SUSTAINABILITY APPRAISAL SCOPING REPORT FOR THE GREATER NORWICH LOCAL PLAN

MARCH 2017

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INTRODUCTION

Purpose of the SA

The effect of local plans on the environment and people's quality of life, both now and in the future, is an essential consideration in plan making.

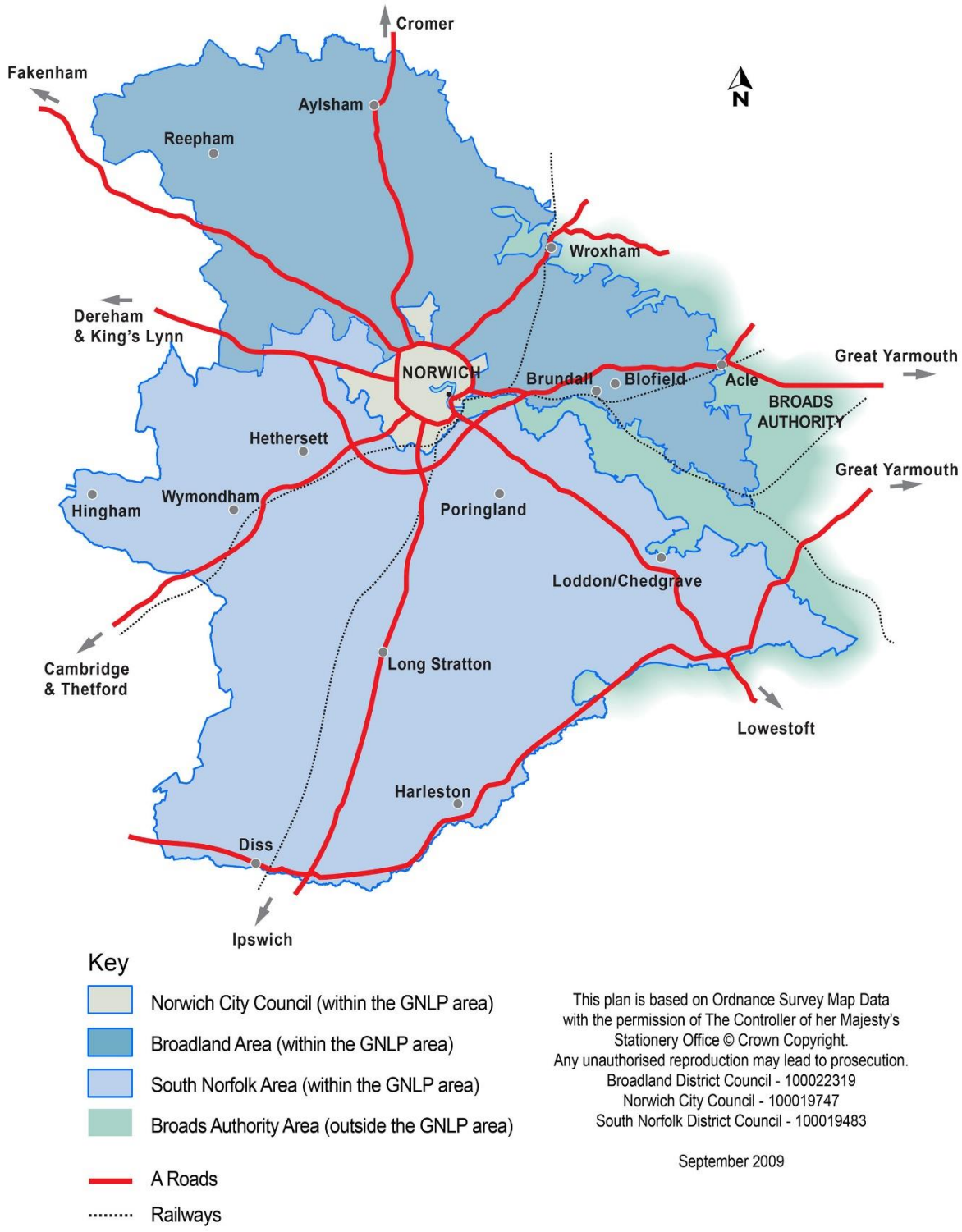
To help address this, a Sustainability Appraisal (SA), incorporating a Strategic Environmental Assessment (SEA), must be carried out alongside the preparation of local plans. The SA aims to ensure that environmental, social and economic sustainability objectives are complied with and to avoid or minimise any potential adverse impacts of the plan.

This report is the first stage of the Sustainability Appraisal, the Scoping Report, of the Greater Norwich Local Plan (GNLP). The Scoping Report identifies the scope and level of detail of the information to be included in the sustainability appraisal report. It sets out the context, objectives and approach of the assessment and identifies relevant sustainability issues and objectives. Its main output is a sustainability framework. GNLP policies will be tested against this framework to assess their likely sustainability effects.

The GNLP will guide development in Greater Norwich up to 2036, providing both strategic policies and site allocations to meet evidence based needs for land for development. It is being produced by the three councils of Broadland, Norwich and South Norfolk, supported by Norfolk County Council. It takes the adopted Joint Core Strategy for Broadland, Norwich and South Norfolk (JCS), which covers all three districts from 2008 up to 2026, as its starting point.

Figure 1 below is a map showing the local plan area. The GNLP will not cover the Broads Authority area which is a separate planning authority.

Figure 1 The GNLP area



Legislative Requirements

Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA)

Section 19 of the Planning and Compulsory Purchase Act 2004 requires local planning authorities to carry out a sustainability appraisal of local plans and to prepare a report of the findings. As stated under Section 39 of the Act 2004, this is "with the objective of contributing to the achievement of sustainable development" by assessing the extent to which the emerging plan, when judged against reasonable alternatives, will help to achieve relevant environmental, economic and social objectives".

There is also a requirement for development plan documents to undergo an environmental assessment, known as a Strategic Environmental Assessment or SEA, under European Directive 2001/42/EC (transposed into UK legislation by the Environmental Assessment of Plans and Programmes Regulations 2004).

Under UK law, Sustainability Appraisal incorporates SEA. This means that in addition to environmental issues, on which an SEA focuses, social and economic matters are also addressed as part of the overall assessment of sustainability, within a single joint appraisal.

To comply with these legal requirements, the SA of the Greater Norwich Local Plan will:

- Adopt a long-term view of development within the area covered by the plan, with particular focus on the social, environmental, and economic effects of the proposed plan;
- Develop an effective system for ensuring that sustainability objectives are transformed into sustainable planning policies;
- Reflect global and national concerns, as well as concerns at the local level;
- Provide an audit trail of how the local plan has been revised to take into account the findings of the sustainability appraisal;
- Incorporate the requirements of the SEA Directive (see Appendix 2) Demonstrating Compliance with SEA Directive – this appendix will be completed and included in the SA Report to accompany submission of the GNLP;
- Involve consultation on this Scoping Report early in the plan making process.

To demonstrate compliance with the SEA Directive, the SA Report which accompanies the draft plan at publication should

include an outline of the plan's content including its strategic objectives.

Since the specific objectives for the GNLP are yet to be established, at this stage it is only possible to set out broad objectives based on NPPF local plan requirements.

The broad objectives of the documents which comprise the councils' Local Plan are: "The Local Plan will set out policies for the use and development of land to 2036. The GNLP will set out strategic and site allocations policies for the three districts to provide for:

- homes, jobs, retail, leisure and other commercial development needed in the area;
- Infrastructure needed to support development including green infrastructure, transport, telecommunications, waste management, water supply, waste water, flood risk and energy;
- health, community and cultural infrastructure and other local facilities;
- climate change mitigation and adaptation; and
- conservation and enhancement of the natural and historic environment, including landscape."

Each district will separately produce a development management policies document that will sit alongside the GNLP and set out land use policies necessary to address district specific issues.

The Habitats Directive

Local plans must also ensure that they comply with the requirements of the Directive on Conservation of Natural Habitats and of Wild Fauna and Flora 92/43/EEC (Habitats Directive). This involves undertaking an Appropriate Assessment into any potential effects of the plan on 'European sites' or 'Natura 2000 sites' of nature and habitat value, namely Special Areas of Conservation (SACs), Special Protection Areas (SPAs), and Ramsar sites of international wetland importance. There are a number of such sites within and close to Greater Norwich.

Even a plan that is not directly concerned with protected sites can still indirectly affect Natura 2000 sites. Consequently, Appropriate Assessment must determine the likely significance of the plan on protected sites and suggest alternatives where possible. A plan should seek to avoid adverse effects on the integrity of designated sites, mitigate those impacts that remain and, if necessary, put in place compensatory measures. The reasons for designation as a protected site, such as the habitats and species present, and the conservation objectives of

management plans in place to preserve these are assessed. If these are compromised directly by the plan or through 'in combination' effects with other plans or developments, the plan must explain how it intends to avoid or mitigate the impacts. If the initial Appropriate Assessment shows that further work will be required, "reasonable alternative" approaches to addressing Habitats Directive requirements will need to be addressed through the SA process.

Work to address Habitats Directive requirements for the Greater Norwich Local Plan will be done at a later stage of the overall GNLP process, after the production of this Scoping Report.

The SA Process

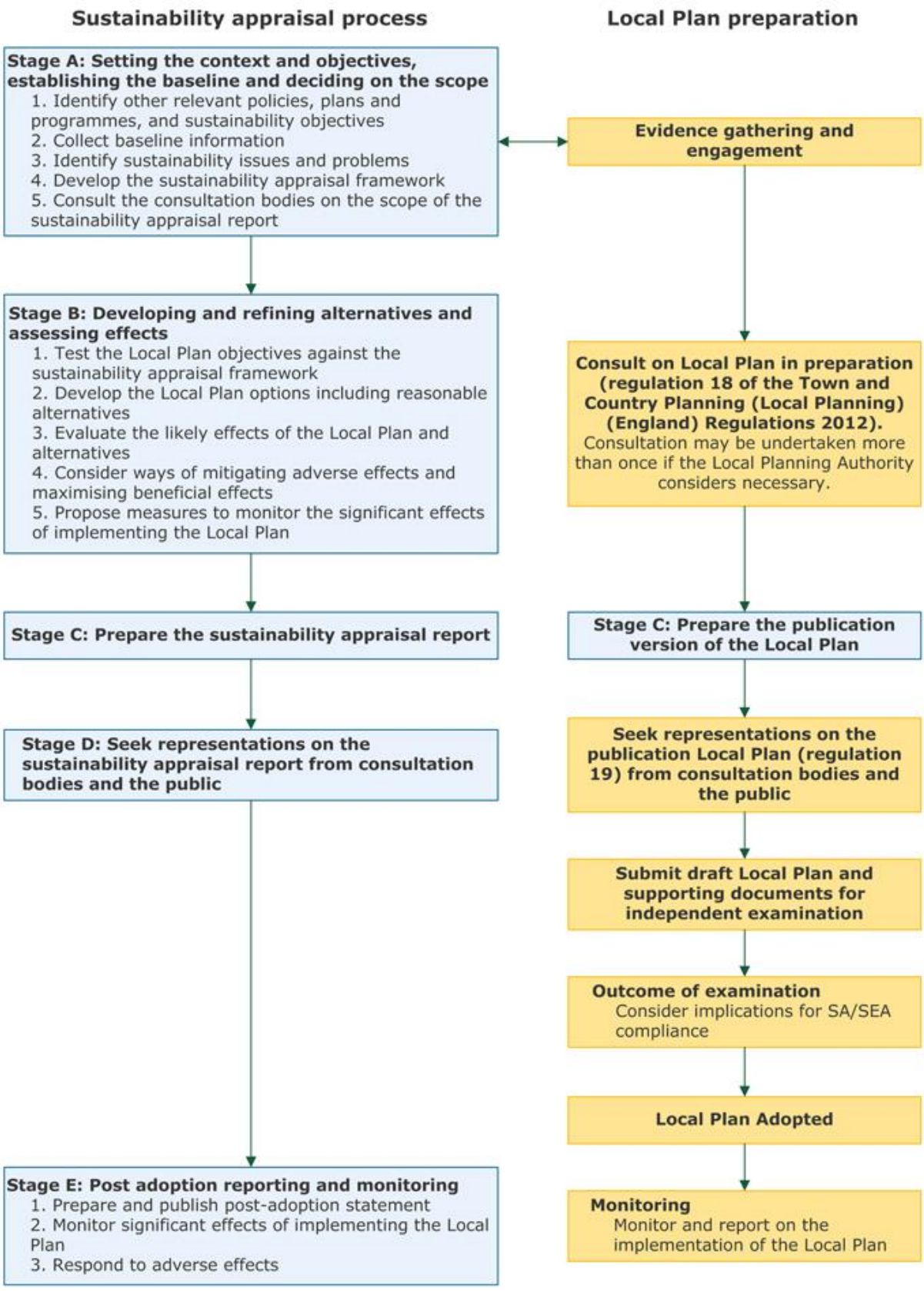
This SA Scoping Report forms the starting point for the sustainability appraisal which will guide the evolution and assessment of the emerging GNLP. A key aim of scoping is to help ensure the sustainability appraisal is proportionate and relevant to the local plan being assessed.

SA is an iterative process which runs concurrently with local plan making (see figure 2). After the initial scoping for the SA has been carried out the next stage are developing and refining of options and assessing their effects. The sustainability appraisal framework produced as part of the Scoping Report will be used to consider the effects of the different plan options, the "reasonable alternatives" required to be assessed by SEA Directive, to assist in the identification of the plan's favoured option. The framework includes sustainability objectives, along with indicators to assess progress.

A local plan draft containing a favoured option and the reasonable alternatives to that option, along with a draft sustainability appraisal report assessing the plan, will be consulted on prior to the publication of the local plan for submission. The "final" SA report will then be submitted with the GNLP to the Secretary of State for examination in public.

The Government's Planning Practice Guidance (PPG) on sustainability appraisal of local plans, as set out in figure 2 below, establishes a five-stage SA process to be undertaken alongside plan making. This report, the Scoping stage, is Stage A of the SA:

Figure 2 The SA and local plan preparation processes



The Scoping Stage (Stage A)

The Scoping stage of SA production comprises the five steps set out in figure 2 and detailed further below.

Step 1 - Identifying relevant plans and programmes

Step 1 provides an analysis of the context in which the plan is being prepared. It includes a summary of the key plans and programmes along with the elements relevant to the specific topic of the National Planning Policy Framework (NPPF).

The purpose of the NPPF is to promote sustainable development through planning. The NPPF takes into account the International and European Directives, along with the UK Sustainable Development Strategy, stating that

'International and national bodies have set out broad principles for sustainable development. Resolution 42/187 of the United Nations General Assembly defined sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The UK Sustainable Development Strategy Securing the Future set out five 'guiding principles of sustainable development : living with the planet's environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly'.

Since the adopted JCS applies until 2026 and provides both current strategic policy context for the area the starting point for the GNLP and , the JCS's policies and objectives, along with other relevant local plan policies, are covered on a topic by topic basis. The plan objectives for the GNLP itself are not available to inform the SA scoping stage, but will be incorporated into the SA report when available.

Appendix 1 provides a summary of other relevant policies, plans, programmes, strategies and initiatives with an influence on the content of the plan. Where relevant this includes their sustainability objectives.

The above sources inform the identification of sustainability issues and the development of the sustainability framework for this SA.

Step 2 - Collecting Baseline Data

The second step of stage A involves collecting data on the existing environmental, economic and social characteristics of the Greater Norwich area likely to be affected by the local plan and the likely evolution of that baseline without the implementation of the GNLP. The baseline information referred to in this scoping report is intended to act as a 'benchmark' for

the appraisal and monitoring of 'significant' effects[1]. In determining the likely significance of effects there is a requirement to consider the:

- Probability , duration , frequency and reversibility of the effects;
- Cumulative nature of effects;
- "the transboundary nature of effects"
- Risks to human health or the environment;
- Magnitude and spatial extent of effects (geographical area and size of the population likely to be affected);
- Value and vulnerability of the area likely to be affected due to:
- Special natural characteristics or cultural heritage,
- Exceeded environmental quality standards or limit values,
- Intensive land-use
- The effects on areas or landscapes which have a recognised national community or international protection status.

Step 3 - Identifying Sustainability Issues

The third step is to establish the relevant sustainability issues the SA will concentrate on. This has clear parallels with plan-making process where the aim is to identify key issues for the area and focus the plan on addressing these. The iterative SA process will take account of emerging evidence as it is produced to support plan making, as well as the scoping evidence in this report.

Step 4 - Developing the SA Framework

The fourth step of stage A is to develop the SA Framework. This will be used in stage B of the SA to appraise the reasonable alternative options identified in plan making and to assist in identifying the favoured option. The framework will also contribute to identifying the best means of monitoring the effects of the plan.

Step 5 - Consulting on the Scope of the Sustainability Appraisal

The fifth and final step of the Scoping Report is the legal requirement to consult on the SA's scope with the organisations prescribed by regulations, Historic England, Natural England and the Environment Agency. In addition, selected stakeholders will be notified of the consultation, which will be published on the Greater Norwich website and open to all to respond to.

[1] Annex II – SEA Directive

The Scoping Report's format

Taking account of the requirements in this introduction, sections 1 to 15 of the Scoping Report provide commentary and data on a topic by topic basis. The sections cover:

- Air Quality and Noise
- Climate Change (including flood risk)
- Biodiversity, Geodiversity and Green Infrastructure
- Landscape
- Water
- Built Heritage
- People and Communities
- Deprivation
- Health
- Crime
- Education
- Transport and Access to Services
- Natural Resources, Waste and Contaminated Land
- Employment and the Economy
- Housing

Taken together, the topics cover the main sustainability issues relevant to the Greater Norwich Local Plan. This approach follows advice in the PAS Good Plan Making Guide (2014)[2] and the PAS SA Advice note (2010) as an effective way of facilitating stakeholder engagement.

For each of sections there is a common format: introduction; context; current and projected baseline; and issues.

Introduction: This provides an outline of topic area covered in the section.

Context: This draws from the relevant plans, policies, strategies and initiatives at national and local level focusing on the issues, objectives or aspirations as outlined above. This section is augmented by appendix 1.

Current and Projected Baseline: This section reviews the current situation and policy approaches to predict how the area is likely to change without a new plan beyond 2026, the end date for the JCS. This 'baseline information' helps to enable identification of the key sustainability issues that should be a particular focus of the appraisal in order to provide benchmarks for the appraisal of 'significant effects'. As well as Office of National Statistics (ONS) data from the Census and other national and local data sources, much of which is sourced from the Annual Monitoring Report (AMR) of the Joint Core Strategy for Broadland, Norwich and South Norfolk (JCS), particular use is made of data from the

[2] PAS – Good Plan Making Guide (2014)

English Indices of Deprivation 2015. This is a consolidated dataset which compiles a wide range of statistical data to derive a common Index of Multiple Deprivation (IMD) – a ranking showing in relative terms how deprived a given area is. The Index enables reliable comparisons of levels of deprivation and disadvantage to be made across standard administrative areas and other geographies. The index is made up of several separate and distinct aspects (domains) of deprivation. The domains are:

- Income deprivation;
- Employment deprivation;
- Education, skills and training deprivation;
- Health deprivation and disability;
- Crime;
- Barriers to housing and services; and
- Living environment.

The baseline sections make as much use of mapped data, much of it from the IMD, as possible to aid understanding.

Issues: This section draws together the context and baseline to identify the issues that the GNLP should seek to address in order to help deliver sustainable development in the three districts, focusing on the specific character of the area where relevant.

Section 16 sets out the limitations in the data that has been used for the report and section 17 is a summary table of the issues identified in sections 1 to 15.

Section 18 is the Sustainability Framework, the main output of this Scoping Report. It will be used in later stages of the SA/SEA process to assess the sustainability of the strategy, policies and possible growth locations set out in the GNLP.

1. SECTION 1 – AIR QUALITY AND NOISE

1.1.2. This section covers air quality issues and the noise environment in Greater Norwich.

1.2. Context

1.2.1. National

1.2.2. The Environment Act 1995 introduced a system of Local Air Quality Management (LAQM). This required local authorities to assess air quality within their boundary and to evaluate development and transport plans against these assessments.

1.2.3. National Air Quality Objectives are set out in regulations. If an objective is unlikely to be met, the local authority must designate an Air Quality Management Area (AQMA) and draw up an Air Quality Action Plan.

1.2.4. The Air Quality Strategy (2007) establishes the policy framework for ambient air quality management and assessment in the UK which includes the National Air Quality Objectives.

1.2.5. In 2009, Defra issued Local Air Quality Management Policy Guidance, Practice Guidance and Technical Guidance to help local authorities carry out their duties under the Environment Act 1995. The combined guidance covers a wide range of topics, from how to declare an AQMA, to the locations of monitoring sites, duration of monitoring and implementing low emissions zones.

1.2.6. The Air Quality Standards Regulations 2010 (which enact the EC Air Quality Directive 2008/50/EC) require the assessment of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter, lead, benzene and carbon monoxide in ambient air.

1.2.7. In regards to issues of Air Quality, in April 2015 the Supreme Court required the Government to publish a plan to achieve compliance with EU air quality standards for nitrogen dioxide in the shortest time possible in accordance with Article 23 of the Air Quality Directive (2008/50/EC). In December 2015 the Government published a plan which purported compliance with the Supreme Court's Order. In November 2016 the Supreme Court further ruled that the December 2015 plan was inadequate. The Supreme Court has given Government until 24 April 2017 to produce a new draft plan to comply with the Air Quality Directive and until 31 July to produce a final one.

1.2.8. The NPPF sets out a number of requirements:

- Paragraph 17 states: …. planning should: …contribute to conserving and enhancing the natural environment and reducing pollution."

- Paragraph 109 states: "The planning system should contribute to and enhance the natural and local environment by: … preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability."
- Paragraph 124 states: "Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan."

1.2.9. These requirements are supplemented by the PPG, which states that local plans may need to consider:

- The potential cumulative impact of a number of smaller developments on air quality…;
- The impact of pollution that originates from one place;
- Ways in which new development would be appropriate in locations where air quality is or likely to be a concern and not give rise to unacceptable risks from pollution. This could be through, for example, identifying measures for offsetting the impact on air quality arising from new development.

1.2.10. On the subject of noise, paragraph 123 of the NPPF states:

"*Planning policies and decisions should aim to:*

- *Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*
- *Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;*
- *Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and*
- *Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.*"

1.2.11. The footnote to paragraph 123 of the NPPF refers to Defra's Noise Policy Statement for England (March 2010) for a definition of 'significant adverse impacts'. The statement sets out the long term vision of government noise policy, to promote good health and a good quality of life through the management of noise. Its aim is to "*clarify the underlying principles and aims in existing policy*

documents, legislation and guidance that relate to noise." It requires noise to be properly considered, but does not ignore the wider benefits of development which may have noise implications.

1.2.12. This statement also incorporates the Environmental Noise Regulations 2006 which requires non-major airports such as Norwich International Airport to produce strategic noise maps and a noise action plan to show how noise effects will be mitigated where the Lden noise level exceeds 55dBA.

1.2.13. The PPG suggests that light pollution could be an issue where a new development could materially alter light levels outside the development; where existing light installation makes the proposed location for development unsuitable; if the development is in or near a protected area of dark sky or an intrinsically dark landscape; where there could be ecological impacts.

1.2.14. Local

1.2.15. Technical Guidance on Air Quality and Land Use Planning was developed by Norfolk Local Air Quality Management Group. It sets out the circumstances when an assessment may be required and provides details of the information required to undertake such an assessment.

1.2.16. Norfolk's adopted 3rd Transport Plan describes the county's strategy and policy framework for delivery up to 2026. The plan identifies six priorities for transport, including reducing emissions.

1.2.17. Norwich Area Transport Strategy (NATS) is the means of co-ordinating and delivering transport infrastructure investment in and around the Norwich Urban Area. It also aims to reduce emissions.

1.2.18. Norwich International Airport (NIA) has an Environmental Policy and a Noise Policy and has three noise monitors on the site boundary at Catton, Spixworth and Hellesdon. Defra have determined that NIA is not required to produce a Noise Action Plan.

1.2.19. Spatial planning objective 9 of the JCS includes protection, management and enhancement of the natural, built and historic environment. One of the indicators for monitoring this through the JCS relates to designated Air Quality Management Areas (AQMAs).

1.3. Current Baseline

1.3.1. There are no AQMAs in South Norfolk or Broadland, but there is one AQMA covering central Norwich, which broadly encompasses the area inside the inner ring road. The AQMA was declared as a result of continued exceedance of the annual objective for nitrogen dioxide (NO_2), but for no other pollutant. Road traffic is the most significant source of NO_2 and, more specifically diesel vehicles including many buses and taxis are the main contributor. The 2015

Draft Action concentrates significantly on road changes, with the overall aim of diverting non-essential traffic out of the city centre by way of restricted road access measures and re-routing of main traffic flows, augmented by improvements to bus lanes and cycle routes to give greater connectivity.

1.3.2. Improvements to air quality across the whole of Norwich are supported by ongoing actions such as schools and workplace travel plans, promoting alternative fuel use, land use planning, continued support for Norfolk's car sharing and Car Club schemes, Travelwise initiative and promoting freight distribution centres.

Figure 3 Map showing Norwich Central AQMA Boundary

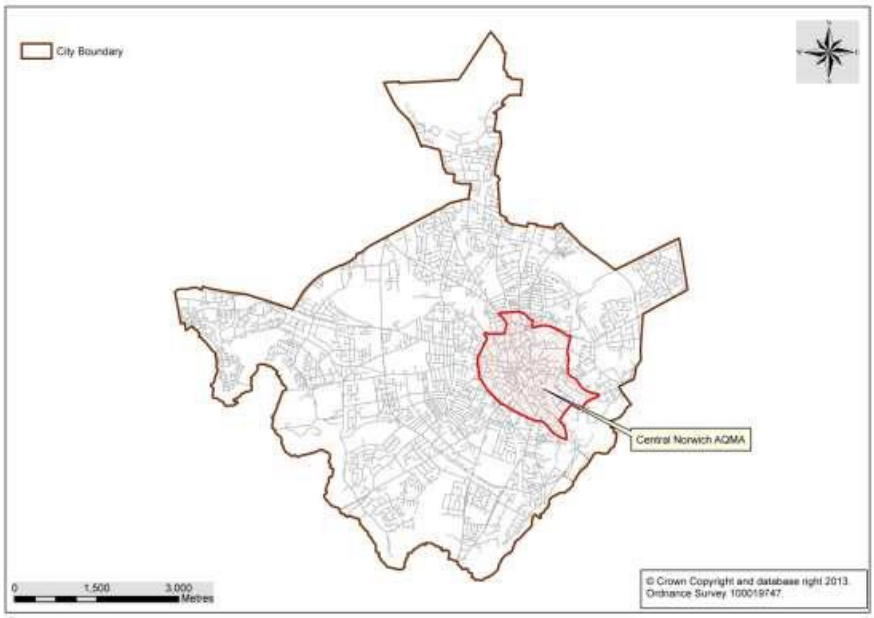
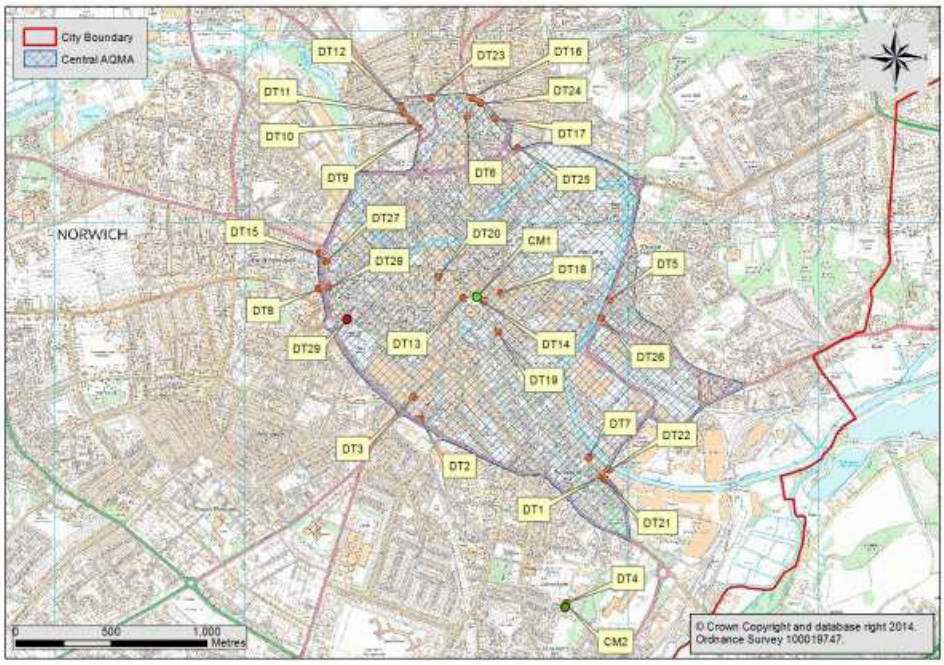


Figure 4 Map showing Norwich automatic and non-automatic monitoring locations

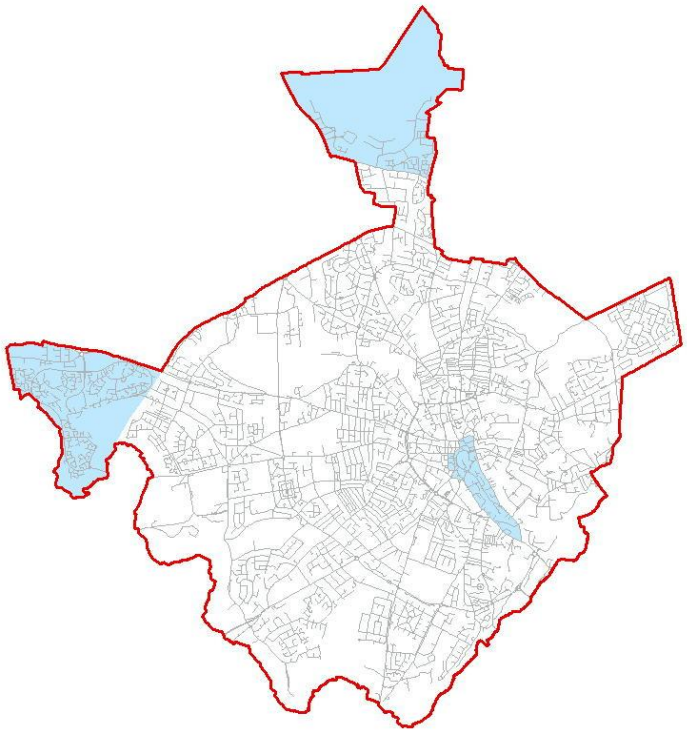


1.3.3. There is also an AQMA in Hoveton, which is just outside the boundary of the study area. Hoveton (in North Norfolk) and Wroxham (in Broadland) are separated only by the River Bure. Therefore, development in Wroxham may impact on the air quality of Hoveton, and the air quality in Hoveton may impact on the residents of Wroxham.

1.3.4. Other than the above AQMAs, there are isolated sites of reduced air quality around, for example, sewage treatment works, intensive farming sites and landfill sites. These are monitored by the Environment Agency.

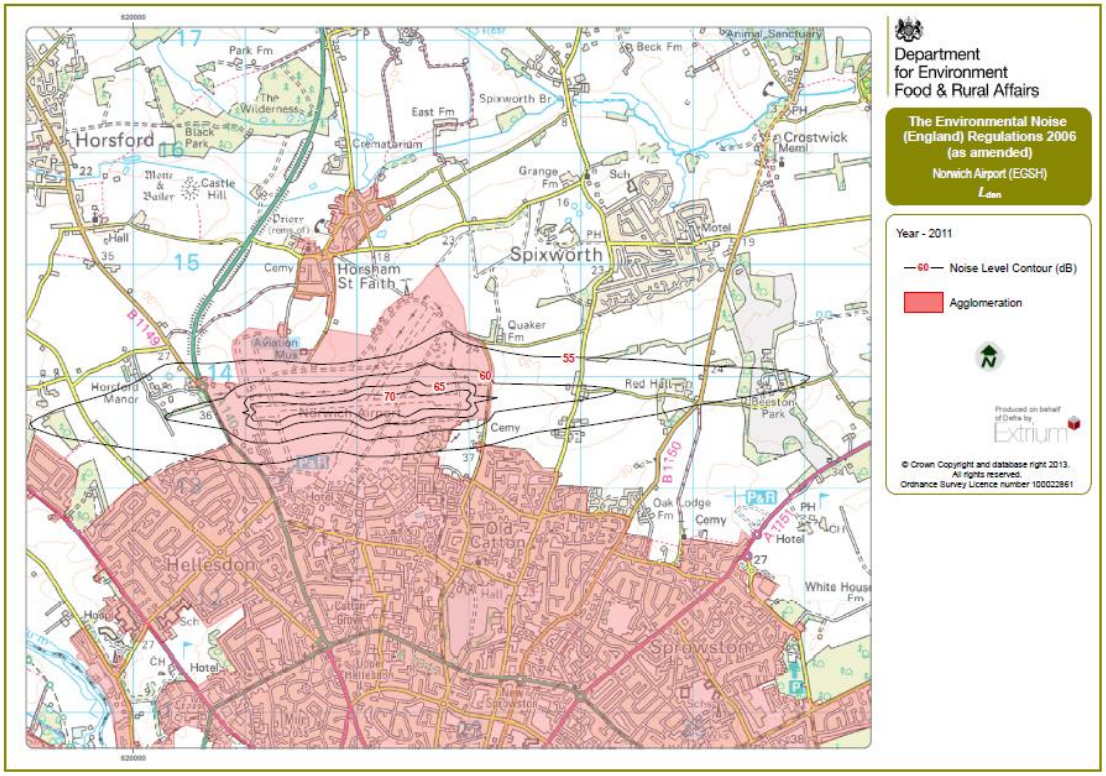
1.3.5. There are no smoke control areas in South Norfolk or Broadland, but there are three areas in Norwich – at King Street, Bowthorpe, and Norwich Airport which have been in place since 1968, 1972, and 1972 respectively.

Figure 5 Map showing three Norwich smoke control areas



1.3.6. The principal noise sources in the Greater Norwich area are from road traffic, most particularly on the A11 and A47 trunk roads, the A140, outdoor events, and Norwich International Airport (NIA). Approximately 100 dwellings are currently within the 55dBA Lden contour of the airport (see figure 6 below). Expansion of airport operations is planned and the Norwich Northern Distributor Road (NDR) is under construction, with completion scheduled for early 2018.

Figure 6 Norwich Airport Noise Contour Map (2011)



1.3.7. There are no protected dark sky areas around Greater Norwich, but the rural parts of the area and the adjacent areas would benefit from consideration of light pollution.

1.3.8. Evolution of the baseline

1.3.9. While air quality in Norwich city centre is likely to remain a major issue during the plan period to 2036, improvements may be expected resulting from traffic management measures set out in NATS and promoted by the JCS (see section 1.2.17of this report) and by other measures prioritised by Norwich city centre AQMA Action Plan. The Government[3] is committed to ensuring that nearly all cars and vans in the UK will be zero emission vehicles by 2050, meaning all car and van sales need to be zero emission vehicles by 2040. Government is providing over £600 million of support this Parliament, aimed at achieving growth in the early market for ultra-low emission cars and vans and preparing for mass market uptake in the 2020s, which is during the GNLP plan period. Consequently, there is expected to be an increasing uptake of ultra-low emission vehicles during the lifetime of the GNLP. Norwich City Council has recently agreed a motion that policies over provision of electric car parking points when planning permission is granted should be updated where appropriate. This may help improve air quality in Norwich

[3] **HM Government, October 2016, Government response to the Committee on Climate Change: Progress on meeting carbon budgets, pg19-20**

(and elsewhere). Noise from Norwich International Airport and existing and new main roads is also likely to remain a long term issue which should be taken account of in the location of new development.

1.4. Issues

- There are Air Quality Management Areas (AQMA) in Norwich City Centre and in Hoveton, adjacent to the plan area, along with other isolated sites of reduced air quality.

- There are high noise levels around Norwich International Airport and main roads in the area and light pollution from urbanised areas.

2. SECTION 2 – CLIMATE CHANGE

2.1.1. This section considers both climate change mitigation and adaptation. Mitigation focuses on details of current carbon emission within the Greater Norwich area, while adaptation concentrates on flood risk issues.

2.2. Context

2.2.1. National and International

2.2.2. The UK government is committed to tackling climate change "as one of the most serious risks we face[4]".

2.2.3. Taking account of international agreements set out in appendix 1, Climate Change policy is integral to the NPPF:

- Paragraph 7 emphasises the importance of planning in helping to address climate change as part of delivering sustainable development;
- Paragraph 94 states: "Local planning authorities should adopt proactive strategies to mitigate and adapt to climate change…".
- Paragraph 95 states: "to support the move to a low carbon future, local planning authorities should plan for new development in locations and ways which reduce greenhouse gas emissions…"
- Paragraph 97 states: "To help increase the use and supply of renewable and low carbon energy, local planning authorities should… have a positive strategy to promote energy from renewable and low carbon sources…".
- The NPPF also states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere (paragraph 100).

2.2.4. The Planning Act 2008 requires that "Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authorities area contribute to the mitigation of, and adaption to, climate change. The footnote to paragraph 94 of the NPPF refers to the Climate Change Act 2008. This establishes a legally binding climate change target to reduce the UK's greenhouse gas emissions by at least 80% (from a 1990 baseline) by 2050. To ensure that regular progress is made towards this long-term target, the Act also establishes a system of five yearly carbon budgets. The first five budgets, leading to 2032, have now been set in law. The UK is currently in the second carbon budget period (2013-2017) where a target of 29% reduction below 1990 levels was set. The third carbon budget requires a 34%

[4] HM Government, October 2016, Government response to the Committee on Climate Change.

reduction by 2020, the fourth a 50% reduction by 2025 and the fifth a 57% reduction by 2030. The Carbon Plan, published by the Department of Energy and Climate Change in December 2011, sets out how the Government aims to achieve these reductions.

2.2.5. The Committee on Climate Change state that in 2014 UK emissions were 35% below 1990 levels, and that provision figures indicate that emissions fell a further 3% in 2015. Consequently the first carbon budget (see paragraph 2.2.4) has been met. Also that the UK is currently on track to outperform the second and third carbon budgets. However, the UK government[4] recognises that emissions are currently projected to be 10% greater than the budget level over the forth carbon budget (2023-2027), and 18% greater over the fifth carbon budget (2028-2032).

2.2.6. The Committee on Climate Change explain that almost all of the fall in emissions from 1990 levels so far has been from the power sector, as a result of reduced use of coal and increased generation of electricity from renewables. It is the view of the committee that emission reductions in any single sector will not be enough to meet the fourth and fifth carbon budgets.

2.2.7. The UK government is currently working towards its emissions reduction plan. This plan will set out how the UK intends to decarbonise over the 2020s to meet its carbon budgets. Notwithstanding the above, the UK Government accepts[5] that to meet carbon budget targets there will need to be transitions across all sectors of the economy. To this end, the UK government remains committed to: continuing to reduce power sector emissions; improving the efficiency of homes and other buildings; decarbonising industry, agriculture, land use and land use change and forestry; reducing emissions from transport, which will be increasingly important to meet carbon budget commitments; and, supporting innovation.

2.2.8. The Flood Risk Regulations 2009 implement the European Floods Directive, and require the Environment Agency (EA) to assess, map and plan for flood risk from the sea, main rivers and large raised reservoirs, and Lead Local Flood Authorities (LLFAs) for all other sources of flooding, including where the two interact. The output of EA work in this area is to identify strategic flood risk areas from, for example, main rivers. The LLFA is responsible for identifying local sources of flooding, such as surface water flooding from heavy rainfall events.

2.2.9. The Flood and Water Management Act 2010 gives the EA a strategic overview of the management of flood and coastal erosion risk in England; and gives LLFAs responsibility for putting in place flood management strategies. The Act defines 'risk' and includes district councils as Risk Management Authorities. It also sets out

[5] HM Government, October 2016, Government response to the Committee on Climate Change.

approaches to flood risk management, including: at section 32, sustainable drainage requirements; and at section 40, changing Building Regulations to incorporate greater flood resilience.

2.2.10. Under this Act, Defra issued guidance and information notes on a number of different aspects, and the Environment Agency has produced tools to help LLFAs consider the impacts of climate change on sources of local flood risk.

2.2.11. The National Flood & Coastal Erosion Risk Management Strategy for England was published in 2011. The strategy builds on existing approaches to flood and coastal risk management and promotes the use of a wide range of measures to manage risk. It identifies the wider benefits of managing floodwater by utilising the environment (wetlands and other areas suitable for inundation) including improved biodiversity and water quality. The strategy encourages more effective risk management by enabling people, communities, business, infrastructure operators and the public sector to work together. In practice, this means that Local Plans should be consistent with Flood and Coastal Erosion Risk Management strategies and plans.

2.2.12. Local

2.2.13. The overall ambition of the New Anglia Local Enterprise Partnership (LEP) Green Economy Pathfinder is to achieve sustainable, low carbon growth, skills development and employment in Norfolk and Suffolk. Priorities set out in the manifesto include reducing carbon and greenhouse gas emissions and encouraging investment in renewable and low-carbon technologies.

2.2.14. Tomorrow's Norfolk, Today's Challenge, Norfolk's Climate Change Strategy was produced by Norfolk Climate Change Partnership, and identifies priorities for transport, energy, housing and the economy to which all district councils have signed up, including increasing resilience of new development to the impacts of climate change.

2.2.15. The Carbon Reduction Target for Norwich City Council, set in its second Carbon Management Plan, is to achieve a total reduction of 40% in carbon emissions from the 2006/7 baseline by 2019[6]. South Norfolk's Carbon Management Plan sets a target of 20% reduction from a 2008/9 baseline by 2013/14[7] for its own operations. Broadland has an Environmental Strategy and Action Plan which aims to reduce carbon emissions (but no target has been agreed[8]).

[6] http://www.norwich.gov.uk/Environment/EcoIssues/Documents/CarbonFootprintReport.pdf
[7] http://www.south-norfolk.gov.uk/CARMS/meetings/cab2010-04-19ag11app1.pdf

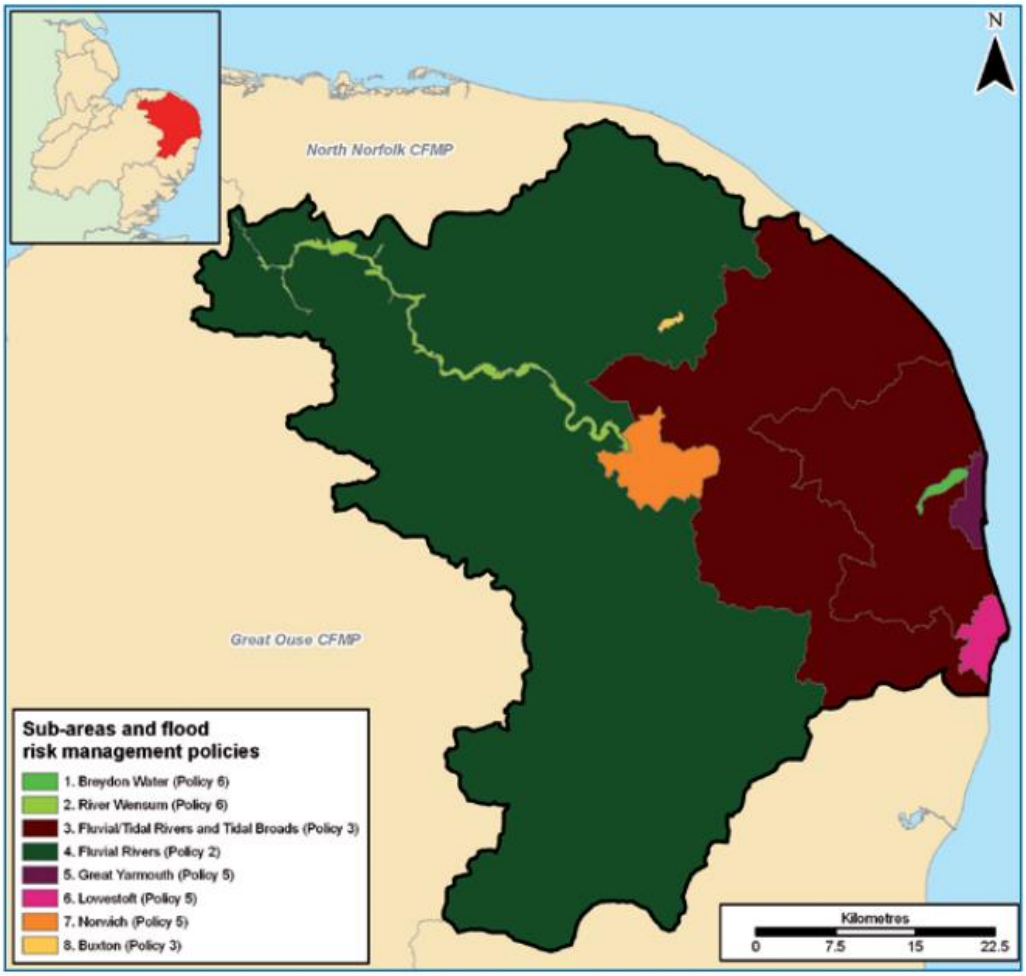
[8] http://www.broadland.gov.uk/PDF/Environmental_strategy_low_res_1(1).pdf

2.2.16. Although there is no coast within the greater Norwich area, the flat and low-lying nature of some of the surrounding landscape means the impact of coastal erosion is an issue which should be considered. There are two Shoreline Management Plans for Norfolk: SMP 5 Hunstanton to Kelling and SMP 6 Kelling to Lowestoft Ness[9]. These long-term plans promote greater sustainability of the shoreline and one more in keeping with the natural character of this coast. The purpose of an SMP is limited to coastal defence, and it does not seek to address the consequences of coastal change; however it does seek to highlight those issues that will need to be addressed.

2.2.17. The Broadland Rivers Catchment Flood Management Plan (BRCFMP) was produced by the Environment Agency in 2009 and covers the Greater Norwich area. This deals mainly with fluvial flooding, and sets policies for managing flood risk within the catchment and should inform the production of the Local Plan. Policies affecting the Greater Norwich area (and the actions proposed) are: Policy 2 – Fluvial Rivers (mitigation on land, protect flood plain, flood resilience); Policy 3 – Buxton (investigate alternative flood risk management actions); Policy 5 – Norwich (flood resilience, emergency response plan); Policy 3 – Fluvial/Tidal Rivers and Tidal Broads (maintain flood embankments, flood storage, resilience plan for most at risk properties); and Policy 6 – River Wensum (flood storage on natural floodplain, river restoration, and flood resilience).

[9] http://www.eacg.org.uk/default_smp.asp

Figure 7 Map of the Broadland Rivers Catchment Flood Management Plan Sub-areas



2.2.18. The policies in the BRCFMP have been carried forward to the new Flood Risk Management Plan, about to be published. This document will co-ordinate the actions from all flood risk management authorities in the River Basin District.

2.2.19. Norfolk County Council, as Lead Local Flood Authority, is required to develop a Local Flood Risk Management Strategy (LFRMS). As the Environment Agency has responsibility for main rivers and the sea, this strategy addresses the risk from surface water run-off, groundwater and ordinary watercourses. Data has been collected through Surface Water Management Plans, and after producing a Preliminary Flood Risk Assessment, the LFRMS was adopted in 2015. It aims to inform all groups and individuals who may have an interest in, or an ability to influence or manage flood risk. It sets seven objectives covering a range of topics such as water quality, partnership working and flood risk and development. These objectives will filter through to the Flood Risk Management Plan mentioned in paragraph 67 above.

2.2.20. From April 2015, planning policy and decisions on planning applications for major developments have been required to ensure

that sustainable drainage systems (SuDS) are used for the management of surface water. Norfolk County Council is required to comment on planning applications for major developments in respect of surface water drainage.

2.2.21. Spatial Planning Objective 1 of the JCS is "To minimise the contributors to climate change and address its impact". Accordingly, the objective promotes:

- high standards of design and sustainable access;
- reduction of greenhouse gases and adaptation to the impact of climate change;
- zero and low - carbon developments;
- guiding new development away from areas with a high probability of flooding. Where new development in such areas is desirable for reasons of sustainability (e.g. in the city centre), flood mitigation will be required and flood protection will be maintained and enhanced.

2.2.22. Policies throughout the JCS support these objectives, most notably policy 1 (Climate change), policy 2 (Good design) and policy 3 (Energy and water), with the latter requiring 10% of the energy supply for new development to be from renewable sources. Detailed approaches to mitigating flood risk in new development, agreed with the LLFA, are in development management policies for each district.

2.3. Current Baseline

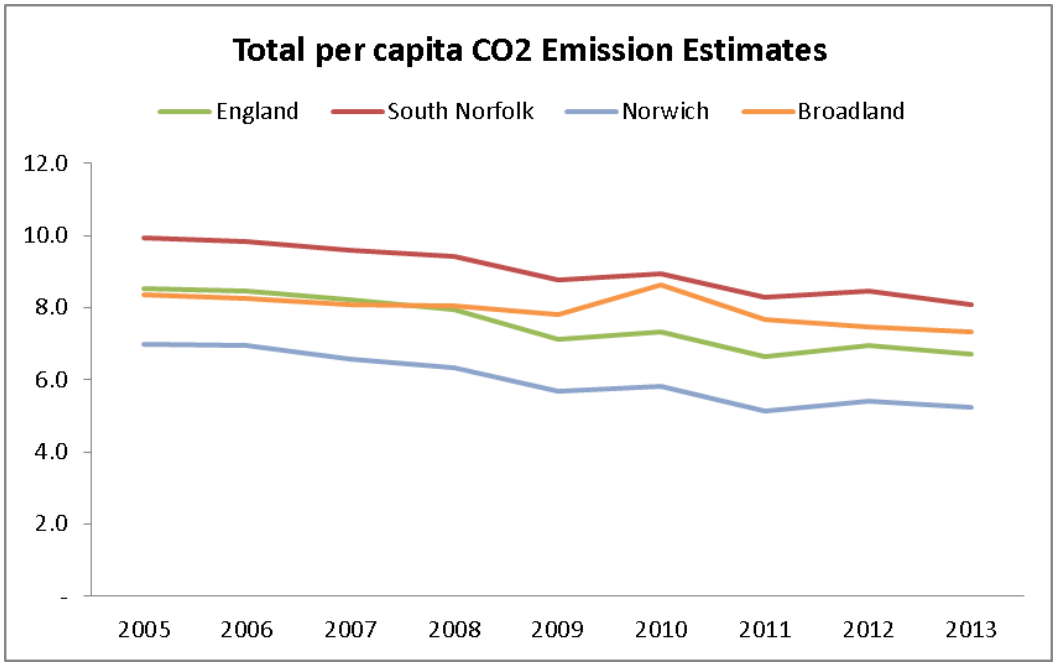
2.3.1. Broadland and South Norfolk CO_2 per capita emissions are above the national (England) average but have steadily reduced in recent years, in line with national trends. Emissions are lower in Norwich, reflecting the urban nature of the district with shorter and fewer car journeys needed.

Figure 8 2013 Per Capita CO^2 emission estimates[10]

Area	Industry & commercial	Domestic	Transport	Total
Broadland	2.9	2.2	1.9	7.3
Norwich	2.4	1.8	0.9	5.2
South Norfolk	2.2	2.2	3.1	8.1
Norfolk	3.0	2.2	2.2	7.5
East of England	2.0	2.0	1.9	6.0
England	2.8	2.0	1.9	6.7

[10] 2005 to 2013 UK local and regional CO2 emissions, DECC & ONS

Figure 9 Per Capita Emission Trends



2.3.2. The general trend for CO_2 emissions is a reduction since 2005 at all geographic levels.

2.3.3. There are a number of factors that contribute to the scale of per-capita emissions in Greater Norwich, including transport. In regards to transport, it is acknowledged that the Examining Authorities Report into the Northern Distributor Road (NDR) found that the scheme will "lead to an immediate and ongoing increase in carbon emissions as compared with the "Do-Minimum" scenario". However it was also acknowledged that these may be "mitigated by efficiency improvements promoted in future carbon budget rounds and that evidence submitted to the examination did not show that, in isolation, the scheme would affect the ability of the Government to meet its carbon reduction targets, nor the fulfilment of the overarching national carbon reduction strategy"[11].

2.3.4. According to UK Climate projections 2009 (UKCP09) [12] overall the long term projection is that the area is likely to have wetter winters, drier summers, and higher average temperatures.

[11] The Planning Inspectorate, The Norfolk County Council (Norwich Northern Distributor Road (A1067 to A47(T) Order, Examining Authorities Report of Findings and Conclusions and Recommendation to the Secretary of State for Transport, paragraph 4.283.

[12] http://ukclimateprojections.metoffice.gov.uk/21678

Figure 10 UK Climate projections 2009 temperature projections under various probability scenarios

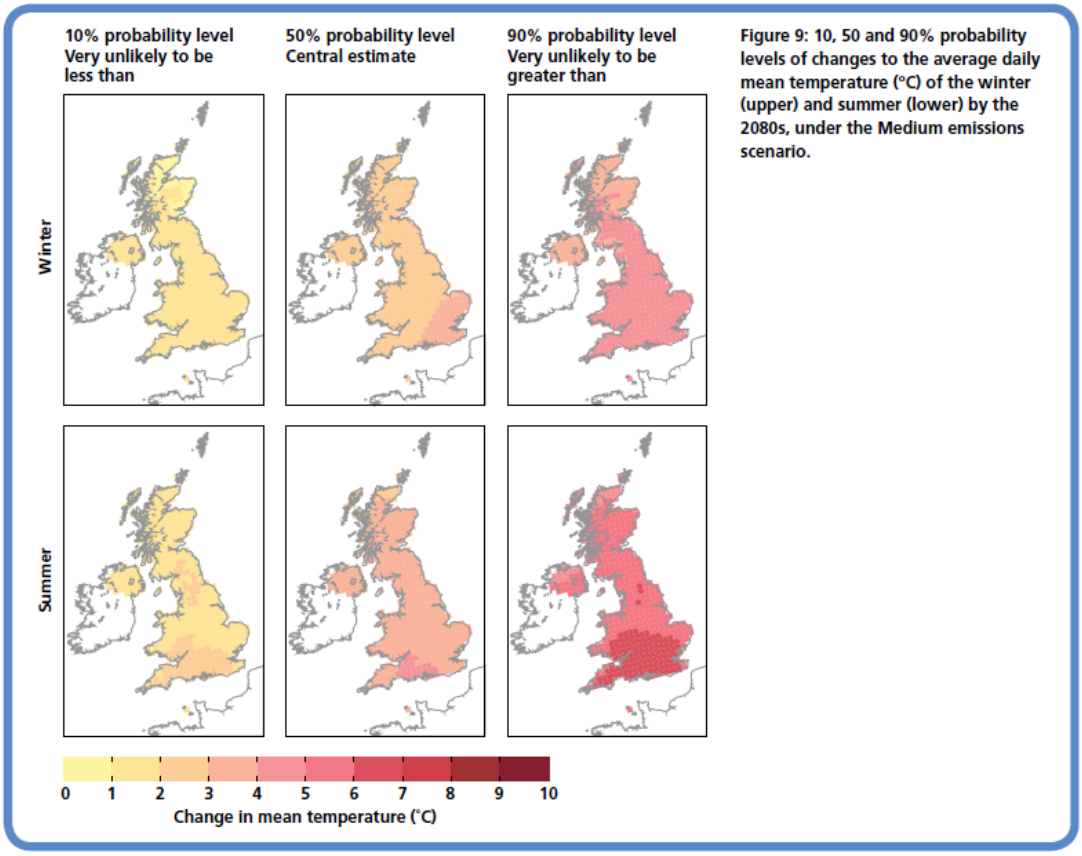
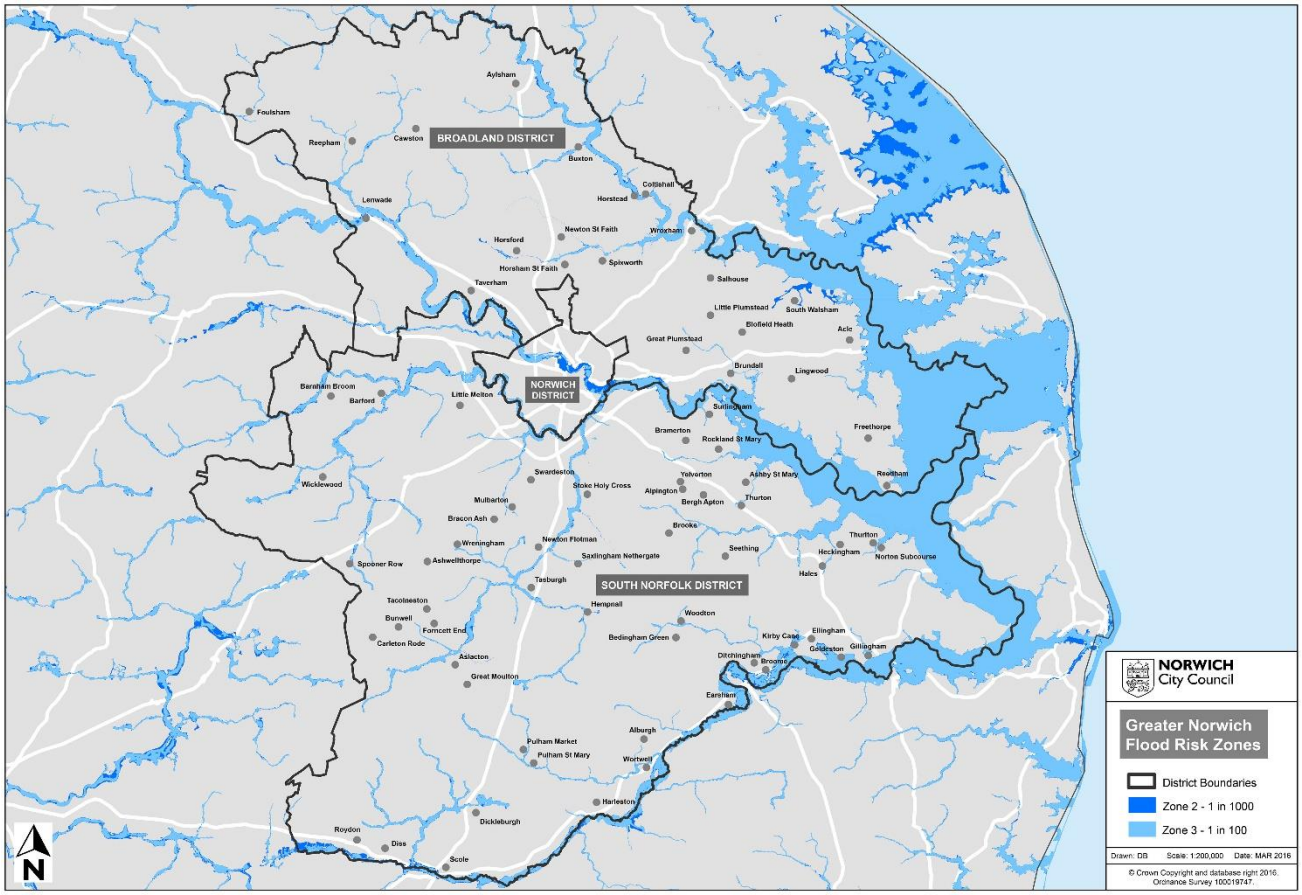


Figure 9: 10, 50 and 90% probability levels of changes to the average daily mean temperature (°C) of the winter (upper) and summer (lower) by the 2080s, under the Medium emissions scenario.

2.3.5. Although the area has no coastline, as noted above, the low-lying nature of parts of the surrounding area mean that coastal erosion and tidal flooding could impact on both the Broads and Greater Norwich.

2.3.6. Figure 9 below illustrates the main areas at risk of flooding in Greater Norwich, as defined by the Environment Agency. Although protected, the Wensum valley in Norwich city centre is an area where flooding could be a risk to development potential. As the map demonstrates, there areas of functional flood plain in and around Norwich city centre, to the west on the River Wensum and to the east and south on the River Yare. There are extensive areas where flood risk is relatively high, particularly along the rivers Waveney, Yare and Bure, though these are largely covered by the Broads as the local planning authority.

Figure 11 Environment Agency Flood Zones 2 & 3



2.3.7. The main sources of flood risk[13] in the area are identified as, among other things: flooding from the River Wensum in Norwich, the River Bure and Camping Beck at Buxton; combined river and tidal flooding in Wroxham/Hoveton and Brundall; failure or overwhelming of pumping stations causing localised flooding in Wymondham, Aylsham, and Upton; breaching/failure of embankments in Norwich; and surface water and sewer flooding in a range of places. Based on the whole catchment area, which is wider than the study area, the largest concentration of people currently at risk from the 1% annual probability river flood are located in Buxton with Lamas, but by 2100 the largest increase in flood risk from rivers is in Norwich.

2.3.8. Regarding local sources of flooding, such as surface water, ground water and ordinary water courses, no *nationally significant* indicative Flood Risk Areas have been identified in the Greater Norwich area by the Environment Agency. However, Norwich was identified as having approximately 14,000 people at risk of surface water flooding and was ranked 19th in a list of English settlements outside the indicative Flood Risk Areas[14].

[13] Broadland Rivers Catchment Flood Management Plan

[14] According to the Norfolk Preliminary Flood Risk Assessment, 2011

2.3.9. The Norfolk Flood Risk Management Strategy identifies the top 39 settlements at risk from surface water flooding based on flood risk, and grouped them into four priority bands based on the potential numbers of people at risk. Those settlements in the Greater Norwich Area have been extracted into the following table:

Figure 12 Flood Risk Settlement Priority Ranking

Priority Band	Settlement	Potential impact within the Places above the Flood Risk Thresholds		
		Number of people	Critical Infrastructure	Non residential properties
1	**Norwich (inc. Drayton, Taverham and Cringleford)**	22,273	58	1,909
2	**No settlements in Greater Norwich in this ranking**			
3	**Wymondham**	1,381	0	177
4	**Diss**	534	2	111
5	**Long Stratton**	264	3	79
6	**Aylsham**	339	2	84
7	**Harleston**	597	2	23
8	**Spixworth**	241	2	0
9	**Buxton**	260	0	0

2.3.10. Potential measures to mitigate for and adapt to this risk are described in Appendix 1 of the Norfolk Local Flood Risk Management Strategy[15]. Such mitigation measures will be directed towards areas where the most benefit might be achieved, and include retrofitting sustainable drainage (SuDS), flood defences, increased capacity and conveyance of drainage systems and improved land management practices. They include:

Figure 13 Potential Flood Mitigation Measures

Settlement/area	Mitigation
Diss	Protection of 205 properties to a 1 in 100 standard
Harleston	Protection of 140 properties to a 1 in 100 standard
Catton Grove	Protection of 847 properties to a 1 in 100 standard
Drayton	Protection of 86 properties to a 1 in 100 standard
Nelson/Town Close	Protection of 667 properties to a 1 in 100 standard
Wymondham	Protection of 217 properties to a 1 in 100 standard

15 http://norfolkcc.cmis.uk.com/norfolkcc/Meetings/tabid/70/ctl/ViewMeetingPublic/mid/397/Meeting/401/Committee/18/Default.aspx

2.3.11. There has been an increase in renewable energy generation in recent years, predominantly in the form of solar and wind, along with some biomass generation. In January 2016, the Department for Energy and Climate Change (DECC) Renewable Energy Planning Database[16] showed that there are eleven operational large scale renewable energy developments, two under construction and four awaiting construction in the Greater Norwich area.

2.3.12. Whilst the above developments illustrate that there is potential for major renewable energy development in the area, future growth in major renewable energy schemes is difficult to predict. It is likely to be dependent on government policy on planning and subsidies for the industry, changes in technology and the cost of other sources of energy, though a positive approach to renewable energy development through the GNLP would be likely to assist in bringing sites forward.

Figure 14 Renewable and Low Carbon Decentralised Energy Schemes

Operational	Under Construction	Awaiting Construction
Avenue Solar Farm, Yelverton	Scottow Moor Solar Farm phase 2	Banningham Road, Aylsham
Bungay Road Solar Farm, Tasburgh	White Horse Lane Solar Farm, Trowse	Brick Kiln Road Solar Farm, Mulbarton
Costessey Landfill Gas Project		New Road Solar Farm, Bawburgh
Old Airfield Solar Farm, Weston Longville		Oulton Airfield Solar Farm
Reepham Road Biomass		Rookery Business Park Solar Farm, Besthorpe
Salhouse Solar Farm		
Scottow Moor Solar Farm phase 1		
Spring Farm biomass, Taverham		
UEA Combined Gas Fired Heat and Power		
Weston Airfield Wind Farm, Weston Longville		
Woodforde Solar Farm		

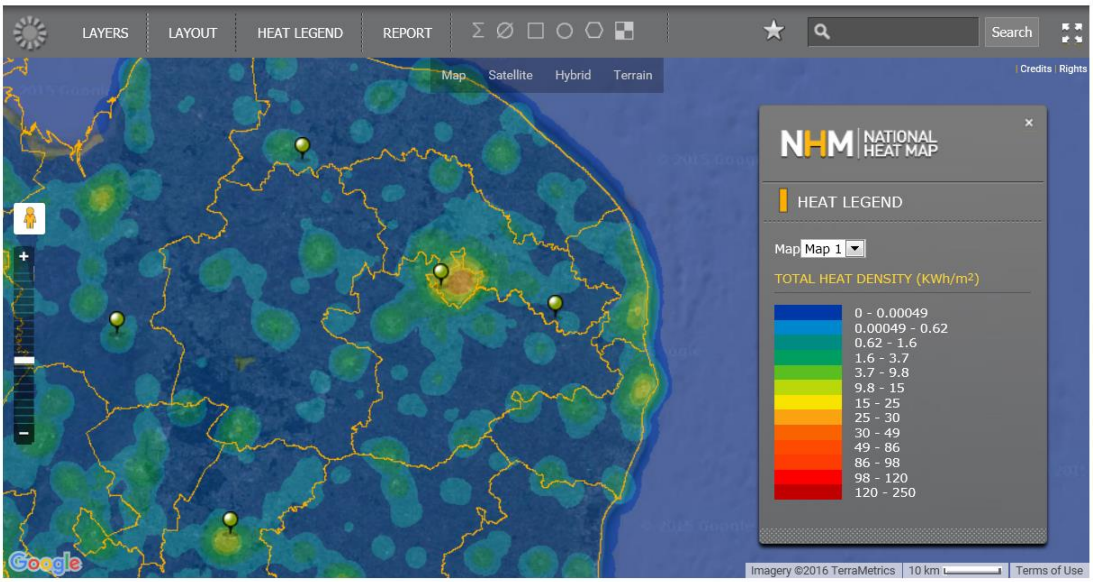
[16] https://www.gov.uk/government/publications/renewable-energy-planning-database-monthly-extract

2.3.13. The DECC interactive maps[17] show that in September 2015, although Norwich had fewer than the GB average domestic solar photovoltaic (PV) installations, both Broadland and South Norfolk had over the GB average number of installations. However, this still represents a minority of the housing stock.

2.3.14. As with major renewable energy generation, the potential for further growth in solar PV installations is difficult to predict. It is likely to be dependent on national issues such as government policy on subsidies, changes in technology, the cost of panels and the cost of other sources of energy.

2.3.15. The DECC national heat map[18] for Greater Norwich shows heat demand by area. It is primarily intended to help identify locations where local heat distribution is most likely to be beneficial and economic, and is a tool for prioritising locations for more detailed investigation. The map below also shows two Combined Heat and Power (CHP) installations in the area. The Utilities site in Norwich was allocated for development that will "seek to maximise the use of renewable and low carbon energy sources including the provision of district wide heating and CHP. As such, consideration continues to be given to the potential for developing a CHP network in Norwich.

Figure 15 Extract of National Heat Map



2.4. Projected Baseline

2.4.1. While the JCS contains policies to address climate change issues, including flood risk, since climate change is a global issue it is difficult to predict longer term changes in the baseline. However, it is important that after 2026, the end date of the JCS, the GNLP

[17] http://tools.decc.gov.uk/en/content/cms/statistics/local_auth/interactive/domestic_solar/index.html
[18] http://tools.decc.gov.uk/nationalheatmap/

provides a strategic plan for the Greater Norwich area to minimise emissions in the area and to assist adaptation to climate change. Without such a plan, there is the potential for emissions to increase and for more development to be located in, for example, areas prone to flood risk or to not be adapted to climate change.

2.5. Issues

- Ensure consistency with interventions proposed within Governments forthcoming emissions reduction plan, supporting the wider policy imperative to reduce carbon emissions over time.
- Climate change is expected to increase the frequency and intensity of extreme weather events such as heat waves, drought and intense rainfall.
- Fluvial/tidal flooding is a risk affecting limited parts of the area, while surface water and sewer flooding is a risk in a number of places.
- Although per capita CO2 emissions have been declining in line with national trends, they are above the national average in rural parts of the area.
- There is potential to increase renewable energy production chiefly from solar, wind and biomass developments, as well as from micro-renewables.

3. SECTION 3 – BIODIVERSITY, GEODIVERSITY AND GREEN INFRASTRUCTURE

3.1.1. This section identifies the biodiversity and geodiversity assets, including designated sites and wider information on the natural environment, including the green infrastructure network, in the Greater Norwich area.

3.2. Context

3.2.1. National/International

3.2.2. The EU Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC) requires the UK to create an ecological network to protect threatened habitats and species. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) form part of this network. However, if a development affects European protected species Natural England could issue a licence and seek proportionate mitigation and compensation measures.

3.2.3. The NPPF recognises the need for planning to contribute to and enhance the natural and local environment. It emphasises the need to minimise the impact on, and provide net gains in, biodiversity. The planning system should establish coherent ecological networks that are more resilient to current and future pressures. The NPPF also identifies how the planning system should protect and enhance geological conservation interests.

3.2.4. The Natural Environment and Rural Communities Act of 2006, Section 40: Duty to conserve biodiversity states: "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity". In Section 41, the Act requires a list of species and habitats which are of principal importance for conserving biodiversity.

3.2.5. The Natural Environment White Paper of 2011 states the need to stop the decline in biodiversity and the degradation of ecosystems and services, and restore them as far as is feasible, and seek to deliver net gains in biodiversity where possible. One of the commitments was to publish a biodiversity strategy for England.

3.2.6. Biodiversity 2020 is the Government's strategy for England's wildlife and ecosystems. It encapsulates the aims of the EU Biodiversity Strategy and seeks to achieve, by 2020:

- More, bigger and less fragmented areas for wildlife, no net loss of priority habitat and a net increase in priority habitats.
- Restoration of at least 15% of degraded ecosystems as a contribution to climate change mitigation and adaptation.
- An overall improvement in the status of species and prevention of further human-induced extinctions.
- Improved engagement in biodiversity issues.

3.2.7. The UK post-2010 Biodiversity Framework was published in 2012. It covers the period to 2020 and replaces the UK Biodiversity Action Plan process. However, many of the tools and background information developed under UK BAP still form the basis of much biodiversity work.

3.2.8. The EU published guidance in 2013 on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment. This suggests that an SEA should focus on ensuring "no net loss" of biodiversity before considering mitigation and compensation. The assessment should also take account of ecosystem services and the links between the natural environment and the economy.

3.2.9. The UK Geodiversity Action Plan provides a shared context and direction for geodiversity through a common aim, themes, objectives and targets, linking national, regional and local activities. To help deliver this in England, the Geodiversity Charter (2015), developed by the English Geodiversity Forum, sets out the ambition that geodiversity is recognised as an integral and vital part of the environment, economy and heritage that must be safeguarded and managed for current and future generations.

3.2.10. Good Practice Guidance for Green Infrastructure and Biodiversity (2012) while not a strategy, has been endorsed by a range of organisations including the Town and Country Planning Association and the Wildlife Trusts. It emphasises the importance of a strategic approach to green infrastructure (GI), which should be multi-functional and emphasise the area's locally distinctive character. GI should protect, enhance, restore and create wildlife habitats, and connect sites at a strategic and a local level.

3.2.11. Local

3.2.12. The Local Nature Partnership, Wild Anglia's core strategic document is their manifesto, setting out four strategic aims: economic growth; exemplary green infrastructure; strengthening nature; and a healthy, happy society.

3.2.13. The Norfolk Biodiversity Partnership has collated the 22 habitat action plans and 15 species action plans for the most threatened species/habitats in the Greater Norwich Area. These form a useful foundation for related policies. The Biodiversity Supplementary Planning Guidance for Norfolk was produced in 2004. Despite its age, it contains useful practical examples of how biodiversity can be incorporated into development.

3.2.14. The River Wensum Restoration Strategy (2009) was a pilot for Natural England's national approach to whole-river restoration planning. This identifies and prioritises physical restoration measures that will help to achieve the SAC's conservation objectives in the most cost-effective way.

3.2.15. Norfolk Geodiversity Partnership has produced the Norfolk Geodiversity Action Plan (2010-2015). Among other aims, the document seeks to embed geo-conservation in official plans and policies. A Supplementary Planning Guide, Geodiversity in Planning, has also been produced. This recommends reference to British Geological Survey maps and the Norfolk Geodiversity Audit for plan-making purposes.

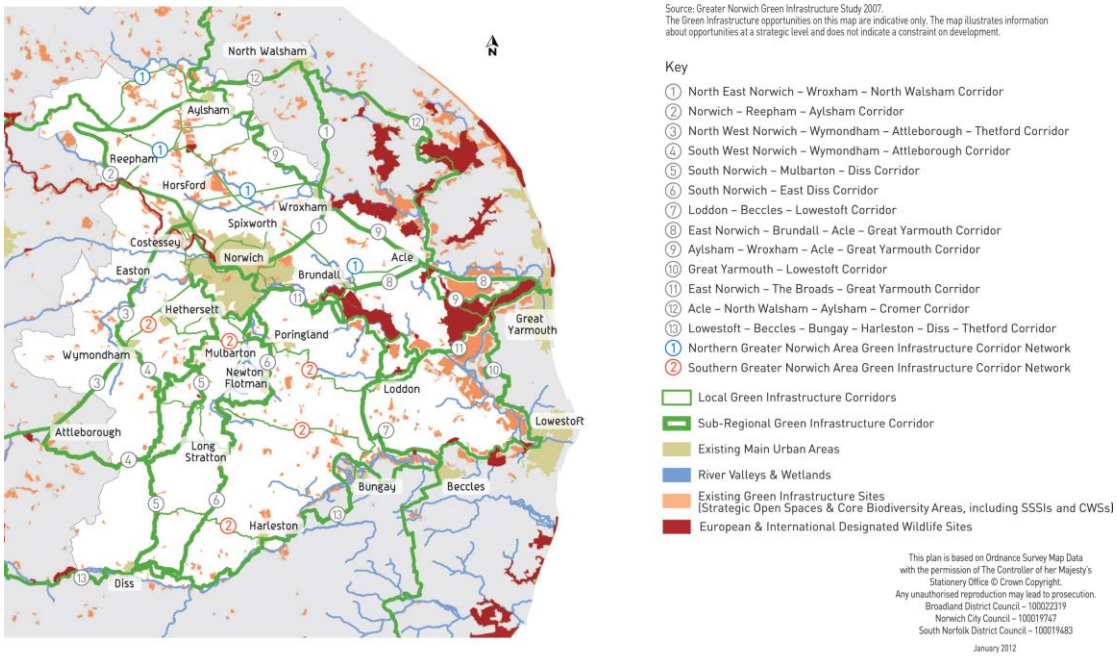
3.2.16. The Greater Norwich Green Infrastructure Strategy was part of the evidence base of the Joint Core Strategy. It brings together various strands of green infrastructure work across the Greater Norwich area into a single vision, and makes recommendations for investing in the provision of multi-functional green infrastructure. Among other things, it identifies indicative sub-regional and local green infrastructure corridors. The Greater Norwich Green Infrastructure Delivery Plan post-dates the Greater Norwich Green Infrastructure Strategy, providing a more focussed study of the key growth areas of south-west and north-east of Norwich.

3.2.17. The JCS identifies "Enhancing our special environment and mitigating against any adverse impacts of growth" as one of the 'grand challenges' it faces. To address this, the strategy aims both to locate development in places that will minimise adverse impact on the environment and to look after and improve the natural qualities of the area, taking the opportunities which development brings to expand and create even more.

3.2.18. To enable this, policy 1 of the JCS sets out the proposed green infrastructure network for the Greater Norwich area (see figure 16 below), including links with neighbouring areas. As Greater Norwich is located adjacent to the Broads and other areas of national and international importance, the JCS and other Local Plan documents seek to provide sufficient high quality green infrastructure to provide buffer zones and alternative destinations to help manage visitor pressure on biodiversity.

3.2.19. Due to proximity to Natura 2000 protected habitats in the Broads, Local Plan policies in Broadland require developments to provide Suitable Alternative Natural Greenspace (SANG). The aim of this policy approach is to provide viable alternatives to Natura 2000 sites to meet every day recreational needs.

Figure 16 Proposed green infrastructure network for the Greater Norwich area



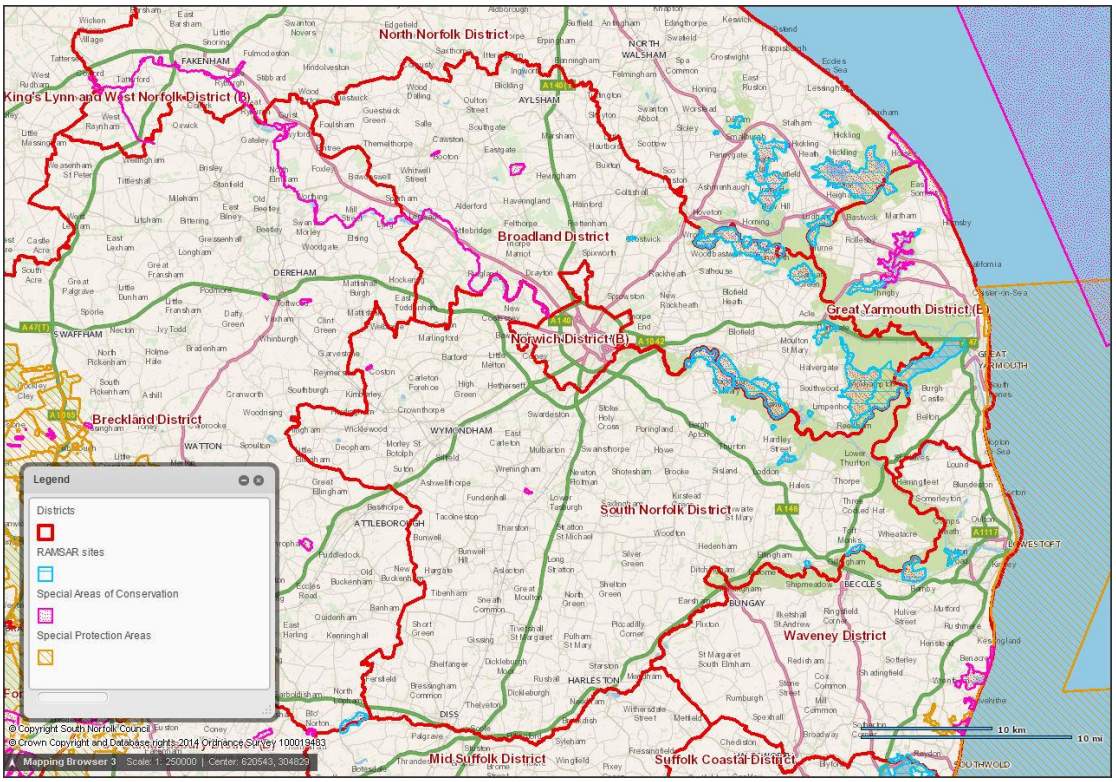
3.3. Current Baseline

3.3.1. The Greater Norwich area is home to some significant nature conservation interests. The table below summarises these and establishes the baseline. There are large areas of internationally important wildlife sites across the area designated for both habitat and species protection, these being Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites for wetland importance. Most of these are marshland, rivers or broads, so water quality is a key issue. There are also many nationally important Sites of Special Scientific Interest (SSSIs) and national and local wildlife sites dispersed widely across the area. Their number and locations are set out in figures17 to 21 below.

Figure 17 Numbers of locally, nationally and internationally designated nature conservation sites, 2015[19]

Feature	Norwich	Broadland	South Norfolk	Greater Norwich
SAC	0	3 (2 shared)	2 (2 shared)	**3**
SPA	0	2 (1 shared)	1 (shared)	**2**
Ramsar	0	2 (1 shared)	1 (shared)	**2**
SSSI	6	15 (3 shared)	27(3 shared)	**45**
National Nature Reserves	0	2 (1 shared)	1 (shared)	**2**
Local Nature Reserves	8	2	8	**18**
Roadside Nature Reserves	1	8	43	**52**
County Wildlife Sites	30[20]	130[21]	268[22]	**428**

Figure 18 SAC, SPA & Ramsar sites in Greater Norwich



[19] Sources: Norfolk County Council Biodiversity Information Service and Natural England. Some sites have several designations, so will be counted more than once in the table.

[20] http://www.nbis.org.uk/sites/default/files/documents/CWSinNorwich2013.pdf

[21] http://www.nbis.org.uk/sites/default/files/documents/CWSinBroadland2013.pdf

[22] http://www.nbis.org.uk/sites/default/files/documents/CWSinSouthNorfolk2013.pdf

Figure 19 SSSIs in Greater Norwich

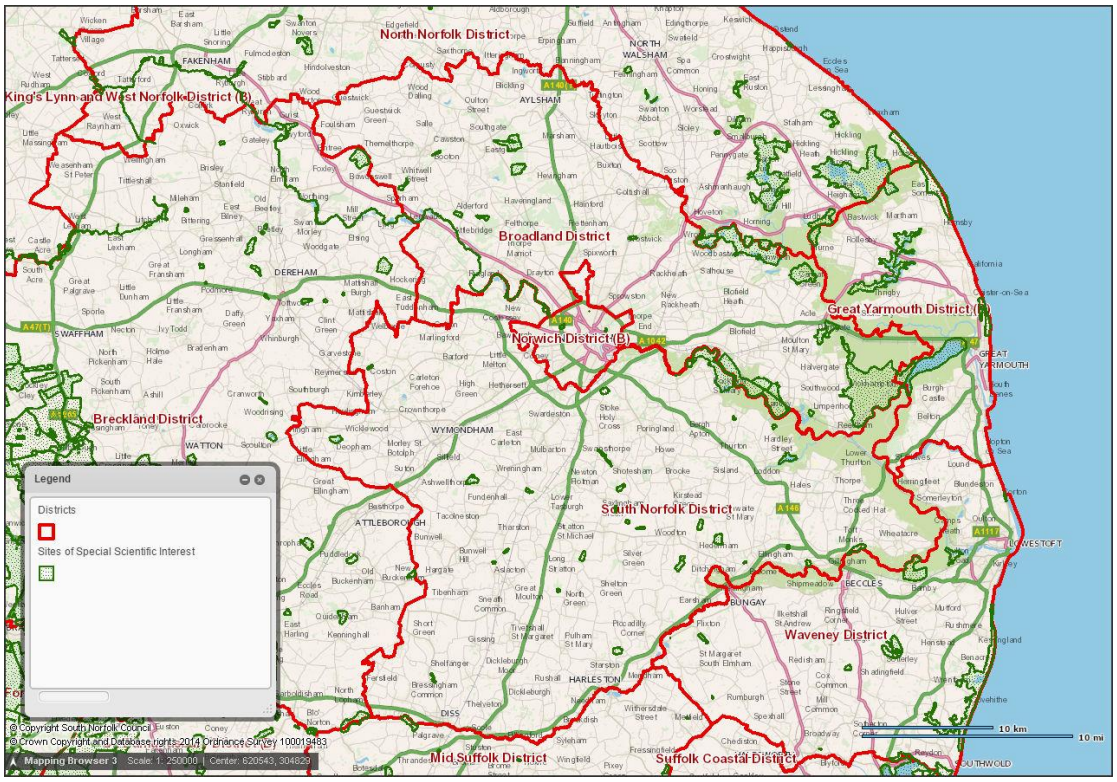
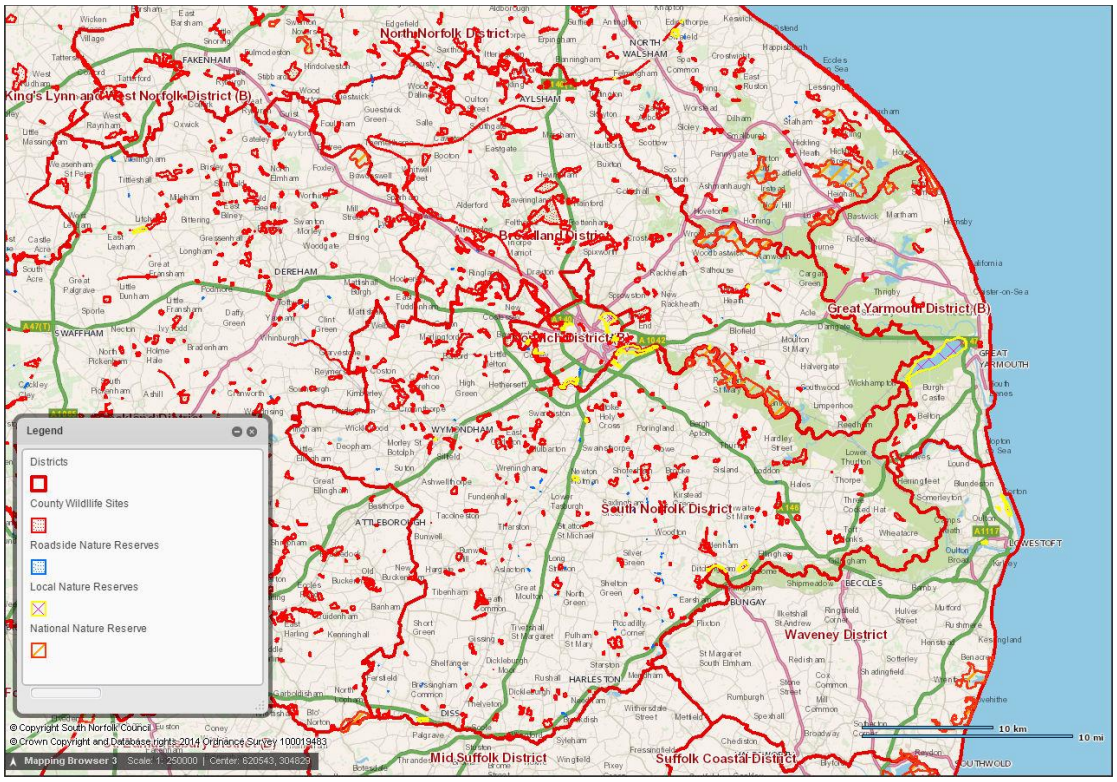


Figure 20 National Nature Reserves, Local Nature Reserves, Roadside Nature Reserves & County Wildlife Sites in Greater Norwich



3.3.2. Natural England's database of SSSIs includes those for geo-diversity, and records their condition[23]. There are 45 SSSIs in the Greater Norwich area, including 6 geological designations. Of the 45 SSSIs, 11 have elements that are either in 'unfavourable – no change' or 'unfavourable – declining' condition.

Figure 21 The percentage of SSSIs in 'favourable condition' or 'unfavourable recovering condition' and CWS/CGS in 'positive conservation management', at March 2015[24]

District	SSSI	CWS/CGS
Broadland	94%	75%
Norwich	75%	93%
South Norfolk	78%	70%

3.3.3. Norfolk Biodiversity Partnership defines 22 habitats and 15 species which are the most threatened species/habitats in the Greater Norwich Area (previously described as BAP habitats and species). These are shown in, figure 22, below[25].

Figure 22 Most threatened habitats and species on Greater Norwich area

Habitat Action Plans	Species Action Plans
Allotments	Mammals
Cereal field margins	Birds
Churchyards and cemeteries	Butterflies
Coastal and floodplain grazing marsh	Crustaceans
Coastal sand dunes	Molluscs
Fens	Sea Anemone
Hedgerows	Fungus
Littoral and sublittoral chalk	Lichen
Lowland calcareous grassland	Liverwort
Lowland heathland and dry acid grassland	Vascular Plants
Lowland meadow and pastures	Beetles
Lowland mixed deciduous woodland	Stoneworts
Lowland wood-pasture and parkland	Fish
Maritime cliff and slopes	Dragonflies
Mesotrophic lakes	Amphibians
Open mosaic habitats on previously developed land	

[23] https://designatedsites.naturalengland.org.uk/SiteList.aspx?siteName=&countyCode=29&responsiblePerson=

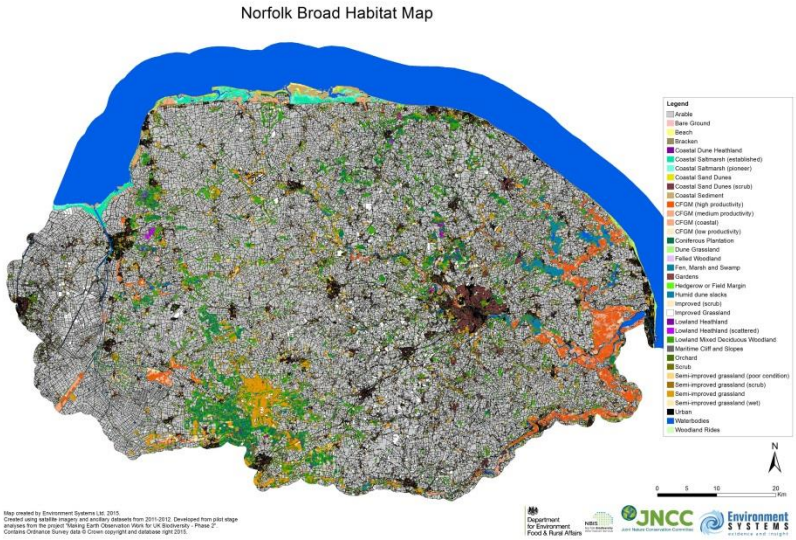
[24] JCS AMR 2014/15

[25] http://www.norfolkbiodiversity.org/actionplans/

Ponds	
Reed beds	
Saline lagoons	
Seagrass beds	
Traditional orchards	
Wet woodlands	

3.3.4. Norfolk Biodiversity Information Service (NBIS) has mapped habitat in Norfolk at a field-by-field scale. The resultant map, shown at figure 23 below, is currently being ground-truthed[26]. The map can be viewed in more detail using this link: www.nbis.org.uk/sites/default/files/images/Norfolk_main_map_150dpi.png.

Figure 23 Norfolk Broad Habitat Map



3.3.5. Across the Greater Norwich Area, there are 114 audited significant geological and geomorphological sites and features, including SSSIs[27]. There is also a designated County Geological Site (CGS) at Pinebanks Pit, Thorpe St Andrew[28].

3.3.6. Work, which it is anticipated will continue into the long term, has begun on implementing the Green Infrastructure network, both through the design of new development providing new green infrastructure and the use of CIL funding to provide new and improve existing green infrastructure. For example, demonstration projects are underway to strengthen the role of Marriotts Way; to

[26] http://www.nbis.org.uk/sites/default/files/images/Norfolk_main_map_150dpi.png
[27] https://sites.google.com/site/norfolkgeodiversity/action-ngap/1-understanding
[28] http://www.nbis.org.uk/CGS

provide a pedestrian bridge across the River Yare between Bowthorpe and Colney; and to develop the Wensum River Parkway.

3.3.7. The delivery of an effective GI network can have multi-functional benefits that are not only limited to conserving and enhancing the natural environment but can include: promoting recreational activities and social interaction thereby supporting healthy communities; helping create a sense of place as a key part of good design; creating and high quality environment which are attractive to businesses and investors; and, mitigating and adapting to the impact of climate change through storing carbon, contributing to sustainable drainage and reducing the heat island effect.

3.4. Projected Baseline

3.4.1. Beyond the JCS end date in 2026, long term prospects for protecting and enhancing the wealth of habitats and species in the area, and for further developing the existing green infrastructure network, would be reduced without a strong policy framework being established in the Greater Norwich Local Plan.

3.5. Issues

- There is a need to protect and enhance nationally and internationally protected nature conservation interests and geodiversity sites in and adjacent to the area, with particular emphasis on reducing visitor pressure on and improving water quality in Natura 2000 sites and the wider habitats of the Broads.

- There are a number of locally important biodiversity sites that should be protected and enhanced.

- Local changes in air quality resulting from increased emissions, such as from increased traffic movements, could affect designated sites.

- Ensuring that the impact on GI from new development is minimised and benefits from new GI are maximised.

- Long term investment in improvements to the defined green infrastructure network is required.

4. SECTION 4 – LANDSCAPE

4.1.1. This chapter covers the character of the landscape in Greater Norwich.

4.2. Context

4.2.1. National/International

4.2.2. The European Landscape Convention, 2000, promotes the protection, management and planning of landscapes, and is the first international treaty to be exclusively concerned with all dimensions of the European landscape.

4.2.3. The NPPF states at paragraph 156 that Local Planning Authorities should set out strategic policies within the Local Plan for the 'conservation and enhancement of the natural and historic environment, including landscape'.

4.2.4. Natural England has produced National Character Area profiles, which provide a valuable resource for understanding the wider landscape context. They provide a strong environmental evidence base and inform local Landscape Character Assessments.

4.2.5. Local

4.2.6. Objective 9 of the Joint Core Strategy aims to protect, manage and enhance key landscapes in Greater Norwich. Policies 1 and 2 recognise the importance of maintaining strategic gaps between settlements, respecting landscape settings and of development making efficient use of land, including developing brownfield sites.

4.2.7. A Local Landscape Designations Review for South Norfolk Council concluded that there is a strong justification for retaining Strategic Gaps/Important Breaks, between Wymondham and Hethersett and Hethersett and Cringleford to maintain a separation between settlements which are under threat of coalesce[29]. This approach is implemented through South Norfolk's Local Plan policy DM 4.7. The location of the gaps is shown in figures 24 and 25 below.

4.2.8. The South Norfolk Local Landscape Designations Review also covered four additional planning policy tools. These are 1) the Norwich Southern Bypass Landscape Protection Zone (which has important part in safeguarding the landscape setting of Norwich); 2) Key Views (which are "cones" where long views to and from Norwich are identified, which should not be obstructed); 3) Undeveloped Approaches (several road and rail corridors approaching Norwich that have a very distinctive rural character and that afford views across the surrounding countryside and to

[29] http://www.south-norfolk.gov.uk/planning/media/11115104R_Strategic_Gaps_Review_FINAL_SK_28-09-2012.pdf

Norwich); and 4) Gateways, which are key points of transition or "arrival" in Norwich where the landscape and townscape changes. South Norfolk's Local Plan Policy DM 4.6 sets out the approach to development which may affect these four policy tools.

Figure 24 Strategic Gap between Wymondham and Hethersett

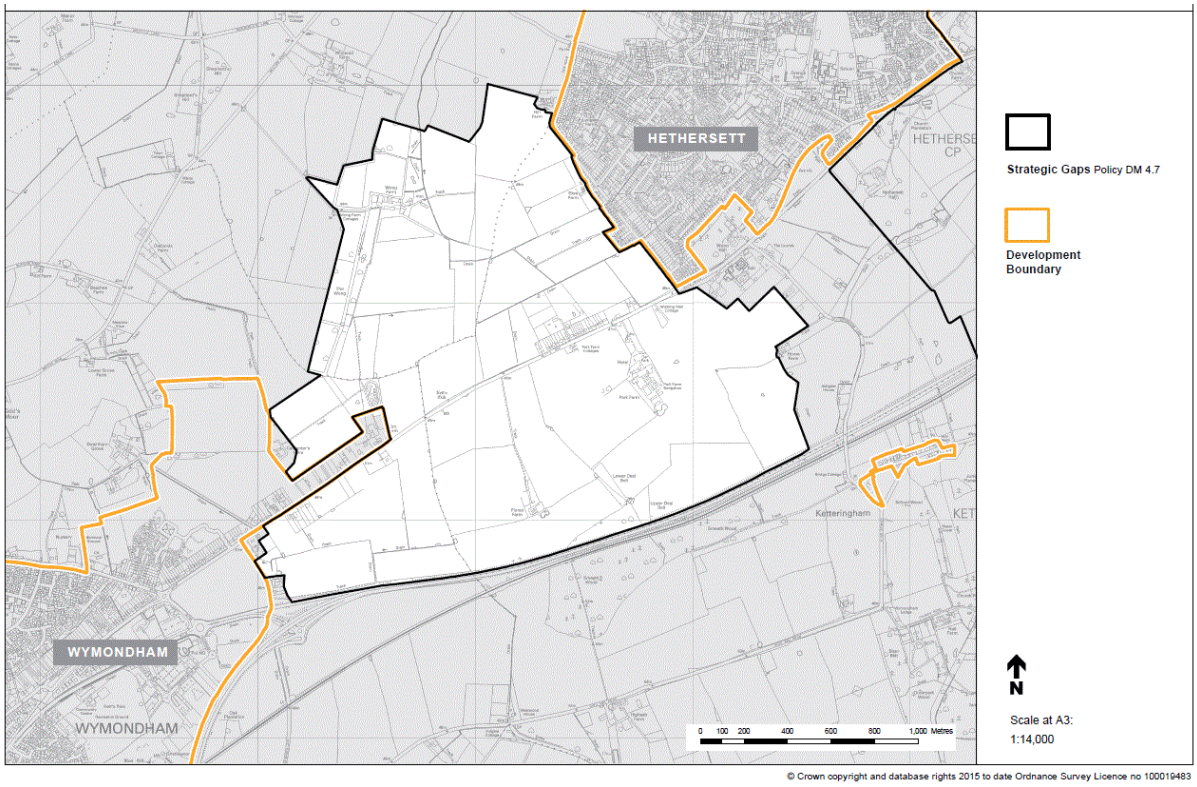
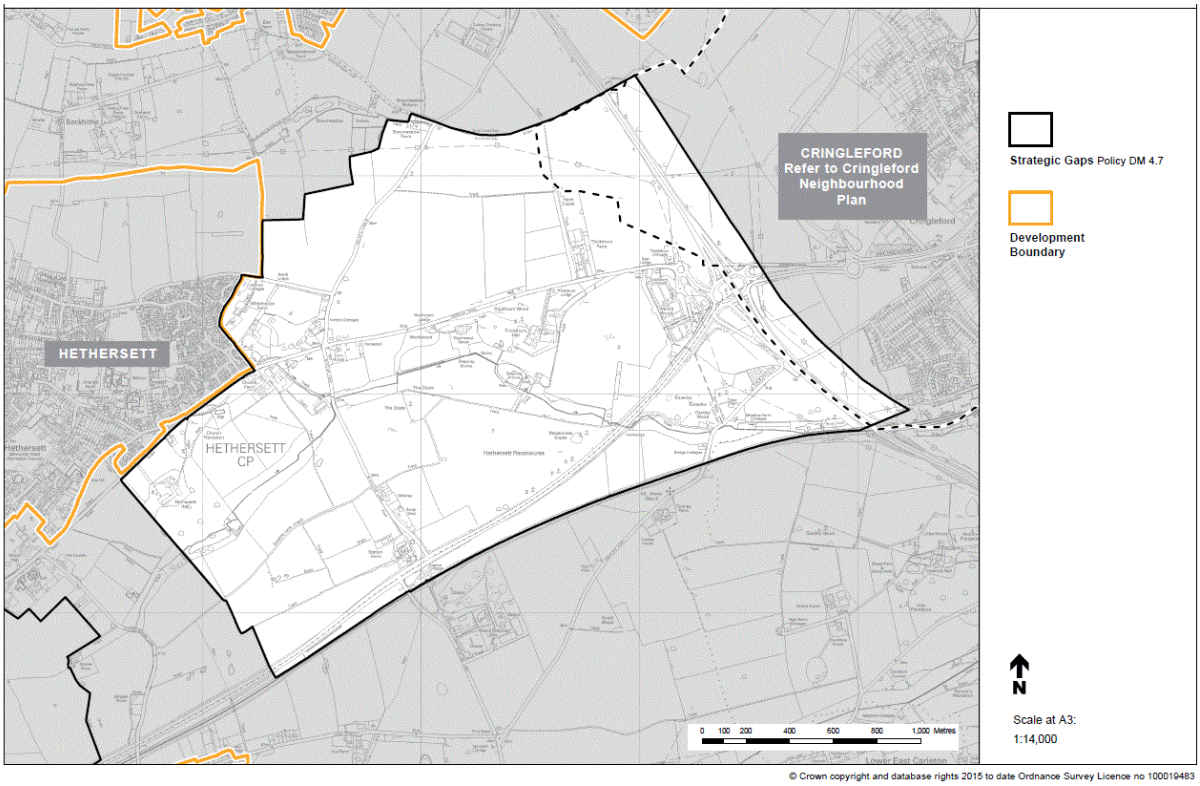


Figure 25 Strategic Gap between Hethersett and Cringleford



4.2.9. Broadland District Council's Landscape Character Assessment Supplementary Planning Document (SPD) and South Norfolk's Local Landscape Designation Review provide an up-to-date integrated assessment of the landscape character of the districts in accordance with current guidance and best practice. Between them they cover both districts, excluding the Broads Authority Executive Area and can be used to inform and underpin planning policy and decision making. Norwich City Council has a draft Trees and Landscape SPD.

4.3. Current Baseline

4.3.1. Broadland district is predominantly rural, covering an area of 55,167 hectares to the north and east of Norwich. It embraces large areas of low lying arable land, and to a lesser extent, pasture farmland. It also contains numerous woodlands and plantations along the areas of historic parkland. For the most part, the boundaries of the district are roughly defined by the river valleys of the Bure, Wensum and Yare. In the west, the boundary follows the edge of and the elevated Till Plateau[30].

4.3.2. South Norfolk is also a predominantly rural district which is 90,891 hectares in area. While its northern boundary borders Norwich, the district is largely a rural area of subtle contrasts, ranging from large scale and open plateau landscapes to the more enclosed and intimate character of the low-lying river valley landscapes. The

[30] Based on the Broadland Landscape Character Assessment SPD, paragraph 1.2.2, page 1 http://www.broadland.gov.uk/housing_and_planning/618.asp

landscape is predominantly arable farmland, interspersed with woodland, historic parkland and settlements[31].

4.3.3. Norwich is a more urbanised environment, but its historic landscape is visible in its parks and the remnants of historic woodland and heathland, including Mousehold Heath.

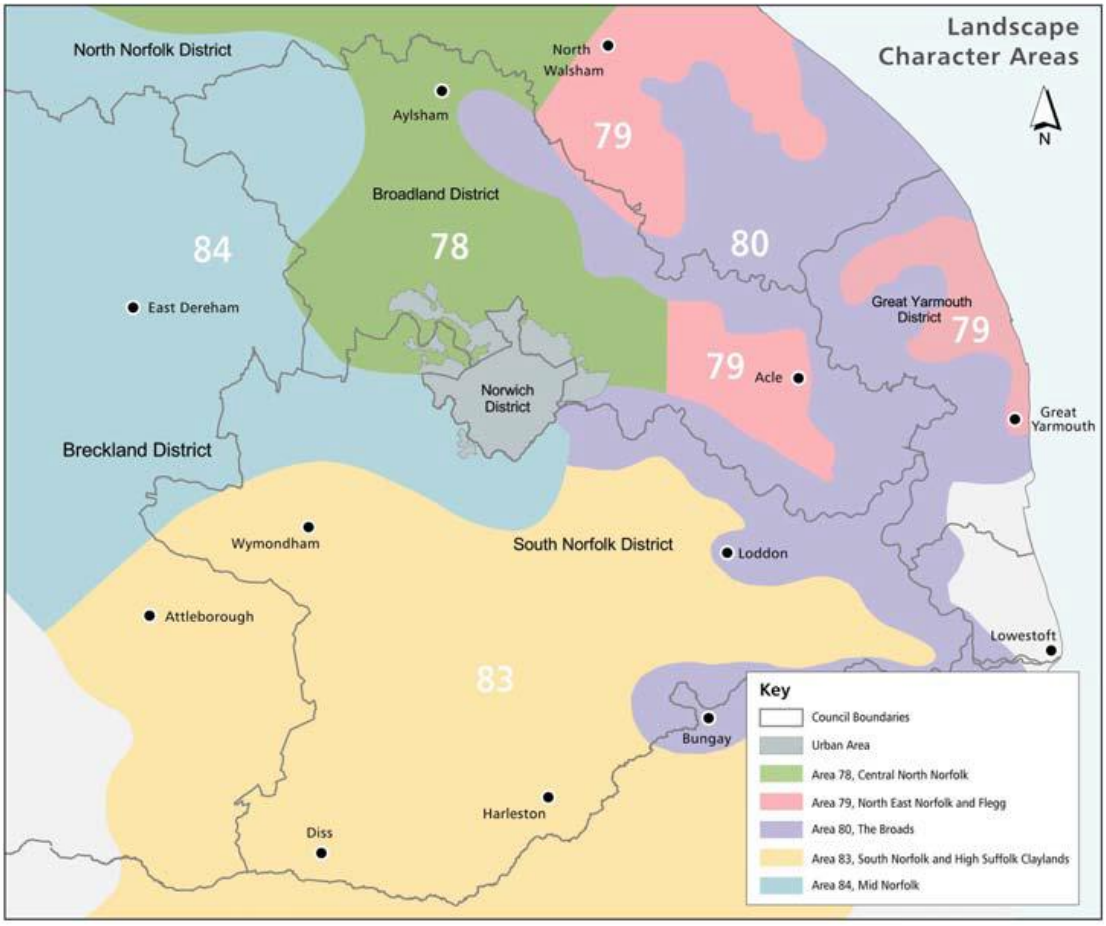
4.3.4. The eastern edges of both Broadland and South Norfolk are within the executive area of the Broads Authority, which is the local planning authority for this nationally important landscape designated by Government which has an equivalent status of a National Park. Although the Broads Executive Area is outside the area covered by the Greater Norwich Local Plan, it contains some of the primary environmental assets within the region. Regard must be had to its national status as a landscape, nature and recreation resource, the implications of which extend beyond the Broads area boundary to include its setting. The Broads Authority Local Plan will work to preserve these qualities, but it will need support from its neighbours.

4.3.5. The diversity of landscapes in the Greater Norwich area is reflected by the fact that five nationally defined landscape character areas converge around Norwich, a level of complexity unique within the region. Figure 26 below illustrates this. The National Landscape Character Areas cover:

- the fens and marshes of the Broads (character area 80);
- rolling landscapes of varied geology including woodland, heath and former parkland estates in the west and north of the area (78 and 84);
- an extensive open clay plateau incised by rivers in the south (83); and
- a more intimate landscape of small fields and hedgerows in the east (79).

[31] Based on South Norfolk Local Landscape Designations Review 2012 http://www.south-norfolk.gov.uk/planning/media/11115101R_Final_DW_06-12.pdf

Figure 26 National Landscape Character Areas covering the Greater Norwich area



4.3.6. At a local level, the landscape has been defined as various local Landscape Character Areas as figures 27 to 28 below illustrate.

Figure 27 Landscape Character Areas in Broadland[32]

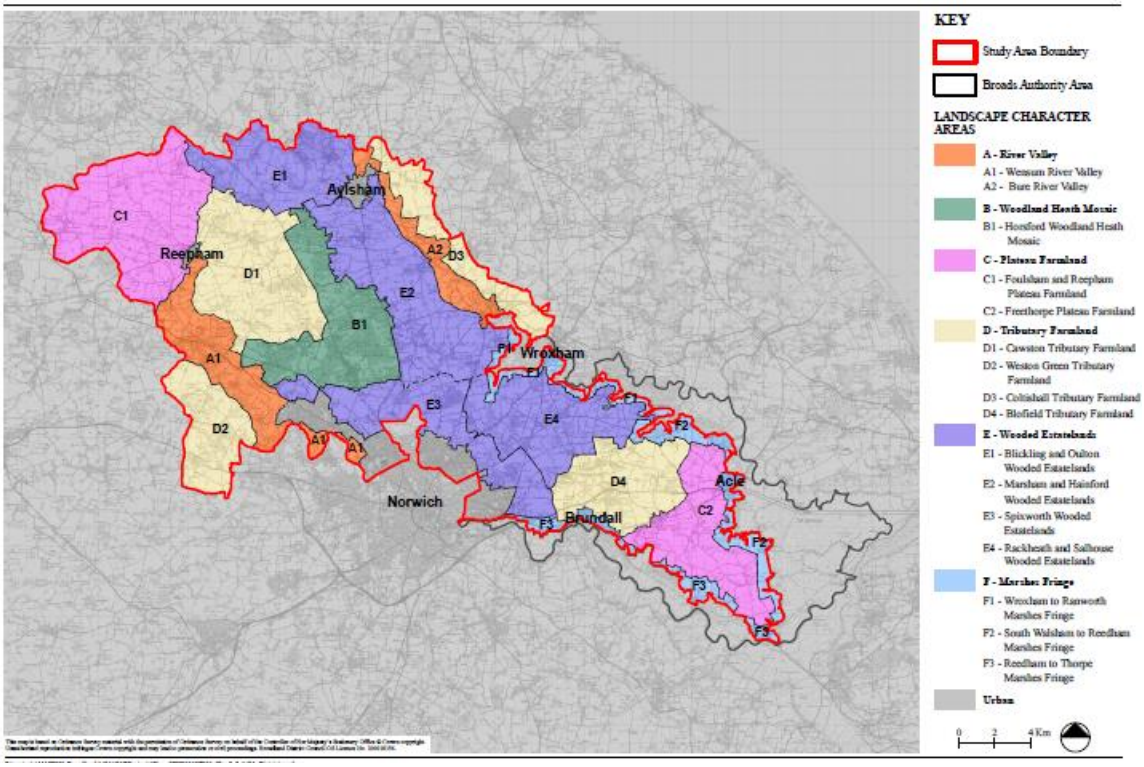
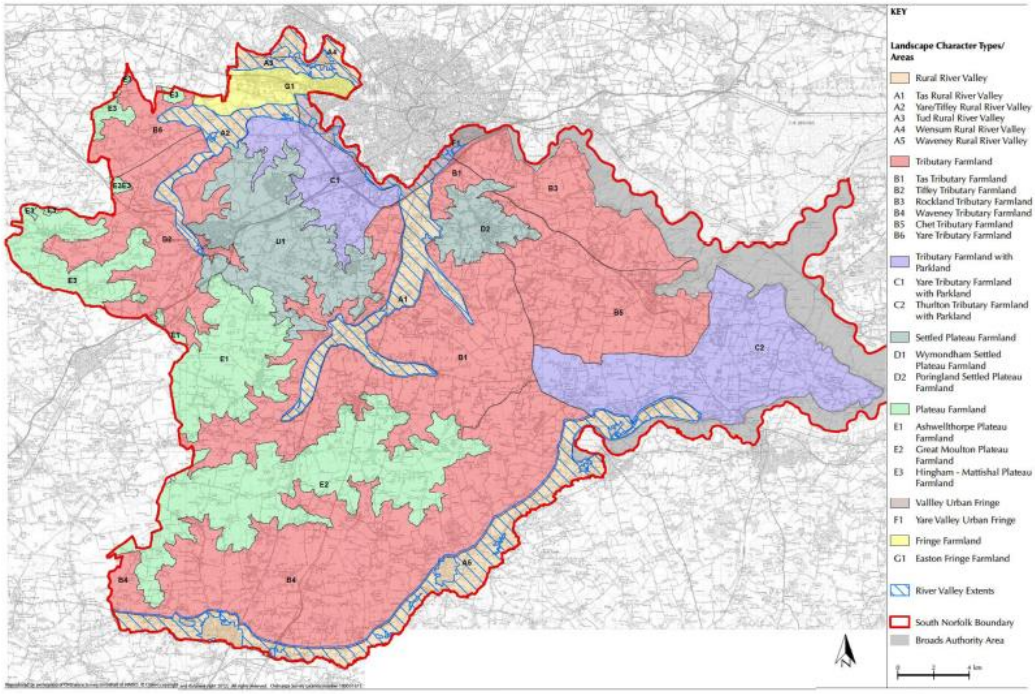


Figure 28 Landscape Character Areas in South Norfolk[33]



[32] http://www.broadland.gov.uk/PDF/LCA_SPD_Adopted_FINAL.pdf

[33] http://www.south-norfolk.gov.uk/planning/media/11115101R_Final_DW_06-12.pdf

4.3.7. An important element of the character of the landscape of Greater Norwich is the range of historic parks, gardens and woodlands, and the number of important trees in each district, as set out and mapped in figures 29 to 32 below.

Figure 29 Numbers of Historic Parks and Gardens and Ancient Wooodlands in Greater Norwich

Feature	Norwich	Broadland	South Norfolk	Greater Norwich
Historic Parks & Gardens[34] (Historic England)	9	5	7	21
Historic Parks & Gardens[35] (locally listed)	10	18	17	45
Ancient Woodland	2	44 (1 shared)	108 (1 shared)	153
TPO trees[36]	438	651	538	1627

[34] http://historicengland.org.uk/listing/the-list/results
[35] http://www.heritage.norfolk.gov.uk/advanced-search
[36] TPO trees can be individual trees or tree groups so the number in the table is not indicative of the number of individual trees which are covered by TPOs in each district.

Figure 30 Map of Historic Parks and Gardens and Ancient Woodlands in Broadland

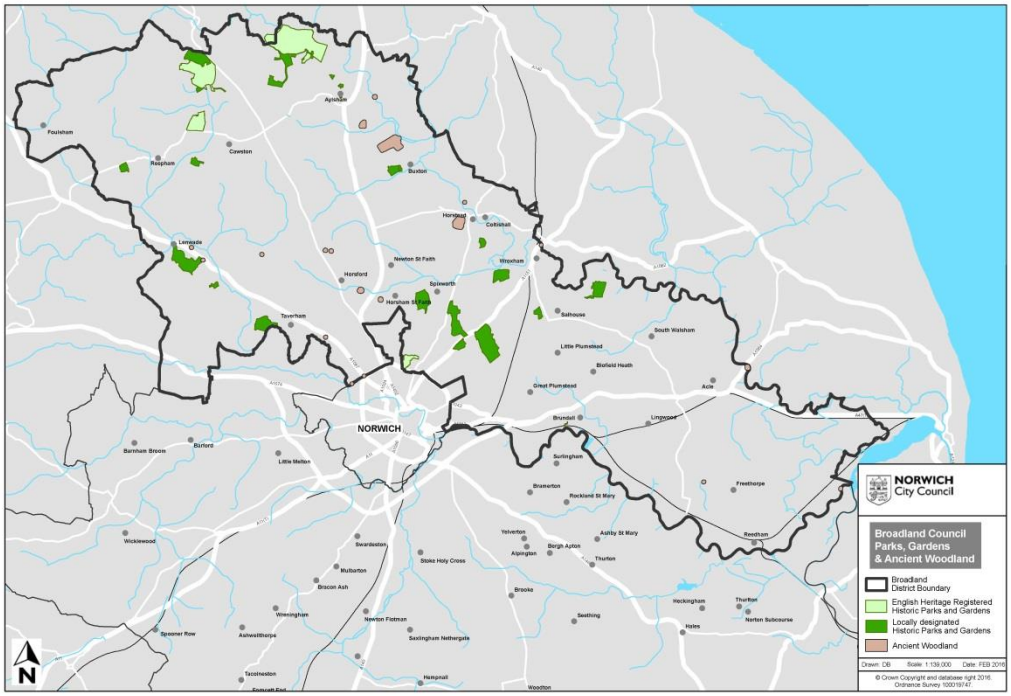


Figure 31 Map of Historic Parks and Gardens and Ancient Woodlands in Norwich

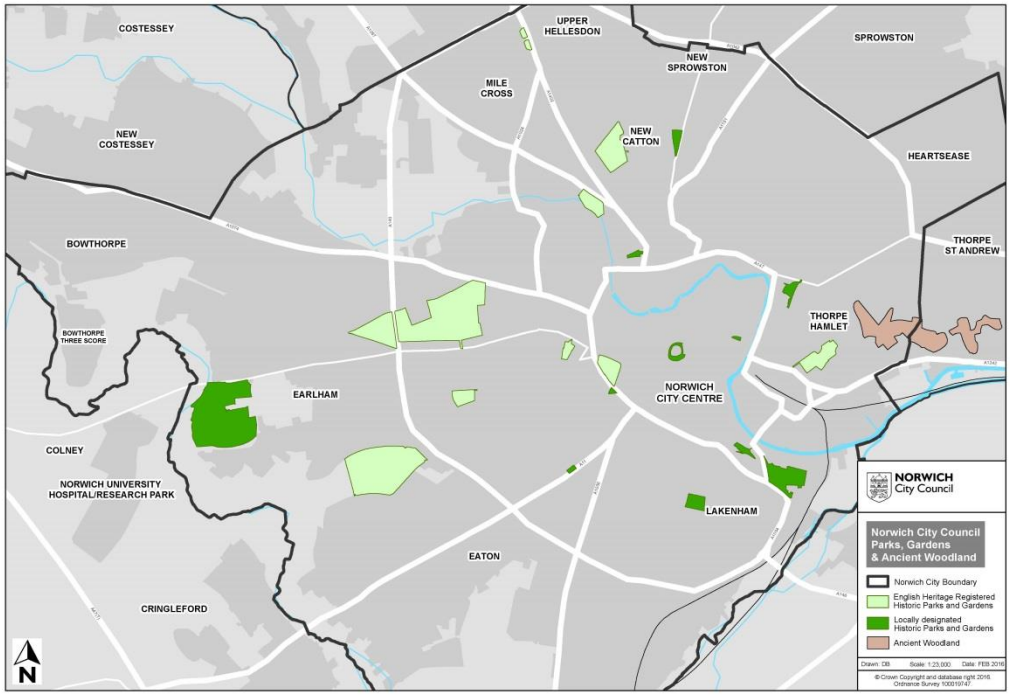
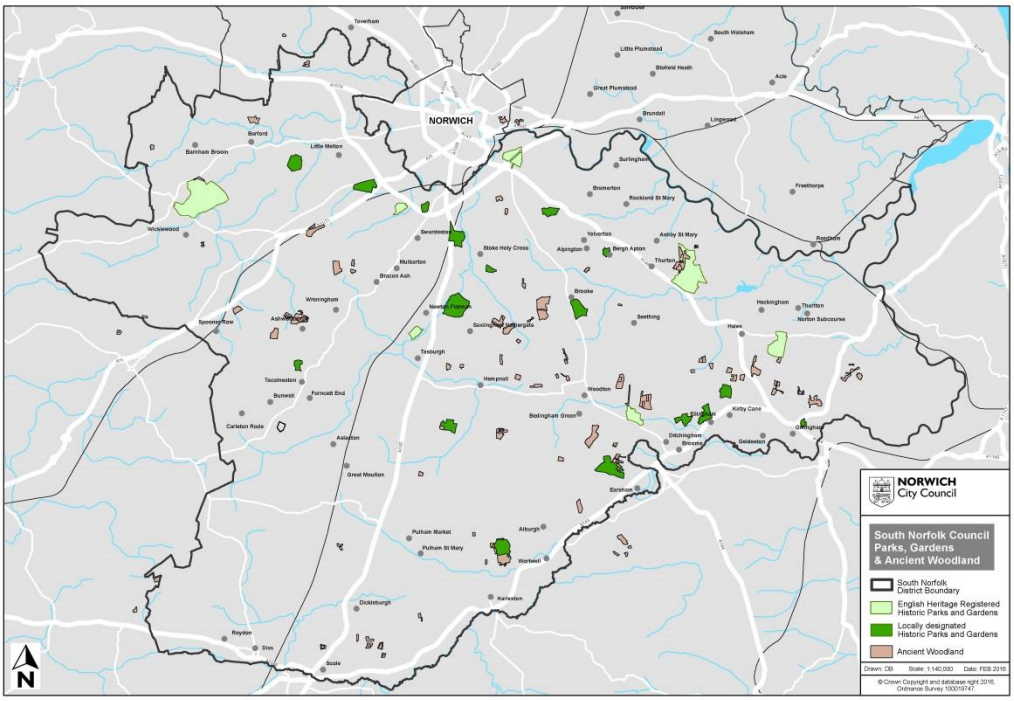


Figure 32 Map of Historic Parks and Gardens and Ancient Woodlands in South Norfolk



4.4. Projected Baseline

4.4.1. Long term protection of the distinctive landscapes of the area will require policy protection beyond the end date of the JCS in 2026.

4.5. Issues

- Development should maintain important aspects of Greater Norwich's varied landscapes, including historic parks and gardens and ancient woodlands.

- Defined strategic gaps, including those between Wymondham and Hethersett and Hethersett and Cringleford, are important to maintain the settlement pattern in rural areas.

- Regard must be had to the distinctive landscape of the Broads.

5. SECTION 5 - WATER

5.1.1. This section covers issues relating to water availability, waste water and water quality. Flooding is covered in section 2 on climate change.

5.2. Context

5.2.1. National

5.2.2. The legislative responsibility for an integrated approach to water management is set out in the European Water Framework Directive (WFD), which seeks to reverse deterioration of water quality and to improve environmental standards.[37] The aim is for each inland and coastal water area to achieve at least Good Ecological Status over a range of different timescales between 2015 and 2027.

5.2.3. The policy-making context for managing water resources is set by the Government's strategy Future Water, published in 2011. The strategy aims to achieve "sustainable delivery of secure water supplies, an improved and protected water environment, fair, affordable and cost-reflective water charges, reduced water sector greenhouse gas emissions and more sustainable and effective management of surface water."[38]

5.2.4. The organisation responsible for the protection and management of groundwater in England is Environment Agency. Their strategy Groundwater Protection: Principles and Practice (GP3) is intended for anyone interested in proposing or carrying out an activity that may cause groundwater impacts[39]. The document sets out the Environment Agency's approach to management and protection of groundwater, its position on applying relevant legislation, and technical guidance for those dealing with groundwater issues. Essential to the Environment Agency's work is addressing climate change and its consequences, working with people and communities to create better places, and working with businesses and other organisations to use resources wisely.

5.2.5. The NPPF provides several points in relation to water resources. Paragraph 99 states Local Plans should take account of climate change, including its relationship to water supply. Paragraph 109 says that both new and existing development should not place an unacceptable risk upon water resources. Paragraph 156 requires local planning authorities to set out strategic priorities for water supply and the management of waste water for their area.

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[37] The EU Water Framework Directive - Integrated River Basin Management for Europe http://ec.europa.eu/environment/water/water-framework/index_en.html

[38] *Future Water - The Government's Water Strategy for England* *https://www.gov.uk/government/publications/future-water-the-government-s-water-strategy-for-england*

[39] Environment Agency, *Groundwater Protection: Principles and Practice GP3* https://www.gov.uk/government/publications/groundwater-protection-principles-and-practice-gp3

5.2.6. Local

5.2.7. In response to the Water Framework Directive (WFD), England and Wales are divided into 10 River Basin Districts, each of which is manged through a River Basin Management Plan (RBMP). The Anglia RBMP was first published in 2009 to provide a framework to protect and enhance the water environment. In 2015 the plan was updated to identify progress since the 2009 plan, and assess the current state and pressures on the environment. Key themes in the RBMP are water quality, water quantity, wildlife habitat and creation. Greater Norwich is situated within the Broadland Rivers catchment which is one of 11 catchments within the Anglian Rivers Basin District. The catchment is described as follows.

5.2.8. "…a relatively flat area of approximately 3,188 km^2. The area is mostly rural with a few larger urban areas including the City of Norwich, Great Yarmouth and Lowestoft. The main land use in the catchment is arable agriculture there are pockets of water-dependent industries around Norwich. Tourism and water-based recreational pursuits such as boating and angling are vitally important to the Broadland River economy. The tidal rivers in the Broadland Rivers area form the third largest in navigation in Britain."[40]

5.2.9. The main rivers in the area are the Rivers Wensum, Yare, Tud, Ant and Bure to the north and the Rivers Tas and Waveney to the south. The Broadland rivers catchment area encompasses the Broads Executive Area (status equivalent to a National Park Area) and has a high density of local and nationally important protected sites, including the Broads and River Wensum SACs and the Broadland SPA, which are protected under European law (the Habitats Directive).[41]

5.2.10. *The Broadland Rivers Catchment Partnership implements the RBMP at catchment level. It is made up of a group of organisations with an interest in improving the environment in the local area. Through the Broadland Rivers Catchment Plan, they identify local issues and priorities and access funding to implement various programmes and measures. The WFD status of water bodies outside the local plan area but within the Broadland Rivers catchment is of interest due to the nature of rivers and river catchments.*

5.3. Current Baseline

5.3.1. Relatively low rainfall totals mean that the whole area covered by Anglian Water, the company responsible for water supply and

[40] Ibid, 43

[41] Greater Norwich Development Partnership Water Cycle Study – Stage 2b, page 148

waste water disposal in Greater Norwich, is defined by the Environment Agency as suffering from serious water stress[42].

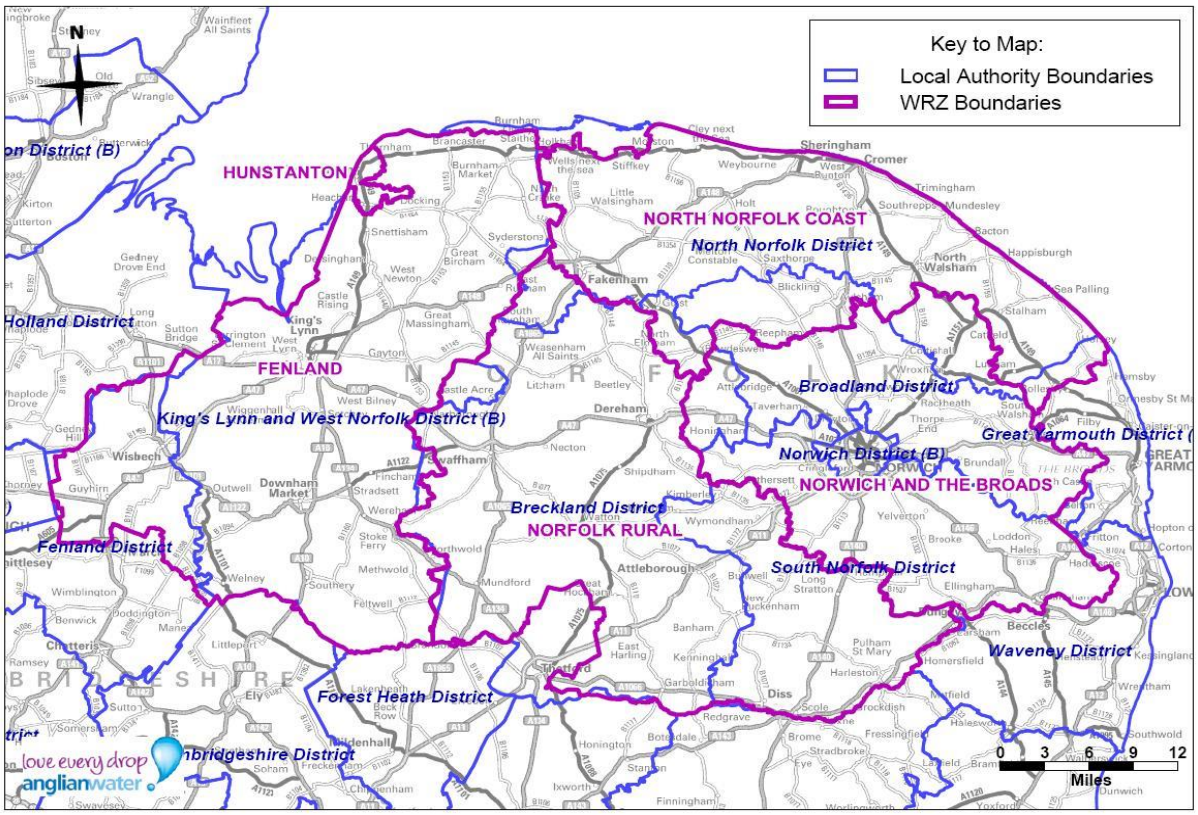
5.3.2. As well having low rainfall, the rurality of much of Greater Norwich means there are challenges in dealing with the pollution of fertilisers and pesticides from agriculture that can leach into ground water and surface water sources. This has particular significance locally as water quality is a key issue for the Broads, the only lowland area in the country with the equivalent status to a national park.

5.3.3. As a consequence the Greater Norwich authorities have worked closely with Anglian Water, along with the Environment Agency and Natural England, on water issues for a number of years. This close working partnership included the production of a Water Cycle Study between 2008 and 2010 as part of the evidence base for the JCS. This evidence has led to the JCS placing a particular focus on promoting water efficiency in new development (see paragraph 147) and on the relevant agencies promoting improved water quality (see paragraph 151).

5.3.4. Anglian Water published its Water Resources Management Plan (WRMP) in 2015 which covers the period to 2040. Most of Greater Norwich is covered by Anglian Water's Norwich and the Broads Water Resources Zone (WRZ), whilst the north of Broadland (including Aylsham) is in the North Norfolk Coast area and the south and west of South Norfolk (including Wymondham and Diss), is in the Norfolk Rural area. Figure 33 below shows the WRZ boundaries.

[42] Water Stressed area – final classification, Environment Agency 2013 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244333/water-stressed-classification-2013.pdf

Figure 33 Map of district boundaries and Water Resource Zones (WRZs)



5.3.5. Water Supply

5.3.6. Anglian Water supplies from a combination of surface and groundwater sources, the most significant of these being from the River Wensum at Costessey to the west of Norwich. Raw water abstracted is transferred to Heigham Water Treatment Works in Norwich for treatment and pumping into the network[43]. The distribution network serving Greater Norwich includes a large diameter ring main in Norwich and a number of strategic mains that branch off to supply surrounding settlements. The network is also supported by abstractions from boreholes at Colney, on the River Yare, and at Thorpe St Andrew. Water from Heigham supplies Aylsham, Long Stratton, Reepham and Wymondham as well as the Norwich urban area[44].

5.3.7. The 2015 WRMP concludes that no significant water supply investment will be required in the North Norfolk and Norfolk Rural WRZs. However, large deficits are forecast in the Norwich and the Broads WRZ for the AMP6 period (2015-20) as a result of the need to reduce the amount of water taken from the River Wensum Special

[43] Broadland District North East Growth Triangle (Supply and Demand Balance) (GTB37) http://www.broadland.gov.uk/housing_and_planning/5984.asp

[44] Greater Norwich Development Partnership
Stage 2b Water Cycle Study, 2010 http://www.greaternorwichgrowth.org.uk/

Area of Conservation (SAC), which is an internationally protected lowland chalk river habitat.

5.3.8. Consequently, investment of £18.9 million is planned between 2015 and 2020 on a scheme to relocate the abstraction point on the Wensum from Costessey to Heigham, which is outside the SAC. Investment of £5.5 million in metering and £1.3 million on water efficiency is also planned. Taken together, these measures form approximately 60% of the total expenditure in the AMP 6 period in the whole WRMP area, which covers much of eastern England. This investment is necessary to address current water quality issues to ensure that Habitats Regulations Assessment requirements for the River Wensum SAC are met and to support growth.

5.3.9. To complement efforts by Anglian Water to reduce water usage within the existing housing stock, Objective 1 of the JCS prioritises water efficiency in new and existing development, while policy 3 requires new development to be as water efficient as higher nationally set housing standards allow. An advice note published by the Greater Norwich authorities sets out how development can be made water efficient and emphasises the importance of maximising water efficiency.[45]

5.3.10. Waste Water Disposal

5.3.11. There are 14 wastewater treatment works in Greater Norwich. Significant parts of Greater Norwich are served by the Whitlingham works, to the east of Norwich, which discharges water into the tidal River Yare.

5.3.12. Other treatment works, with the rivers they discharge into, are at:

- Acle-Damgate, Aylsham, Belaugh (River Bure);
- Rackheath (Dobbs Beck, a tributary of the Bure);
- Diss and Harleston (River Waveney);
- Long Stratton (Hempnall Beck);
- Sisland and Poringland (River Chet);
- Reepham (Blackwater Drain, a tributary of the Wensum);
- Stoke Holy Cross (River Tas);
- Swardeston-Common (Intwood Stream, a tributary of the Yare); and
- Wymondham (River Tiffey).

5.3.13. Capacity for the treatment of waste water varies across the area. In some locations there is ample capacity relative to current demand and coping with increased demand from new development is unlikely to be a significant issue. In other locations, such as Long Stratton, demand and capacity are much closer, and so a process

[45] GNGB, Water Efficiency Advice Note http://www.greaternorwichgrowth.org.uk/dmsdocument/2147

of detailed analysis and infrastructure planning is needed between the organisations responsible[46].

5.3.14. Water Quality

5.3.15. There are 93 river water bodies and 18 lakes in Broadland Rivers Catchment. The priority river basin management issues for the catchment are diffuse pollution from the rural area, physical modification of rivers and lakes and pollution from waste water. In addition, the River Wensum, which is a Natura 2000 site, is currently in unfavourable ecological condition. The factors causing this are the high levels of phosphate which affect water quality, water abstraction affecting water resources, siltation (caused mainly by agricultural run-off) and modifications to deepen, widen and straighten the channel[47]. An alliance of organisations including Anglian Water, the Environment Agency and Natural England are working towards the improvement of the river and, as set out above, efforts are being made to reduce the water abstraction levels from the Wensum. Likewise, in the Broads a programme is taking place to improve water quality, reducing the harmful nutrients and contaminants[48].

5.3.16. The Broadland Rivers Catchment Plan[49] identifies the following issues within the catchment area: Over 90% of rivers fail to meet WFD targets; expensive treatment is needed at times to treat some drinking water; some protected habitats still do not meet Habitats Directive Standards; water levels are too high or too low in some areas; there is localised flooding from various sources.

5.4. Projected Baseline

5.4.1. Over the coming years, demand from development, climate change, and attempts to reduce ecological impact will reduce the amounts of water that can be sustainably abstracted in the Greater Norwich area.

5.4.2. The WRMP contains longer term proposals for the Norwich and the Broads WRZ to reduce leakage and consider alternative sources of water supply from 2035/40, which may include water re-use, involving treating waste water to a high standard before pumping it upstream to support further abstraction from the River Wensum.

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[46] Joint Anglian Water – Environment Agency Position Statement on Growth in Long Stratton Water Recycling Centre http://www.south-norfolk.gov.uk/planning/media/G12_Joint_Anglian_Wate_and_Environment_Agency_statement_on_Long_Stratton_growth.pdf

[47] Natural England and Environment Agency, *Factsheet: The River Wensum Restoration Strategy* http://www.norfolk.gov.uk/view/ncc089250

[48] The Broads Water Quality http://www.broads-authority.gov.uk/looking-after/managing-land-and-water/water-quality

[49] *https://www.gov.uk/government/publications/anglian-river-basin-district-river-basin-management-plan* and *http://www.broads-authority.gov.uk/looking-after/managing-land-and-water/beyond-the-broads*

5.4.3. Beyond the end of the JCS plan period in 2026, it will be important that the GNLP continues the positive policy approach to promoting water efficient development and that programmes to improve water quality are continued.

5.5. Issues

- Since the area suffers from water stress, effectively managing the supply and demand balance is critical, taking into account the peaks in demands from homes, jobs and agriculture and the impact of abstraction on habitats and biodiversity. Ensuring water efficiency will have a key role locally.

- Water quality in Natura 2000 protected sites is an issue, particularly in relation to water abstraction from the River Wensum and water disposal at Long Stratton and into the River Yare. Consequently there is a need to improve water quality to achieve Water Framework Directive (WFD) targets and to protect habitats.

- There is a need to consider the measures within the Anglian River Basin Management Plan and the issues in the Broadland Rivers Catchment Plan.

6. SECTION 6 – HISTORIC ENVIRONMENT

6.1.1. This section focuses on the built character of Greater Norwich, including designated buildings, conservation areas and heritage at risk. Issues related to the landscape elements of the historic environment, such as historic parks and gardens, are considered in the Landscape Section of this report.

6.2. Context

6.2.1. National

6.2.2. The Government's statement on the **Historic Environment for England** (2010) sets out its vision for the historic environment. It calls for those who have the power to shape the historic environment to recognise its value and to manage it in an intelligent manner in light of the contribution that it can make to social, economic and cultural life. Also of note is the reference to promoting the role of the historic environment with the Government's response to climate change and wider sustainable development agenda.

6.2.3. Section 12 of the **National Planning Policy Framework** details measures for Conserving and Enhancing the Historic Environment. In particular paragraph 126 states:

> *"Local Planning authorities should set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. In doing so, they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance."*

6.2.4. Local

6.2.5. The **Norfolk Historic Environment Record** (NHER) is the comprehensive and definitive record of the historic environment of Norfolk[50]. The information held in the NHER provides a detailed framework to aid understanding of cultural heritage across Greater Norwich and provides an important tool that contributes to the planning decision-making processes, especially where issues affecting the landscape, both rural and urban, need to be considered.

6.2.6. Objective 8 of the **JCS** requires protection and enhancement of the character of the area, while objective 9 focuses specifically on protection, management and enhancement of the built and historic environment. Policy 2 (Promoting good design) requires development to create a strong sense of place and to respect local

[50] http://www.heritage.norfolk.gov.uk/

distinctiveness, including the historic environment, townscapes and gateways between urban and rural areas. A particular focus is placed on the use of advice in conservation area appraisals to ensure that development in these protected areas is appropriate.

6.2.7. In addition, there are local requirements for archaeological assessments in defined areas of archaeological interest.

6.3. Current Baseline

6.3.1. Greater Norwich, as an area which has been relatively intensively settled historically, has a rich archaeological heritage. Centred on England's former second city, and containing a number of historic market towns and villages, it also has a rich built heritage reflecting its agricultural wealth and local industries, including cloth, leather and food production.

6.3.2. The Norfolk Mapping Browser identifies listed buildings and ancient monuments. District websites identify numbers of conservation areas, listed buildings and ancient monuments as set out in figure 34, below.

Figure 34 Numbers of Conservation areas, Listed Buildings and Ancient Monuments in Greater Norwich

Feature	Norwich	Broadland	South Norfolk	Greater Norwich
Conservation Areas	17	21	52	**90**
Listed Buildings	1500	980	3310	**5790**
Ancient Monuments	25	22	38	**85**

6.3.3. Norwich

6.3.4. Norwich's built heritage is defined by its Norman cathedral, and from the same era, the Castle Keep, but more modern architecture makes an enormous contribution too. **Norwich 12** is an initiative to develop 12 of Norwich's most iconic buildings into an integrated family of heritage attractions which act as an internationally recognised showcase of English urban and cultural development over the last 1,000 years.[51] The city has kept much of its historic street pattern, of which Elm Hill is a prime example.

6.3.5. Open space is important to the setting of the city, including the "Plains" in the city centre, several Grade II listed formal parks (including Eaton, Heigham, Wensum and Waterloo), along with extensive areas of natural open spaces, including Mousehold Heath and the Yare and Wensum valleys.

[51] 'A Journey Through the English City' http://www.norwich12.co.uk/index.htm

6.3.6. Norwich has 17 conservation areas which are varied in character and built form. The majority of these have conservation area appraisals and there is an ongoing programme to produce appraisals for all of the conservation areas.

6.3.7. The city centre conservation area, which is divided into 13 areas reflecting historic characteristics through its appraisal, is the largest and contains some of the oldest and most significant heritage assets.

6.3.8. Many of the conservation areas fall in areas of the city which historically were detached village settlements that over time been largely incorporated into the suburban outer area of the city beyond the medieval city walls. The outer conservation area settlements vary in date with Hellesdon village being one of the earliest with mention in the Doomsday Book, Heigham Grove mainly having origins from 19th century Victorian development and most recently Mile Cross Conservation area largely dating from the early part of the 20th Century.

6.3.9. The following maps, figures 35 and 36, show where designated heritage assets are located in Norwich.

Figure 35 Map of Conservation Areas & Scheduled Ancient Monuments in Norwich

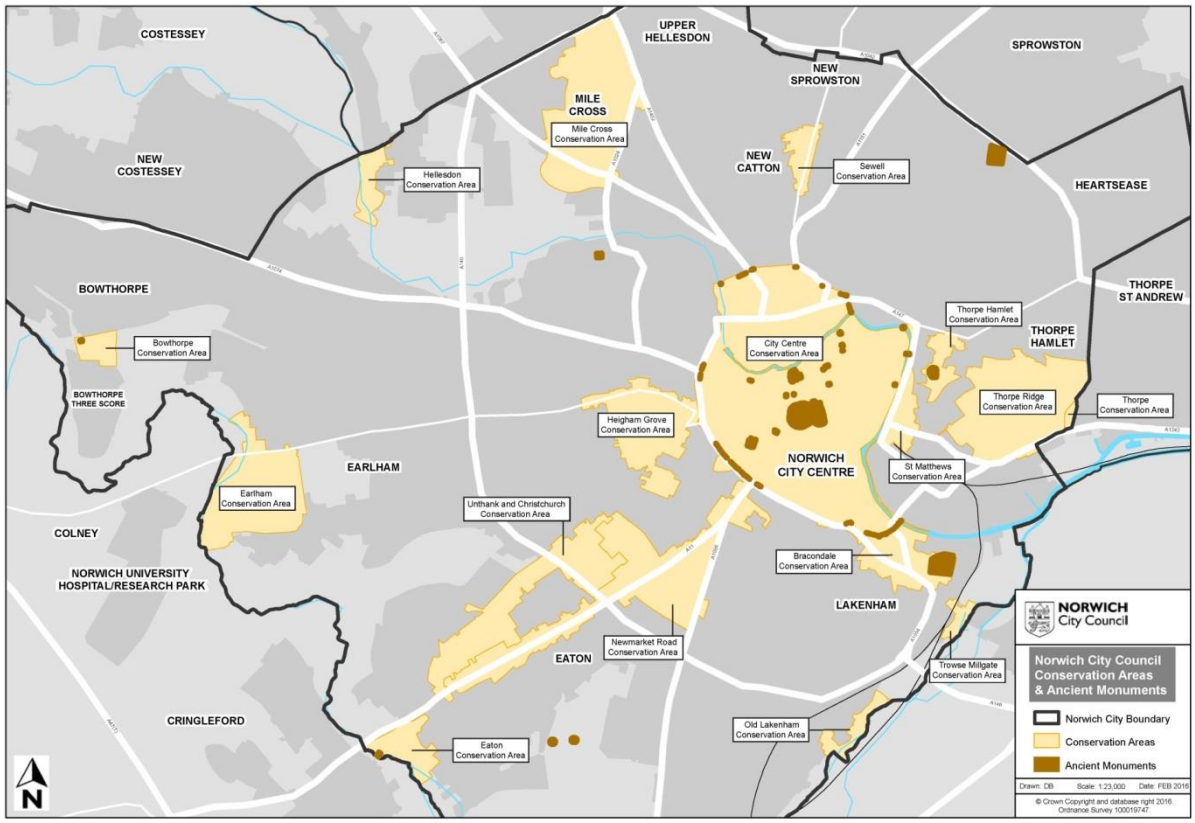
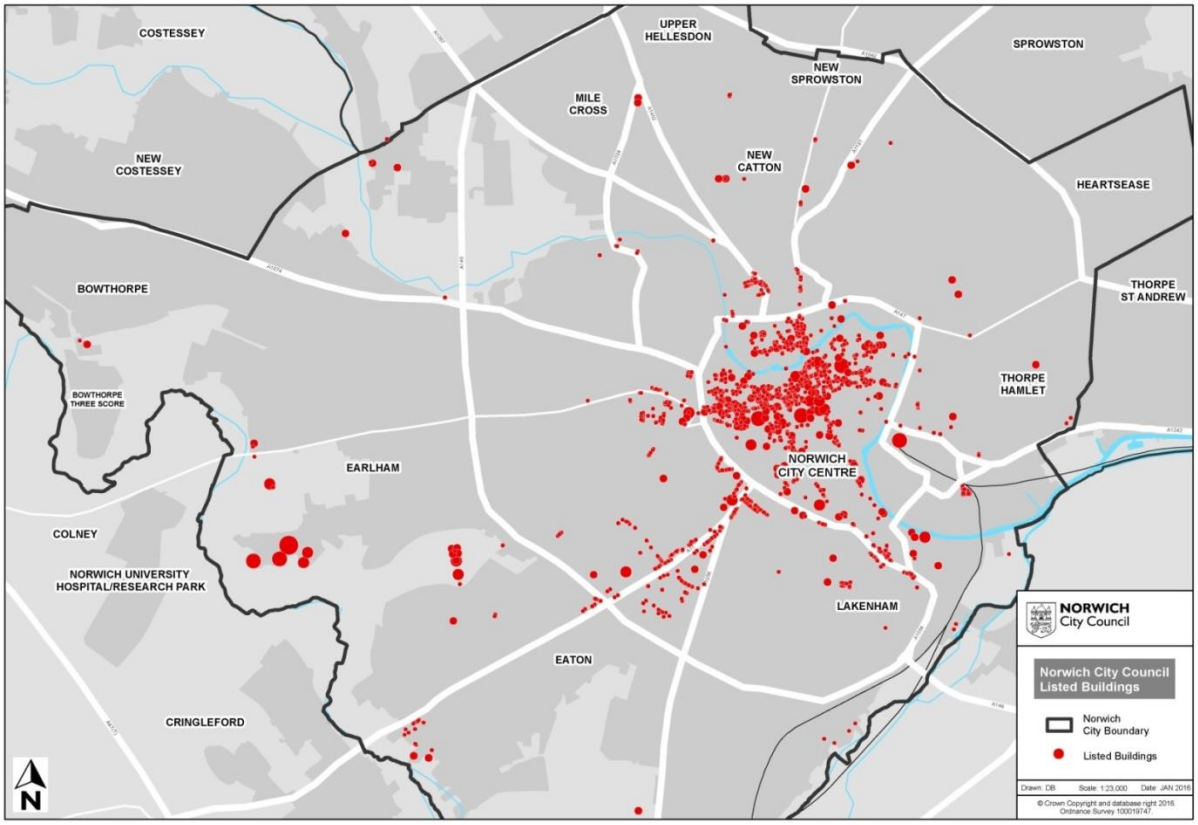


Figure 36 Map of Listed buildings in Norwich



6.3.10. Broadland

6.3.11. Broadland contains 21 conservation areas. The majority of these also have conservation area appraisals and there is an ongoing programme to produce appraisals.

6.3.12. The nature of these conservation areas is varied and reflects the diverse character of the district. Thorpe End was a planned garden village, Wroxham Conservation Area is unusual in containing a large 20th century open plan estate within a landscaped setting and RAF Coltishall (within both North Norfolk and Broadland districts) is a former airbase. Many of the district's town and village centres are designated as are country estates such as Blickling and Heydon and settlements such as Old Catton and Thorpe St Andrew which have become outer suburbs of Norwich. The district shares some of its conservation areas with the Broads Authority (for example Halvergate) and Norwich City Council (Hellesdon). The following maps, figures 37 and 38, show where designated heritage assets are located in Broadland.

Figure 37 Map of Conservation Areas & Scheduled Ancient Monuments in Broadland

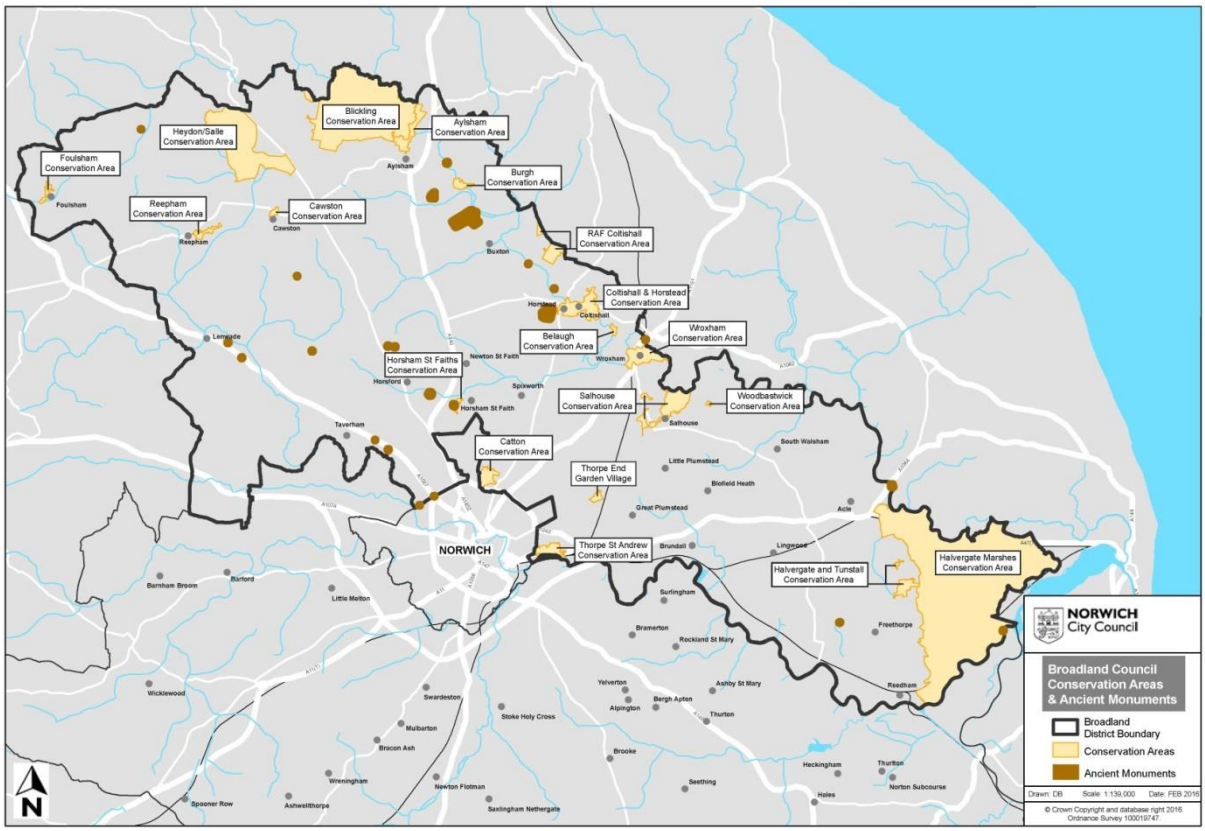
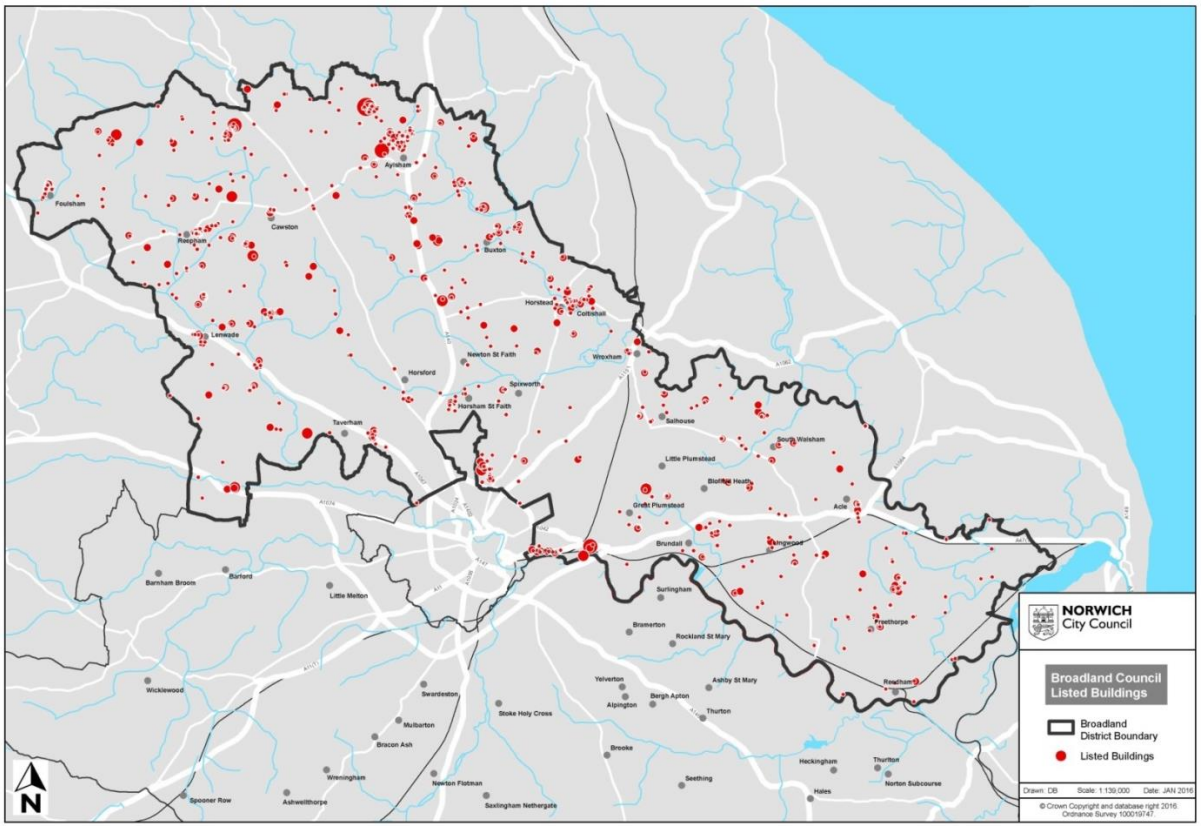


Figure 38 Map of Listed buildings in Broadland



6.3.13. South Norfolk

6.3.14. The district of South Norfolk contains 53 conservation areas. Only a limited number currently have appraisals, though there is a programme to produce them.

6.3.15. Four key market towns, Diss, Harleston, Loddon and Wymondham, have conservation areas with retail, service and residential uses and so have diverse urban characters and appearances. Hingham is another market town but its centre is largely residential.

6.3.16. The remaining conservation areas are mostly centred on villages throughout the district, some of the areas having more of a rural character than others. The villages of Fritton and Mulbarton have very large commons with houses widely dispersed in the surrounding area whereas Pulham Market has a much smaller common, which is enclosed by buildings on all sides. Shotesham is one of the most rural in character, much of the conservation area being the park/farm land belonging to the Shotesham Park Estate.

6.3.17. The conservation areas of Cringleford, Old Costessey and Loddon and Chedgrave all stand out as they are situated either on or adjacent to a river which contributes much to their distinctive character.

6.3.18. A number of the conservation areas are shared with the Broads Authority.

6.3.19. The following maps, figures 39 and 40, show where designated heritage assets are located in South Norfolk.

Figure 39 Map of Conservation Areas and Scheduled Ancient Monuments in South Norfolk

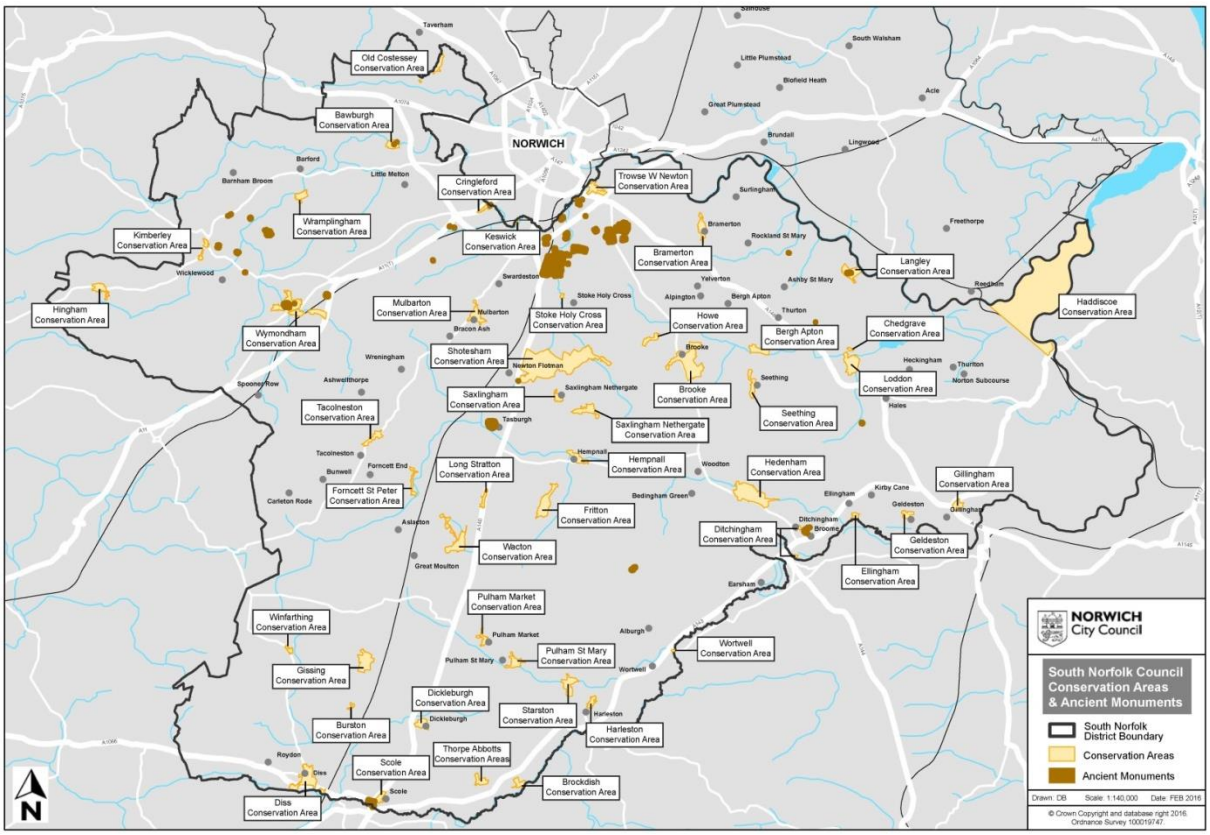
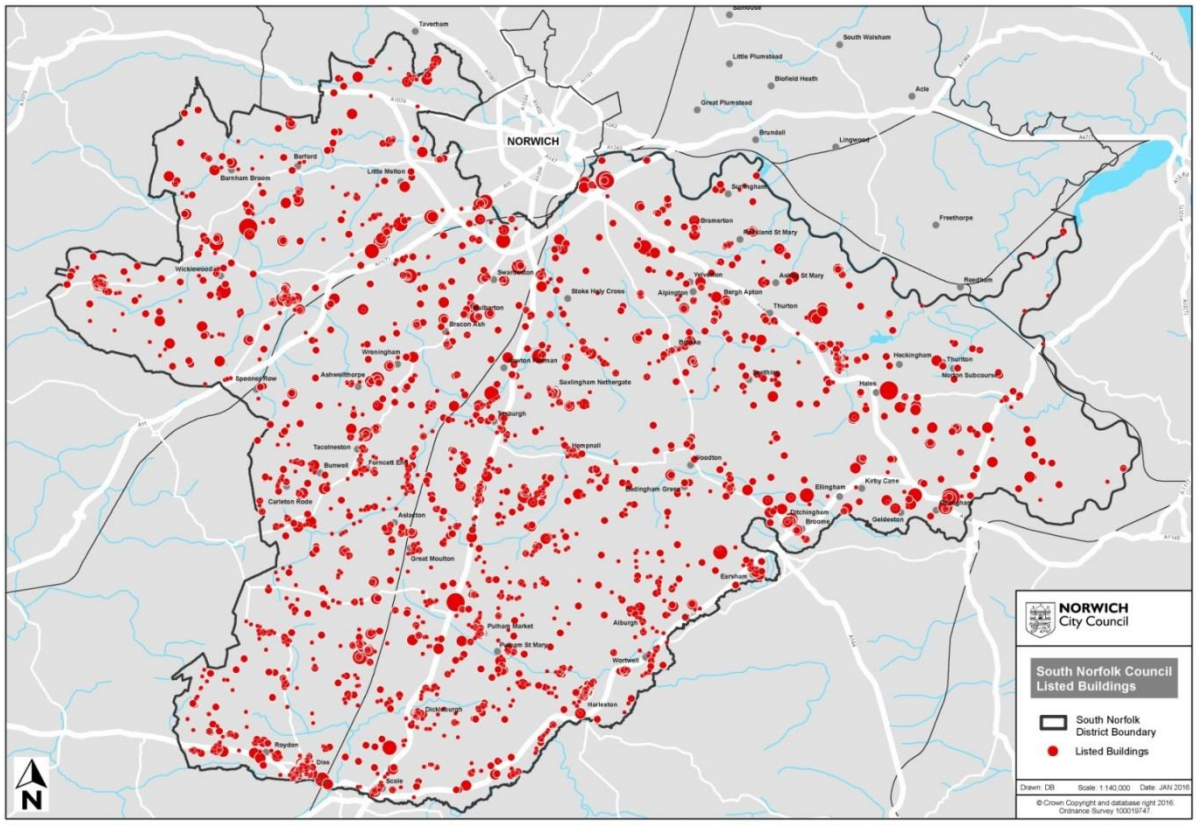


Figure 40 Map of Listed buildings in South Norfolk



6.3.20. Heritage at Risk

6.3.21. There are 107 listed buildings recorded on the buildings at risk register within Greater Norwich.

6.3.22. In Norwich the 31 buildings and structures at risk, which range from the 16th century Church of St Mary the Less, on Queen Street, to the 20th century Pavilion at Waterloo Park[52].

6.3.23. In Broadland there are the 36 buildings and structures at risk; examples of which are the brick and flint Bridewell building in Acle that dates from the 17th century; and, to Grade II* and Scheduled Ancient Monument, Drayton Old Lodge, built in 1437.

6.3.24. In South Norfolk there are the 40 buildings and structures at risk that reflect the rural estates, agricultural heritage, and the many parish churches across the district. Examples of buildings at risk are: the Grade II remains of the Jacobean Melton Hall (in Greater Melton) that dates from the 17th century; the Grade II, but badly fired damaged, Church of St Wandregelius, Bixley; and, the Grade II timber-framed Kings Head Inn, Pulham St Mary, that has been unoccupied since 2007[53].

6.3.25. It is reasonable to assume that those assets with no solution agreed could continue to be a risk in the future, although it is possible that funding could be secured to address such threats.

6.4. Issues

- There is a great wealth of heritage assets in the area of both national and local significance. A limited number of these assets are on the heritage at risk register.
- Due to the long history of habitation in the area, there is significant potential for archaeological artefacts and finds throughout Greater Norwich.
- Conserve and enhance designated and non-designated heritage assets and the contribution made by their settings.
- Areas where there is likely to be further significant loss or erosion of townscape character or quality, or where development has had or is likely to have significant impact (direct and/or indirect) upon the historic environment and/or people's enjoyment of it.

[52] Norwich Heritage at Risk Register http://www.norwich.gov.uk/Planning/HeritageAndConservation/Pages/BuildingsAtRisk.aspx

[53] South Norfolk Buildings at Risk http://www.south-norfolk.gov.uk/planning/1605_3330.asp http://www.south-norfolk.gov.uk/planning/1605_3730.asp http://www.south-norfolk.gov.uk/planning/1605_3730.asp

- Traffic congestion, air quality, noise pollution and other problems affecting the historic environment.

7. SECTION 7 – PEOPLE AND COMMUNITIES

7.1.1. The People and Communities chapter covers the population make-up of Greater Norwich and helps to inform the following chapters on deprivation, crime, education and health. The chapter sets out demographic evidence based on various sources including the 2011 Census and ONS estimates. No contextual review of plans and programmes is included as the topic area does not lend itself to such an approach.

7.2. Current Baseline

7.2.1. The estimated population of Greater Norwich in 2014 was 392,700[54]. Figure 41 below sets out the population for each district.

Figure 41 Estimated district populations, 2014

Area	Estimated population 2014
Broadland	126,000
Norwich	137,500
South Norfolk	129,200
Greater Norwich total	392,700

7.2.2. The population of the area increased by 31.7% between 1971 and 2011, from 289,500 to 381,200. This is an increase of 0.79% per year. While Broadland and South Norfolk's populations generally increased steadily through the 40 year period, Norwich's population declined slightly during the 1980s and 1990s, but has grown strongly since 2001.

7.2.3. The Greater Norwich annual rate of increase went up slightly in the last decade to 0.87%, with an increase of 30,400, or 8.7% between 2001 and 2011. This compares to a 7.7% increase in Norfolk and a 7 % increase in the United Kingdom.

7.2.4. This population rise was the result of a mixture of natural increase and migration, both internal and international. Natural change in both Broadland and South Norfolk was negative between 2001 and 2011, with internal migration from elsewhere in the United Kingdom being the main contributor to population increase in the last decade by a significant margin.

7.2.5. Figure 42 below shows the population of the largest settlements in Greater Norwich from the 2011 Census[55]. Approximately 70% of the

[54] Based on ONS estimates http://www.norfolkinsight.org.uk/dataviews/view?viewId=53 as reported on the Norfolk Insight website, extracted 23/12/2015

[55] Source – ONS census 2011 from Appendix 1 Norfolk Compendium 2014 (* Note: population figures for Horsford and Blofield are from the 2001 census). As the Norwich urban area is a single entity in terms of the planning settlement hierarchy, suburbs within Broadland and South Norfolk, such as Drayton, Cringleford and Sprowston, are not listed separately.

residents of Greater Norwich live in these larger settlements, with the remaining 30% living in smaller settlements.

Figure 42 Population of the largest settlements in Greater Norwich, 2011

Settlement	Population 2011 census
Norwich urban area	210,743
Wymondham	14,405
Diss	7,572
Aylsham	7,378
Brundall	5,790
Long Stratton	4,395
Horsford	3,965*
Blofield	3,537*
Acle	2,824
Reepham	2,709
Loddon	2,633

7.2.6. Age structure of the population

7.2.7. Figures 43 to 45 below show the change in the age structure of the population for each Greater Norwich district between 2001 and 2011.

7.2.8. Norwich's age structure is markedly different from those of Broadland and South Norfolk, which display similar patterns.

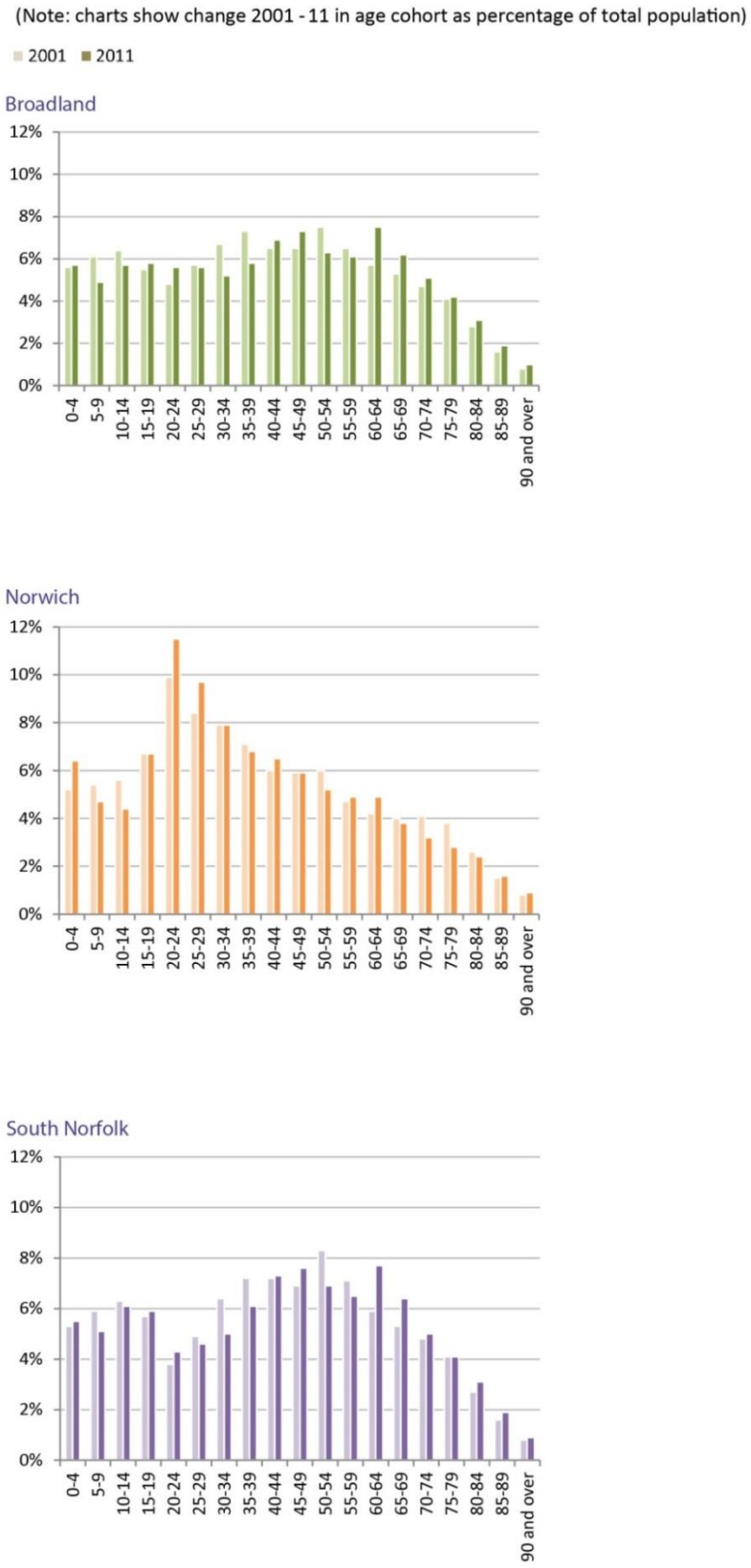
7.2.9. Broadland and South Norfolk's age structures have two peaks, 60-64 year olds and 40-49 year olds. These result from, respectively, the baby booms of the late 1940s and the late 1960s/early 1970s.

7.2.10. As a city which has a large population of students and other younger adults, Norwich has a different pattern, with its peaks being the 20 to 34 year olds. The percentage of 20 to 29 year olds rose significantly between 2001 and 2011. This will have implications for housing provision for younger adults in Norwich.

7.2.11. The most significant change between 2001 and 2011 overall in Greater Norwich by age was the increasing numbers of older adults in the population, in particular 60-69 year olds. There is a higher proportion of older people than nationally and a significantly higher proportion of females than males in the oldest age groups as men tend to die at younger ages than women.

7.2.12. The birth rate increased between 2001 and 2011 and there are more 0 to 4 year olds than previously. During the same period the proportion of 5 to 14 year olds in the population fell.

Figures 43 to 45 Change in the age structure of the population for each Greater Norwich district between 2001 and 2011[56]



7.2.13. Household size

7.2.14. Average household size reduced by over 1% between 2001 and 2011. Average household size in 2011 was 2.34 in Broadland, 2.20 in Norwich and 2.35 in South Norfolk. [57]

7.2.15. Ethnicity

7.2.16. Figure 46 below shows that the area's ethnic composition changed between 2001 and 2011, with an increase in minority ethnic groups. This change was most marked in Norwich, which has a more ethnically diverse population than Broadland and South Norfolk. Nevertheless, the Greater Norwich area remains less ethnically diverse than England as a whole.

Figure 46 - Percentage of resident population by ethnic group[58]

Area	Census	White British	Other white	Asian	Mixed	Black	Other
Broadland	2001	97.4	1.5	0.4	0.4	0.1	0.1
	2011	95.9	1.8	1.0	0.9	0.3	0.2
Norwich	2001	93.5	2.7	1.3	1.0	0.9	0.5
	2011	84.7	6.1	4.4	2.3	1.6	0.8
South Norfolk	2001	97.2	1.7	0.4	0.5	0.1	0.1
	2011	95.1	2.4	1.0	1.0	0.3	0.1
England	2001	87.4	3.8	4.8	1.4	2.2	0.4
	2011	80.6	5.4	7.5	2.2	3.3	1.0

7.3. Projected Baseline

7.3.1. Based on projections reported in the 2015 **Central Norfolk Strategic Housing Market Assessment (SHMA)**, the population of the Greater Norwich area at the end of the local plan period in 2036 will be between 455,000 and 458,000.[59] The projected annual rate of population growth to 2036, at between 0.75% and 0.78%, is very similar to that which took place between 1971 and 2011 and slightly less than 2001-2011.

7.3.2. Based on current trends, it seems likely that while the age profile of the population will increase overall, there will remain a marked difference in the demographic structure of the population within the area. It is likely that there will continue to be a higher proportion of

[56] Source ONS Census

[57] ONS census 2011

[58] ONS Census 2011 (figures may not sum to 100 due to rounding)

[59] Population projection to 2036 455,142 (based on sub national population projection) and is 458,158 (based on 10 year migration trend) – see Central Norfolk Strategic Housing Market Assessment at http://www.south-norfolk.gov.uk/housing/media/SHMA_Central_Norfolk_Part_1.pdf

young adults in Norwich, a higher proportion of people in older age groups in Broadland and South Norfolk, and increasing ethnic diversity.

7.3.3. The implications of the population growth and likely changes in demographic profile of the area will be key considerations for the GNLP. Without the plan, it would be unlikely to be possible to address the housing and growth needs identified in the plan's evidence base in a sustainable manner.

7.4. Issues

- There is a need to provide for continued growth in the population of approximately 15-16% from 2012 to 2036.
- It is necessary to provide services and housing to meet the needs across the area, particularly those of younger adults in Norwich, of remote rural communities and of the growing older population throughout the area.
- The needs of the small but growing ethnic groups in the area will need to be taken into account.

8. SECTION 8 – DEPRIVATION

8.1.1. This section covers existing and projected deprivation within Greater Norwich.

8.2. Context

8.2.1. National

8.2.2. **A New Approach to Child Poverty: Tackling the Causes of Disadvantage and Transforming Families' Lives** is the government's first child poverty strategy, produced in 2011. It is set against the backdrop of the Child Poverty Act 2010, which established a duty to minimise socio-economic disadvantage. It aims to strengthen families, encourage responsibility, promote work, guarantee fairness and provide support to the most vulnerable.

8.2.3. The **NPPF** states that local planning authorities should use their evidence base to assess locations of deprivation which may benefit from planned remedial action.

8.2.4. Local

8.2.5. Objective 4 of the **JCS** is to promote regeneration and reduce deprivation both in the significant concentrations of deprivation in Norwich, and in serious pockets of deprivation in surrounding towns, villages and rural areas.

8.2.6. Policy 7 (Supporting communities) aims to tackle social deprivation through a multi-agency approach to ensure that facilities and services are available as locally as possible, considering the potential for colocation, and are accessible on foot, by cycle and public transport.

8.2.7. This is supported by area focussed policies. Policy 11 (City centre) promotes an integrated approach to economic, social, physical and cultural regeneration to enable greater use of the city centre, including redevelopment of brownfield sites. Policy 12 (The remainder of the Norwich urban area, including the fringe parishes) prioritises area wide regeneration in east, west and north Norwich.

8.3. Current Baseline

8.3.1. According to the **Index of Multiple Deprivation** (IMD) for all domains, Norwich was ranked the 47th most deprived out of 324 district authorities in England in 2015, with South Norfolk ranked 241st and Broadland ranked 280th based on average deprivation scores. Norwich is the second most deprived district in Norfolk behind Great Yarmouth, which is ranked 29th.

8.3.2. Figure 47 below shows the relative changes in overall deprivation ranking of the Greater Norwich districts between 2004 and 2015,

according to the average rank of scores from the IMD in the year shown.

Figure 47 – Indices of multiple deprivation rank of average scores for Greater Norwich districts

Indices of multiple deprivation rank of average scores				
The lower the figure the more deprived relative to other districts/boroughs				
	2004	**2007**	**2010**	**2015**
Norwich	61	62	70	47
South Norfolk	281	286	259	241
Broadland	302	301	279	280

8.3.3. The overall ranking of Norwich City has risen from 70th most deprived in 2010 to 47th most deprived in 2015, with Broadland and South Norfolk also having shown a relative increase in deprivation when compared to national averages. However it should be noted that the data is not directly comparable over a long period because of changes in data definition and the indicators used.

8.3.4. The maps at figures 48 and 49 below show the distribution of relative levels of overall deprivation across Greater Norwich, mapped to the smallest geographic areas for which data is published – that is *Lower Super Output Areas* (LSOAs), or neighbourhoods.

8.3.5. The neighbourhoods with the highest level of deprivation – those that fall within the most deprived 10% nationally – are within Norwich City, which also shows marked polarisation within a relatively small geographic area between its most deprived and least deprived areas. There are particular concentrations of deprivation evident in parts of Bowthorpe, Catton Grove, Crome, Lakenham, Mancroft, Mile Cross, Town Close and Wensum wards, but also many areas which show very low levels of deprivation. Town Close ward is notable in that it includes one neighbourhood which is amongst the 10% *most* deprived nationally (broadly the Vauxhall Street and Suffolk Square area) and one amongst the 10% *least* deprived (broadly the area between Ipswich Road and Hall Road centred on Grove Walk).

8.3.6. There were also very high levels of income deprivation affecting children and older people (in terms of average score, Norwich was ranked 20th and 37th respectively).

8.3.7. In the suburban and rural parts of Greater Norwich, the majority of neighbourhoods do not suffer from significant levels of deprivation, with only a very few areas ranked within the most deprived 40% and only one neighbourhood – part of Diss ward – within the most deprived 30%.

Figure 48: Indices of Deprivation 2015: Map showing overall Index of Multiple Deprivation in Greater Norwich

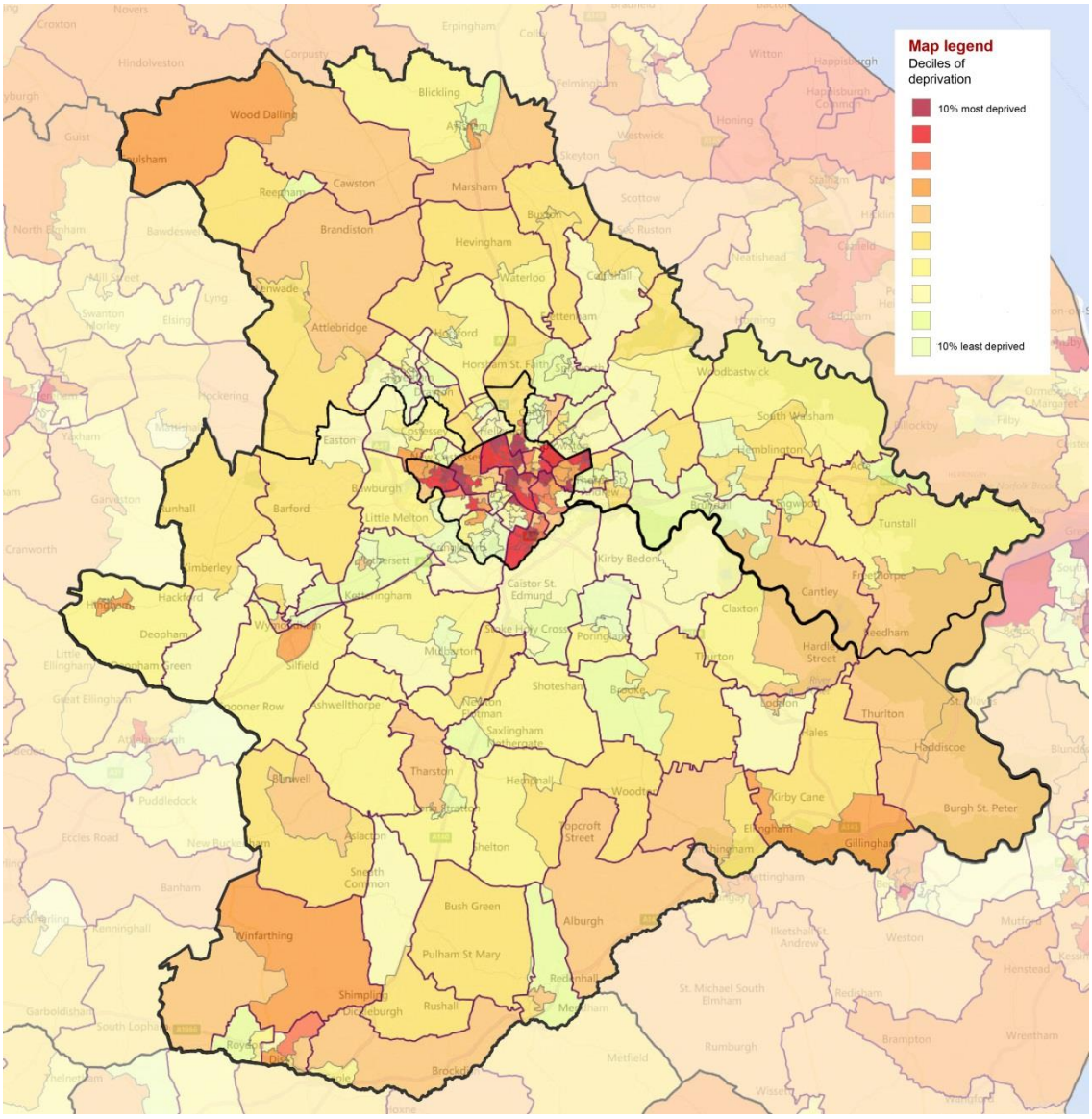
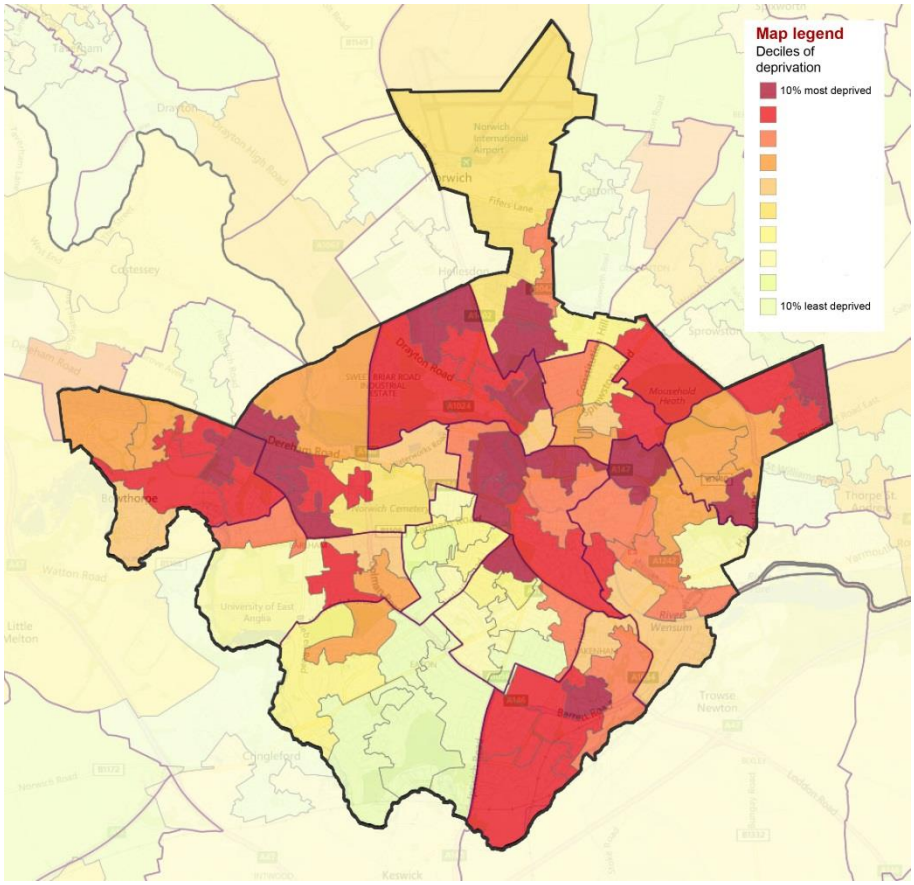


Figure 49: Indices of Deprivation 2015: Map showing overall Index of Multiple Deprivation in Norwich



8.4. Projected Baseline

8.4.1. It is likely that without the continuation of the positive policies to reduce deprivation set out in the JCS to support vibrant centres and focus on regeneration of the most deprived neighbourhoods, relative deprivation could increase beyond the end of the JCS plan period in 2026.

8.5. Issues

- There is a need to minimise socio-economic disadvantage and reduce deprivation, which particularly affects a number of areas of Norwich and some rural areas.