

Sustainability Appraisal and Strategic Environmental Assessment of the Greater Norwich Local Plan 2018 - 2038

Consultation response: Addendum to the Regulation 19 SA/SEA Report

September 2021



LEPUS CONSULTING
LANDSCAPE, ECOLOGY, PLANNING & URBAN SUSTAINABILITY

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About this report & notes for the reader

Lepus Consulting Ltd (Lepus) has prepared this report for the use of the Greater Norwich Development Partnership. This document is intended as an Addendum to the Regulation 19 SA/SEA Report, which is available on the Greater Norwich Local Plan website.

There are a number of limitations that should be borne in mind when considering the conclusions of this report. No party should alter or change this report whatsoever without written permission from Lepus.

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during this time. This report has been produced to assess the sustainability impacts of the Greater Norwich Local Plan and meets the requirements of the SEA Directive. It is not intended to be a substitute for an Environmental Impact Assessment (EIA) or Appropriate Assessment (AA).

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1 Introduction

1.1 Context

1.1.1 The purpose of this document is to support the Greater Norwich Development Partnership (GNDP), which includes Broadland District Council, Norwich City Council and South Norfolk Council, in the preparation of their Local Plan 2018 - 2038.

1.1.2 Between 1st February and 22nd March 2021, the GNDP underwent public consultation on the Regulation 19 Pre-Submission Draft Version of the GNLP¹. This version of the GNLP was supported by a Sustainability Appraisal/Strategic Environmental Assessment (SA/SEA) report², which satisfied the requirements of an 'Environmental Report' as per the SEA Directive³ (from here on referred to as the Regulation 19 SA Report).

1.1.3 Lepus Consulting has prepared this Addendum to the Regulation 19 SA Report in order to address responses related to the SA/SEA received by the GNDP during the Regulation 19 consultation, specifically in relation to the testing of reasonable alternatives and selection process for the chosen spatial strategy and distribution of growth in the Plan area.

1.1.4 This report does not reproduce the contents of the earlier SA reports and should be read in conjunction with them. All appraisals have been assessed against the SA Framework set out in **Appendix A**. The methodology for the appraisal process is the same as that used in earlier stages. A summary of the SA methodology for undertaking the assessment of potential effects is provided in **Chapter 3**.

1.2 Using this document

1.2.1 This document should be read in the context of the SA and Local Plan process so far (see **Table 2.1**) and in conjunction with the Regulation 19 SA Report.

1.2.2 The report is structured as follows:

- **Chapter 2:** background and further context regarding how spatial options have been identified and considered during the Local Plan and SA process.
- **Chapter 3:** a summary of the SA methodology used to appraise spatial options and all aspects of the Plan considered within the SA process. The full methodology can be found within the Regulation 19 SA Report.
- **Chapter 4:** the full appraisal of each spatial option to provide additional information alongside the findings of the Regulation 19 SA Report.
- **Chapter 5:** conclusion and next steps.

¹ GNLP (2021) Regulation 19 Publication Information. Available at: <https://www.gnlp.org.uk/regulation-19-publication-part-1-strategy/regulation-19-publication-information-not-part-plan> [Date Accessed: 06/08/21]

² Lepus Consulting (2021) Sustainability Appraisal and Strategic Environmental Assessment of the Greater Norwich Local Plan (Volumes 1-3) January 2021. Available at: <https://www.gnlp.org.uk/regulation-19-publication/evidence-base> [Date Accessed: 06/08/21]

³ Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 (SEA Directive). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32001L0042&from=EN> [Date Accessed: 06/08/21]

2 Background

2.1 Overview

- 2.1.1 The preparation of the GNLP has been supported by a sustainability appraisal process. Key stages of the sustainability appraisal process are set out in **Table 2.1**.
- 2.1.2 The SA process has followed the Local Plan making process on an iterative basis. Consequently, there are several SA documents that have been prepared. The Regulation 19 SA Report meets the requirements of the SEA Directive and all earlier work is clearly referenced in the Regulation 19 SA Report and is available on the GNLP website⁴. **Table 2.1** sets out the iterative timeline of the Local Plan and SA/SEA processes.

Table 2.1: Timeline of SA documents in relation to the GNLP stages of preparation

Date	Local Plan Stage	Sustainability Appraisal
January to March 2018	Stage A Regulation 18 Consultation of Site Proposals, Growth Options and the Interim Sustainability Appraisal	Interim Sustainability Appraisal (GNDP) This report assessed the GNLP options for growth, which included six options for the spatial strategy and policy options.
October to December 2018	Stage B Regulation 18 Site Proposals Addendum and HELAA Addendum	No SA report prepared.
January to March 2020	Stage C Regulation 18 Draft Strategy consultation Draft strategy including vision, objectives and strategic policies, a sites document and supporting evidence documents.	Regulation 18C SA Report (Lepus) This report assessed 285 reasonable alternative sites and eleven draft strategic policies.
February to March 2021	Publication Draft Plan The GNLP is split into two documents: The Strategy and Site Allocations. The Strategy Document sets out the profile of Greater Norwich, the Plan vision and objectives, and the strategic policies. The Site Allocations Document sets out the site allocations of the GNLP.	Regulation 19 SA Report (Lepus) The Regulation 19 SA Report summarised the SA process to date and helped inform the examination stage of the preparation of the GNLP. The Regulation 19 SA presented the findings of the sustainability appraisal of the GNLP, which is composed principally of twelve strategic policies and 138 site policies. This report also contained an assessment of an additional 107 reasonable alternative sites.

⁴ Greater Norwich Local Plan. Available at: <https://www.gnlp.org.uk/growing-stronger-communities-together> [Date Accessed: 18/08/21]

2.2 Representations at R19

- 2.2.1 Consultation on the Regulation 19 Pre-Submission Draft Version of the GNLP closed on 22nd March 2021⁵. During consultation, GNLP received several comments in relation to the Sustainability Appraisal process and findings. These are available on the GNLP website⁶.
- 2.2.2 This SA Addendum has been produced to respond to a representation made by Rosconn Strategic Land⁷ who raised issues relating to the selection process for the chosen spatial strategy of the GNLP.
- 2.2.3 The representation states:
- 2.2.4 *“The Regulation 19 SA fails to explain adequately why the Plan’s preferred spatial strategy was selected and how it performs against the reasonable alternatives for the distribution of growth. Rather than providing a clear narrative to enable the reader to determine how the Plan’s preferred strategy and reasonable alternatives to it were shaped over time, the current SA refers to a number of previous reports published in previous stages of consultation.”*
- 2.2.5 The following sections of this document address these matters.

2.3 Spatial Options

- 2.3.1 Reasonable alternatives or ‘options’ for the spatial strategy within Greater Norwich have been considered throughout the Local Plan and SA process to date. Section 5.4 of the Regulation 19 SA main report (Volume 2 of 3: Regulation 19 SA Report)⁸ outlines the findings from each of these appraisals.
- 2.3.2 The Regulation 18A SA (prepared by GNLP in 2018)⁹ tested the sustainability performance of six reasonable alternative spatial strategy options, as identified in the Growth Options Document (January 2018)¹⁰, each based on the delivery of approximately 7,200 new dwellings:
1. Urban Concentration (close to Norwich).
 2. Transport Corridors.
 3. Cambridge Norwich Tech Corridor.

⁵ GNLP (2021) Regulation 19 Publication Information. Available at: <https://www.gnlp.org.uk/regulation-19-publication-part-1-strategy/regulation-19-publication-information-not-part-plan> [Date Accessed: 06/08/21]

⁶ GNLP (2021) Greater Norwich Local Plan Regulation 19 Publication – Evidence Base. Available at: <https://www.gnlp.org.uk/regulation-19-publication/evidence-base> [Date Accessed: 06/08/21]

⁷ Rosconn Strategic Land (2021) Representations to the Regulation 19 Publication Greater Norwich Local Plan for Rosconn Strategic Land March 2021. Available at: <https://oc2connect.gnlp.org.uk/download/attachment/3251> [Date Accessed: 06/08/21]

⁸ Lepus Consulting (2021) Sustainability Appraisal and Strategic Environmental Assessment of the Greater Norwich Local Plan – Volume 2 of 3: Regulation 19 SA Report January 2021. Available at: https://www.gnlp.org.uk/sites/gnlp/files/2021-01/LC-663_Vol_2of3_GNLP_SA_Reg19_20_250121LB_compressed%20Jan%202021.pdf [Date Accessed: 23/08/21]

⁹ GNLP (2018) Interim Sustainability Appraisal of the Greater Norwich Local Plan for Broadland, Norwich and South Norfolk. Available at: <https://gnlp.oc2.uk/document/15> [Date Accessed: 23/08/21]

¹⁰ GNLP (2018) Greater Norwich Local Plan Regulation 18 Consultation Growth Options. Available at: <https://www.gnlp.org.uk/regulation-18-stage> [Date Accessed: 23/08/21]

4. Dispersal.
5. Dispersal Plus New Settlement.
6. Dispersal and Urban Growth.

2.3.3 The Regulation 18A SA also considered options for the spatial strategy within Norwich City Centre, the Urban Area and Fringe Parishes, Norwich Urban Area & Distribution of Growth and the Settlement Hierarchy.

2.3.4 The Regulation 18A SA notes that “*whilst the actual allocation numbers within each approach could vary to some degree, such variation is not considered to constitute a fundamentally different conceptual alternative. Therefore these Alternatives are considered to cover the full range of potential conceptual approaches to distributing additional development across Greater Norwich*”.

2.3.5 In subsequent stages of the Local Plan process, the GNDP considered a hybrid spatial strategy, which is a combination of elements of the six previously considered options (primarily options 1, 2, 3 and 6). This option was presented in the Regulation 18C Draft Strategy and is as follows:

- a. Maximises brownfield development and regeneration opportunities, which are mainly in Norwich. The brownfield/greenfield split for new homes in the Plan is 27%/73%;
- b. Broadly follows the settlement hierarchy set out in Policy 1 (the Norwich urban area; main towns; key service centres and village clusters) in terms of scales of growth as this reflects access to services and jobs;
- c. Focuses most of the growth in locations with the best access to jobs, services and existing and planned infrastructure in and around the Norwich urban area and the Cambridge-Norwich Tech corridor;
- d. Focuses reasonable levels of growth in the main towns, key service centres and village clusters to support a vibrant rural economy. The approach to village clusters is innovative. It reflects the way people access services in rural areas and enhances social sustainability by promoting appropriate growth in smaller villages. It will support local services, whilst at the same time protecting the character of the villages;
- e. Allocates strategic scale housing sites (1,000 dwellings +) in accessible locations;
- f. Allocates a significant number of medium scale and smaller scale sites in the urban area, towns and villages, providing a balanced range of site types to allow for choice, assist delivery and allow smaller scale developers and builders into the market. Overall, 12% of the homes allocated through the Plan are on sites of no larger than 1 hectare, meeting national requirements;
- g. Sets a minimum allocation size of 12-15 dwellings to ensure that a readily deliverable amount of affordable housing is provided on all allocated sites.

2.3.6 Housing growth is proposed to be delivered in line with the following settlement hierarchy, in line with the preferred option identified at Regulation 18A:

1. Norwich urban area (Norwich and Norwich Fringe)
2. Main towns
3. Key service centres
4. Village clusters

2.3.7 The Regulation 18C SA report assessed the proposed spatial strategy as part of Policy 1 – The Sustainable Growth Strategy. Policy 1 also sets out the provision of homes and employment floorspace, which at the time of the Regulation 18C Draft Strategy consisted of 44,340 dwellings (including 7,840 homes via new allocations) and 360 ha of employment floorspace. The policy was identified as having the potential to result in major negative impacts in relation to air quality, climate change and natural resources and a minor negative impact in relation to biodiversity. The spatial strategy would be expected to result in neutral or positive impacts in relation to all other SA Objectives (see **Table 2.2**).

Table 2.2: Impact matrix for Policy 1 – The Sustainable Growth Strategy at Regulation 18C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Air Quality & Noise	Climate Change Mitigation & Adaptation	Biodiversity, Geodiversity & GI	Landscape	Housing	Population & Communities	Deprivation	Health	Crime	Education	Economy	Transport & Access to Services	Historic Environment	Natural Resources, Waste & Contaminated Land	Water
--	--	-	0	++	+	+	+	+	++	++	++	+	--	0

2.3.8 The Regulation 19 SA Report re-visited the assessment of the spatial strategy as part of the assessment of Policy 1 and found no change to the overall findings or SA performance, as per **Table 2.2** above.

2.3.9 The growth strategy set out in the Publication Draft Plan (2021) is as follows:

- a. Maximises brownfield development and regeneration opportunities, which are mainly in Norwich. The brownfield/greenfield split for new homes in the plan is around 22%/78%;
- b. Broadly follows the settlement hierarchy set out in policy 1 (the Norwich urban area; main towns; key service centres and village clusters) in terms of scales of growth as this reflects access to services and jobs;
- c. Focusses most of the growth in locations with the best access to jobs, services and existing and planned infrastructure in and around the Norwich urban area and the Cambridge Norwich Tech corridor;
- d. Focusses reasonable levels of growth in the main towns, key service centres and village clusters to support a vibrant rural economy. The approach to village clusters is innovative. It reflects the way people access services in rural areas and enhances social sustainability by promoting appropriate growth in smaller villages. It will support local services, whilst at the same time protecting the character of the villages.

- e. Allocates strategic scale housing sites (1,000 dwellings +) in accessible locations;
- f. Allocates a significant number of medium scale and smaller scale sites in the urban area, towns and villages, providing a balanced range of site types to allow for choice, assist delivery and allow smaller scale developers and builders into the market. Overall, 12% of the homes allocated through the plan are on sites of no larger than 1 hectare, meeting national requirements. More small-scale housing developments will be provided by policy 7.5 and through windfall development;
- g. Sets a minimum allocation size of 12-15 dwellings to ensure that a readily deliverable amount of affordable housing is provided on all allocated sites.

2.3.10 This chosen strategy is the same as that presented in the Regulation 18C Draft Strategy with minor wording amendments and the addition of reference to small-scale windfall development. Policy 1 of the GNLP sets out the same strategy but has been updated to reflect the most up-to-date figures in relation to housing provision. The Regulation 19 Publication Draft Plan (2021) Policy 1 proposes 49,492 dwellings (including 10,704 homes via new allocations) and 360 ha of employment floorspace, which was assessed in the Regulation 19 SA Report¹¹ and the accompanying SA of each GNLP policy at Appendix C¹². As there has been no change in the proposed spatial strategy since the Regulation 18C SA, the SA findings remain the same as those presented in **Table 2.2**.

2.3.11 This SA Addendum seeks to provide further information and detail regarding these conclusions by re-assessing each of the seven spatial options against each SA Objective, with the increased housing provision that was introduced at Regulation 19 as a consequence of accommodating the latest government-calculated housing numbers using the so-called 'standard methodology'.

¹¹ Lepus Consulting (2021) Sustainability Appraisal and Strategic Environmental Assessment of the Greater Norwich Local Plan – Volume 2 of 3: Regulation 19 SA Report January 2021. Available at: https://www.gnlp.org.uk/sites/gnlp/files/2021-01/LC-663_Vol_2of3_GNLP_SA_Reg19_20_250121LB_compressed%20Jan%202021.pdf [Date Accessed: 23/08/21]

¹² Lepus Consulting (2021) Sustainability Appraisal and Strategic Environmental Assessment of the Greater Norwich Local Plan – Volume 3 of 3: Appendices January 2021. Available at: https://www.gnlp.org.uk/sites/gnlp/files/2021-01/LC-663_Vol_3of3_Appendices_3_250121LB_compressed%20Jan%202021.pdf [Date Accessed: 23/08/21]

3 Summary Methodology

3.1 Introduction

3.1.1 This chapter provides a brief overview of the methodology used to inform the identification and assessment of potential effects in the SA process. The detailed SA Methodology is provided in the SA reports which accompanied the previous stages of Local Plan preparation.

3.1.2 The process of sustainability appraisal uses geographic information, the SA Framework and established standards (where available) to inform the assessment decisions and provide transparency.

3.2 The appraisal process

3.2.1 Development proposals and policies set out in the GNLP have been assessed against the SA Framework (see **Appendix A**). The SA Framework is comprised of SA Objectives and decision-making criteria. Acting as yardsticks of sustainability performance, the SA Objectives are designed to represent the topics identified in Annex 1(f)¹³ of the SEA Directive. Including the SEA topics in the SA Objectives helps ensure that all of the environmental criteria of the SEA Directive are incorporated. Consequently, the 15 SA Objectives reflect all subject areas to ensure the assessment process is transparent, robust and thorough. The SA Objectives and the SEA Topics to which they relate are set out in **Table 3.1**.

3.2.2 Each SA Objective is considered when appraising each aspect of the GNLP. It is important to note that the order of SA Objectives in the SA Framework does not infer prioritisation. The SA Objectives are at a strategic level and can potentially be open-ended. In order to focus each objective, decision making criteria are presented in the SA Framework to be used during the appraisal of the GNLP.

¹³ Annex 1(f) identifies: *'the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors'*.

Table 3.1: Summary of the SA Objectives

SA Objectives		Relevance to SEA Directive - Annex 1(f)
1	Air Quality and Noise: Minimise air, noise and light pollution to improve wellbeing.	Air and human health
2	Climate Change Mitigation and Adaptation: Continue to reduce carbon emissions, adapting to and mitigating against the effects of climate change.	Climate change, soil and water
3	Biodiversity, Geodiversity and Green Infrastructure: Protect and enhance the area's biodiversity and geodiversity assets and expand the provision of green infrastructure.	Biodiversity, flora, fauna and geodiversity.
4	Landscape: Promote efficient use of land, while respecting the variety of landscape types in the area.	Landscape and historic environment.
5	Housing: Ensure that everyone has good quality housing of the right size and tenure to meet their needs.	Housing, population and quality of life
6	Population and Communities: Maintain and improve the quality of life of residents.	Population and quality of life
7	Deprivation: To reduce deprivation.	Population and quality of life
8	Health: To promote access to health facilities and promote healthy lifestyles.	Population, quality of life and health
9	Crime: To reduce crime and the fear of crime.	Population and quality of life
10	Education: To improve skills and education.	Population and economic factors
11	Economy: Encourage economic development covering a range of sectors and skill levels to improve employment opportunities for residents and maintain and enhance town centres.	Economic factors and material assets
12	Transport and Access to Services: Reduce the need to travel and promote the use of sustainable transport modes.	Accessibility, climate change and material assets
13	Historic Environment: Conserve and enhance the historic environment, heritage assets and their setting, other local examples of cultural heritage, preserving the character and diversity of the area's historic built environment.	Historic environment and landscape
14	Natural Resources, Waste and Contaminated Land: Minimise waste generation, promote recycling and avoid the sterilisation of mineral resources. Remediate contaminated land and minimise the use of the best and most versatile agricultural land.	Soil and material assets
15	Water: Maintain and enhance water quality and ensure the most efficient use of water.	Water

- 3.2.3 The purpose of this document is to provide an appraisal of reasonable alternative spatial options within Greater Norwich in line with Article 5 Paragraph 1 of the SEA Directive¹⁴:
- 3.2.4 *“Where an environmental assessment is required under Article 3(1), an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated. The information to be given for this purpose is referred to in Annex I”.*
- 3.2.5 This document also provides information in relation to the likely characteristics of effects, as per the SEA Directive (see **Table 3.2**).

Table 3.2: Annex II of the SEA Directive¹⁵

Criteria for determining the likely significance of effects (Article 3(5) of SEA Directive)

The characteristics of plans and programmes, having regard, in particular, to:

- the degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources;
- the degree to which the plan or programme influences other plans and programmes including those in a hierarchy;
- the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development;
- environmental problems relevant to the plan or programme; and
- the relevance of the plan or programme for the implementation of Community legislation on the environment (e.g. plans and programmes linked to waste management or water protection).

Characteristics of the effects and of the area likely to be affected, having regard, in particular, to:

- the probability, duration, frequency and reversibility of the effects;
- the cumulative nature of the effects;
- the transboundary nature of the effects;
- the risks to human health or the environment (e.g. due to accidents);
- the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected);
- the 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; and
- the effects on areas or landscapes which have a recognised national, community or international protection status.

- 3.2.6 The appraisal process considers the level of significance of the effects identified. To do so, it draws on criteria for determining significance of effects in Annex II of the SEA Directive (see **Table 3.2**). Any assessment rated as negligible cannot constitute a significant effect.

¹⁴ Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 (SEA Directive). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32001L0042&from=EN> [Date Accessed: 10/08/21]

¹⁵ Ibid

3.3 Impact assessment and determination of significance

3.3.1 Significance of effect is a combination of impact sensitivity and magnitude. Impact sensitivity can be expressed in relative terms, based on the principle that the more sensitive the resource, the greater the magnitude of the change, and as compared with the do-nothing comparison, the greater will be the significance of effect.

3.4 Sensitivity

3.4.1 Sensitivity has been measured through consideration as to how the receiving environment will be impacted by a plan proposal. This includes assessment of the value and vulnerability of the receiving environment, whether or not environmental quality standards will be exceeded, and for example, if impacts will affect designated areas or landscapes.

3.4.2 A guide to the range of scales used in determining sensitivity is presented in **Table 3.3**. For most receptors, sensitivity increases with geographic scale.

Table 3.3: Sensitivity

Scale	Typical criteria
International/ national	Designations that have an international aspect or consideration of transboundary effects beyond national boundaries. This applies to effects and designations/receptors that have a national or international dimension.
Regional	This includes the regional and sub-regional scale, including county-wide level and regional areas.
Local	This is the district and neighbourhood scale.

3.5 Magnitude

3.5.1 Magnitude relates to the degree of change the receptor will experience, including the probability, duration, frequency and reversibility of the impact. Magnitude has been determined on the basis of the susceptibility of a receptor to the type of change that will arise, as well as the value of the affected receptor (see **Table 3.4**).

Table 3.4: Magnitude

Magnitude	Typical criteria
High	<ul style="list-style-type: none"> • Likely total loss of or major alteration to the receptor in question; • Provision of a new receptor/feature; or • The impact is permanent and frequent.
Medium	Partial loss/alteration/improvement to one or more key features; or The impact is one of the following: <ul style="list-style-type: none"> • Frequent and short-term; • Frequent and reversible; • Long-term (and frequent) and reversible; • Long-term and occasional; or • Permanent and occasional.
Low	Minor loss/alteration/improvement to one or more key features of the receptor; or The impact is one of the following: <ul style="list-style-type: none"> • Reversible and short-term; • Reversible and occasional; or • Short-term and occasional.

3.6 Significant effects

3.6.1 A single value from **Table 3.5** has been allocated to each SA Objective for each reasonable alternative. Justification for the classification of the impact for each SA Objective is presented in an accompanying narrative assessment text for all reasonable alternatives that have been assessed through the SA process.

3.6.2 The assessment of impacts and subsequent evaluation of significant effects is in accordance with the footnote of Annex 1(f) of the SEA Directive, where feasible, which states: *“These effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects”*.

Table 3.5: Guide to scoring significant effects

Significance	Definition (not necessarily exhaustive)
<p style="text-align: center;">Major Negative --</p>	<p>The size, nature and location of a site would be likely to:</p> <ul style="list-style-type: none"> • Permanently degrade, diminish or destroy the integrity of a quality receptor, such as a feature of international, national or regional importance; • Cause a very high-quality receptor to be permanently diminished; • Be unable to be entirely mitigated; • Be discordant with the existing setting; and/or • Contribute to a cumulative significant effect.
<p style="text-align: center;">Minor Negative -</p>	<p>The size, nature and location of site would be likely to:</p> <ul style="list-style-type: none"> • Not quite fit into the existing location or with existing receptor qualities; and/or • Affect undesignated yet recognised local receptors.
<p style="text-align: center;">Negligible 0</p>	<p>Either no impacts are anticipated, or any impacts are anticipated to be negligible.</p>
<p style="text-align: center;">Uncertain +/-</p>	<p>It is entirely uncertain whether impacts would be positive or adverse.</p>
<p style="text-align: center;">Minor Positive +</p>	<p>The size, nature and location of a site would be likely to:</p> <ul style="list-style-type: none"> • Improve undesignated yet recognised receptor qualities at the local scale; • Fit into, or with, the existing location and existing receptor qualities; and/or • Enable the restoration of valued characteristic features.
<p style="text-align: center;">Major Positive ++</p>	<p>The size, nature and location of a site would be likely to:</p> <ul style="list-style-type: none"> • Enhance and redefine the location in a positive manner, making a contribution at a national or international scale; • Restore valued receptors which were degraded through previous uses; and/or • Improve one or more key elements/features/characteristics of a receptor with recognised quality such as a specific international, national or regional designation.

4 Appraisal of Reasonable Alternative Spatial Options

4.1 Introduction

- 4.1.1 **Table 4.1** below outlines the seven spatial options considered by the GNDP. Each option has been assessed for its likely sustainability impacts, a summary of which is presented in **Table 4.2**. Full explanations and reasonings behind each overall 'score' outlined in **Table 4.2** are set out per SA Objective in the following sections of this appendix.
- 4.1.2 **Tables 4.3 – 4.17** present the likely overall SA impacts (as per **Table 4.2**), alongside the assessment narrative which provides a qualitative analysis of the sustainability performance of each option compared to the other options, with respect to that particular objective.
- 4.1.3 It should be noted that whilst every effort has been made to predict effects accurately, the sustainability impacts have been assessed at a high level and are reliant upon the current understanding of the baseline. These assessments have been based on information provided by the GNDP, as well as expert judgement.
- 4.1.4 Each of the options outlined in **Table 4.1** and discussed within this report set out the location and broad distribution of new housing growth, totalling approximately 10,700 dwellings. This is the level of new housing growth required in order to meet the local housing need (40,541 dwellings) as identified using the Government's standard methodology, when combined with the baseline growth from existing commitments and anticipated windfall allowance. The total housing potential identified within the GNLP is 49,492 dwellings, taking into account the existing commitments, new allocations and windfall allowance¹⁶. The overall potential housing delivery figure includes a 22% buffer above the established housing need.

¹⁶ GNDP (2021) Greater Norwich Local Plan. Section 5 – The Strategy. Housing Growth Needs. Available at: <https://www.gnlp.org.uk/submission-gnlp-secretary-state-environment-part-1-strategy-section-5-strategy-policy-1-0> [Date Accessed: 24/08/21]

Table 4.1: Greater Norwich Spatial Options considered during the Local Plan process

		Growth Options						
Location	Parish / Area	Option 1: Concentration Close to Norwich	Option 2: Transport Corridors	Option 3: Supporting the Cambridge to Norwich Tech Corridor	Option 4: Dispersal	Option 5: Dispersal plus New Settlement	Option 6: Dispersal plus Urban Growth	Option 7: Regulation 19 Hybrid Approach
Norwich		2,220	2,220	2,220	2,220	2,220	2,220	3,635
North East	Growth Triangle	1,785	1,785	300	300	300	1,785	1,420
	Thorpe St. Andrew							
	Elsewhere							
North / North West	Hellesdon	890	300	0	150	150	300	1,417
	Horsford							
	Drayton							
	Elsewhere							
West	Bawburgh	745	745	745	150	150	745	200
	Costessey							
	Easton							
South West	Cringleford	1,785	745	2,220	225	225	300	0
	Hethersett							
	Little Melton							
	Elsewhere							
Main Towns		820	2,450	1,865	1,785	1,785	1,040	1,655
Key Service Centres		670	670	820	1,270	1,270	890	695
New Village(s)		0	0	745	0	745	0	0
Villages		1,785	1,785	1,785	4,600	3,855	3,420	1,682
Total New Allocations		10,700	10,700	10,700	10,700	10,700	10,700	10,704

Table 4.2: Impact matrix of all spatial options assessed within this report

SA Objective	Spatial Option						
	1	2	3	4	5	6	7
	Concentration Close to Norwich	Transport Corridors	Supporting the Cambridge to Norwich Tech Corridor	Dispersal	Dispersal + New Settlement	Dispersal + Urban Growth	Regulation 19 Hybrid Approach
SA Objective 1 – Air Quality and Noise	-	-	-	--	--	--	-
SA Objective 2 – CC Mitigation and Adaptation	-	-	-	--	--	--	-
SA Objective 3 -Biodiversity, Geodiversity & GI	-	-	-	-	-	-	-
SA Objective 4 -Landscape	-	-	-	-	-	-	-
SA Objective 5 - Housing	+	+	+	++	++	++	+
SA Objective 6 – Population & Communities	+	+	+	0	0	0	+
SA Objective 7 – Deprivation	+	+	+	+	+	+	+
SA Objective 8 - Health	+	+	+	0	0	0	+
SA Objective 9 - Crime	0	0	0	0	0	0	0
SA Objective 10 - Education	+	+	+	0	0	0	+
SA Objective 11 - Economy	++	++	++	+	+	+	++
SA Objective 12 – Transport & Access to Services	+	+	+	-	-	-	+
SA Objective 13 – Historic Environment	-	-	-	-	-	-	-
SA Objective 14 – Natural Resources, Waste & Contaminated Land	-	-	-	--	--	--	-
SA Objective 15 – Water	-	-	-	-	-	-	-

4.2 SA Objective 1 – Air Quality and Noise

- 4.2.1 This objective seeks to minimise air, noise and light pollution to improve wellbeing. Indicators of this objective include the number of residents in areas of poor air pollution and proximity to sources of pollutants such as main roads and Air Quality Management Areas (AQMAs). There is currently one AQMA within the Plan area: Central Norwich AQMA¹⁷. There are no motorways which pass across the Plan area. There is a network of A-roads which provide good road access to Norwich City and its surroundings; towards the Norfolk coastline and towards Ipswich, Cambridge and Peterborough such as A140, A11 and A47. As such, air quality is generally expected to be worse within and surrounding Norwich City, and along these major transport routes, compared to the more rural areas of the Plan area.
- 4.2.2 All spatial options would direct a proportion of growth towards Norwich City. Development within the city is likely to be of higher density than in surrounding areas. Higher density development would be expected to reduce the overall quantity of land being built upon across the Plan area, which would in turn help to minimise the risks to air quality caused by development. However, there is a general trend of air pollution in higher density urban areas having more adverse impacts on human health than in air pollution in lower density urban areas¹⁸. Cities generally have higher populations and higher emission of pollutants as well as taller buildings which stagnate air flow.
- 4.2.3 By focusing the majority of development within the city, where air quality is already poor (e.g. in proximity to, or within, Central Norwich AQMA), development of this scale could lead to a further deterioration of air quality and lead to pockets of poor air quality and noise pollution, particularly associated with traffic congestion. Option 7 would direct the highest amount of growth to Norwich with 3,635 dwellings proposed in this area in total, and so could result in the greatest impacts in terms of exposure to existing sources of pollution.
- 4.2.4 Spatial options which involve more dispersed growth (Options 4, 5 and 6) would result in more development in smaller settlements, where air quality is generally better. However, introducing new development into these settlements may result in localised reductions in air quality, and may also increase the need to travel via car to reach services and facilities resulting in higher traffic-related emissions over a wider area. In contrast, growth options which would locate a larger proportion of development within proximity to existing transport routes including areas with more sustainable travel options already in place, such as pedestrian, cycle and public transport routes (Options 1, 2 and 7, and to a lesser extent Option 3), could potentially have lower transport-related air quality emissions per-capita. This is evidenced by the improvements to air quality seen in Central Norwich AQMA, with decreases in nitrogen dioxide levels due in part to improvements made to the bus fleet, cycle routes and traffic management techniques in the city, although monitoring will need to continue to verify this trend¹⁹.

¹⁷ Department for Environment Food and Rural Affairs (2021) Central Norwich AQMA (Norwich City Council). Available at: https://uk-air.defra.gov.uk/agma/details?agma_ref=1519 [Date Accessed: 09/08/21]

¹⁸ Yuan, C, Ng, Edwards, Norford, Leslie, K. (2014) Improving air quality in high-density cities by understanding the relationship between air pollution dispersion and urban morphologies, *Building and Environment*, V71, pp245-258, January 2014

¹⁹ Norwich City Council (2020) 2020 Air Quality Annual Status Report (ASR) November 2020. Available at: https://www.norwich.gov.uk/download/downloads/id/7112/2020_air_quality_status_report.pdf [Date Accessed: 23/08/21]

- 4.2.5 In terms of light and noise pollution, the impacts are likely to be greatest under options where higher dispersal of development is advocated. Introducing a significant proportion of new dwellings into rural communities could result in significant changes to lighting and noise levels, whereas development closer to Norwich is likely to already have such infrastructure in place, and result in less extensive impacts.
- 4.2.6 SA Objective 1 covers complex and cross-boundary issues of air, noise and light pollution. The development of 10,700 new dwellings would be expected to significantly increase pollution and result in an adverse impact on air quality and noise, under all growth strategies. It is likely that the greatest change in air quality and noise impacts compared to the current baseline would be experienced under the options which proposed more dispersal of development. However, options which locate more development towards Norwich would be likely to expose new residents to the highest levels of pollution from existing sources. On balance, it is considered that the more sustainable options are those which direct most growth towards the city as there is the likely to be greater opportunity in these areas to facilitate sustainable transport options.
- 4.2.7 Overall, Options 4, 5 and 6 could potentially result in a major negative impact on air quality and noise compared to the baseline, whereas Options 1, 2, 3 and 7 could result in a minor negative impact. Option 7 could be identified as the best performing as it directs the highest amount of growth within Norwich, with Option 1 the next best performing option as it directs the highest amount of growth to Norwich and the Urban Fringe combined (7,425 dwellings in total).

Table 4.3: Impact matrix and ranking of spatial options under SA Objective 1 – Air Quality & Noise

SA Objective 1 – Air Quality and Noise	Spatial Option						
	1	2	3	4	5	6	7
SA Score	-	-	-	--	--	--	-

4.3 SA Objective 2 – Climate Change Mitigation and Adaptation

- 4.3.1 Greater Norwich is largely rural, with Norwich City in the centre of the Plan area representing the main populated area, linking to the Main Towns via the strategic road network. The Plan area contains a large proportion of green and blue infrastructure, including a network of natural and semi-natural habitats amongst the settlements and agricultural landscape, including a number of nationally and locally designated biodiversity sites as well as watercourses such as the River Wensum and River Yare and associated wetlands. Soils and vegetation play vital roles in mitigating and adapting to climate change, such as through carbon storage and attenuating flood risk by intercepting surface water and storing water that could otherwise lead to flooding, causing harm to people and property within urban areas. Flood risk is prevalent particularly towards the east (adjacent to The Broads) and will likely become a more significant threat in the future due to climate change and sea level rise.

- 4.3.2 Under all spatial options the proposed development of 10,700 dwellings would be expected to result in a loss of greenfield land and vegetation cover to some extent, consequently resulting in a reduction in the carbon storage capabilities of the Plan area. This scale of development would also be expected to result in a significant increase in carbon emissions due to the construction and occupation of new development, including through an increase in the number of vehicles on the local road networks, which represents a major source of particulate matter and greenhouse gases (GHGs).
- 4.3.3 Spatial options which would direct larger proportions of development towards Norwich and the existing built-up areas would be likely to present greater opportunities for efficient use of land and natural resources, such as via higher density developments. This may also be expected to result in lesser impacts in terms of pluvial flood risk. Furthermore, new residents in these locations would be expected to have good access to a range of public transport and sustainable travel options rather than relying on personal car use.
- 4.3.4 Conversely, greater dispersal of development across a number of settlements (including Options 4, 5 and 6) could result in lower density development and therefore potentially a larger proportion of previously undeveloped land and green infrastructure lost to development. Dispersed development could also lead to increased need to travel and less availability of sustainable transport options.
- 4.3.5 Overall, there are likely to be the most opportunities to deliver sustainable development which seeks to combat climate change and mitigate flood risk where efficient use of land can be prioritised, minimising loss of green infrastructure, and situating new development in proximity to existing services, facilities and public transport infrastructure. As such, Spatial Option 1 could perform best under this objective by concentrating development within and around Norwich, followed by Option 7 with the highest proportion in Norwich itself. Option 2, which focuses development within key transport corridors, has some degree of overlap with Option 1 as urban fringe locations tend to be well served by transport corridors, but also encompasses a strategy focussed on key A roads and (in some locations) rail corridors. This could lead to mixed effects in terms of facilitating sustainable transport, including potential for co-ordinated strategic transport investment / improvement schemes that help to reduce carbon emissions, but may also place pressure on the existing transport network and car use. Option 3 also encompasses a main rail corridor. These options are therefore considered the next best performing options, with Options 4, 5 and 6 considered the worst performing with regards to SA Objective 2.

Table 4.4: Impact matrix of spatial options under SA Objective 2 – Climate Change Mitigation & Adaptation

SA Objective 2 – CC Mitigation and Adaptation	Spatial Option						
	1	2	3	4	5	6	7
SA Score	-	-	-	--	--	--	-

4.4 SA Objective 3 – Biodiversity, Geodiversity and Green Infrastructure

- 4.4.1 Greater Norwich supports a range of biodiversity and geodiversity assets. There are four European designated biodiversity sites within the GNLP area: Broadland SPA and Ramsar; The Broads SAC; River Wensum SAC; and Norfolk Valley Fens SAC. Several other European sites can be found in the surrounding area within Norfolk. A Habitats Regulations Assessment (HRA) has been carried out alongside the Local Plan and SA process which has considered the potential impacts of the development proposed within the GNLP, in the context of the Birds and Habitats Directives.
- 4.4.2 The emerging Green Infrastructure and Recreational impact Avoidance and Mitigation Strategy (GI RAMS)²⁰ aims to support local planning authorities in addressing the mitigation needs of Local Plans including the GNLP in-combination with European sites. The strategy seeks to use green infrastructure at the Local Plan level to divert and deflect new residents from visiting European sites on a daily basis.
- 4.4.3 A network of nationally and locally designated and non-designated biodiversity sites can also be found in Greater Norwich. This includes 49 Sites of Special Scientific Interest (SSSI) and two National Nature Reserves (NNR), as well as numerous stands of ancient woodland, Local Nature Reserves (LNR), County Wildlife Sites (CWS) and priority habitats distributed throughout the Plan area. In terms of geodiversity, important sites include a number of SSSIs which contain features of geological interest, as well as ‘Pinebanks’ County Geological Site (CGS).
- 4.4.4 As a minimum, there should be no net loss to the biodiversity network, the species diversity or habitat diversity. Emerging government policy on net gain is likely to see a commitment to at least a 10% gain in biodiversity, measured using the biodiversity metric²¹.
- 4.4.5 Delivering the majority of development within Norwich and the urban fringe would be expected to provide opportunities to intensify under-utilised and vacant space within the urban area. This would be likely to reduce the overall quantity of new land required for development to meet the housing need and thereby protect biodiversity features in these areas. However, urban areas also support some habitats and form ecological networks so it would be important to ensure preservation and enhancement of green corridors and habitat links alongside development in these areas.
- 4.4.6 All spatial options would be likely to result in loss of previously undeveloped land to some extent, and as such, it is expected that all options would result in some loss of green infrastructure and degradation of ecological networks. The development of 10,700 new dwellings would be likely to increase recreational pressure and disturbance to designated sites, result in reductions to air quality, and result in increased demand for water resources, all of which could result in harm to biodiversity if not carefully managed and mitigated.

²⁰ Place Services (2021) Norfolk Green Infrastructure and Recreational impact Avoidance and Mitigation Strategy – Habitats Regulations Assessment Strategy Document March 2021. Available at: https://www.gnlp.org.uk/sites/gnlp/files/2021-03/Norfolk_GI_RAMS_Strategy_March_2021.pdf [Date Accessed: 10/08/21]

²¹ Defra (2021) Environment Bill 2019-21: Bill 220 2019-21 (as amended in Committee). Available at: <https://services.parliament.uk/bills/2019-21/environment.html> [Date Accessed: 10/08/21]

4.4.7 Biodiversity and the required nature and level of mitigation should be evaluated at the site-specific level to ensure that important features and habitats are conserved and enhanced. In general, spatial options which deliver the largest proportions of development within Norwich and the urban fringe could potentially result in the least impacts to biodiversity, geodiversity and green infrastructure. However, Norwich City also supports green infrastructure corridors. All spatial options have the potential to result in a minor negative impact on SA Objective 3 and cannot be differentiated at this high level of assessment.

Table 4.5: Impact matrix of spatial options under SA Objective 3 – Biodiversity, Geodiversity & GI

SA Objective 3 - Biodiversity, Geodiversity & GI	Spatial Option						
	1	2	3	4	5	6	7
SA Score	-	-	-	-	-	-	-

4.5 SA Objective 4 – Landscape

4.5.1 At the European, national, regional and local levels emphasis is placed on the protection of landscape as an essential component of people’s surroundings and sense of place. Landscape is described as comprising natural, cultural, social, aesthetic and perceptual elements. This includes flora, fauna, soils, land use, settlement, sight, smells and sound²². The extent to which landscape impacts are likely to emerge will depend on the size, nature and location of the proposed development.

4.5.2 Greater Norwich is largely rural with high quality landscapes and countryside which is distinguished by the river valleys of the River Yare and River Wensum. The Broads National Park is situated in the south east of Broadland and the north east of South Norfolk districts, with a small section within Norwich City. There are two Country Parks within the Plan area: ‘Catton Park’ Country Park in Broadland and ‘Whitlingham’ Country Park in South Norfolk.

4.5.3 Under all seven spatial options, a large proportion of development would be located on previously undeveloped land including within and surrounding smaller settlements such as the Key Service Centres and Villages. Option 4 would direct the largest proportion of development towards Villages and as such could potentially result in the most significant impacts in terms of landscape character, including potential impacts on the nationally important landscape within The Broads resulting from development in Villages in close proximity. Development focused towards these lower-tier settlements could also result in adverse impacts due to increased risk of urbanisation of the countryside, although extensions to the urban area around Norwich City (such as Options 1, 2 and 7) could also lead to similar impacts through encroachment into the surrounding landscape and potentially coalescence between settlements.

²² Natural England (2014) An Approach to Landscape Character Assessment. Available at: <https://www.gov.uk/government/publications/landscape-character-assessments-identify-and-describe-landscape-types> [Date Accessed: 10/08/21]

- 4.5.4 Delivering higher levels of development within the existing urban areas would help to promote an efficient use of land and would reduce the amount of development required within smaller settlements and encroachment into the countryside. Modifying built form where houses or offices already occupy the immediate landscape tends to accommodate change better than new houses in a field with diverse natural features. Although, infilling and redeveloping urban land close to Norwich could lead to adverse impacts on the character and quality of the townscape without careful design and consideration of factors such as key views and historic landmarks.
- 4.5.5 Overall, the effect of each spatial option on the landscape is difficult to quantify as it depends on many contextual factors that cannot be determined at this high level. It is likely that all options would result in adverse impacts on the landscape to some extent. The best performing option could be identified as Option 7, because it directs the lowest proportion of growth to the Villages which may be more sensitive to change.

Table 4.6: Impact matrix of spatial options under SA Objective 4 – Landscape

SA Objective 4 - Landscape	Spatial Option						
	1	2	3	4	5	6	7
SA Score	-	-	-	-	-	-	-

4.6 SA Objective 5 – Housing

- 4.6.1 The NPPF defines local housing need as “the number of homes identified as being needed through the application of the standard method set out in national planning guidance”²³. Local authorities must consider the identified needs of specific groups within the Local Plan. All seven spatial options seek to meet the identified housing need of 40,541 homes (including 10,704 dwellings from new allocations) to accommodate the growing population.
- 4.6.2 Spatial options with growth focused in and surrounding Norwich City could potentially be more constrained in terms of space, which may lead to more limited options relating to the layout and design of development. A greater dispersal of development, as promoted under Options 4, 5 and 6, may be capable of providing a greater range of housing types to meet the diverse needs of residents, including provision of affordable homes. These growth strategies may also be least complex in terms of delivery, as they would rely on a number of developments in smaller settlements, in contrast to fewer, larger developments that would be required to meet the housing need under other options (such as Options 1 and 2).
- 4.6.3 In particular, the development of a new settlement, as proposed within Options 3 and 5, could potentially allow the creation of a new well-designed public realm including integrated facilities and green infrastructure alongside a mix of housing types to accommodate residential growth, which may be the most likely to meet all the varying needs of the population. However, there may be more complications with such a strategy in terms of deliverability compared to Option 4 which would not be expected to rely on such large-scale allocations.

²³ MHCLG (2021) National Planning Policy Framework. Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> [Date Accessed: 10/08/21]

4.6.4 All options would be expected to have positive impacts on housing. Options 4, 5 and 6 are considered to be the most likely to provide high quality and desirable housing and to provide the most choice, and as such, result in major positive impacts. Whereas, spatial options which direct lower proportions of the housing need to the lower-tier settlements in the hierarchy could potentially have more limited opportunities but would still result in minor positive impacts. Overall, Spatial Option 4 is considered to be the best performing as it could deliver a wide range of housing types and ensure the least risk in terms of delivery and timescales of development.

Table 4.7: Impact matrix of spatial options under SA Objective 5 - Housing

SA Objective 5 - Housing	Spatial Option						
	1	2	3	4	5	6	7
SA Score	+	+	+	++	++	++	+

4.7 SA Objective 6 – Population and Communities

4.7.1 This objective seeks to maintain and improve quality of life for residents. In line with the NPPF, local planning authorities should seek to promote social interaction, create communities which are safe and accessible, and ensure there is good accessibility to a range of green infrastructure, sports facilities, local shops, cultural buildings and outdoor space. It is beneficial for residents’ wellbeing to be situated within communities that provide services and facilities to meet their day-to-day needs.

4.7.2 The provision of local services and facilities within Greater Norwich is most concentrated in the larger settlements. Spatial options which direct more development towards Norwich City would be expected to situate a greater proportion of new residents within a sustainable distance to existing facilities and services. In contrast, spatial options which direct larger proportions of development towards Villages could potentially situate residents in areas where facilities are more sparsely distributed.

4.7.3 However, although there may be fewer facilities found in the smaller settlements, residents within these areas may experience a stronger sense of community than residents of towns and cities and may place greater value on the local services that are available to them. Furthermore, smaller settlements would generally be expected to provide better access to open spaces and the surrounding countryside, and have higher environmental quality, potentially leading to higher quality of life.

4.7.4 The development of new settlements within Options 3 and 5 could provide opportunities to design sustainable and high-quality neighbourhoods that are well-designed to support vibrant communities.

4.7.5 Quality of life is highly subjective and can be perceived differently by residents in the same area. Development under all spatial options should seek to optimise the layout and design to encourage social interaction and community cohesion and ensure there is sustainable access to facilities and services to meet needs.

4.7.6 Overall, Spatial Option 7 is considered to be the best performing as it strikes a balance between maximising development in areas with the best access to existing services and jobs whilst still delivering an appropriate amount of growth towards the smaller settlements, in line with the settlement hierarchy. Although all options may have potential to achieve benefits to populations and communities, overall Options 4, 5 and 6 would result in more dispersed growth, which in general could be expected to provide more restricted access to services and facilities, when compared to Options 1, 2, 3 and 7. On balance, a negligible impact could be expected for Options 4, 5 and 6 whereas a minor positive impact is more likely under Options 1, 2, 3 and 7.

Table 4.8: Impact matrix of spatial options under SA Objective 6 – Population & Communities

SA Objective 6 – Population & Communities	Spatial Option						
	1	2	3	4	5	6	7
SA Score	+	+	+	0	0	0	+

4.8 SA Objective 7 – Deprivation

4.8.1 The purpose of this SA Objective is to redress deprivation issues across the Plan area. The Index of Multiple Deprivation (IMD)²⁴ is the official measure of relative deprivation for Lower Super Output Areas (LSOAs)²⁵ in England. Overall, deprivation is relatively low across Greater Norwich, although there are some pockets of deprivation within Norwich City, with approximately 20% of Norwich’s LSOAs among the 10% most deprived in England²⁶. Out of 317 Local Authorities in England, Norwich is ranked 52nd most deprived. In contrast, South Norfolk is ranked 232nd and Broadland 260th most deprived, with no LSOAs within the most 10% deprived in England.

4.8.2 Spatial options with the most focus on development in Norwich City and the urban fringe would be likely to provide the most opportunity to develop vacant and under-utilised space for residential use. This would also direct more new residents towards the city centre and in close proximity to employment opportunities and other services. Ensuring residents have good access to a wide range of services and facilities as well as employment opportunities would be likely to have benefits to local communities and result in a positive impact on equality.

²⁴ MHCLG (2019) English indices of deprivation 2019. Available at: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019> [Date Accessed: 10/08/21]

²⁵ DCLG (2016) The English Indices of Deprivation 2015 – Frequently Asked Questions (see question 11. What is a Lower-layer Super Output Area/neighbourhood/small area?). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/579151/English_Indices_of_Deprivation_2015_-_Frequently_Asked_Questions_Dec_2016.pdf [Date Accessed: 10/08/21]

²⁶ Local Government Association (2019) Indices of Multiple Deprivation 2019. Available at: https://lginform.local.gov.uk/reports/view/lga-research/lga-research-report-indices-of-deprivation-2019?mod-area=E92000001&mod-group=AllRegions_England&mod-type=namedComparisonGroup [Date Accessed: 10/08/21]

- 4.8.3 However, spatial options with emphasis on development in and around the city (Options 1, 2, 3 and 7) could also result in more higher density developments, and reduced accessibility to outdoor space. Additionally, development within existing deprived areas could potentially exacerbate the existing social pressures faced by current residents in these areas and place increased pressure on local services. On the other hand, development could also help to support regeneration in these deprived areas, if carefully planned and designed.
- 4.8.4 The extent to which each spatial option would deliver affordable housing is uncertain however there is likely to be a greater mix of housing that could be delivered through options with more dispersed development, as discussed within **section 4.6**.
- 4.8.5 Overall, deprivation is not expected to be significantly affected by the broad distribution of development across Greater Norwich. All seven spatial options could potentially result in a minor positive impact on deprivation, due to providing similar opportunities for plan-led regeneration and tackling of social inequalities.

Table 4.9: Impact matrix of spatial options under SA Objective 7 - Deprivation

SA Objective 7 - Deprivation	Spatial Option						
	1	2	3	4	5	6	7
SA Score	+	+	+	+	+	+	+

4.9 SA Objective 8 – Health

- 4.9.1 National and local health strategies and policies seek to promote the development of healthy communities, such as through delivering age-friendly environments for the elderly, encouraging healthier food choices and facilitating active travel.
- 4.9.2 Access to healthcare facilities is also an important factor, especially within rural communities. There is only one NHS hospital with an A&E department in the Plan area: Norfolk and Norwich University Hospital. Other hospitals in Greater Norwich include St Michaels Hospital, Hellesdon Hospital, Julian Hospital and Norwich Community Hospital. There are approximately 70 GP surgeries located across the Plan area, with the surgeries more-or-less evenly distributed across the three districts.
- 4.9.3 Providing residents with sustainable access to a diverse range of natural habitats is an effective means of reducing health inequalities in the area. Given the rural character of much of Broadland and South Norfolk, new residents in these areas are likely to have good access to the surrounding countryside and a range of natural habitats. The extensive PRow network throughout Norfolk offers residents good access into the countryside. Within the Plan area including Norwich City, there are a wide variety of public green spaces including parks, playing fields, golf courses, allotments and sports facilities. All these open spaces positively contribute towards the health and wellbeing of residents, by helping to encourage physical exercise through sports, recreation and active travel.

4.9.4 Spatial options with a higher proportion of development in the more built-up areas in Norwich City and the Urban Fringe would be expected to provide more residents with good access to a range of existing healthcare facilities, although there is some uncertainty regarding the capacity of these facilities to deal with high levels of growth. In contrast, in smaller settlements, development is more likely to be situated further from healthcare facilities resulting in increased need to travel which could present challenges for certain groups such as the elderly, and result in higher levels of personal car use.

4.9.5 On the whole, spatial options which direct more growth towards areas with the best relationship to healthcare facilities would be expected to present the most sustainable options in terms of human health and wellbeing. As such, Options 1 and 7 could be identified as the best performing in this regard, although Options 1, 2, 3 and 7 would each perform similarly by locating development in the areas where transport and accessibility is best.

Table 4.10: Impact matrix of spatial options under SA Objective 8 – Health

SA Objective 8 – Health	Spatial Option						
	1	2	3	4	5	6	7
SA Score	+	+	+	0	0	0	+

4.10 SA Objective 9 – Crime

4.10.1 The purpose of this objective is to help reduce crime rates in the local area. Although levels of crime are generally low in Greater Norwich, there are higher crime levels in inner urban wards, particularly in areas with a concentration of late-night drinking establishments.

4.10.2 Community cohesion is important to help ensure residents are living happy and healthy lifestyles. Interactive and vibrant communities often benefit from a strong sense of place, a reduced fear of crime and have economic benefits. Development under all spatial options would be expected to provide similar opportunity to incorporate measures to deliver these objectives, including taking into account guidance to make developments safer by design.

4.10.3 Higher rates of crime and anti-social behaviour can be associated with high density development, and residents can often feel less safe in these areas. As such, more development in Norwich and the Urban Fringe could potentially present more challenges in this aspect. However, crime and the fear of crime is not expected to be significantly affected by the broad distribution of development across Greater Norwich, and as such, a negligible impact would be expected across all seven options.

Table 4.11: Impact matrix of spatial options under SA Objective 9 – Crime

SA Objective 9 – Crime	Spatial Option						
	1	2	3	4	5	6	7
SA Score	0	0	0	0	0	0	0

4.11 SA Objective 10 – Education

- 4.11.1 The education sector is large in Norfolk. Within Greater Norwich there are 150 primary and 24 secondary schools. There are 52 primary schools in Broadland, 34 in Norwich and 64 in South Norfolk. The secondary schools are primarily located within Norwich City and the urban fringe, with others located in Reepham, Aylsham and Acle in Broadland and Wymondham, Long Stratton, Harleston, Diss, Loddon, Hethersett and Framingham Earl in South Norfolk. Within the wider county, there are many schools and colleges, as well as higher education at the University of East Anglia, Anglia Ruskin University and University Campus Suffolk.
- 4.11.2 The extent to which all spatial options would facilitate good education for new residents is almost entirely dependent on the specific location of development, which is uncertain at this high level of assessment.
- 4.11.3 In general, it is likely that directing a larger proportion of growth towards Norwich City would mean that more residents are situated within close proximity to existing schools and higher education opportunities and are better related to sustainable transport options to reach schools elsewhere. However, similarly to healthcare facilities as discussed within **section 4.9**, this presents some uncertainty in terms of capacity.
- 4.11.4 Access to primary schools is a key consideration for the GNLP when considering growth within Villages. Several of the villages within Greater Norwich do not contain primary schools. It is likely that spatial options which rely on a large proportion of development dispersed in these lower-tier settlements would result in more risk in terms of accessibility to schools. However, it is possible that by delivering more spread-out development, such as through Options 4, 5 and 6, development could help to relieve potential issues with capacity to a greater extent than those with higher growth in the city.
- 4.11.5 Another consideration is the delivery of new villages, as proposed within Options 3 and 5. These new villages could potentially provide new services such as schools alongside residential growth, helping to provide sustainable access; however, the viability and delivery of such infrastructure is uncertain.
- 4.11.6 Careful consideration of the impacts of development on the capacity of local schools will be required, and in some locations expansion of schools may be needed to support large scale higher density development proposals. Overall, it is expected that there would be more choice of schools and education facilities for development closer to Norwich, as well as better public transport accessibility, whereas in rural areas there is likely to be a greater need to travel long distances to the nearest schools. Spatial Option 7 seeks to deliver the smallest proportion of development towards Villages, the largest proportion within Norwich, and the largest combined proportion to Norwich, the Urban Fringe and Main Towns. Option 1 directs the highest amount of growth to Norwich and the Urban Fringe. As such, these two options could be considered as the best performing in this regard. However, Options 2 and 3 also seek to direct the majority of growth within the closest proximity to Norwich and the key transport corridors and so would also be expected to result in a positive impact in terms of access to education.

Table 4.12: Impact matrix of spatial options under SA Objective 10 – Education

SA Objective 10 - Education	Spatial Option						
	1	2	3	4	5	6	7
SA Score	+	+	+	0	0	0	+

4.12 SA Objective 11 – Economy

- 4.12.1 The Greater Norwich Employment Land Assessment²⁷ identified 68 active employment sites within the GNLP area totalling approximately 700ha. The assessment estimates there is an additional need for between 11,762 and 20,487 employment opportunities in Greater Norwich, with land requirements between 46ha and 84ha until 2036.
- 4.12.2 The majority of the employment land in the Plan area is found in Norwich and the urban fringe. Notable major employers include Aviva, Virgin Money, Greene King and Royal Bank of Scotland. The Cambridge-Norwich Tech Corridor stretches between Norwich and Cambridge and is predicated to be a future hotspot for economic growth. The project aims to create 10,000 new jobs, attract £905m of private investment and see up to 20,000 homes built between Norwich and Newmarket by focussing on 11 key areas along the route by 2031.
- 4.12.3 Spatial options that focus most residential growth towards Norwich would be expected to provide the most sustainable access to employment opportunities. Main Towns and Key Service Centres would be likely to provide some employment opportunities but to a lesser extent. By directing more residential growth towards centres, these options could potentially locate new residents in close proximity to shops and other services and subsequently have benefits to the local economy.
- 4.12.4 Spatial Option 3 seeks to support the Cambridge-Norwich Tech Corridor including the development of a new settlement. By locating more homes in this region, this option could potentially help to drive economic growth for the area.
- 4.12.5 Options 4, 5 and 6 would encourage a greater dispersal of development, including a relatively high proportion of growth within Villages. Option 4 in particular seeks to deliver 4,600 dwellings in Villages. These options may see a greater reliance on unsustainable travel modes to reach employment opportunities within Norwich or other larger settlements.
- 4.12.6 In terms of supporting economic growth, Option 3 would be expected to perform best, followed by the options which direct the most growth towards Norwich and the Urban Fringe (Options 7, 1 and 2), where access to employment and retail is likely to be the most convenient and sustainable.

Table 4.13: Impact matrix of spatial options under SA Objective 11 – Economy

SA Objective 11 - Economy	Spatial Option						
	1	2	3	4	5	6	7
SA Score	++	++	++	+	+	+	++

²⁷ GVA (2017) Greater Norwich: Employment Land Assessment. Available at: https://gnlp.oc2.uk/docfiles/46/greater_norwich-employment_land_assessment-final_submission.pdf [Date Accessed: 11/08/21]

4.13 SA Objective 12 – Transport and Access to Services

- 4.13.1 This objective seeks to reduce the need to travel and promote the use of sustainable transport modes. Development should be located where transport options are, as far as possible, not limited to using the private car, so that sustainable transport options can be promoted, and where the need for additional infrastructure can be minimised.
- 4.13.2 There is a need to improve the strategic transport network in Greater Norwich, most particularly improvements to the rail network, to the A47 and to provide good quality public transport access to Norwich International Airport. In rural areas, access to public transport is more restricted, so it will be important to sustain local public transport services where possible and to support demand responsive transport.
- 4.13.3 Options 1, 2, 3 and 7 seek to focus the most growth near to areas which support the most services, facilities and employment opportunities and which are already well-served by sustainable transport options. These options would therefore be likely to provide the most sustainable options in terms of transport and accessibility. This incorporates rail, public transport and active travel routes, for example cycle routes which link Norwich City to other settlements in Greater Norwich including Reepham and Aylsham. Norwich City has seen a 40% increase in cycle use since 2013²⁸ and further development in proximity to the city may facilitate a continued upward trend in active travel. However, there is a possibility that new development in these areas could add pressure onto current transport services via road and rail and may not seek to encourage further investment or improvements in transport infrastructure in other areas.
- 4.13.4 Wider dispersal of development, as within Options 4, 5 and 6, would be expected to have more restricted access to sustainable transport options, such as bus routes and train stations. These options would deliver the largest proportions of growth towards Villages where it is likely that there would be high reliance on car use, and an increased need to travel in order to reach facilities, services and employment opportunities. A minor negative impact on transport and accessibility would be likely under these three options.
- 4.13.5 The development of new settlements (Options 3 and 5) could potentially provide opportunities to integrate new transport infrastructure amongst residential growth although it is uncertain if a new settlement would be able to provide all services and facilities required within one free-standing village. It is likely there would be some reliance on travel to other higher-tier settlements.

²⁸ GNDP (2021) Greater Norwich Local Plan. Section 2 – Greater Norwich Profile. The cycle network. Available at: <https://www.gnlp.org.uk/submission-gnlp-secretary-state-environment-part-1-strategy-section-2-greater-norwich-profile/cycle> [Date Accessed: 24/08/21]

4.13.6 Spatial Options 1, 2 and 7 would all be expected to perform similarly. Spatial Option 2 aims to focus development within transport corridors including the A-road network and railways. As such, this option may provide the best accessibility to sustainable transport, followed by Option 7 which would deliver the largest proportion of development to Norwich, the Urban Fringe and Main Towns. Option 1 also has some degree of overlap with these options, as it focuses development in the urban fringe. Options 2 and 3 in particular could lead to mixed effects in terms of facilitating sustainable transport as they both have potential to encourage co-ordinated strategic transport investments particularly along the A11 corridor, although, these options may also place pressure on the existing transport network and car use. In comparison, Options 4, 5 and 6 could potentially result in a minor negative impact due to the higher level of growth proposed in Villages which are likely to have somewhat restricted access to services and sustainable transport. However, it should be noted that under all options some growth would be directed towards Villages.

Table 4.14: Impact matrix of spatial options under SA Objective 12 – Transport & Access to Services

SA Objective 12 – Transport & Access to Services	Spatial Option						
	1	2	3	4	5	6	7
SA Score	+	+	+	-	-	-	+

4.14 SA Objective 13 – Historic Environment

- 4.14.1 Historic environment priorities from the international to the local level seek to address a range of issues, particularly in relation to the conservation and enhancement of heritage assets that are irreplaceable and play an important role in place making and the quality of life for local residents.
- 4.14.2 Greater Norwich has a wide range of designated statutory and non-statutory heritage assets including 213 Grade I Listed, 355 Grade II* Listed and 4,437 Grade II Listed Buildings; 137 Conservation Areas; 82 Scheduled Monuments (SMs); and 22 Registered Parks and Gardens (RPGs). Whilst not listed, many historic buildings and infrastructure such as roads, canals, railways and their associated industries are also of historic interest.
- 4.14.3 Maintaining local distinctiveness, character and sense of place alongside delivering development can present challenges. However, new development can also stimulate new investment and potentially enhance the local townscape or improve the accessibility of heritage assets for local residents.
- 4.14.4 As all seven spatial options would locate a large proportion of development on previously undeveloped land, it is likely that all options would have the potential to result in harm to heritage assets and the historic environment, to some extent. Option 4 would direct the largest proportion of development towards Villages and as such could potentially result in the most significant impacts in terms of altering the historic character and setting of rural villages.

- 4.14.5 Spatial options which would deliver higher levels of development within the existing urban areas would help to promote an efficient use of land and reduce the amount of development required within the lower-tier settlements. As such, there may be more potential to avoid or lessen impacts on the historic environment. However, Norwich City Centre contains many Listed Buildings, including the Grade I Listed Norwich Cathedral, and the setting and views of and from these heritage assets would need to be carefully considered. Equally, redevelopment within the urban area could also provide opportunities to rejuvenate degraded areas, capture local distinctiveness and contribute positively to the historic environment.
- 4.14.6 The overall impact of each spatial option on the historic environment is difficult to quantify as it depends upon the scale, nature and design of the specific allocations made within each over-arching strategy. All options could result in a minor negative impact on heritage assets. On the assumption that there would be more opportunities for heritage-led regeneration in and around Norwich compared to the smaller settlements, and that the most potential for harm could occur in rural settlements, Option 7 could be identified as the best performing as it directs the least amount of development to Villages (1,682 dwellings).

Table 4.15: Impact matrix of spatial options under SA Objective 13 – Historic Environment

SA Objective 13 – Historic Environment	Spatial Option						
	1	2	3	4	5	6	7
SA Score	-	-	-	-	-	-	-

4.15 SA Objective 14 – Natural Resources, Waste and Contaminated Land

- 4.15.1 This objective covers a range of topics and aims to minimise waste generation, promote recycling, avoid the sterilisation of mineral resources, remediate contaminated land and to minimise the use of ‘best and most versatile’ (BMV) agricultural land.
- 4.15.2 The development of 10,700 dwellings would be expected to lead to a cumulative increase household waste generation, under any spatial option. Potential mineral resources in Norfolk include widely distributed sand and gravel, and to a lesser extent silica sand and carstone²⁹. All spatial options would need to consider the potential for sterilisation of these resources.
- 4.15.3 Soil is an essential and non-renewable resource that provides a wide range of ecosystem services. It filters air, stores and cycles water and nutrients, decomposes and cycles organic matter, supports plant growth and provides medicines³⁰. Soil is also one of the most important natural carbon sinks globally and its protection is vital in efforts to mitigate anthropogenic climate change. It can reduce flood risk, alleviate flood damage and improve local water and air quality to the benefit of ecosystem and human health.

²⁹ Norfolk County Council (2011) Norfolk Minerals and Waste Development Framework. Core Strategy and Minerals and Waste Development Management Policies Development Plan Document 2010-2026. Adopted September 2011. Available at: <https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/minerals-and-waste-planning-policies/adopted-policy-documents> [Date Accessed: 11/08/21]

³⁰ Food and Agriculture Organization of the United Nations (2021) Soil ecosystem services. Available at: <http://www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/soil-biodiversity/soil-ecosystems-services/en/> [Date Accessed: 11/08/21]

- 4.15.4 The majority of the Plan area is located on land classified as Grade 3 Agricultural Land Classification (ALC) land, although there are large extents of Grades 1 and 2 ALC particularly in Broadland. ALC Grades 1, 2 and Sub-Grade 3a represent some of Greater Norwich’s BMV land³¹. Almost the entirety of Norwich is ‘Urban’ ALC land.
- 4.15.5 All seven spatial options would involve a large amount of development situated on previously undeveloped land and so would result in adverse impacts on natural resources, to some extent. However, Options 1, 2 and 7 in particular aim to deliver the largest amount of development within Norwich and the Urban Fringe, and as such, these three options could potentially provide the most opportunity for higher density development and efficient use of land. Furthermore, the land surrounding Norwich City is largely ‘Urban’ according to the ALC. Therefore, these options could potentially result in the most efficient use of natural resources and would reduce the loss of agriculturally valuable soils found in South Norfolk and Broadland in the lower-tier settlements, relative to the other spatial options.

Table 4.16: Impact matrix of spatial options under SA Objective 14 – Natural Resources, Waste & Contaminated Land

SA Objective 14 – Natural Resources, Waste & Contaminated Land	Spatial Option						
	1	2	3	4	5	6	7
SA Score	-	-	-	--	--	--	-

4.16 SA Objective 15 – Water

- 4.16.1 Water is a key consideration within Greater Norwich, including water quality, management and availability. A complex network of waterways course through the GNLP area, with the main watercourses including the River Wensum and the River Yare.
- 4.16.2 The main water service provider for Greater Norwich is Anglian Water. The Water Resources Management Plan (WRMP)³² states that there is currently significant pressure from population growth, climate change, sustainability reductions and the need to increase resilience to severe drought. The Water Cycle Study (WCS)³³ assessed development proposals in Greater Norwich in regard to water supply capacity, wastewater capacity and environmental capacity and identified that there are some Water Recycling Centres that have no capacity to treat additional wastewater flows from the proposed level of growth and where upgrades will be required to accommodate the planned growth, such as in Long Stratton, Wymondham and Whitlingham.

³¹ Natural England (1988) Agricultural Land Classification of England and Wales: Revised criteria for grading the quality of agricultural land (ALC011). Available at: <http://publications.naturalengland.org.uk/publication/6257050620264448?category=5954148537204736> [Date Accessed: 11/08/21]

³² Anglian Water (2019) Water Resource Management Plan 2019. Available at: <https://www.anglianwater.co.uk/siteassets/household/about-us/wrmp-report-2019.pdf> [Date Accessed: 11/08/21]

³³ AECOM (2021) Greater Norwich Water Cycle Study Final Report March 2021. Available at: https://www.gnlp.org.uk/sites/gnlp/files/2021-04/Greater%20Norwich%20Water%20Cycle%20Study_Final%20Version%20March%202021.pdf [Date Accessed: 11/08/21]

- 4.16.3 The vulnerability of groundwater to pollution is determined by the physical, chemical and biological properties of the soil and rocks. Groundwater Source Protection Zones (SPZs) indicate the risk to groundwater supplies from potentially polluting activities and accidental releases of pollutants³⁴. A large proportion of Greater Norwich lies within SPZ 3, with smaller areas of SPZ 1 and 2.
- 4.16.4 The development of 10,700 new dwellings across Greater Norwich would be expected to result in an increased demand for water resources, with implications for the management of wastewater and the availability of drinking water. The broad spatial distribution of development would not be expected to significantly impact this. All development within Greater Norwich would need to consider the potential impacts on water, including above and below ground watercourses, as well as implications for the management of wastewater and availability of drinking water. Overall, all seven spatial options have the potential to result in a minor negative impact on water.

Table 4.17: *Impact matrix of spatial options under SA Objective 15 – Water*

SA Objective 15 – Water	Spatial Option						
	1	2	3	4	5	6	7
SA Score	-	-	-	-	-	-	-

³⁴ Environment Agency (2013) Groundwater Source Protection Zones. Available at: <http://apps.environment-agency.gov.uk/wiyby/37833.aspx> [Date Accessed: 11/08/21]

5 Conclusion and Next Steps

5.1 Conclusion

- 5.1.1 In order to identify the best performing option, no attempt to sum the different SA ‘scores’ across each SA objective has been made since they are intrinsically different and not comparable.
- 5.1.2 Drawing on the discussion and assessment findings within **Chapter 4** of this report, all options have the potential to result in mixed effects in terms of sustainability. Option 1 could potentially result in the best performance in terms of climate change mitigation and adaptation (Objective 2), and joint best alongside Option 7 in terms of health (Objective 8) and education (Objective 10). Option 7 could potentially perform best against air quality (SA Objective 1), landscape (Objective 4), population and communities (Objective 6) and cultural heritage (Objective 13) although there is a degree of uncertainty especially in terms of landscape and heritage impacts. Options 1, 2 and 7 all perform similarly across several SA objectives and joint best for transport (Objective 12) and natural resources (Objective 14). Option 4 emerges as the best performing against housing (Objective 5), and Option 3 best against economy (Objective 11). Impacts on biodiversity, deprivation, crime and water (Objectives 3, 7, 9 and 15) are particularly difficult to separate out with regards to broad distribution of development and all options perform similarly. Spatial Options 5 and 6 do not emerge as the best performing option under any of the SA objectives, when compared against the other spatial options.
- 5.1.3 A key challenge in delivering the required housing development in Greater Norwich is that the higher-tier settlements, with the best accessibility and infrastructure provision, have a significant existing outstanding commitment of housing growth and have already seen significant development. The levels of development that can be supported in these areas needs to be carefully planned alongside infrastructure improvements. The GNLP area is also constrained by flood risk, biodiversity considerations and the area’s rich heritage resource as well as the landscape character of the countryside and townscapes.
- 5.1.4 Development focused mainly around Norwich City under Option 1 would on balance lead to a more positive effect on topics such as natural resources and accessibility and reduce the need to travel through the co-location of jobs and homes, but could lead to adverse consequences on rural inequalities, and may place pressure on Norwich’s infrastructure such as the road network.
- 5.1.5 Option 2 would see a concentration of growth in the main transport corridors. There is a degree of overlap with Option 1 as urban fringe locations tend to be well served by transport corridors, which extend out from Norwich City primarily following the strategic road network.

- 5.1.6 Similarly, Option 3 focuses development along the A11 road corridor. This option may help to drive economic growth and investment within the Cambridge Norwich Tech corridor, but could lead to adverse impacts and rural inequalities elsewhere in the GNLP area and may place greater pressure and potential for adverse impacts on the lower-tier settlements located within the corridor. This option would also direct a proportion of growth to a new settlement in or near the corridor.
- 5.1.7 A high level of dispersal to Villages is advocated under Option 4, alongside a limited amount of growth in the Norwich fringe parishes and A11 corridor. This option would lead to more development in the rural settlements, which would be expected to provide more flexibility in terms of housing growth but poses challenges in relation to sustainable transport and accessibility to services, facilities and employment opportunities. Additionally, more rural growth may have implications for the scale of development which could be achieved without adversely impacting the character of existing rural settlements.
- 5.1.8 Option 5 builds on Option 4 but would direct some of the proposed Village growth into a new settlement instead. A new settlement (as proposed within Options 3 and 5) offers a range of opportunities for positive planning across several SA objectives; however, this could also lead to significant impacts on the natural environment including landscape and biodiversity. Furthermore, transport and accessibility of the new settlement would need to be carefully considered alongside options for mitigation and enhancement.
- 5.1.9 Option 6 promotes dispersal of development to Villages but also seeks to direct a significant proportion of growth to the fringe parishes in the outskirts of Norwich. Urban extensions could help to deliver a higher proportion of new development in closer proximity to services and facilities, however, could lead to adverse impacts in terms of urbanisation of the countryside and similarly to Option 1, could place more pressure on Norwich's infrastructure and lead to competition between jobs and homes.
- 5.1.10 Option 7 draws on elements of the other six options. The majority of growth is focused on locations with the best access to jobs, services and existing and planned infrastructure in and around Norwich City (as per Option 1 and 2) as well as the Cambridge Norwich Tech corridor (as per Option 3). Suitable levels of growth are then directed to Main Towns, Key Service Centres and Villages (dispersal as per Options 4, 5 and 6) with the aim of supporting the rural economy and appropriate growth to support local services but also protect the character of the settlements. Option 7 may therefore offer the best opportunity to deliver a range of development types and scales across the GNLP area, allowing some market choice but still focusing the majority of development towards areas with the best existing accessibility and provision of services.
- 5.1.11 Several SA objectives are particularly dependent on location and contextual factors: particularly including flood risk, biodiversity, landscape and cultural heritage. It is not possible to fully understand the impacts of development without further contextual and locational specific information. More locational specific assessment has been carried out in the SA process in terms of cluster and site level analysis as well as assessment of the potential mitigating influence of GNLP policies (see Regulation 19 SA Report).

5.1.12 A balanced approach would be likely to offer the most sustainable and viable strategy, to ensure the majority of growth where access to services, facilities and employment opportunities is best but not resulting in detrimental impacts associated with over-capacity issues and exacerbation of impacts such as air pollution, and still directing some limited levels of growth towards the smaller settlements in accordance with the settlement hierarchy.

5.1.13 It is also important to ensure that key infrastructure, such as transport, green infrastructure and low-carbon technologies, is able to be delivered alongside development to ensure that the strategy delivers sustainable development. There is a need to ensure development proposals are carefully designed in order to avoid any significant adverse impacts on pollution, human health, biodiversity, natural resources and the water environment.

5.2 Chosen Spatial Strategy

5.2.1 The spatial options considered in the Reg 18A SA report (2018)³⁵ allowed the identification and assessment of different reasonable alternatives to distributing development across the Greater Norwich area and comparative analysis of the sustainability implications of each of these options. These alternatives are considered to cover a range of conceptual approaches to delivering housing development across the plan area.

5.2.2 The spatial approach to the GNLP has been explored through the plan making process and tested through the SA process. This spatial prescription is an iterative part of the plan making process and provides the context for subsequent more detailed strategic locational, thematic and site policies in the plan.

5.2.3 This report, and earlier SA work, has shown that a single spatial approach may not be able to deliver the housing growth and environmental, social and economic aspirations for the Greater Norwich area, and there are potentially negative consequences for sustainability if any of the six spatial options were adopted in isolation.

5.2.4 A hybrid approach to balanced growth has therefore been proposed as the preferred strategy in the Regulation 18C and Regulation 19 versions of the GNLP which has been informed by the evidence base underpinning the plan and sustainability appraisal process. The proposed spatial strategy would be in accordance with the settlement hierarchy identified in the plan which aims to direct growth in order of priority to:

1. The Norwich urban area (Norwich and Norwich Fringe);
2. Main Towns;
3. Key Service Centres; and
4. Village Clusters.

³⁵ GNDP (2018) Interim Sustainability Appraisal of the Greater Norwich Local Plan for Broadland, Norwich and South Norfolk. Available at: <https://gnlp.oc2.uk/document/15> [Date Accessed: 23/08/21]

- 5.2.5 This sets out an approach that aims to focus more growth closer towards the larger settlements, maximises the potential for use of brownfield land and provides for urban extensions close to existing jobs, services and infrastructure. The preferred option combines concentration of most of the development in and around Norwich and on the Cambridge Norwich Tech Corridor, with an element of dispersal to villages to support rural communities. It is considered that the preferred approach provides the best balance across a range of sustainability objectives and will help to support delivery of the plan.
- 5.2.6 No new settlements are proposed in the current version of the GNLP; however, a proportion of the allocated sites are strategic-scale commitments of 1,000 or more homes, located in accordance with the settlement hierarchy. The longer-term development of a new settlement could be a suitable option in the future. This could be considered in the next review of the GNLP.

5.3 Examination

- 5.3.1 The Submission Version of the GNLP was submitted to the Secretary of State for independent examination on 30th July 2021³⁶. Further information regarding the ongoing examination process can be found on the GNLP website: <https://www.gnlp.org.uk/>

³⁶ Greater Norwich Local Plan (2021) Submission of the GNLP to the Secretary of State. Available at: <https://www.gnlp.org.uk/node/33> [Date Accessed: 11/08/21]

Habitat Regulations Assessments

Sustainability Appraisals

Strategic Environmental Assessments

Landscape Character Assessments

Landscape and Visual Impact Assessments

Green Belt Reviews

Expert Witness

Ecological Impact Assessments

Habitat and Ecology Surveys



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Appendix A: SA Framework

Theme	Over-arching Objective	Decision making criteria for site allocations and general polices	Suggested indicators	Suggested targets
Air Quality and Noise (ref: SA1)	Minimise air, noise and light pollution to improve wellbeing.	<ul style="list-style-type: none"> Will it have a significant impact on AQMAs in Norwich city centre? Will it minimise impact on air quality? Will it minimise the impact of light and noise pollution? 	Concentration of selected air pollutants: <ol style="list-style-type: none"> NO₂ PM₁₀ (particulate matter) 	Decrease
Climate Change Mitigation and Adaptation (ref: SA2)	Continue to reduce carbon emissions, adapting to and mitigating against the effects of climate change.	<ul style="list-style-type: none"> Will it minimise CO₂ emissions? Will it support decentralised and renewable energy generation? Will it minimise the risk of fluvial or surface water flooding? 	CO ₂ emissions per capita	Reduction in emissions
			Sustainable and renewable energy capacity permitted by type	Year on year permitted capacity increase
			Number of planning permissions granted contrary to the advice of the Environment Agency on either flood defence or water quality grounds	Zero
Biodiversity, Geodiversity and Green Infrastructure (ref: SA3)	Protect and enhance the area's biodiversity and geodiversity assets and expand the provision of green infrastructure.	<ul style="list-style-type: none"> Will it minimise impact on designated sites and important species and habitats? Could it provide opportunities for bio- or geo-diversity enhancement? Could it contribute to green infrastructure networks? Will it help minimise the impact on air quality at designated sites? Will it ensure that current ecological networks are not compromised and future improvements in habitat connectivity are not prejudiced? 	Net change in Local Sites in "Positive Conservation Management"	Year on year improvements
			Percentage of SSSIs in: <ol style="list-style-type: none"> favourable condition; unfavourable recovering; unfavourable no change; unfavourable declining; or destroyed/ part destroyed. 	95% of SSSIs in 'favourable' or 'unfavourable recovering' condition
			Number of Planning Approvals granted contrary to the advice of Natural England or Norfolk Wildlife Trust (on behalf of the County Wildlife Partnership) or the Broads Authority on the basis of adverse impact on site of acknowledged biodiversity importance.	None
			Percentage of allocated residential development sites, or sites permitted for development of 10 or more homes, that	Minimise

Theme	Over-arching Objective	Decision making criteria for site allocations and general polices	Suggested indicators	Suggested targets
			have access to a semi-natural green space of at least 2ha within 400m.	
			Length of new greenway (defined as a shared use, car-free off-road route for a range of users and journey purposes) provided as a consequence of a planning condition, S106 obligation or CIL investment.	Increase
			Total hectares of accessible public open space (cumulative) provided as a consequence of a planning condition, S106 obligation or CIL investment within the plan period	Equal to or above current local plan requirements.
Landscape (ref: SA4)	Promote efficient use of land, while respecting the variety of landscape types in the area.	<ul style="list-style-type: none"> Will it minimise impact on the landscape character of the area, including the setting of the Broads? Will it enable development of previously developed land? Will it make efficient use of land? 	Percentage of new and converted dwellings on Previously Developed Land	18% to 2026 (based on JCS housing allocations, update in line with GNLP)
			Number of Planning Approvals granted contrary to the advice of the Broads Authority on the basis of adverse impact on the Broads Landscape	None
Housing (ref: SA5)	Ensure that everyone has good quality housing of the right size and tenure to meet their needs.	<ul style="list-style-type: none"> Will it ensure delivery of housing to meet needs in appropriate locations? Will it deliver affordable housing and other tenures to meet needs? Will it ensure a variety in the size and design of dwellings, to meet a range of circumstances and needs? 	Net housing completions	Meet or exceed annual trajectory requirements
			Affordable housing completions	tbc
			House completions by bedroom number, based on the proportions set out in the most recent Sub-regional Housing Market Assessment	Figures within 10% tolerance of the Housing Market Assessment Requirements
			Starter Homes completions	20% of homes delivered are starter homes
Population and Communities (ref: SA6)	Maintain and improve the quality of life of residents.	<ul style="list-style-type: none"> Will it enhance existing, or provide new community facilities? Will promote integration with existing communities? 	No indicators for provision of community facilities have been identified	

Theme	Over-arching Objective	Decision making criteria for site allocations and general policies	Suggested indicators	Suggested targets
Deprivation (ref: SA7)	To reduce deprivation.	<ul style="list-style-type: none"> Will it help to reduce deprivation? 	Indicator and targets from IMD to be identified	
Health (ref: SA8)	To promote access to health facilities and promote healthy lifestyles.	<ul style="list-style-type: none"> Will it maximise access to health services, taking into account the needs of an ageing population? Will it promote healthy lifestyles? Will it avoid impact on the quality and extent of existing assets, such as formal and informal footpaths? 	Percentage of physically active adults	Increase percentage annually or achieve percentage above England average
			Indicator and target for access to health facilities to be identified	
Crime (ref: SA9)	To reduce crime and the fear of crime.	<ul style="list-style-type: none"> Will it help design out crime from new development? 	Indicator and target for crime reduction to be identified	
Education (ref: SA10)	To improve skills and education.	<ul style="list-style-type: none"> Will it enable access to education and skills training? 	Indicator and target for access to education facilities to be identified	
Economy (ref: SA11)	Encourage economic development covering a range of sectors and skill levels to improve employment opportunities for residents and maintain and enhance town centres.	<ul style="list-style-type: none"> Will it promote Greater Norwich as a regional economic centre? Will it promote employment land provision to support existing and future growth sectors? Will it promote a range of employment opportunities? Will it promote vibrant town centres? Will it promote the rural economy? 	Amount of land developed for employment by type	118ha B1 & 111ha B2 / B8 2007 to 2026 (split into five-year tranches, based on JCS targets - update in line with GNLP targets)
			Annual count of jobs by BRES across the Plan area	Measure against GNLP annualised jobs targets (2,222 p.a in JCS.)
			Employment rate of economically active population	Increase
			Percentage of workforce employed in higher occupations	Annual increase of 1%
Transport and Access to Services (ref: SA12)	Reduce the need to travel and promote the use of sustainable transport modes.	<ul style="list-style-type: none"> Does it reduce the need to travel? Does it promote sustainable transport use? Does it promote access to local services? Does it promote road safety? Does it promote strategic access to and within the area? 	Percentage of residents who travel to work: <ul style="list-style-type: none"> a) By private motor vehicle; b) By public transport; c) By foot or cycle; or d) Work at, or mainly at, home. 	Decrease in a), increase in b), c) and d).
			IMD Access to services and housing	Increase the number of LSOAs in the least deprived 50% on the IMD for access to housing and services

Theme	Over-arching Objective	Decision making criteria for site allocations and general polices	Suggested indicators	Suggested targets
Historic Environment (ref: SA13)	Conserve and enhance the historic environment, heritage assets and their setting, other local examples of cultural heritage, preserving the character and diversity of the area's historic built environment.	<ul style="list-style-type: none"> Does it enable the protection and enhancement of heritage assets, including their setting? Does it provide opportunities to reveal and conserve archaeological assets? Could it benefit heritage assets currently 'at risk'? 	Percentage of Conservation Areas with appraisals	Year on year increase
			Heritage at risk - number and percentage of <ul style="list-style-type: none"> a) Listed buildings; and b) Scheduled Ancient Monuments. on Buildings at Risk register	Year on year reduction
Natural Resources, Waste and Contaminated Land (ref: SA14)	Minimise waste generation, promote recycling and avoid the sterilisation of mineral resources. Remediate contaminated land and minimise the use of the best and most versatile agricultural land.	<ul style="list-style-type: none"> Does it contribute to the minimisation of waste production and to recycling? Does it safeguard existing and planned mineral and waste operations? Will it help to remediate contaminated land? Does it avoid loss of the best and most versatile agricultural land (grades 1-3a)? Will there be adequate provision for waste and recycling facilities? 	Number of planning permissions granted on non-allocated sites on class 1, 2 or 3a agricultural land	Zero
			Percentage of land allocated for development, or subject to an extant planning permission of 5 or more dwellings that is identified as Grade I or II agricultural land value.	Minimise
			Minerals and waste indicators and targets tbc	
			No indicators for contaminated land have been identified	
Water (ref: SA15)	Maintain and enhance water quality and ensure the most efficient use of water.	<ul style="list-style-type: none"> Will it maximise water efficiency? Will it minimise impact on water quality? Will it impact on water discharges that affect designated sites? Will it contribute to achieving the River Basin Management Plan actions and objectives? 	Water efficiency in new homes	All new housing schemes to achieve water efficiency standard of 110 litres/person/day (lpd) No indicators for water infrastructure have been identified.
			See also flood section (Number of planning permissions contrary to the advice of the Environment Agency on either flood defence or water quality grounds)	



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