, regional and local nature conservation importance, to protect important species, habitats and geological features.

7.2 Paragraph 8 of PPS9 describes how development within, or potentially affecting, SACs, SPAs, Ramsar sites and SSSIs should be considered, and the County Council does not believe there are specific local circumstances that would justify a modification of this policy (with the exception of the Breckland SPA, which is addressed in Policy CS14 and paragraph 6.71). As all National Nature Reserves are also SSSIs, no separate policy is required in the Core Strategy.

7.3 Local Nature Reserves (LNRs) are statutory designations made under section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities for the benefit of both people and wildlife. They are places with wildlife and/or geological features that are of particular interest locally and they offer people special opportunities to study or learn about nature or simply to enjoy nature. In 2008 there were 28 LNRs in Norfolk.

7.4 County Wildlife Sites (CWS) are locally designated areas of land rich in wildlife and can be found throughout Norfolk. Outside the internationally and nationally protected areas, these sites are the best areas for wildlife in the county and often support both locally and nationally threatened species and habitats. In 2008 there were 1,256 CWS in Norfolk and they form a critically important part of Norfolk's ecological network.

7.5 LNRs and CWSs are thus a valuable nature conservation resource which requires protection, not only for their own sake, but also as part of the wider ecological network, sometimes as a 'buffer' to national and international nature conservation sites.

7.6 Outside these locally designated sites, Norfolk also supports a wide array of habitats and species, many of which are recognised by the UK and Norfolk Biodiversity Action Plans. Policy CS14 seeks to ensure that biodiversity in these non-designated areas is protected and enhanced, and that habitat fragmentation is avoided. In addition to avoiding habitat fragmentation, opportunities should be sought to create greater habitat connectivity to facilitate a more robust and healthy natural environment.

7.7 In 2008 there were four Regionally Important Geological and Geomorphological Sites (RIGS) in Norfolk. RIGS are selected on a local or regional basis using four criteria:

- The value of a site for educational purposes in life-long learning;
- The value of a site for study by both professional and amateur earth scientists;
- The historical value of a site in terms of important advances in earth science knowledge, events or human exploitation;

- The aesthetic value of a site in the landscape, particularly in relation to promoting public awareness and appreciation of earth sciences.

7.8 In addition to RIGS, other areas of importance for geodiversity conservation are also found throughout Norfolk. These include tracts of attractive and/or geomorphologically-important landscape that may be recognised through landscape characterisation or as part of designated landscapes, such as Areas of Outstanding Natural Beauty. The Norfolk Geodiversity Partnership is developing a comprehensive audit of geodiversity features in the county, the Norfolk Geodiversity Action Plan.

Development Management Policy DM1 – Nature conservation

Development that would harm:

- Locally designated nature conservation and geodiversity sites; and/or
- Habitats, species or features identified in UK and Norfolk biodiversity and geodiversity action plans;

will only be permitted if it can be demonstrated that sufficient measures to mitigate harm to the site, habitat(s) and/or species can be put in place, preferably in advance of development. If appropriate mitigation measures cannot practicably be implemented, compensatory habits or geological exposure of at least an equivalent standard at a suitable alternative location should be provided. Potential adverse impacts off-site, caused by water contamination, changes to hydrology and/or air pollution, will also need to be considered.

In cases where permission is granted on the basis that restoration will provide enhancement to local nature conservation efforts in the longer-term, any adverse impacts on local nature conservation during the construction and operational phases must be mitigated and fully compensated for. Ongoing management of the restored areas and compensatory habitat(s) will be required to prevent succession away from the chosen habitat(s) type unless this would be unnecessary or inappropriate.

Core River Valleys

7.9 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 Babingley), 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 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.

7.10 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 the Norfolk Ecological Network. Although they are not formally designated, safeguarding the Core River Valleys will help preserve the unique and rich quality of Norfolk's landscape and natural heritage.

Development Management Policy DM2 – Core River Valleys

Development will only be permitted in Core River Valleys (as shown on the Proposals Map) where it can be demonstrated to enhance the local landscape and/or biodiversity (either immediately or on restoration) and not impede floodplain functionality.

Applicants will be expected to demonstrate that proposals will enhance the form, local character and distinctiveness of the landscape and natural environment of a river valley. In the particular case of mineral extraction proposals, an assessment of any impacts will include:

- consideration of the potential impacts or enhancement of the landscape and natural environment, both during and after working;
- the duration of any adverse impacts, and mitigation and/or compensatory measures to replace losses; and
- the provision of any long term asset enhancement through restoration proposals.

Groundwater and surface water

7.11 The biological and chemical water quality of Norfolk's rivers is important for the ecological quality and biodiversity of the environment and for public amenity and enjoyment. The quality of rivers also affects the degree and extent of treatment required to enable the water to meet drinking water standards. Groundwater is also an important asset to Norfolk as it supplies over 60 per cent of the county's water supply (compared to around 35 per cent nationally). The threat to groundwater supplies and possible reduction in quantity as a result of climate change makes its protection essential.

7.12 Mineral extraction activities in Norfolk, particularly where they do not penetrate the water table, are unlikely to have a significant impact on groundwater quality and/or resources. However, they can have more of an impact on surface water quality and/or resources through discharges to watercourses and the creation of new surface water bodies.

7.13 Waste management facilities, particularly when handling, storing or processing non-inert wastes, can potentially pose a greater risk to groundwater and surface waters. It is therefore very important that such facilities are planned, located and operated appropriately to minimise pollution risks.

7.14 The Environment Agency is the statutory body responsible for the protection and management of groundwater resources in England and Wales. They have set out a framework for the regulation and management of this resource in a set of documents known as 'Groundwater Protection: Policy and Practice (GP3)'. Part 4 of the document contains detailed policies for different sectors and activities

which the Council will give due regard to when determining applications that may affect groundwater.

7.15 Groundwater Source Protection Zone (SPZ) 1 is a minimum 50-metre protection area surrounding groundwater sources such as wells, boreholes and springs used for public drinking water supply, and covers the area where pollution would travel within a 50-day period. SPZ2 covers a 400-day travel period for pollutants and SPZ3 the total catchment area for a borehole.

7.16 Minerals and waste developers must therefore satisfy the County Planning Authority, through planning applications, that site activities will not adversely impact upon groundwater quality or resources, or surface water quality or resources. This will be assessed during the planning application process through consultation with the Environment Agency, Natural England, the appropriate water utility company and (where relevant) the appropriate Internal Drainage Board.

Development Management Policy DM3 – Groundwater and surface water

Applicants will need to give due regard to the policies within the Environment Agency's document 'Groundwater Protection: Policy and Practice (GP3)' and demonstrate that proposed developments would not adversely impact upon groundwater quality or resources and surface water quality or resources. A hydrological/hydrogeological risk assessment must be submitted, where applicable, to demonstrate this to the satisfaction of the County Planning Authority as advised by the Environment Agency.

In line with the Environment Agency's policy, sites for mineral extraction and associated development will be acceptable in Groundwater Protection Zone 1 provided they are above the water table. Sites for mineral extraction into the water table in Zones 2 & 3, and outside Groundwater Protection Zones, will be acceptable in principle, although proposals in Zones 2 & 3 will need to be accompanied by a hydrogeological risk assessment which demonstrates that the extraction can take place safely. Sites for waste management facilities will not be permitted in Groundwater Protection Zone 1.

Flood risk

7.17 With the risk of flooding likely to be exacerbated by climate change in future years, flood risk is a significant development constraint in Norfolk. However, the vulnerability of different types of minerals and waste development to flooding varies, as listed in Table D2 of PPS25: *Development and Flood Risk*.

7.18 Sand and gravel extraction is classed as 'water-compatible' development in PPS25. All other types of minerals extraction and the processing of minerals are classed as 'less vulnerable' development. Waste and water treatment facilities are also classed as 'less vulnerable' development. However, landfills and other waste management facilities handling hazardous waste are classed as 'more vulnerable' development.

7.19 Norfolk's seven districts have all prepared, or are preparing/reviewing/ updating, Strategic Flood Risk Assessments to support their LDFs and, as such, the County Council has not prepared its own SFRA. Although not all SFRAs provide complete spatial coverage (they tend to concentrate on urban areas and exclude many rural areas), they do cover the main existing and potential new employment areas (e.g. Whitehouse Farm, land south of the A47 at King's Lynn). The County Council has, however, prepared a Combined Strategic Flood Risk Assessment (April 2010), which takes account of the information contained with the districts' SFRAs.

7.20 In line with PPS 25, the Sequential Test must be applied to all proposals. Table D.3 of PPS 25 should be referred to, to establish if the vulnerability of the proposed development is appropriate in the Flood Zone and for instances where the Exception Test is also required. Applications in areas of flood risk should also demonstrate that the Sequential Approach has been considered within the site, directing the highest risk elements of the proposal to areas of the site at least risk of flooding.

7.21 A Flood Risk Assessment (FRA) must support all applications in areas of flood risk, and on sites greater than one hectare. The FRA should recognise the unique characteristics of minerals and waste sites which may adversely impact the water environment. These include, but are not limited to, the following:

- consideration of the impacts on surface water and groundwater throughout the various phases of development;
- consideration of the impact on surface water and groundwater of all ancillary features such as bunds, stockpiles and roads;
- demonstration that adequate compensatory storage or drainage works have been provided at all stages of development;
- demonstration that mineral workings will not increase flood risk elsewhere, for example by adversely impacting on flood flows or storage capacity;
- details of how the site has been designed to reduce flood risk, for example with flood storage and attenuation areas;
- demonstration of how the risk of pollution will be minimised should the site flood;
- demonstration that the effectiveness of the floodplain will not be compromised, and, where possible, to reduce flood risk through appropriate design, operation and restoration;
- demonstration that the physical integrity of watercourses has been safeguarded by ensuring adequate margins between a river bank and an excavation.

7.22 When considering development proposals, PPS25 will therefore be applied in accordance with the method prescribed in Policy DM4 below.

Development Management Policy DM4 – Flood risk

The Norfolk district councils' Strategic Flood Risk Assessments will be used to inform decisions for mineral extraction and associated development and waste management facilities where appropriate. In accordance with PPS 25, the Sequential Test and, where necessary, the Exception Test must be applied to all proposals. If it is demonstrated that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed, the applicants must demonstrate that they have applied the Sequential Approach on the site itself. In particular, ancillary uses and access roads should preferably be sited in areas at lowest risk of flooding.

A Flood Risk Assessment is required for all development in Flood Zones 2 and 3, and for sites greater than 1 hectare. Through consultation with the Environment Agency, the County Planning Authority will expect developers, through site layout, design and access, to ensure flood risk is not increased as a result of all mineral extraction and waste management sites.

Borrow pits

7.23 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 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.

7.24 Proposals for new or extensions to reservoirs and incidental mineral extraction, involving removal of mineral off-site, will need to demonstrate that there is a proven need for the proposal. Such need could be demonstrated by, for instance, the Environment Agency agreeing that a proposal for a winter-fill agricultural reservoir or potable water reservoir is justifiable and acceptable.

Development Management Policy DM5 – Borrow pits and agricultural or potable water reservoirs

Borrow pits will be permitted so long as it is demonstrated that:

- The 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
- It will be worked and be restored within the same timescale as the related construction project; and
- Extraction from the site causes less environmental damage than would result from using material from an established source of supply.

Proposals for agricultural reservoirs, potable water reservoirs and incidental mineral extraction involving off-site removal of minerals will be permitted, subject to applicants demonstrating that there is a proven need for the proposal and it complies with the other policies of the Core Strategy.

Household Waste Recycling Centres

7.25 The County Council has a statutory duty, as Waste Disposal Authority, to provide Household Waste Recycling Centres (HWRCs or Civic Amenity sites) for householders within Norfolk to dispose of their waste. There are 19 HWRCs in the county.

7.26 A number of the HWRCs can at times suffer from constraints such as size restrictions and peak-time queues. Modern sites, such as that opened in King's Lynn in 2008, 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 replacement sites, to these higher standards whenever opportunities emerge.

7.27 Major housing and employment growth is planned for Norfolk over the next few decades. Although the exact locations of major new housing developments have not yet been confirmed in adopted district DPDs and the Joint Core Strategy, there is reasonable certainty that substantial new growth will take place to the north-east of Norwich (the Rackheath Eco-Community and in the Catton/Sprowston area), and at Wymondham, Attleborough, Thetford, Great Yarmouth and King's Lynn.

7.28 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, by necessity, be required as the major housing growth planned for Norfolk is delivered.

7.29 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 construct/improve the site. However, as relatively little capital funding is currently available for major HWRC improvement works, all potential opportunities to

secure suitable sites and/or section 106 planning gain through the planning system will be explored.

7.30 Although most potential HWRC improvements or new HWRC locations will be able to meet the tests of policies CS5 and CS6, there may be cases where there is a demand for a HWRC in a certain area, but no suitable sites. In these cases, Policy DM6 will allow an appropriate proposal to be determined positively.

Development Management Policy DM6 – Household Waste Recycling Centres

Where there is a demand for a new or improved Household Waste Recycling Centre in a specific area of Norfolk, but a suitable site in line with Policies CS5 and CS6 cannot be found, they will be acceptable within purpose designed or suitably adapted facilities on other sites, including greenfield sites.

Where justifiable, an appropriate level of developer contributions from new developments will be sought towards the provision of improvements to the Household Waste Recycling Centre network. This will normally be in the form of financial contributions, but in certain locations – particularly the major growth locations identified in adopted district DPDs – suitable sites for new Household Waste Recycling Centres could be requested.

Safeguarding aerodromes

7.31 Advice Notes on the safeguarding of aerodromes have been produced by the Airport Operators' Association and General Aviation Awareness Council. The purpose of safeguarding 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. The safeguarding area regarding potential bird hazards is generally a 13km radius from the centre point of civil and military aerodromes (MPS1, paragraph 19). Other potential risks to aerodromes include buildings and lighting affecting telecommunications and visibility, and tall structures affecting flightpaths.

7.32 A number of aerodromes and technical sites are located within Norfolk, or have consultation areas within Norfolk. Officially safeguarded areas have been established for aerodromes at Norwich International Airport, RAF Marham, RAF Swanton Morley, RAF Honington, RAF Lakenheath and RAF Mildenhall and for other MoD sites at Neatishead, Old Buckenham, Trimingham and Weybourne. The boundary of the safeguarded area for each site is shown on the Proposals Map. The location and boundary of a safeguarded area is determined by the consultee and is not a matter of discretion for the County Council.

Development Management Policy DM7 – Safeguarding aerodromes

Minerals and waste planning applications that are within safeguarded areas will be the subject of consultation with the operator of the aerodrome or technical site.

Proposed developments within 13 km of the centre point of safeguarded aerodromes that have the potential to attract birds, due to landscaping or waste management operations, must be subject to a bird hazard assessment. Where significant risk is identified, developers will be expected to modify their proposals to mitigate this risk and as part of the mitigation it may be necessary to produce and implement a Bird Hazard Management Plan acceptable to the aerodrome concerned.

Restrictions on the height or detailed design of buildings, or on development which might create a bird hazard, may be imposed, and in particular cases where the risk cannot be mitigated satisfactorily, planning permission will be refused.

Landscape and design

7.33 Norfolk is predominantly rural in nature and the integrity and attractiveness of the landscape and the countryside is an important aspect of the quality of life for Norfolk residents and a draw for tourists. As such, it is important that the value of the landscape is protected from unsympathetic and inappropriate minerals and waste developments and, where practicable, that restoration of minerals sites contributes to an improvement in local landscapes.

7.34 Norfolk is home to the Norfolk Coast Area of Outstanding Natural Beauty (AONB) and The Broads, which is a national asset with the status equivalent to a National Park. Protecting these areas will help preserve the unique and rich quality of Norfolk's landscape and natural heritage, as well as contribute to the local economy. The Broads and the Norfolk Coast AONB have the highest status of protection in relation to landscape and scenic beauty (as stated in Planning Policy Statement 7: *Sustainable Development in Rural Areas* (PPS7)). Large mineral extraction and associated development and waste management facilities, within or close to the boundaries of the AONB or The Broads, can have a detrimental impact on the character, economic and social well-being of those areas, and will be acceptable only in exceptional circumstances.

7.35 A landscape unit is a geographically distinct portion of an area that has a particular visual character. Some parts of Norfolk have undergone marked changes that have been inconsistent with the local landscape character and the importance of the local landscape obviously varies; for example, the character of parts of the Wensum and Nar valleys have been changed by extensive mineral extraction and the creation of lakes.

7.36 Outside the nationally designated areas, Norfolk contains diverse landscapes and townscapes which reflect the local variation in physical factors such as geology, soils, building materials, relief and climate, together with other factors such as local land tenure and settlement patterns. These factors give many areas, of both the countryside and the built environment, a distinctive character and contribute to a strong sense of place.

7.37 To help development proposals reflect the distinctive character, the landscape of Norfolk has been described, at a detailed level, in a series of landscape character assessments covering the seven district council areas together with the Broads Authority executive area. These assessments have drawn upon the draft Norfolk Historic Landscape Characterisation, and their purpose is not only to ensure that change and development does not undermine whatever is characteristic or valued about a particular place, but also to consider ways of improving local landscape character.

7.38 The impact of most waste management facilities on the landscape and townscape is not likely to be significantly different to other industrial proposals. By contrast, the nature of landfill and of mineral extraction is that they will almost inevitably have to take place within the open countryside, beyond the existing and planned limits of built-up settlements. The effects of mineral extraction and associated development and waste management facilities on the land therefore normally need to be mitigated, and whilst their operations are temporary, they can have a long term effect on the landscape. As mineral working can only take place where mineral exists, this further reinforces the need to protect the key characteristics of non-designated landscapes to help preserve the unique and rich quality of Norfolk's natural heritage.

7.39 The quality of the built environment and the presence of historic assets contribute to the appeal of Norfolk and as such these assets – including Conservation Areas and listed buildings – should be preserved and enhanced and new development within such areas should be of high quality design that complements the area. The desirability of preserving or enhancing Conservation Areas is therefore to be a material consideration in the handling of development proposals which are outside Conservation Areas but would affect their setting, or views into or out of Conservation Areas.

7.40 Mineral extraction and associated development and waste management facilities proposed within Conservation Areas, or where such development would affect the view or setting of a Conservation Area and/or listed buildings, will be subject to the relevant policies on Conservation Areas and listed buildings in the district councils' Local Plans or LDFs.

7.41 No statutory controls follow from the inclusion of a site in English Heritage's Register of Parks and Gardens of Special Historic Interest. They are, however, an integral part of Norfolk's cultural heritage, local landscape and green infrastructure network. They are also a key component of the tourism industry and provide an important habitat for local biodiversity. As such, these sites are considered to be essential local assets that must be protected from damaging development. In 2008 Norfolk had 52 Historic Parks and Gardens, a large number compared to other counties in the region. Historic Parks and Gardens are an important visitor attraction within the county, with Sandringham, Felbrigg, Oxburgh, Blickling and Holkham Halls amongst the best-known.

Development Management Policy DM8 – Design, local landscape and townscape character

Development will be permitted if it will not harm the conservation of, or prevent the enhancement of, key characteristics of its surroundings with regard to the character of the landscape and townscape, including consideration of its historic character and settlement pattern, taking into account any appropriate mitigation measures.

In line with PPS1, new development, including ancillary landscaping and car parking areas, must promote good design which is compatible with the existing or planned built form of the local area and the surrounding landscape.

Applicants will be expected to show how their proposals will address impacts on landscape and townscape. This would normally be undertaken through a study and evaluation of local landscape and townscape character and an assessment of how the proposal will impact on it, with reference to any relevant landscape character assessment or design guide. Alternatively it could be carried out through a local assessment using a suitable methodology, appropriate to the scale of the development proposed. In particular the potential individual and cumulative effects on the following issues must be addressed:

- landscape and townscape character, e.g. visual intrusion, the layout and scale of buildings and designated spaces, the built fabric, public access; and
- landscape and townscape sensitivity and capacity, e.g. local distinctiveness, condition, historic patterns of development, semi-natural habitats, remoteness and tranquility, and noise and light pollution.

Development will only be permitted where it would be within, or could affect the setting of, nationally or locally registered Historic Parks or Gardens, registered battlefields, conservation areas, listed buildings or the North Norfolk Heritage Coast, where the applicant can demonstrate that the development would not adversely impact on the historic form, character and/or setting of these locations, taking into account any mitigation measures.

Scheduled monuments and archaeological sites

7.42 Planning applications in areas with high potential for archaeological interest, such as sites larger than one hectare and smaller sites adjacent to areas of known archaeological interest, must be accompanied by an archaeological assessment. Norfolk County Council's Historic Environment Service will provide advice on the archaeological potential of proposed development sites.

7.43 Norfolk has a particularly rich archaeological heritage, with more than 50,000 known archaeological sites spanning half a million years of human activity. The county's wide variety of monuments and artefacts ranges from prehistoric burial mounds and flint tools to twentieth-century industrial buildings and World War II defensive structures. In 2008 Norfolk contained 438 Scheduled Monuments, and many more non-scheduled sites.

7.44 The County Planning Authority will avoid allocating sites for mineral extraction and associated development and waste management facilities that would adversely impact on known archaeological sites. Prospective developers

are advised to familiarise themselves with PPS5: *Planning for the Historic Environment* and consult with planning officers and Norfolk Historic Environment Service before planning permission is applied for, so that issues relating to the historic environment may be addressed at the pre-application stage.

7.45 It may be necessary to carry out archaeological investigations, including excavations and recording, prior to development on certain sites and in cases of sites of known archaeological interest or potential, the results of a field evaluation will be required to be submitted with planning applications. The costs of any investigations must be met by the applicant. This, together with the scheme of archaeological excavation, recording and publication, may be arranged and achieved through a legal (S106) agreement. Where recording is not a formal requirement, but there is archaeological potential, a planning condition may be imposed to ensure an appropriate programme of archaeological work is undertaken.

7.46 Where the physical preservation of archaeological features *in situ* is not considered to be justified, the County Planning Authority will need to be satisfied that the operator has made proper provision for the excavation, recording, publication and archiving of the remains. Archaeological excavation and recording should be undertaken before development starts, in accordance with a scheme agreed with the County Planning Authority in consultation with the Council's archaeological advisers, the Norfolk Historic Environment Service.

Development Management Policy DM9 – Archaeological sites

Applicants whose proposals could potentially affect heritage assets, or which are in areas with high potential for archaeological interest, will be required to prepare and submit an appropriate desk-based assessment and, where necessary, a field evaluation with their application to the County Council.

Development will only be permitted where it would not adversely affect the significance of heritage assets (and their settings) of national and/or regional importance, whether scheduled or not. Where proposals for mineral extraction or waste management facilities would affect Scheduled Monuments and/or other assets of national and/or regional importance (including their settings), there will be a presumption in favour of their preservation *in situ*.

Following the results of a site evaluation, development which would potentially affect other heritage assets (not of national or regional importance) could be acceptable if subject to appropriate mitigation measures – such as physical preservation of the archaeology *in situ*, or preservation by record (including appropriate publication and archiving).

Transport

7.47 An assessment of the impacts of the transporting of minerals and associated products to and from quarries, and the movement of waste is a key consideration in determining the acceptability of development proposals.

7.48 The requirement for transport-related assessments will depend on the scale, nature and impact of the development proposed. The first step in producing a Transport Assessment/ or Statement is to agree the scope of the document with the Highway Authority. If a trunk road is likely to be affected by the proposed development, the Highways Agency will also need to agree the scope of the

Transport Assessment/ or Statement. Whilst some planning applications (e.g. a new site office) may have few transport implications, other seemingly minor applications (e.g. a new aggregate bagging plant) may be more significant. Decisions on whether a Transport Assessment/ or Statement is required can therefore only be made on a case-by-case basis.

7.49 A Transport Statement will be required if the impacts of a development are thought to be relatively minor. A Transport Assessment, defined as “an assessment of the effects upon the surrounding area by traffic as a result of a development, such as increased traffic flows, that may require highway and/or safety improvements”, will be required if there are significant highway issues, or if the size of the development and the amount of traffic generated warrants it. Further guidance is included in the County Council’s *Aims and Guidance Notes for Local Highway Authority requirements in Development Management* (December 2010) document and Department for Communities and Local Government/Department for Transport document *Guidance on Transport Assessment* (March 2007).

7.50 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 the Highways Agency, developers will be required to make an appropriate financial contribution to the scheme.

7.51 Where a development could introduce environmental and highway impacts from increased traffic over more than one alternative highway route, a proposal could be made acceptable if the most suitable route (in highways and amenity terms) could be agreed and adopted by the site operator. When determining planning applications for minerals and waste development, section 106 Agreements will therefore be used to secure acceptable routing of HGVs when a routing agreement is necessary.

7.52 Notwithstanding any routing agreements, it is accepted that, in order to allow local deliveries of material, a certain (small) proportion of HGV trips from a minerals or waste site may need to use routes and roads otherwise unacceptable. Although each case will need to be assessed on its merits, the limit for local deliveries will normally be a 5-mile radius.

7.53 Requiring a formal Travel Plan for the majority of minerals and waste sites, many of which will be located in rural areas poorly served by public transport, would be inappropriate. However, sites located within, or adjacent to, settlements may offer more realistic alternatives for non-car transportation to the site. For such sites, a Travel Plan may therefore be desirable. Any requirements for Travel Plans will need to be assessed and then prepared in accordance with the County Council’s latest guidance on the submission of Travel Plans.

Development Management Policy DM10 – Transport

Planning applications for new minerals and/or waste sites, or proposals that generate an increase in traffic movements or traffic impact, must be accompanied by a Transport Statement that demonstrates:

- 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;
- Consideration of sustainable drainage and pollution control measures; and
- Measures to reduce car travel to the site by workers and visitors and encourage walking, cycling and use of public transport.

In addition:

- If, in the opinion of the Highway Authority and/or Highways Agency, development raises significant transport issues, particularly if highway improvements are required, a more detailed Transport Assessment will be necessary. Appropriate details will be required of any highway improvements necessary to mitigate the transport impacts of the development.
- If appropriate, formal measures to promote travel-reduction measures will be secured by a Traffic Management Plan and/or Travel Plan.

Sustainable construction and operations

7.54 Various PPSs (such as the PPS1 supplement on climate change) and other guidance documents support local authorities to promote resource-efficient and energy-efficient buildings, community heating schemes, the use of combined heat and power, small scale renewable and low carbon energy schemes in developments, the sustainable use of water resources and the use of sustainable drainage systems (SuDS) in the management of run-off.

7.55 Although secondary and recycled aggregates are used in Norfolk and help to reduce the demand for primary extraction, there is strong potential for increasing the proportion of minerals supply met by secondary and recycled aggregates.

7.56 The East of England is the driest region in England and water resource availability is limited. As such, water is likely to become increasingly scarce as a result of significant growth pressures coupled to climate change. Water resources and the provision of water abstraction are likely to be significant constraints on development and, as such, the County Council will, where justifiable, require water conservation measures for new development.

7.57 The number of mineral workings and waste management facilities that use robust and auditable Environmental Management Systems, such as ISO 14001,

is low, and this could mean that the highest standards of environmental performance and protection are not being achieved in Norfolk. Environmental Management Systems are a sound way for industry to ensure that the environmental impacts of their processes are considered, minimised as much as possible and subject to year-on-year improvements.

7.58 Mineral extraction and associated development, and waste management facilities can have serious implications for greenhouse gas emissions. The processes involved are almost always energy intensive, and the combustion of fossil fuels to produce this energy leads to CO₂ emissions. Some waste disposal operations, such as landfill, produce significant amounts of methane, which has, molecule for molecule, the highest global warming potential of all major greenhouse gases.

7.59 Reducing the amount of waste landfilled as a result of demolition and construction activities is also a key aim. The Waste & Resources Action Programme's (WRAP) initiative called *The Construction Commitments: Halving Waste to Landfill*, which was launched in 2008, encourages the construction industry to commit to halve the amount of construction waste sent to landfill by 2012, and is strongly supported by the County Council.

Development Management Policy DM11 – Sustainable construction and operations

Sustainable development will be promoted by requiring proposals for mineral extraction and associated development and waste management facilities to demonstrate consideration of:

- Design standards: good design and layout including the BREEAM “Very Good” or “Excellent” standard (or similar where no BREEAM standard exists) in the design of new buildings or plant;
- Sustainable materials: the use of recycled and secondary materials (including aggregates) in the construction of the facility and associated transport infrastructure should be maximised; and
- Water efficient design, including water recycling and sustainable drainage measures.

Operators will be encouraged to adopt an environmental management system (EMS), such as ISO 14001, to minimise the environmental impacts from operations.

Evidence as to how the sustainable demolition, construction and operation of a proposal will be implemented must accompany the planning application. Applicants shall provide information appropriate to the planning application on the following matters:

- a. the type and volume of waste that the development will generate (both through the construction and operational phases);
- b. on-site waste recycling facilities to be provided (both through the construction and operational phases);
- c. the steps to be taken to minimise the use of raw materials (including hazardous materials) in the construction phase through sustainable design and the use of recycled or reprocessed materials;
- d. the steps to be taken to reduce, reuse and recycle waste (including hazardous wastes)

- e. If waste generated during construction is to be disposed of elsewhere, the distance it will be transported and the method of transportation; and
- f. The steps to be taken to ensure the maximum diversion of waste from landfill (through recycling, composting and recovery) once the development is operational.

The use of Site Waste Management Plans for development proposals below the legal threshold of £300,000 is encouraged, as is the usage of the SMARTWaste project tool. Any measures required will be secured through planning conditions and/or planning obligations.

Amenity

7.60 In accordance with the objectives of MPS1, appropriate measures to minimise effects of, noise, dust, and light pollution at minerals sites should be addressed. This may include further opportunities to use “white noise” reversing alarms, conveyor transport as an alternative to dump trucks, dust suppression measures (including Dust Action Plans where appropriate), and speed restrictions. Similar concerns can apply to waste management activities, with odour, bird flocks, pests, litter, noise, dust and light pollution common concerns. In addition, any potential impact on health can be a material consideration where emissions to air would occur.

7.61 Many localised and specific impacts associated with mineral extraction and associated development and waste management facilities can be contained to an acceptable level provided that mitigation measures comprising appropriate design, controls and safeguards are incorporated - MPS2 has guidance. In implementing the above policy, proposals will need to be accompanied by information identifying and addressing the impacts that may arise. Developers should contact the County Planning Authority at an early stage in project design to determine the scope of any assessments that may be required.

Development Management Policy DM12 – Amenity

The protection of amenity for people in close proximity to potential minerals extraction and associated developments and waste management facilities will be a key consideration. Where appropriate, buffer zones, advanced planting and/or screening and other mitigation measures, such as restriction on hours of working and dust suppression measures, will be required.

Development will be permitted only where it can be demonstrated that the scale, siting and design of a proposal is appropriate and that unacceptable impact to local amenity will not arise from the construction and/or operation of a facility.

Air quality

7.62 The National Air Quality Strategy requires the concentration of certain key pollutants (such as fine particulates (PM₁₀) and oxides of nitrogen (NO_x)) to be limited to a safe standard for human health. Norfolk County Council therefore has

a statutory obligation to ensure air quality is maintained at an acceptable level for human health.

7.63 A priority within Norfolk's Sustainable Community Strategy is the promotion of vibrant communities. It is recognised that human health is an integral component of community vibrancy, therefore to deliver the Sustainable Community Strategy it is important for the Core Strategy to protect health, especially where there is a known problem, such as in Air Quality Management Areas (AQMA's).

7.64 In 2010 Norfolk had six AQMA's. Five of the AQMA's have been declared due to nitrogen dioxide (NO₂), caused principally by road traffic; three of these AQMA's are located in Norwich and two are in King's Lynn. One AQMA has been declared near East Wretham due to elevated levels of particulate matter (PM₁₀); investigation by Breckland District Council has demonstrated that the most likely cause of this is wind-blown soil.

Development Management Policy DM13 – Air Quality

Applicants for planning permission will be required to submit information to demonstrate that proposals effectively minimise harmful emissions to air and would not impact negatively on existing Air Quality Management Areas, nor lead to the declaration of a new AQMA. Development will be permitted if adequate measures can be agreed through planning conditions to mitigate potentially harmful air quality impacts to human health.

Planning permission will only be granted in areas nearing AQMA threshold limits if an Air Quality Impact Assessment shows that the development in question and its associated activities would not increase air pollution to unacceptable levels, as defined in the National Air Quality Strategy.

Progressive working and restoration

7.65 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.

7.66 Suitable restoration and after-use must therefore be considered for minerals sites, and for waste facilities of a temporary nature. 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. Norfolk's Sustainable Community Strategy aims to improve biodiversity and enhance local landscape character in the county and this will be emphasised in the consideration of restoration and after-use plans.

7.67 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.

7.68 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.

7.69 Upon cessation of working and restoration of a minerals or waste site, the removal of some local road improvements may be required to meet the provisions outlined in Policy DM14. 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.

Development Management Policy DM14 – Progressive working, restoration and after-use

Proposals for new mineral workings must be accompanied by a scheme for the phased and progressive working and restoration of the site throughout its life.

Restoration and after-use of mineral extraction sites and associated development, and temporary waste management facilities, will be determined on a case-by-case basis, prioritising the most appropriate after-use(s) for each site. This will include consideration of restoration to enhance biodiversity, geodiversity and landscape; support for green infrastructure; potential to restore and/or improve agricultural soil quality, and to facilitate leisure and recreational development (including footpaths).

Preference will be given to after-uses and restoration that support the aims of Norfolk's Sustainable Community Strategy, with particular emphasis on:

- Enhancement to the Norfolk Ecological Network; and
- The creation of new, high-quality, distinctive landscapes.

The after-use and restoration proposal must demonstrate that:

- The appropriate restoration and after-use is both feasible and achievable in the proposed time scales.
- Due consideration has been given to opportunities to improve public access, particularly to implement the County Council's Rights of Way Improvement Plan.
- Due consideration has been given to supporting the aims of the Green Infrastructure Strategy.
- Any important geology or geomorphology on the site will be retained in sample exposures for study purposes.

Cumulative impacts

7.70 Minerals and waste development can, by virtue of the nature and scale of their operations, generate significant environmental and amenity impacts. In particular, noise, dust, HGV movements, air quality, landscape and ecology impacts can all raise concerns.

7.71 It is therefore important to ensure that, where there are a number of potential sites close together, and/or new sites close to existing operations, the potential cumulative impacts are considered fully. Unacceptable cumulative impacts could lead to the requirement to phase developments, and/or impose additional controls over the routing of HGVs.

Development Management Policy DM15 – Cumulative impacts

Where a proposed mineral extraction site, or waste management facility, is considered acceptable (in its own right) but the cumulative impact of a proposal in conjunction with other existing, permitted or allocated minerals extraction sites and/or waste management facilities, in the proximity is considered unacceptable, the proposal may be considered acceptable if phased so that one site follows the completion of the other or it can be demonstrated that the adverse cumulative impacts can be adequately mitigated.

Planning applications must therefore be supported by information demonstrating how proposals relate to other development nearby and details of how any cumulative effects are proposed to be mitigated satisfactorily.

Agricultural land

7.72 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 (grade 1 being the highest quality land) with grade 3 subdivided into two subgrades, 3a and 3b.

7.73 Planning Policy Statement 7: *Sustainable Development in Rural Areas* (PPS7) refers to the protection of best and most versatile agricultural land (BMV, Grades 1, 2 and 3a) from irreversible development. 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 desired. PPS7 (paragraph 28) also makes clear that, when determining planning applications, the presence of BMV agricultural land should be considered alongside other sustainability considerations (biodiversity, landscape etc).

7.74 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, with smaller areas of Grade 4 (“poor quality”) land, located mainly in the drier and more free-draining Brecks.

7.75 Given their nature, most waste management facilities will tend to be suitably located on previously developed land and industrial locations and it is not expected that there will be a great need to locate such uses on agricultural land. However, some waste developments, particularly composting, may be more appropriate on agricultural land as opposed to in industrial areas. Where a waste management facility is proposed on BMV agricultural land, policy DM16 will still apply.

Development Management Policy DM16 – 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, 4 and 5.

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, the County Planning Authority will expect soil and land quality surveys and soil handling and replacement strategies to be submitted (the latter based upon Defra’s ‘Good Practice Guide for Handling Soils’); 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.

8. MONITORING AND IMPLEMENTATION

8.1 The implementation of the Norfolk Minerals and Waste Development Plan Documents must be monitored and reported in order to continue to appraise progress against objectives and indicators. This is a key aspect of the new planning system and is important for the successful delivery of the Spatial Vision and the aims of the Core Strategy.

8.2 By identifying appropriate indicators, the effectiveness of policies and implementation mechanisms can be monitored. This will be carried out through the Annual Monitoring Reports (AMRs), which are compiled in December each year, the production of which is required by the Planning and Compulsory Purchase Act 2004. If, as a result of monitoring, it is concluded that policies in the Core Strategy are not working as intended, a review may be required.

8.3 The AMR will describe any changes to the indicators arising from the implementation of the Minerals and Waste Development Plan Documents, and how the County Council will work to mitigate any adverse effects identified, improve performance, and manage any identified risks. The monitoring process will incorporate the following:

- Geographic Information Systems (GIS);
- Comparison of the current state against baseline indicators;
- Analysis of changes to indicators (positive or negative); and
- Analysis of performance against objectives.

8.4 Table 8 describes the monitoring and implementation regime. It describes which indicators will be reviewed and when this information will be collected. The indicators have been chosen with a view to providing a consistent basis for monitoring the performance of the Core Strategy and Development Management policies against the aims and objectives.

Delivery through Flexibility

8.5 The minimum need for mineral extraction and associated development and waste management facilities will be provided in accordance with the policies in this Core Strategy.

8.6 The Core Strategy recognises the need for flexibility for minor waste facilities, such as small waste transfer stations, and minor mineral operations that can be subject to changing market forces and operations required to meet local needs. These 'minor development' proposals (as identified in Appendix B) will need to satisfy the policies of the Core Strategy, although they will not need to be specifically allocated in the Minerals Site Specific Allocations DPD and the Waste Site Specific Allocations DPD.

8.7 To plan the required infrastructure for sewage and sludge treatment facilities, the waste water management companies are reliant on the outcomes of the district and borough councils' Local Development Frameworks (LDFs) for the location and scale of allocated growth. The LDFs will include detailed Growth Infrastructure Studies and Integrated Water Cycle Strategies that identify

infrastructure needs. As specific locations for growth have yet to be confirmed, a flexible policy is required to ensure that sufficient sewage and sludge infrastructure requirements can be implemented at a later date.

Delivery through Review

8.8 Circumstances may change during the lifetime of the LDF. The monitoring indicators outlined in Table 8 will be reviewed annually in the Annual Monitoring Report to ensure a constant review of policy and site delivery. A full review of the Minerals Site Specific Allocations DPD and Waste Site Specific Allocations DPD will be undertaken five years after adoption of these documents, to reflect market changes and ensure an adequate landbank exists in the county.

Table 8: Monitoring and Implementation Regime

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
Ensure steady and adequate provision of primary, and increasingly recycled and secondary, minerals to meet requirements	CS1 – Minerals extraction	Landbank for sand and gravel, carstone and silica sand Annual production of sand and gravel, carstone and silica sand (tonnes)	Norfolk County Council	Site specific allocations decisions as part of M&WLDF (CS4 and CS5) Development management decisions as part of the M&WDF	Adoption of Allocations DPD On-going throughout time period of Strategy
	CS16 - Safeguarding Minerals and waste Sites and mineral resources	Number of non-minerals and waste planning applications granted by local planning authorities within safeguarded areas unless they would fall within the exclusions set out in Appendix C	Norfolk County Council	Mapping safeguarded and mineral safeguarded areas in M&WLDF	Adoption of Proposals Map
			All Local Planning Authorities	Consultation process on planning applications within the safeguarded areas	On-going throughout time period of Strategy
	CS17 – Use of secondary and Recycled Aggregates	Number of district council local development frameworks containing a policy in accordance with Core Strategy Policy CS17	Norfolk County Council All Local Planning Authorities	District councils' LDFs and procurement practice Norfolk County Council's procurement practice	On adoption of relevant LDFs On-going through procurement practice
Increase the proportion of waste recycling, composting and energy recovery	CS4- New waste management capacity to be provided	New waste management capacity	All Local Planning Authorities	Education and promotion of waste minimisation, recycling and recovery.	On-going throughout time period of Strategy
	CS7 – Recycling, composting, anaerobic digestion and waste	% of municipal waste: <ul style="list-style-type: none"> ▪ recycled ▪ composted 	Norfolk County Council	District Councils through planning obligations	

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
	transfer stations	<ul style="list-style-type: none"> ▪ energy recovery 	Waste management companies	Development management decisions as part of M&WLDF	
	CS8 – Residual waste treatment facilities	% of waste received at waste management facilities in Norfolk that is recycled/recovered			
	CS9 - Inert waste landfill				
	CS10 – Non-hazardous and hazardous waste landfill	Renewable energy generation capacity at waste management facilities (MW)		District councils' LDFs and procurement practice	
	CS13 – Climate change and renewable energy generation				
	CS17 – Use of secondary and recycled Aggregates	Quantity of recycled and secondary aggregate produced in Norfolk			
	DM11 – Sustainable Construction and Operations				
Minimise the amount of waste sent to landfill	CS4 – new waste management capacity to be provided	% of municipal waste landfilled	Norfolk County Council	Education and promotion of waste minimisation, recycling and recovery	On-going throughout time period of Strategy
	CS7 – Recycling, composting, anaerobic digestion and waste transfer stations	Waste input to non-hazardous landfill (tonnes)	Waste collection authorities	Development management decisions as part of M&WLDF	
	CS8 – Residual waste treatment facilities	Waste input to hazardous landfill (tonnes)	Waste management companies	Monitoring and enforcement	
		Waste input to inert landfill			

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
	CS9 – inert waste landfill	(tonnes)	Environment Agency		
	CS10 – Non-hazardous and hazardous waste landfill	Inert, non-hazardous and hazardous landfill capacity (cubic metres and years) Quantity of London waste disposed of in Norfolk (tonnes)			
Ensure mineral extraction and associated development and waste management facilities takes place as close as reasonably possible to where these resources are used, and that waste is treated as close as reasonably possible to where it is generated	CS2 – General locations for mineral extraction and associated activities	Location of allocation sites and distance from main settlements and markets towns. Distance of mineral extraction and associated development and waste management facilities from main settlements and market towns for which planning permission is granted	Norfolk County Council Landowners and mineral and waste developers	Site specific allocations decisions as part of M&WLDF	Adoption of Allocations DPD
	CS5 – General location of waste management facilities			Encouragement of landowners/ developers to submit sites in preferred areas of the county	On-going throughout time period of Strategy
	CS9 – Inert waste landfill			Development management decisions as part of M&WLDF	
	CS10 – Non-hazardous and hazardous waste landfill				

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
Increase the use and availability of sustainable transport in accessing waste and/or minerals facilities	CS15 – Transport	Number of minerals and waste planning applications approved to utilise transport methods via road/rail/or water	Norfolk County Council	Site specific allocations decisions as part of M&WLDF	Adoption of allocations DPD
	DM10 –Transport		Network Rail	Development management decisions as part of M&WLDF	
			Broads Authority	Monitoring and enforcement	
			Highways Agency	Gain support of non-road transport modes from relevant authorities	On-going throughout time period of Strategy
			Other relevant transport authorities		
Mitigate the adverse traffic impacts of mineral extraction and associated development and	CS15 - Transport	Number of reported accidents involving HGVs	Norfolk County Council	Development management decisions as part of M&WLDF	Adoption of Allocations DPD
		Number of mineral and/or waste planning	Highways Agency	Site specific allocations decisions as part of M&WLDF	On-going throughout time

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
waste management facilities	DM10 - Transport	<p>applications granted that include direct access to corridors of movement and/or involve highway infrastructure upgrades/improvements.</p> <p>Number of substantiated complaints concerning lorry traffic</p>		<p>Monitoring and enforcement</p> <p>Cooperation and support of Highways Agency in its development management decisions</p>	period of Strategy
Minimise the impact of mineral extraction and associated development and waste management facilities on the environment by promoting innovative opportunities to enhance and protect biodiversity, landscape and geodiversity, water supply, the wider countryside, and cultural heritage	DM1 – Nature conservation	<p>Number of minerals and waste sites within 5km of a:</p> <ul style="list-style-type: none"> - SAC - SPA - Ramsar site <p>Number of minerals and waste sites within 2km of:</p>	<p>Norfolk County Council</p> <p>Environment Agency</p>	<p>Site specific allocations decisions as part of M&WLDF</p> <p>Development management decisions as part of M&WLDF</p>	<p>Adoption of Allocations DPDs</p> <p>On-going throughout time period of Strategy</p>
	CS14 – Environmental protection	<p>- a SSSI</p> <p>- a National Nature Reserve</p> <p>Number of minerals and waste sites adjacent to:</p> <ul style="list-style-type: none"> - a Local Nature Reserve - County Wildlife Site - RIGS. <p>Number of minerals and</p>			

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time Scale
		<p>waste sites within the AONB</p> <p>Number of minerals and waste sites within the Heritage Coast area</p> <p>Number of minerals and waste sites within the Broads Authority Area</p>			
	DM2 – Core river valleys	Number of minerals and waste sites within a core river valley		Development management decisions as part of M&WLDF	On-going throughout time period of Strategy
	DM8 - Design, local landscape and townscape character	<p>Number of minerals and waste planning applications refused on grounds of design or landscape</p> <p>Number of minerals and waste sites in or adjacent to a historic park or garden</p> <p>Number of minerals and waste sites within or adjacent to Conservation Areas</p> <p>Number of minerals and waste sites adjacent to</p>		<p>Development management decisions as part of M&WLDF</p> <p>Monitoring and enforcement</p>	

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
		listed buildings			
	DM9 – Archaeological sites	Number of archaeological sites adversely affected by mineral extraction and associated development or waste management facilities		Development management decisions as part of M&WLDF	
	DM14 – Progressive working, restoration and after-use	Area of BAP habitat lost to or created by minerals extraction and associated development and waste management facilities % of minerals workings covered by progressive restoration schemes		Development management decisions as part of M&WLDF Monitoring and enforcement	
	DM11 – Sustainable construction and operations	Number of applications demonstrating a good standard of design, use of sustainable materials and water efficient design			
Minimise soil and water contamination and flood risk arising from minerals and waste activities	CS14– Environmental protection	Number of minerals and waste sites within Groundwater Source Protection Zone 1	Norfolk County Council Minerals and waste	Site specific allocations decisions as part of M&WLDF	Adoption of Allocations DPDs.

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
	DM3 – Groundwater and Surface Water	Groundwater and surface water quality	management companies Environment Agency	Development management decisions as part of M&WLDF	On-going throughout time period of Strategy
	DM4 - Flood Risk	Number of minerals and waste planning permissions granted contrary to the advice of the Environment Agency on flood risk grounds	Norfolk County Council	Site specific allocations decisions as part of M&WLDF	Adoption of Allocations DPDs
	CS13 – Climate change and renewable energy generation		Environment Agency	Development management decisions as part of M&WLDF Advice from Environment Agency	On-going throughout time period of Strategy
Reduce methane and carbon dioxide emissions from mineral extraction and associated development and waste management facilities Contribute to the renewables obligation and regional targets for renewable energy by increasing the	CS13 – Climate change and renewable energy generation	% of methane Emissions from landfill sites escaping into the atmosphere	Norfolk County Council	Development management decisions as part of M&WLDF	On-going throughout time period of Strategy
	CS8 – Residual waste treatment facilities	Percentage of methane Emissions from landfill sites used in power generation	Environment Agency	Monitoring and enforcement	
	DM11 - Sustainable construction and operations	Renewable energy generation capacity at waste management facilities (MW)	Waste management companies Minerals operators		

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
proportion of energy recovery from waste		Quantity of waste managed through processes generating renewable energy Number of minerals and waste operations securing at least 10% of their energy on site from renewable or low-carbon sources			
Ensure that minerals and waste facilities and transportation do not lead to AQMAs and that emissions are reduced.	CS15 – Transport	Number of minerals and waste sites within an AQMA	Norfolk County Council	Site specific allocations decisions as part of M&WLDF	On-going throughout time period of Strategy
	DM13 – Air quality	Number of AQMAs within Norfolk	Environmental Health	Development management decisions as part of M&WLDF	
Mitigate adverse impacts on amenity resulting from mineral extraction and associated development and waste management facilities	CS14 – Environmental protection	Number of substantiated complaints about amenity impacts from minerals and waste	Norfolk County Council	Site specific allocations decisions as part of M&WLDF	Adoption of Allocations DPDs.
	DM12 - Amenity				
	DM10 - Transport		Environmental Health	Development management decisions as part of M&WLDF	On-going throughout time period of Strategy
	CS15 - Transport				
	DM8 – Design, local landscape and townscape character		Environment Agency	Monitoring and enforcement	
	DM15 – Cumulative impacts				

Objective	Policy	Indicator(s)	Agencies responsible	Implementation mechanism	Time-Scale
	CS7 – Recycling, composting, anaerobic digestion and waste transfer stations	Number of non-minerals and waste planning applications granted by local planning authorities within safeguarded areas	Norfolk County Council All Norfolk Local Planning Authorities	Consultation process on planning applications within the safeguarded areas Mapping safeguarded sites and mineral consultation areas in M&W LDF and in District Council LDFs	Adoption of proposals map
	CS12 – Whitlingham WWTW				
	CS11- Waste water / sewage infrastructure and treatment facilities				
	CS16 – Safeguarding minerals and waste Sites and mineral resources				

APPENDIX A: FORECAST WASTE QUANTITIES FOR NORFOLK

Annual tonnages of waste requiring management, based on forecast arisings figures for C&I and London waste in the evidence base for the proposed revision to the East of England Plan and Norfolk County Council's own MSW arisings forecasts

Table A.1

Year	MSW	C&I	London waste	Total waste
2009/10	395,412	1,000,000	116,000	1,511,412
2010/11	395,412	988,000	105,000	1,488,412
2011/12	395,412	983,000	94,000	1,472,412
2012/13	400,355	978,000	83,000	1,461,355
2013/14	405,359	976,000	73,000	1,454,359
2014/15	410,426	973,000	62,000	1,445,426
2015/16	415,556	970,000	51,000	1,436,556
2016/17	420,750	966,000	48,000	1,434,750
2017/18	426,009	962,000	45,000	1,433,009
2018/19	431,334	958,000	42,000	1,431,334
2019/20	436,726	954,000	40,000	1,430,726
2020/21	440,875	951,000	37,000	1,428,875
2021/22	445,063	949,000	34,000	1,428,063
2022/23	449,291	947,000	31,000	1,427,291
2023/24	453,559	945,000	28,000	1,426,559
2024/25	457,868	944,000	25,000	1,426,868
2025/26	462,218	943,000	22,000	1,427,218
2026/27	466,609	942,000	19,000	1,427,609
TOTAL	7,708,234	17,329,000	955,000	25,992,234

RECOVERY, RECYCLING AND LANDFILL REQUIREMENTS

Table A.2

Year	MSW & C&I recycling/composting	MSW & C&I treatment capacity	MSW & C&I recovery	MSW & C&I & imported London waste to landfill	Remaining non-hazardous landfill capacity
2009/10	569,028	150,000	113,000	829,384	6,719,596
2010/11	584,028	150,000	106,000	798,384	5,921,212
2011/12	607,559	200,000	153,000	711,853	6,099,359
2012/13	626,866	200,000	151,000	683,489	5,415,870
2013/14	638,202	200,000	160,000	656,157	4,759,713
2014/15	658,567	368,859	293,087	493,772	4,265,941
2015/16	683,082	702,484	290,987	462,487	3,803,454
2016/17	693,558	693,192	301,154	440,038	3,363,416
2017/18	713,065	674,944	302,355	417,589	2,945,827
2018/19	730,993	658,341	306,873	393,468	2,552,359
2019/20	750,668	640,058	308,046	372,012	2,180,347
2020/21	770,726	621,147	308,718	349,131	1,831,216
2021/22	780,804	613,259	319,407	327,852	1,503,364
2022/23	800,902	595,389	321,111	305,278	1,198,086
2023/24	811,019	587,540	332,832	282,708	915,378
2024/25	831,156	570,712	335,570	260,142	655,236
2025/26	842,314	562,904	347,323	237,518	417,718
2026/27	862,492	546,117	350,094	215,023	202,695
TOTAL	12,955,029	8,734,946	4,800,557	8,236,285	

A.3 Recycling/compost assumptions

Norfolk's household waste recycling rate was 43.48% in 2009/10 and is planned to increase to 46.98% (a 2.5% increase) in 2011/12 when kitchen waste collection services (for composting/AD) are expected to be expanded by the district councils. The recycling/composting rate is expected to increase to 48% in 2015/16 and to increase to 50% in 2018/19. The recycling/composting rate is then assumed to remain at 50% for the rest of the Core Strategy period.

Recycling/composting/source-segregated-AD target for C&I starting at 40% in 2009/10 increasing up to 67% in 2026/27 in line with the calculations used for the review of the East of England Plan.

No recycling/composting of imported London waste is expected.

A.4 Treatment assumptions

In 2009/10 and 2010/11 no additional treatment of MSW will be expected as Norfolk will not have the facilities in place for additional treatment. From 2011/12 up to and including 2013/14, 50,000 tonnes of the MSW arisings that are not recycled/ composted/ source- segregated-AD are projected to be treated. From 2014/15 all MSW that has not been recycled/ composted /source-segregated-AD will be treated because the Landfill Directive requires waste to be pre-treated prior to landfill.

From 2009/10, up to and including 2014/15 150,000 tonnes of the C&I waste arisings that are not recycled/composted/source-segregated-AD will be treated. This is based on the minimum quantity of C&I waste that will need to be recovered based on the evidence for the revised East of England Plan. Prior to 2015/16 is considered too early for Norfolk to have the facilities to pre-treat all waste at central facilities, in addition to pre-treatment at the source of waste production. From 2015/16 all C&I waste that has not been recycled/ composted/ source-segregated-AD will be treated

No imported London waste will be treated.

A.5 Recovery assumptions

80% of the MSW treated will be recovered and diverted from landfill

The evidence for the revision to the East of England Plan included maximum quantities of C&I waste to be landfilled. Therefore all waste that is not recycled/composted/source- segregated-AD or landfilled will be recovered. 11% of waste will be recovered in 2009/10 increasing to 17% in 2025/26. The percentage of waste recovered does not increase significantly over the plan period because the main increase is in recycling/ composting/ source-segregated-AD.

No recovery of imported London waste is expected.

A.6 Landfill assumptions

All imported London waste is assumed to be landfilled. All MSW that is not recycled or recovered is landfilled. All C&I waste that is not recycled or recovered is landfilled.

Non-hazardous landfill capacity at 31/03/2009 is 8,482,000m³. 11% of non-hazardous landfill capacity will be taken up by inert waste, leaving 7,548,980m³ voidspace for non- hazardous waste. Norfolk County Council's Planning (Regulatory) Committee resolved to grant planning permission in October 2010, (subject to conditions and the signing of a section 106 legal agreement) for an extension to Attlebridge landfill site with 1,000,000 tonnes capacity. Therefore, taking into account 11% of the capacity potentially being taken up with inert waste, this provides 890,000 cubic metres additional capacity in 2011/2012. When the Attlebridge extension capacity is added to the existing landfill capacity (as at 31/03/2009) the total landfill capacity in Norfolk for non-hazardous waste is 8,438,980 tonnes/cubic metres.

APPENDIX B: NON-STRATEGIC DEVELOPMENT AND SEWAGE/SLUDGE FACILITIES

B.1 'Non-strategic development' means that the site for a proposed development does not need to be allocated in the relevant allocations document, but will be assessed as part of the development management process at the planning application stage.

B.2 An application for 'Non-strategic development' will demonstrate that the proposal meets the following criteria:

- Demonstrates a local need for the facility in the area without compromising the viability of large or medium sized development serving a wider area
- Located in close proximity to the local market it serves
- Meet the policies in this plan

B.3 The criteria for 'Non-strategic development' are as follows:-

Waste Management Facilities

The following waste management facilities with less than 10,000 tonnes per annum throughput capacity

- Household waste recycling centres
- Outdoor composting
- Inert recycling
- Inert landfill
- Thermal, physical, chemical or biological treatment, including transfer.

Sewage and Sludge Facilities

Development for sewage and sludge treatment facilities as identified in the relevant Growth Infrastructure Studies and Integrated Water Cycle Strategies (that identify infrastructure needs for the area).

Minerals Extraction and Associated Development

Proposals for 'Other Minerals' including peat, clay and chalk will be permitted in accordance with the implementation provisions outlined in Chapter 5.

- Exploratory drilling and testing that is not covered by permitted development.
- Mineral extraction and associated developments that involve the processing of recycled and secondary aggregates, including ancillary facilities on existing mineral workings and waste disposal sites where the proposal:
 - would not substantially prolong the life of the mineral working or landfill operations; or
 - would not involve permanent built facilities;

Provided that the plant and ancillary development will be removed on cessation of associated workings and the import of materials for processing or sale will not prolong the life of the site operation or add to the environmental disturbance.

APPENDIX C: SAFEGUARDING CONSULTATION PROCEDURE

C.1 In accordance with Core Strategy Policy CS16 the district and borough councils are requested to consult the County Planning Authority on planning applications that may prejudice the future use of the Mineral Safeguarding Areas and the existing or proposed minerals and waste facilities shown on the Proposals Map. In order to minimise the number of consultations, 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.

C.2 The following developments will be excluded from the consultation process:-

1. Infilling in towns and villages.
2. Householder applications.
3. Advertisement applications.
4. Reserved matters applications.
5. Applications for new or improved accesses.
6. Applications for listed building consent.
7. 'Minor' extensions/alterations to existing uses/buildings.
8. 'Temporary' development (for up to five years).
9. Agricultural buildings adjacent to existing farmsteads.
10. 'Minor' works such as fences and bus shelters.
11. Amendments to current permissions.
12. Extensions to existing settlements of no greater than 1 hectare.

APPENDIX D: REPLACEMENT OF 'SAVED' LOCAL PLAN POLICIES

The following table sets out the policies in this Development Plan Document which are intended to supersede the existing saved Minerals Local Plan and Waste Local Plan policies.

Table D.1

Norfolk Minerals Local Plan 2004 Policy Reference	Equivalent policy or policies in the Core Strategy
MIN 1 Landscape	Policy not saved
MIN 2 Landscape	Replaced by Policies: CS14 – Environmental protection DM2 – Core river valleys, DM8 - Design, local landscape and townscape character.
MIN 3 Landscape	Replaced by Policy DM8 – Design, local landscape and townscape character.
MIN 4A Nature conservation	Replaced by Policies: CS2 – General locations for mineral extraction and associated facilities CS14 – Environmental Protection
MIN 4B Nature conservation	No policy being taken forward to avoid duplication of PPS9
MIN 5 Nature conservation	Replaced by Policies CS14 – Environmental protection DM1 – Nature conservation
MIN 6 Amenity	Replaced by Policies CS14 – Environmental protection DM12 – Amenity
MIN 7 Archaeology and history	Replaced by Policies CS14 – Environmental protection DM9 – Archaeological sites.
MIN 8 Archaeology and history	Replaced by Policies CS14 – Environmental protection DM9 – Archaeological sites
MIN 9 Traffic	Replaced by Policies CS15 – Transport, DM10 – Transport.
MIN 10 Water Resources	Replaced by Policies: CS14 – Environmental protection DM6 - Groundwater and surface water. DM4 – Flood risk
MIN 11 Agriculture	Replaced by Policies CS14 – Environmental protection DM16 - Soils

Norfolk Minerals Local Plan 2004 Policy Reference	Equivalent policy or policies in the Core Strategy
MIN 12 Over concentration	Replaced by Policy DM15 – Cumulative impacts
MIN 13 Record of the operator	No policy being taken forward because this is not a material planning consideration due to planning permission relating to the land and not the operator.
MIN 14 Aggregate landbank	Replaced by Policy CS1 – Minerals extraction.
MIN 15 Phasing	Replaced by Policy CS1 – Minerals extraction.
MIN 16 Silica sand landbank	Replaced by policy CS1 – Minerals extraction.
MIN 17 Investigation areas	Replaced by Policy CS16 – Safeguarding mineral and waste sites and mineral resources. Also replaced by the Mineral Site Allocations DPD.
MIN 18 Safeguarding mineral resources	Replaced by Policy CS16 - Safeguarding mineral and waste sites and mineral resources.
MIN 19A Recycled/secondary aggregate	Replaced by Policies CS6 – General waste management considerations. CS7 – Recycling, composting and waste transfer stations
MIN 19B Recycled/secondary aggregate	Replaced by Policy CS6 – General waste management considerations.
MIN 20 Marine dredged aggregates	No policy being taken forward because Norfolk County Council is not the planning authority for marine dredged aggregates.
MIN 21 Imported material	Policy not saved
MIN 22 Rail depots	Replaced by Policy CS16 – Safeguarding mineral and waste sites and mineral resources.
MIN 23 Alternative transport	Replaced by Policy CS15 – Transport
MIN 24 Industrial plant	No policy being taken forward. Planning applications for this type of operation will be assessed against all the relevant policies in the Strategy.
MIN 25 Borrow pits	Replaced by Policy DM5 – Borrow pits and agricultural or potable water reservoirs
MIN 26 Mineral exploration	No policy being taken forward. Exploratory testing is often permitted development. Where planning permission is required for this activity, planning applications will be assessed against the all the relevant policies in the Strategy.
MIN 27 Oil and gas	Policy not saved
MIN 28 Pentney area policy	Policy not saved
MIN 29 Blackborough End area policy	Policy not saved
MIN 30 Leziate area policy	Policy not saved
MIN 31 Bittering/ Bilney/ Beeston area policy	Policy not saved
MIN 32 Costessey area policy	Policy not saved
MIN 33 Planning applications	Policy not saved

Norfolk Minerals Local Plan 2004 Policy Reference	Equivalent policy or policies in the Core Strategy
MIN 34 Environmental Assessment	Policy not saved
MIN 35 Planning considerations	No specific policy being taken forward. Planning applications will be determined against the relevant policies within the Strategy, as well as national policies.
MIN 36 Planning control	Replaced by Policies CS14 – Environmental protection DM14 – Progressive working, restoration and after-use.
MIN 37 Restoration	Replaced by Policy DM14 – Progressive working, restoration and after-use.
MIN 38 Nature conservation restoration	Replaced by Policies: DM14 – progressive working, restoration and after-use. DM1 – Nature conservation CS14 –Environmental protection
MIN 39 Conditions	No policy being taken forward. Guidance is contained in Minerals Policy Statement 2 and Minerals Planning Guidance 2 on planning conditions.
MIN 40 Enforcement	No specific policy being taken forward, reliance being placed on Planning Policy Guidance 18.
MIN 41 Mineral damaged land	Policy not saved
MIN 42 Mineral review	Policy not saved
MIN 43 Interim development orders	Policy not saved
MIN 44 Implementation	Policy not saved

Norfolk Waste Local Plan 2000 Policy Reference	Equivalent policy or policies in the Core Strategy
WAS 1 Hierarchy framework	Replaced by Policies: CS8 – Residual waste treatment facilities CS10 – Non-hazardous and hazardous landfill CS13 – Climate change and renewable energy generation
WAS 2 Resource recovery	Replaced by Policies: CS8 – Residual waste treatment facilities CS13 – Climate change and renewable energy generation
WAS 3 Industrial Land and brownfield sites	Replaced by Policy CS6 – General waste management considerations
WAS 4 Countryside protection	Replaced by Policies: CS6 – General waste management considerations CS14 – Environmental protection DM8 – Design, local landscape and townscape character
WAS 5 Incineration	Replaced by Policies: CS8 – Residual waste treatment facilities CS13 – Climate change and renewable energy generation
WAS 6 Landfill	Replaced by Policies: CS9 – Inert waste landfill, CS10 – Non-hazardous and hazardous waste landfill
WAS 7 Safeguarding sites	Replaced by Policy CS16 – Safeguarding mineral and waste sites and mineral resources
WAS 8 Landscape	Policy not saved
WAS 9 Landscape	Replaced by Policies: CS14 – Environmental protection, DM2 – Core river valleys, DM8 – Design, local landscape and townscape character.
WAS 10 Landscape	Replaced by Policies CS14 – Environmental protection DM8 – Design, local landscape and townscape character.
WAS 11 Nature conservation	Replaced by Policies: CS14 – Environmental Protection CS5 – General location of waste management facilities
WAS 12 Nature conservation	Replaced by Policies CS14 – Environmental protection DM1 – Nature conservation
WAS 13 Amenity	Replaced by Policies CS14 - Environmental protection DM10 – Amenity
WAS 14 Archaeology	Replaced by Policies: CS14 – Environmental protection DM9 – Archaeological sites
WAS 15 Archaeology	Replaced by Policies: CS14 – Environmental protection DM9 – Archaeological sites
WAS 16 Traffic	Replaced by Policies: CS15 – Transport DM10 – Transport
WAS 17 Airport	Replaced by Policy DM7 – Safeguarding aerodromes.

Norfolk Waste Local Plan 2000 Policy Reference	Equivalent policy or policies in the Core Strategy
Safeguarding	
WAS 18 Water resources	Replaced by Policies: CS14 – Environmental protection DM3 – Groundwater and surface water
WAS 19 Water resources	Replaced by Policy DM4 – Flood risk.
WAS 20 Agriculture	Replaced by Policies: CS14 – Environmental protection DM16 – Soils
WAS 21 Record of the operator	No policy being taken forward because this is not a material planning consideration due to planning permission relating to the land and not the operator.
WAS 22 Public waste recycling centres	Replaced by policy DM6 - Household waste recycling centres
WAS 23 Scrapyards	Replaced by Policies: CS6 – General waste management considerations CS7 – Recycling, composting, anaerobic digestion and waste transfer stations
WAS 24 Sewage and sludge	Replaced by Policy CS11 – Waste water / sewage infrastructure and treatment facilities
WAS 25 Safeguarding	Replaced by Policy CS16 – Safeguarding mineral and waste sites and mineral resources.
WAS 26 Clinical waste	Replaced by Policies CS6 – General waste management considerations CS7 – Recycling, composting, anaerobic digestion and waste transfer stations
WAS 27 Nuclear and radioactive waste	No policy being taken forward because proposals for this type of waste, that fall under the planning remit of Norfolk County Council, will be assessed against all the relevant policies in the Strategy and appropriate national policies.
WAS 28 Inert waste: major projects	Replaced by Policy CS9 – Inert waste landfill.
WAS 29 Mining of waste	No specific policy being taken forward, proposals for this type of operation will be assessed against all the relevant policies in the Strategy
WAS 30 Transport	Replaced by Policy CS15 – Transport
WAS 31 Information required	Policy not saved
WAS 32 Environmental assessments	Policy not saved
WAS 33 Planning considerations	No specific policy being taken forward. Planning applications will be determined against the relevant policies within the Strategy, as well as national policies.
WAS 34 Planning control	Replaced by Policies: CS14 – Environmental protection DM14 – Progressive working, restoration and after-use.
WAS 35 Planning control	Replaced by Policies CS14 – Environmental protection DM14 – Progressive working, restoration and after-use.
WAS 36 Conditions and legal agreements	No policy being taken forward. Guidance is contained in Planning Policy Statement 10 on planning

Norfolk Waste Local Plan 2000 Policy Reference	Equivalent policy or policies in the Core Strategy
	conditions.
WAS 37 Site monitoring and enforcement	No specific policy being taken forward, reliance being placed on Planning Policy Guidance 18.
WAS 38 Plan review	Policy not saved
WAS 39 Plan review	Policy not saved

APPENDIX E: ENVIRONMENT AGENCY INDICATIVE RESPONSES TO POTENTIAL NORFOLK LANDFILL LOCATIONS

E.1 The map depicted on the following page, as supplied by the Environment Agency, shows indicative areas for landfill or landraise development. The following information applies to the map:

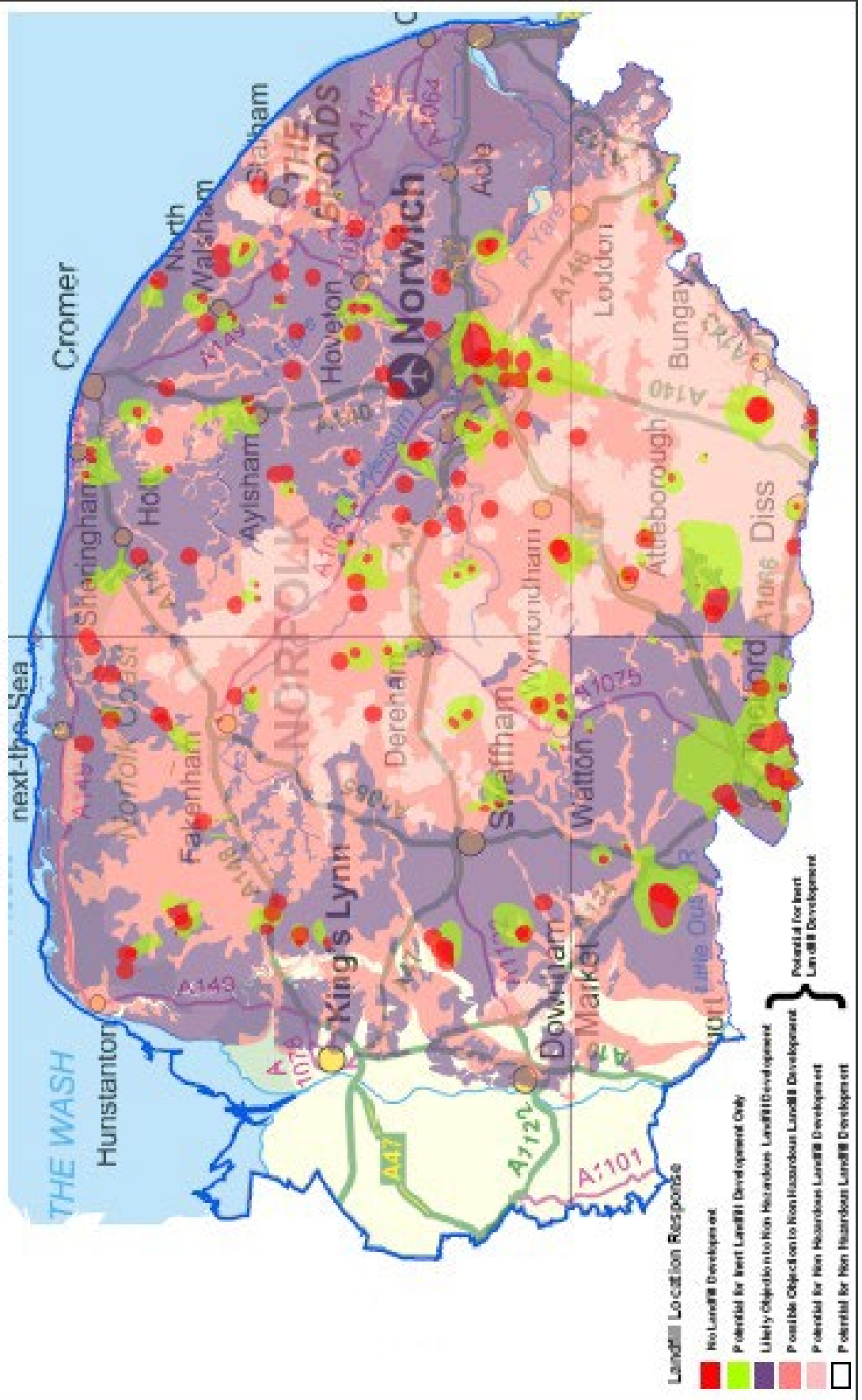
1. No inert or non-hazardous landfill/landraise within a SPZ1. This area is indicated red on the map.
2. Potential inert landfill/landraise within SPZ2. No non-hazardous landfill/landraise. This area is indicated green on the map.
3. The area shaded purple is Major Aquifer – High Vulnerability and Minor Aquifer- High Vulnerability. The Environment Agency is making a local decision that the minor aquifer status for Crag needs to be adjusted to reflect its local importance to water resources. This is in line with RGN 3. This area defines the potential inert landfill/landraise and areas where the Environment Agency would most likely object to a non-hazardous landfill/landraise. A level 3 Hydrogeological Risk Assessment would be required for any non-hazardous site allocation before the Environment Agency could consider removing an objection.
4. The area shaded in dark pink is Major Aquifer – Intermediate vulnerability and Minor Aquifer- Intermediate vulnerability using the same resource logic for point three. This area defines the potential inert landfill/landraise and areas where the Environment Agency could object to a non-hazardous landfill/landraise. Any non-hazardous site allocation would need to be accompanied by a quantitative risk assessment supported by minor intrusive investigations to confirm the presence of a natural geological boundary.
5. The area shaded in light pink is Major Aquifer – Low Vulnerability and Minor Aquifer – low vulnerability using the same logic for point three. Also this area includes white or missing area that equates to non-aquifers. This area defines the potential inert landfill/landraise and areas where the Environment Agency could see potential for non-hazardous landfill/landraise. Any non-hazardous site allocation would need to be accompanied by a quantitative risk assessment to describe the presence of a natural geological boundary.

Map D has been identified as a coarse screening tool in which the Environment Agency has confidence that their position on this matter can be interpreted. The Environment Agency has concerns regarding the effectiveness of the Aquifer Vulnerability mapping in context with solid and drift geology, but on a large scale map these errors are generally small. The Environment Agency cannot differentiate the Minor Aquifer into Crag and Alluvial deposits. This means that there is a slightly increased area to the indicative map where the Environment Agency would or could object to the site allocation. However, the alluvial areas are likely to be associated with high water tables and this in itself could be a valid reason for refusal. Therefore, the bulk description of Minor aquifer is acceptable.

It should be noted that this is an indicative map and that the Environment Agency reserves the right to object to a planning application irrespective of allocations made at the Waste Sites Allocation Development Plan document stage.

Environment Agency

Indicative Responses to Proposed Norfolk Landfill Locations



APPENDIX F: GLOSSARY

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.

After-use The use (usually for agriculture, forestry or amenity) that land is put to once restored following waste disposal or mineral working.

Aggregates Materials such as sand and gravel and crushed rock, used in the construction industry for purposes such as concrete, mortar or roadstone.

Air Quality Management Areas An Air Quality Management Area is declared by a local authority where the air quality objective for one or more of nine specified pollutants is unlikely to be met by the specified date as determined by assessment. Part IV of the Environment Act 1995 places a statutory duty on local authorities to periodically review and assess the air quality within their area. This involves consideration of present and likely future air quality against air quality standards and objectives. The latest Air Quality Strategy for England, Scotland, Wales and Northern Ireland was published by the UK Government and devolved administrations in July 2007.

Amenity Amenity is any tangible or intangible benefits of or relating to a property, especially those which increase the attractiveness or value of the property or which contributes to its comfort or convenience. This could include tangible benefits such as a park, or intangible such as a 'nice view'.

Ancient Woodland An area of woodland which has had a continuous history of tree cover since at least 1600.

Annual Monitoring Report Records progress in implementing the Local Development Scheme and the performance of policies against targets in Development Plan Documents. Indicates what action an authority needs to take if it is not on track or policies needs to be revised/ replaced.

Apportionment Norfolk's share of the waste management capacity to be provided and Norfolk's share of the aggregate provision; apportioned through the East of England Aggregates Working Party.

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 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.

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)

Biodiversity Action Plan A framework for conserving, enhancing and restoring, biological diversity. Biodiversity is defined in Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS9) as "the variety of life in all its forms."

Brownfield land Also known as “previously-developed land” and defined in Annex B to PPS3 (Planning Policy Statement 3: Housing). It is land which is or was occupied by a permanent structure, including the curtilage of the developed land and associated fixed surface infrastructure. The definition includes defence buildings, but 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 parks, recreation grounds and allotments, which, although it may feature paths, pavilions and other buildings, has not been previously developed.
- 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 (to the extent that it can reasonably be considered as part of the natural surroundings).

Carbon footprint Carbon footprint is a measure of the amount of carbon dioxide or CO₂ emitted through the combustion of fuels; in the case of an organisation, business or enterprise, as part of their everyday operations; in the case of an individual or household, as part of their daily lives; or a product or commodity in reaching market.

Carstone Carstone is a ferruginous brown sandstone quarried in West Norfolk. It is used primarily as fill or hoggin. When the iron content is high it can meet higher specifications. Traditionally in West Norfolk it was used as a building material.

Climate change A change of climate caused by the greenhouse gas effect whereby pollutants, predominantly carbon dioxide but also methane and others, trap the heat from the sun. Generally accepted now to be caused by human activity. Considered to be an addition to natural climate change variations.

Community Strategy or Sustainable Community Strategy Wide ranging strategy for a geographical area (e.g. Norfolk) introduced by the Local Government Act 2000. Aim is to improve social, economic and environmental well-being. Focuses on the needs and aspirations of the area's community and is developed, adopted and delivered by a range of agencies and organisations (in the public, private and voluntary sectors) in a partnership approach with a view to achieving synergistic working towards common goals. The partnership is formally known as the Local Strategic Partnership. Modified in the 2006 Government White Paper to focus on 'sustainability'. Development Plans should aim to give spatial expression to the strategy. Local Area Agreements comprise the action plan for the strategy. Overseen by the Local Strategy Partnership, or, in the case of Norfolk Ambition, the County Strategic Partnership.

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 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.

Contaminated land Land that may retain residual polluting substances by virtue of its previous usage and presents a potential risk to the water environment, especially if redevelopment takes place.

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.

Criteria based policy Rather than a policy which is a general statement of intent, these policies will specify criteria against which potential locations for mineral extraction and associated development and waste management facilities will be assessed. They also aim to define the criteria against which planning applications will be considered to ensure that all development contributes to meeting the aims and objectives of the Core Strategy.

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. Formerly called Development Control

Development Plan Documents or DPDs A term brought in by the Planning and Compulsory Purchase Act 2004. These are the spatial planning documents contained in the Local Development Framework. These set out spatial planning policies and proposals for an area or topic. They replace the former Local Plan and include the core strategy, detailed development management policies, site specific allocations of land, area action plans (where needed) and a proposals map.

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.

East of England Plan (Regional Spatial Strategy, RSS) The East of England Plan was the Regional Spatial Strategy, prepared and delivered by the East of England Regional Assembly. The DPDs needed to be in conformity with it. RSS's were revoked by ministerial statement on the 6 July 2010. Some evidence gathering had taken place for the review to the East of England Plan which, has provided more up-to-date information on mineral and waste need.

East of England Regional Assembly A body that comprises representatives from local authorities and other economic, environmental and social organisations from the East of England Region. One of its functions was to prepare the Regional Spatial Strategy – the East of England Plan. EERA was replaced by the East of England Local Government Association and the East of England Development Agency on 1 April 2010.

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) The process of creating energy in the form of electricity and/or heat from the thermal treatment of waste.

Energy recovery The generation of heat and power from burning waste, the production of fuels from other forms of treatment, and the combustion of landfill gas and gas from anaerobic digestion to create electricity.

Environmental Management System A management approach which enables an organisation to identify, monitor, control and improve its environmental performance.

Examination (or Hearing or Inquiry) All Development Plan Documents will be subject to examination before an independent planning inspector. The Inspector's report is binding on the local authority.

Fill material Material which is used to fill former or existing quarries.

Geodiversity Geodiversity is 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.

Greenhouse gas Gases such as carbon dioxide and methane which when their atmospheric concentrations exceed certain levels can contribute to climate change by forming a barrier in the earth's atmosphere that traps the sun's heat.

Groundwater Water within soil, sediments or rocks below the ground surface. Water contained within underground strata is referred to as an aquifer.

Groundwater Source Protection Zones The Environment Agency divides groundwater source catchments into four zones. Zone 1 - Any pollution that can travel to the borehole within 50 days from any point within the zone is classified as being inside zone 1. This applies at and below the water table. This zone also has a minimum 50 metre protection radius around the borehole. These criteria are designed to protect against the transmission of toxic chemicals and water-borne disease.

Hazardous waste All hazardous waste as defined by the List of Wastes Regulations 2005, e.g. asbestos, acids, oils and petroleum products.

Heritage Assets Those parts of the historic environment that have significance because of their archaeological interest.

Heritage Coast A Heritage Coast is a strip of coastline designated by the Countryside Agency in England and the Countryside Council for Wales in Wales as having notable natural beauty or scientific significance.

Historic Parks and Gardens Sites included in the *Register of Parks and Gardens of special historic interest in England*, compiled by English Heritage 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 listed to be of national importance are safeguarded during ongoing management or if any change is being considered which could affect them.

Hoggin Hoggin is an aggregate material suitable as a consolidating layer often without processing. It normally consists of a mixture of sand and gravel in a range of grain sizes held together naturally by clay. It is often used for embankment and general filling.

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.

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.

Issues and Options A stage of the Development Plan Document preparation process where community engagement is sought on an informal basis from interested 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 winning and working.

Landfill A waste disposal site where waste is deposited onto or into land. This includes sites that:

- receive waste from external sources
- are used by waste producers to dispose of their own waste on-site.

It does **not** normally include sites where waste is:

- intended for disposal, and is stored for less than one year
- intended for recovery or treatment, and is stored for less than three years
- prepared for transport for recovery, treatment or disposal elsewhere.

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 Water containing contaminants which leaks from a disposal site such as a landfill.

Listed building In the United Kingdom the term listed building refers to a building or other structure officially designated as being of special architectural, historical or cultural significance. A listed building may not be demolished, extended or altered without special permission being granted by the Local Planning Authority.

Local Area Agreement Local Area Agreements set out the priorities (primarily from the Community Strategy) for a local area agreed between central government and a local area (the local authority and Local Strategic Partnership) and other key partners at the local level. They simplify some central funding, helping to join up public services more effectively and allow greater flexibility for local solutions to local circumstances. Effectively also a delivery plan for the Community Strategy.

Local Development Framework The collective term for the suite of Development Plan Documents produced by a planning authority. In addition to the Core Strategy and Site Allocations DPDs, it includes the Local Development Scheme, the Statement of Community Involvement, Annual Monitoring Report, and any supplementary planning documents.

Local Development Scheme Describes the Local Development Documents which the authority intends to prepare and the timetable for their preparation.

Local Planning Authority An organisation with statutory planning powers, in most areas the relevant County, District or Unitary Council.

Local Nature Reserve (LNR) Locally important wildlife site designated for protection by the local authority.

Local Transport Plan A document produced by Local Highway Authorities that describes its transport policies and its broad implementation programme.

Materials Recovery 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 Local Planning Authority and the Mineral Planning Authority before certain non-mineral planning applications made within the area are determined. MCAs are therefore simply a mechanism to ensure consultation takes place. The level of safeguarding that MCAs can provide on their own is not comparable to that which can be afforded through a Mineral Safeguarding Area (MSA) based system (see below).

Mineral Planning Authority An organisation with statutory planning powers relating to mineral extraction and associated development, the County Councils and Unitary Councils.

Mineral Policy Guidance (MPG) Note These set out Government planning guidance on specific topics.

Mineral Policy Statement (MPS) This is the new system of Government planning policy statements, which will replace MPGs over time.

Mineral Reserve A proven (and usually permitted) area of mineral. That part of a mineral resource which can be economically extracted.

Mineral Resource A wider area of mineral identified only on a geological map.

Mineral Safeguarding Area MSAs are known areas of mineral resources that are of sufficient economic value to warrant protection for generations to come. There is no presumption that any areas within a MSA will ultimately be environmentally acceptable for mineral extraction. The purpose of MSAs is not to automatically preclude other forms of development, but to make sure that mineral reserves are considered in land-use planning decisions.

Minerals and Waste Development Framework This is a portfolio of documents which together will provide the spatial planning strategy for mineral extraction and associated development and waste management facilities within Norfolk. It will replace the Norfolk Minerals Local Plan and the Norfolk Waste Local Plan.

Mines and quarries waste Waste generated by mineral extraction and the processing of minerals into saleable products.

Mitigation Measures to reduce, avoid or remedy any adverse impacts caused by development.

Modal shift A transfer from the use of one means of transport to a more sustainable means of transport, usually from the car to walking, cycling or public transport.

Municipal waste Household waste and other wastes collected by a waste collection authority or its contractors, such as municipal parks and gardens waste, beach cleansing waste, fly-tipped waste and trade waste.

Non-hazardous waste: All non-hazardous waste as defined by the List of Wastes Regulations 2005. This includes municipal and commercial & industrial wastes.

Non-strategic facilities: As defined in Appendix B3.

Norfolk Ambition The Community Strategy for Norfolk (see Community Strategy above).

Norfolk Biodiversity Action Plan The Norfolk BAP is the county's response to the UK Biodiversity Action Plan. It currently contains over 60 habitat and species action plans, and seeks to conserve and enhance biodiversity of national importance found in Norfolk.

Norfolk Geodiversity Action Plan The Norfolk GAP sets out a management framework for the conservation and enhancement of Norfolk's geology, landforms, soils and associated Earth heritage features.

Norfolk Minerals Local Plan 2004 This is the current local plan and contains detailed policies and guidance for making decisions on planning applications for mineral extraction and associated development in Norfolk.

Norfolk Waste Local Plan 2000 This is the current local plan and contains detailed policies and guidance for making decisions on planning applications for waste management facilities in Norfolk.

Norwich Policy Area Reflecting the city's influence and catchment, the policy area is used for planning purposes, extending beyond the urban area and encompassing many smaller towns and settlements. The broad extent of the Norwich Policy Area, based on that of the previous Norfolk County Council Structure Plan, should be established in Local Development Documents produced by the Local Planning Authority.

Permitted mineral reserves Saleable minerals in the ground with planning permission for winning and working. Usually expressed in million tonnes.

Planning Conditions Conditions attached to a planning permission for the purpose of regulating and controlling the development.

Planning Policy Guidance Note (PPG) This sets out Government planning guidance on specific topics.

Planning Policy Statement (PPS) This is the new system of Government planning advice which will replace PPGs over time.

Preferred Options A stage of the Development Plan Document preparation process where the authority's preferred options for addressing key issues are published for a six week consultation period. This stage was deleted in the revision to PPS12, published in 2008.

Primary aggregates Naturally occurring sand, gravel and crushed rock used for construction purposes.

Proximity principle The idea that mineral extraction and associated development and waste management facilities should be located as close as reasonably possible to, in the case of minerals, where the minerals are needed, and, in the case of waste, where it is generated, at least partly to reduce the need

to travel but also to encourage communities to take responsibility for the waste they produce.

Rail depot The reception (or exporting) point for minerals being moved by train.

Ramsar Site A Site of Special Scientific Interest considered to be of international importance as waterfowl habitat designated under the Ramsar International Convention on Wetlands (1971).

Reclamation of mineral workings The combined processes of Restoration and Aftercare following completion of mineral working.

Recovery The principle objective of a recovery operation is to ensure that the waste serves a useful purpose by replacing other substances which would have had to be used for that purpose and thereby conserving natural resources. Recovery includes recycling and composting.

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.

Regionally Important Geological/ Geomorphological Sites (RIGS) These are non-statutory geological / geomorphological sites designated for their value to Earth heritage, including educational, research, historical or aesthetic importance.

Regional Spatial Strategy (RSS) See 'East of England Plan' definition.

Regional Transport Strategy Part of the East of England Plan, it describes the policies for transport that should be applied across the region as part of the regional spatial strategy.

Renewable energy Renewable energy is energy derived from resources that are regenerative or for all practical purposes cannot be depleted.

Renewables Obligation The Renewables Obligation was introduced on 1st April 2002. It places an obligation on all licensed electricity suppliers to produce evidence that they have sourced a specified proportion of their electricity supplies from renewable energy sources.

Residual waste The elements of the waste streams that remain following recovery, recycling or composting operations.

Resource recovery The extraction of useful materials or energy from solid waste.

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, and is an important influence on the asset management plan in terms of signage, improvement programmes, and maintenance priorities.

Safeguarding Protecting sites that have potential for mineral extraction and associated development or waste management facilities from other incompatible development.

Scheduled Monuments Nationally important monuments and archaeological areas that are protected under the Ancient Monuments and Archaeological Areas Act.

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

Sequential test A planning principle whereby certain preferred locations for development are considered first before considering other locations (such as preferring brownfield development over Greenfield, or areas at low risk of flooding over high risk of flooding).

Service centres Service centres are those places where day to day retail, employment and professional services can provide for the needs of the people of the town and the surrounding villages and rural hinterland.

Site (Specific) Allocations Sites which are generally well defined and where there is a presumption in favour of their being developed during the plan period.

Sites of Special Scientific Interest (SSSIs) Sites that are notified and protected under the Wildlife and Countryside Act 1981 on account of their flora, fauna, geological or physiographical features.

Spatial planning Concerned with the physical aspects of places, but not restricted to land use decisions managed through the planning process. Includes physical aspects about how a place functions and develops.

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

Special Protection Area (SPA) An SSSI considered to be of international importance designated under the EC Directive on the Conservation of Wild Birds.

Specific Sites defined in MPS1 as 'where mineral resources are known to exist, where landowners are supportive of mineral development taking place and where Mineral Planning Authorities consider that any planning applications made are likely to be acceptable in planning terms'.

Statement of Community Involvement A document that sets out a LPA'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.

Sterilisation When a change of use or the development of land prevents possible mineral exploitation in the foreseeable future.

Strategic Environmental Assessment An evaluation process for assessing the environmental impacts of plans and programmes. This is a statutory requirement, and is incorporated into Sustainability Appraisal.

Strategic facilities: Waste sites with a minimum threshold of 10,000 tonnes annual throughput as listed in paragraph 6.20.

Strategic Road Network and Regional Road Network The strategic and regional road networks are defined in the Regional Transport Strategy as routes on the inter-urban road network of economic importance for the region and its future development. They are defined mainly by their function. For example, the regional road network is the lowest tier that should need to accommodate significant amounts of lorry traffic, except for access purposes.

Submission A stage of the Development Plan Document preparation process where the document is 'submitted' to the Secretary of State for independent examination by a planning inspector.

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 The most widely-used definition is "Development which meets the needs of the present without compromising the ability of future generations to meet their own needs".

Sustainable transport Sustainable transport is a phrase which was coined in the late 20th century to describe all forms of transport which minimise emissions of carbon dioxide and pollutants. Sustainable transport can mean public transport, car sharing, walking and cycling as well as technology such as electric and hybrid cars and alternative fuels.

Thermal Treatment Can include incineration, gasification and pyrolysis.

Transfer The deposition and separation or bulking up of waste before it is removed for recovery or disposal.

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 or harmfulness.

UK Biodiversity Action Plan The government's response to the United Nations Convention on Biological Diversity. The BAP includes a description of the UK's biological resources and a suite of habitat and species action plans.

Waste arisings The amount of waste generated in a 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, this is the relevant district council.

Waste Disposal Authority A local authority that is legally responsible for the safe disposal of household waste collected by the WCAs and the provision of Household Waste and Recycling Sites. In Norfolk, this is the County Council.

Waste hierarchy The ranking of waste management options in order of sustainability.

Waste management The means of dealing with waste, including waste disposal, transfer, processing, recovery/recycling operations, incineration and other technologies.

Waste Planning Authority A local authority that is responsible for the preparation of minerals and waste planning documents, and the determination of minerals and waste planning applications. In Norfolk, this is the County Council.