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North Lincolnshire Local Plan

Issues & Options

Sustainability Appraisal Environmental Report

**Draft Report
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**Report prepared for:
North Lincolnshire Council**



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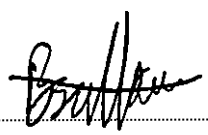
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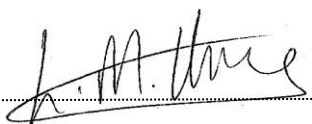
Contract

This report describes work commissioned by Chris Barwell on behalf of North Lincolnshire Council, by a letter dated 2 March 2017. Jamie Oaten, Ben Sullivan, David Revill and Laura Thomas of JBA Consulting carried out this work.

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Purpose

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Non-technical summary

A.1 Introduction

North Lincolnshire Council is currently preparing a new Local Plan for North Lincolnshire. The Local Plan will set out a long-term vision, planning policies, and site allocations for the authority area up to 2036.

This stage of the Local Plan (Issues and Options) sets out the Plan's spatial vision and objectives – which together provide the framework for Local Plan policies – and its spatial strategy – which examines the key development issues within North Lincolnshire and identifies options to deal with these issues.

Plans such as North Lincolnshire's new Local Plan are subject to a process called Sustainability Appraisal. The Sustainability Appraisal assesses the potential social, environmental and economic effects of the spatial objectives and spatial strategy options. The appraisal for the Local Plan is being carried out by North Lincolnshire Council with support from independent consultants (JBA Consulting). This Non-Technical Summary should be read alongside the full Sustainability Appraisal report ('Environmental Report') and the Local Plan Issues and Options document (October 2017).

A.2 Sustainability Appraisal

North Lincolnshire Council is required by law to carry out Sustainability Appraisal and Strategic Environmental Assessment of the new Local Plan. The Government recommends that these two requirements are met through one integrated process, referred to as Sustainability Appraisal. The purpose of the Sustainability Appraisal is to promote sustainable development through the better integration of sustainability considerations into the preparation and adoption of plans.

A Sustainability Appraisal Scoping Report was prepared in April 2017. The purpose of the Scoping Report was to identify the key environmental, social, and economic characteristics of the area, and to any important sustainability issues or problems in the area. A series of 14 sustainability objectives was then developed to reflect these key sustainability issues. The sustainability objectives covered the full range of issues identified, including environmental characteristics such as landscape, heritage, water resources and biodiversity, social factors such as deprivation, public health, and access to community services, and economic considerations such as jobs, the rural economy, and new infrastructure.

Each of the spatial objectives and strategy options have been assessed to determine whether they would have a positive or negative effect on each of the sustainability objectives. A colour-coded scoring system is used to identify positive and negative effects, which have been split into minor effects and significant effects. Significant effects are those where there is potential for a widespread, long-term effect that causes a substantial increase or decrease in the quality, health or condition of a particular environmental, social or economic characteristic. Where negative effects are found, the Sustainability Appraisal identifies ways in which these effects could be avoided or minimised. The Sustainability Appraisal therefore provides an opportunity to consider ways through which the Local Plan can contribute to improvements in the environmental, economic, and social conditions of North Lincolnshire.

Consultation on the Sustainability Appraisal is being undertaken as part of the public consultation on the Issues and Options document. The Sustainability Appraisal will be sent to the statutory consultation bodies (Natural England, Historic England and the Environment Agency) and will be available for view on North Lincolnshire Council's website alongside the Issues and Options document.

A.3 Appraisal summary

A summary of the key findings of the Sustainability Appraisal is provided below. A full description of the findings is included in Sections 3 and 4, and Appendix A, of the Environmental Report.

A.3.1 Spatial objectives

The Sustainability Appraisal of the spatial objectives identified a range of potential positive and negative effects. Several of the spatial objectives focused on growing the local economy and providing new housing and employment sites could have a range of potential negative impacts on the environmental sustainability objectives, and on biodiversity and water resources/quality in particular. An increase in economic activity and new development, together with a larger population, will increase the risk of disturbance, damage and loss of habitats, whilst increasing demand for water and potentially reducing water quality.

On the other hand, these spatial objectives are likely to have a positive effect on the social and economic sustainability objectives. The local economy would benefit from new development and infrastructure across North Lincolnshire, as well as initiatives to diversify and strengthen the rural economy. The local population would also benefit from new housing development across the area. This is particularly important given the predicted increase in population. Greater access to key local services and facilities would be provided, although there is a risk that new house building (and associated population increase) would not be matched by an increase in provision of local services. Levels of deprivation may decrease due to increasing availability of accommodation, new job opportunities, and greater access to services.

Spatial objectives that aim to protect and enhance the natural and historic environments would have a wide range of positive effects. They would directly contribute to the environmental sustainability objectives, but would also have positive effects for the social and economic objectives too. The only negative effect identified was in relation to housing provision, as greater environmental protection could conflict with proposals for new house building.

Several of the spatial objectives are likely to conflict with each other. In particular, objectives that aim to protect the natural and historic environment could conflict with objectives to promote economic growth and new development. The Local Plan would need to carefully balance these objectives to ensure that efforts to meet one objective is not to the disadvantage of another.

A.3.2 Spatial strategy options

The spatial strategy options are broadly grouped into eight 'themes', covering topics such as housing, the economy, infrastructure, and waste, with a total of 26 associated spatial strategies included within the Issues and Options document. Each of the spatial strategy options were assessed against the sustainability objectives. The outcomes of this appraisal work are complex and are described in detail in Appendix A of the Environmental Report.

In summary, options that aim to deliver new development in the authority area, such as new housing, employment sites, roads and other infrastructure, are likely to have a positive effect on the local economy, and also on several of the social sustainability objectives, such as deprivation, housing provision, and access to public services. Options that aim to deliver more development or potentially reduce the planning constraints that new development must meet, would have the largest positive effects. However, these options also had a range of negative environmental effects, including potentially significant effects on biodiversity, water resources and efforts to tackle the causes and impacts of climate change.

Options that aim to increase protection for the environment and provide improvements to, or new areas of, open space, would have largely positive effects on all of the sustainability objectives. Not only would environmental considerations such as landscape, biodiversity, water resources, and air quality benefit, but social and economic objectives would also be positively affected. However, increased protection could conflict with objectives to provide

new development and new jobs, although these negative effects are likely to be relatively minor.

A.3.3 Measures to avoid and reduce negative effects

A range of potential negative effects have been identified. Most of these effects are associated with objectives that seek to promote development or economic activity in North Lincolnshire. The following recommendations are therefore made to reduce or avoid these adverse effects:

- The Local Plan should include policies that specifically aim to protect and enhance important environmental features and resources.
- When allocating land for development (for housing, employment, infrastructure, etc), the Local Plan should assess the environmental impacts of each proposed allocation, especially when sites are located outside or close to the edge of urban areas.
- The Local Plan should ensure that the design of new development is high-quality and sustainable, and includes measures to protect and enhance environmental features.
- Protection of the environment could be increased if the Local Plan more clearly acknowledged the importance of areas outside designated sites for biodiversity.
- The Local Plan should recognise that growth in tourist numbers could conflict with objectives relating to housing and could place additional demands on local services and facilities, to the detriment of residents.
- The Local Plan should seek to reduce the effects of new development on air quality and climate change by promoting use of sustainable materials, low carbon technologies, renewable energy generation, energy efficiency measures, and sustainable transport options.
- New development should provide new areas of green and open space.
- There is a risk that population growth in the area could increase pressure on existing infrastructure, services, and facilities. The Local Plan should recognise that population growth will occur and that new infrastructure, services, and facilities will be needed regardless of whether new development is delivered.

A.4 Monitoring of effects

The significant sustainability effects of implementing a Local Plan must be monitored to identify unforeseen negative effects and undertake appropriate remedial action when they arise. Proposed monitoring indicators are summarised in Section 2 of the Environmental Report.

Monitoring requirements can only be definitively established at the Preferred Option stage of the Local Plan (the stage that follows this Issues and Options stage).

A.5 Next steps

The Environmental Report, including this Non-Technical Summary, is being published for consultation alongside the Issues and Options document for a period of consultation in October 2017.

The findings of this initial appraisal work will feed into the development of the next iteration of the Local Plan, along with the consultation responses received. The Sustainability Appraisal process will continue at the Preferred Options stage, as options are refined and preferred options become clear. This will include appraisal of the various proposed site allocations for development and draft Local Plan policies. This process will take into consideration the most up-to-date evidence to assess the draft policies for North Lincolnshire.

The Environmental Report will then be finalised and published for consultation alongside the draft Local Plan.

1 Introduction

1.1 Background

This Sustainability Appraisal (SA) assesses the potential social, environmental and economic impacts of the 'Issues and Options' stage of the North Lincolnshire Local Plan.

This stage of the Local Plan sets out its spatial vision and objectives – which together provide the framework for Local Plan policies – and its spatial strategy – which examines the key development issues of relevance to North Lincolnshire and identifies a series of options for each policy area to deal with these issues. Consultation with the public and other stakeholders on the draft Issues and Options document (NLC, 2018) will be undertaken to ensure that the final spatial vision and objectives reflect local ambitions for the area, and that the preferred spatial strategy options are taken forward to Local Plan policy.

The SA takes each spatial objective and strategy option and examines it against a range of sustainability objectives. This allows objectives and options to be compared to each other, and identifies potential mitigation measures that could be applied to make sure that adverse effects are lessened or avoided. The SA therefore provides an opportunity to consider ways through which the Local Plan can contribute to improvements in the environmental, economic, and social conditions of North Lincolnshire.

1.2 North Lincolnshire

North Lincolnshire is a predominantly rural unitary authority and is situated adjacent to the south bank of the Humber Estuary (see Figure 1-1). It borders North East Lincolnshire to the east, West Lindsey to the south, Bassetlaw to the south west, Doncaster to the west, and the East Riding of Yorkshire, and the City of Kingston upon Hull to the north. It encompasses an area of approximately 859km² and has a population of 170,786 (2016 figures). Around half of the area's population lives in Scunthorpe, whilst other main settlements in the area include Barton-upon-Humber, Brigg, Epworth, Crowle, Barrow-upon-Humber and Winterton (JBA Consulting, 2017a).

The settlement pattern is strongly influenced by the underlying geology, which has given rise to a series of escarpments running north-south across the area, interspersed by the wide, flat river valleys of the Trent and Ancholme. The geography of the area is strongly influenced by the estuarine landscape of the Humber Estuary to the north and the River Trent, which flows northwards through the western half of the area. The main land use is for agricultural farmland, encompassing almost 90% of land area. The land is of high quality, with more than half of it classified as 'the best and most versatile land'.

The Trans-Pennine railway cuts across the centre of North Lincolnshire, connecting the eastern coastal areas with the wider Yorkshire & Humber region to the west. The M180/A180/A160 is the principal route across the area again connecting east and west, and passing through the largest urban areas of Scunthorpe, Brigg and South Killingholme. The A15 provides access to the north east of England and to the south, crossing the Humber Estuary at Barton-upon-Humber, the only crossing point on the estuary. Several major ports are situated along the estuary including the Port of Immingham, the UK's largest port by tonnage, located just east of the authority boundary in North East Lincolnshire.

The estuary is an important wildlife resource and is designated under UK and European legislation. Other important wildlife sites include Crowle Moor and Hatfield Moor, which are also designated under UK and European legislation. Important areas of heritage in North Lincolnshire include the Isle of Axholme, an area extending west of the River Trent towards Doncaster, which is designated as an area of Special Historic Landscape Interest in the current North Lincolnshire Local Plan. The proportion of Grade I listed buildings is twice that of the national average, and North Lincolnshire's historic market towns add to the rich historic environment of the area.

1.3 North Lincolnshire Local Plan

The current North Lincolnshire Local Plan comprises the Core Strategy (adopted in June 2011) together with ‘saved’ policies retained from the North Lincolnshire Local Plan (adopted May 2003), the Housing and Employment Land Allocations Development Plan Document (DPD) (March 2016), and the Lincolnshire Lakes Area Action Plan (AAP) (May 2016).

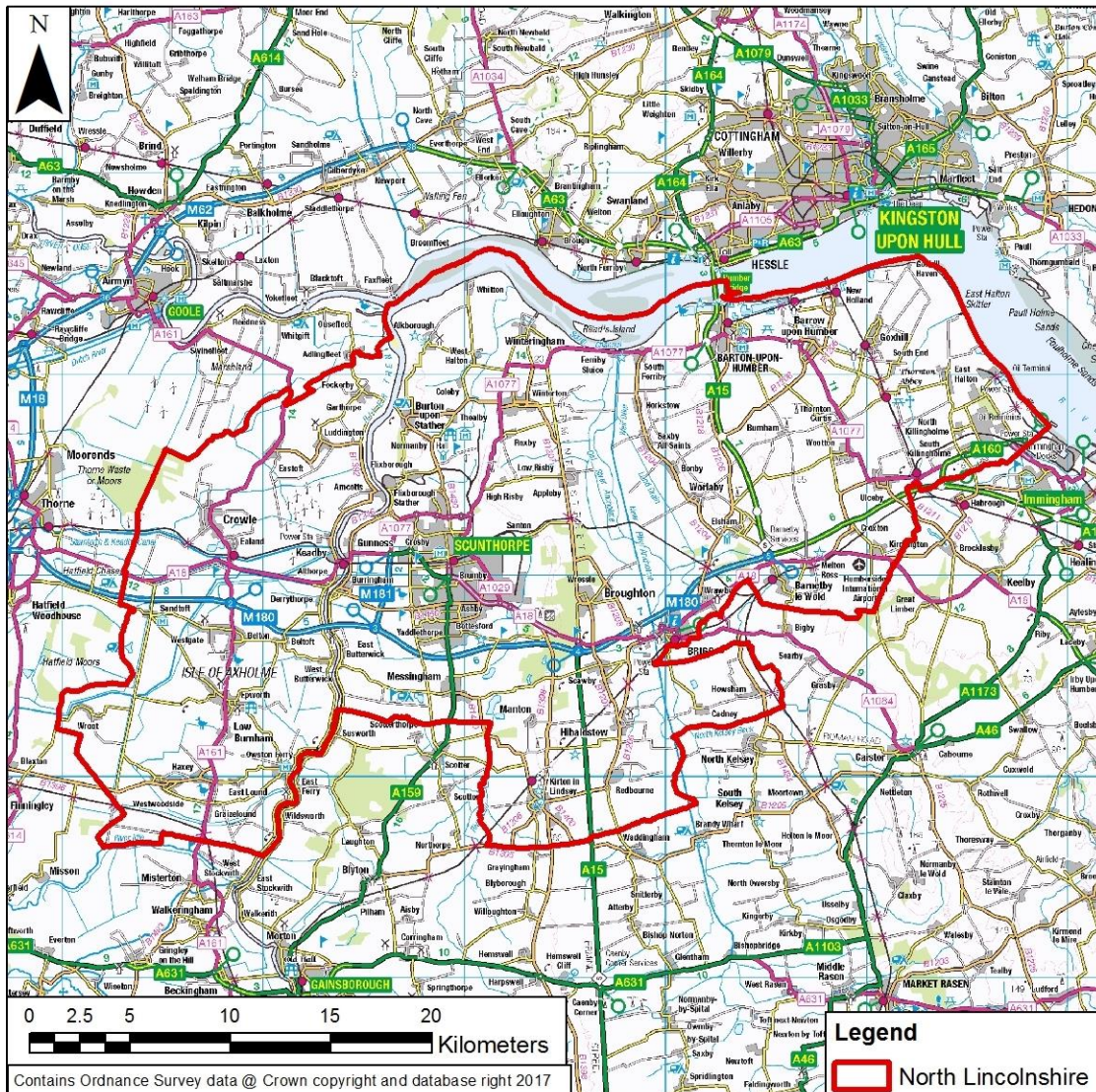


Figure 1-1: North Lincolnshire

North Lincolnshire Council is now preparing a new, single Local Plan for North Lincolnshire. Once adopted, it will replace the current Core Strategy, Housing and Employment Land Allocations DPDs, and Lincolnshire Lakes AAP.

A new Local Plan is required due to changes in legislation since adoption of the current Core Strategy (the Government's preferred approach is for each Local Planning Authority to prepare a single Local Plan for its area) and changes in national planning policy.

North Lincolnshire Council published a new Local Development Scheme in April 2017, which sets out the Local Plan documents that will be prepared and a timetable for their preparation. The Council published an Initial Consultation document in February 2017 in order to raise stakeholder awareness of the Local Plan and to gain initial views on the issues that the Local Plan should address. The outcomes of this consultation process have informed the

preparation of the Issues and Options document, guiding the development of options to address the issues that have been identified.

Consultation on the Issues and Options document will be undertaken between 29th January and 12th March 2018. Once complete, the Council will consider the comments received and any further relevant evidence, and identify the preferred option for each policy area. A Preferred Options document will then be published by the Council for consultation, which will set out the preferred policies, policy approaches and site allocations, for the Local Plan.

1.4 Local Plan Issues and Options

1.4.1 Spatial vision and objectives

The North Lincolnshire Issues and Options stage comprises the spatial vision and supporting spatial objectives, which together provide the framework for Local Plan policies, and a series of spatial strategy options, which set out the options to address the key development issues of relevance to the area.

The spatial vision encapsulates the aspiration for the future of North Lincolnshire (to be achieved by the end of the Local Plan period in 2036). It reflects the areas' distinct circumstances and the key issues and challenges of relevance to the district. It is necessarily strategic in outlook and seeks to encapsulate the full range of ambitions for the area, incorporating themes including the local economy, housing, community cohesion, infrastructure provisions, high-quality design, health and wellbeing, and the natural, built and historic environments. It seeks to embed sustainable development at its core, ensuring North Lincolnshire provides a safe, vibrant, healthy and prosperous place to live and work.

The spatial objectives are derived directly from the vision and encapsulate the key issues that the vision seeks to address. As such, the objectives are effectively subsets of the vision and whilst remaining strategic in scope, set the broad direction for the strategy options and subsequent policies that will be included in the Local Plan. There are 14 spatial objectives included in the Issues and Options document. These are summarised below:

1. Supporting and Growing our Economy
2. Supporting Sustainable Communities
3. Meeting our Housing Needs
4. Delivering Infrastructure for Growth
5. Supporting our Rural Areas and Countryside
6. Protecting and Enhancing our Natural, Built, and Historic Environment
7. Promoting High Quality Design
8. Raising our Aspirations
9. Supporting our Quality of Life
10. Developing our Visitor Economy
11. Tackling Climate Change
12. Efficient use of Resources
13. Ensuring Minerals Supply
14. Delivering Sustainable Waste Management

To ensure this SA remains focused and to avoid repetition, the spatial vision has not been assessed. Its scope is too broad for an assessment to provide meaningful outcomes. Instead the SA has focused on assessing each of the underpinning spatial objectives.

1.4.2 Spatial strategy options

The Issues and Options document also contains a series of spatial strategy options. These options represent reasonable alternatives for delivering the spatial objectives. As such, they consider the full range of issues encompassed by the objectives. They have been derived by North Lincolnshire Council in accordance with the National Planning Policy Framework

(NPPF) guidance; they therefore reflect NPPF requirements with respect to sustainable development. They will be subject to public consultation after which a series of preferred options will be identified that will be reflected in the development of detailed Local Plan policies.

The spatial strategy options are broadly grouped into eight 'themes' with a total of 26 associated spatial strategies included within the Issues and Options document, as listed below:

1. Options for Growth
2. Housing
 - i. Housing Growth
 - ii. Housing Land Allocations
 - iii. Housing Mix
 - iv. Housing Density
 - v. Rural Exception Sites
 - vi. Providing Housing for Older People
 - vii. Providing Gypsy and Traveller Accommodation
 - viii. Delivery of Self-Build and Custom Build Development
3. Economy
 - i. Employment Sites
 - ii. Rural Economy
 - iii. Visitor Economy
 - iv. Scunthorpe Town Centre
4. Natural and Historic Environment
 - i. Biodiversity and Geodiversity
 - ii. Landscape
 - iii. Green and Blue Infrastructure
 - iv. Local Green Spaces
 - v. Historic Natural and Built Heritage
 - vi. Flood Risk
 - vii. Water Efficiency
 - viii. Renewable and Low Carbon Energy
5. Minerals
 - i. Managing the Impact of Mineral Development
6. Waste Management
 - i. Identifying Sites for Waste Management
 - ii. Managing the Impact of Waste Development
7. Infrastructure
 - i. Infrastructure Provision
 - ii. Sustainable Transport
8. Delivering Development
 - i. Development Limits

Full descriptions of the spatial objectives and spatial strategy options are provided in the Issues and Options document (NLC, 2018).

The options identified to deliver each of the spatial strategies have been developed by North Lincolnshire Council in response to the key issues of relevance to the Local Plan and are considered the most appropriate options for dealing with these issues. The options have been developed in accordance with NPPF guidance and as such, they represent reasonable

alternatives for delivering the spatial vision and supporting spatial objectives, being sufficiently distinct, realistic, and deliverable.

Each of the options proposed for each of these spatial strategies have been assessed to determine their potential economic, social and environmental impacts. The outcomes of this assessment are set out in this Environmental Report. The SA will be used to inform the choice of preferred options to take forward and refine further. However, it is not the purpose of the SA to decide which option to take forward, but merely to provide information on the sustainability effects of these options for the plan-makers and to provide transparency.

Sustainability Appraisal is an iterative process and will be repeated at subsequent stages throughout the preparation of the Local Plan.

1.5 Purpose of the Sustainability Appraisal and Environmental Report

Sustainable development has been defined in many ways but is frequently referred to as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Bruntland, 1987). Sustainable development seeks to achieve sustainable economic growth, improve quality of life and community well-being, and protect against biodiversity loss, depletion of resources and environmental deprivation.

Securing the Future (Defra, 2005), the UK Government sustainable development strategy, discusses five guiding principles that are to be used in the UK to achieve sustainable development:

- Living within environmental limits;
- Ensuring a strong, healthy and just society;
- Achieving a sustainable economy;
- Promoting good governance; and
- Using sound science responsibly.

Sustainability Appraisal is an iterative process that aims to identify the significant environmental, social and economic effects of a plan. It is a compulsory requirement for Local Plans under Section 19 of the Planning and Compulsory Purchase Act 2004. UK Government guidance states that *‘Its role is to promote sustainable development by assessing the extent to which the emerging plan, when judged against reasonable alternatives, will help to achieve relevant environmental, economic and social objectives’* (DCLG, 2014).

In line with Government guidance, SA incorporates the requirements of *The Environmental Assessment of Plans and Programmes Regulations 2004* (commonly referred to as the ‘SEA Regulations’), which implement the requirements of European Directive 2001/42/EC ‘on the assessment of the effects of certain plans and programmes on the environment’ (European Parliament, 2001). The Directive requires formal assessment of plans and programmes that are likely to have significant effects (either positive or negative) on the environment. It applies to all plans and programmes which are ‘subject to preparation and/or adoption by an authority at national, regional or local level’ or are ‘required by legislative, regulatory or administrative provisions’ (ODPM, 2004).

The first output from the Sustainability Appraisal process is the production of a Scoping Report. This report provides a description of the baseline environmental characteristics and key environmental and sustainability issues of relevance to North Lincolnshire, and identifies other relevant plans, programmes and policies that may influence the development of the Local Plan. The Scoping Report also establishes an appraisal framework that will be used to examine the sustainability impacts of implementing the Local Plan policies. The framework comprises a series of SA objectives and associated appraisal criteria that reflect the key sustainability issues identified through the baseline review.

The draft Scoping Report (JBA Consulting, 2017a) was published for consultation with the statutory consultees (Historic England, Natural England, and Environment Agency) in April 2017 for a five-week period. Comments received have been reviewed and changes made to refine and confirm the methodology and scope of the assessment. A final version of the

Scoping Report (JBA Consulting, 2017b) was published in August 2017, which has been used to inform and guide the completion of this SA.

The SEA Directive requires an assessment of the Local Plan and its 'reasonable alternatives' i.e., spatial strategy options. These options are assessed at a strategic level against the SA objectives identified in the Scoping Report to identify the extent to which sustainable development is likely to be achieved.

The outcomes of this assessment are detailed in a SA Environmental Report (this report), which will be published alongside the Issues and Options document so that stakeholders are fully informed of the sustainability issues that have been identified when providing comment on the Local Plan proposals. The SA therefore informs and influences the decision-making process in choosing a preferred way of delivering the Local Plan. In doing so, it helps Local Planning Authorities to fulfil their objective of contributing to the achievement of sustainable development and thus help achieve sound plan-making.

2 Appraisal methodology

2.1 The Sustainability Appraisal process

Sustainability Appraisal is an iterative process that aims to identify the significant environmental, social and economic effects of a plan. For the North Lincolnshire Issues and Options stage, this involves assessing the spatial objectives and spatial strategy options against the SA objectives identified through the SA scoping process, so as to identify the extent to which sustainable development is likely to be achieved.

The SA has been prepared in accordance with the requirements of the SEA Regulations and follows good practice guidance produced by the Office of the Deputy Prime Minister (ODPM) (ODPM, 2004) and Planning Practice Guidance provided by the Department for Communities and Local Government (DCLG) (DCLG, 2014).

2.1.1 Meeting legal requirements

Sustainability Appraisal is a compulsory requirement for Local Plans under section 19 of the Planning and Compulsory Purchase Act 2004. Government guidance requires that SA should incorporate the requirements of the SEA Regulations; in practice, SA and SEA follow very similar methodologies and it is possible to combine them without losing the essence of either. Therefore, for the remainder of this document 'Sustainability Appraisal' refers to the combined process.

Annex I of the SEA Directive sets out the scope of information to be provided through the SA process. This is shown in Table 2-1 below, which also identifies where in the SA process each requirement will be met.

Table 2-1: Stages in the SA/SEA process as identified within Annex I of the SEA Directive

SEA Directive requirements	Where in the SA
(a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;	Scoping Report
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	Scoping Report
(c) the environmental characteristics of areas likely to be significantly affected;	Scoping Report
(d) any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;	Scoping Report
(e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;	Scoping Report
(f) likely significant effects on the environment – 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 these factors;	Environmental Report
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan;	Environmental Report
(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Environmental Report
(i) a description of the measures envisaged concerning monitoring in accordance with Article 10; and	Environmental Report
(j) a non-technical summary of the information provided under the above headings.	Environmental Report

As required by the SEA Directive, the full range of environmental receptors have been considered when developing the scope of the SA. The Directive states that an assessment should identify the potentially significant impacts on '*biodiversity, population, human health, fauna, flora, soil, water, air, climatic, material assets including architectural and archaeological heritage, landscape and the interrelationship between the above factors*'. As an integrated SA and SEA is being undertaken, consideration of other 'sustainability' topics has also been made, and therefore the SA appraises other issues including housing, transport, waste, social inclusion and deprivation, and economic and employment characteristics. These are described further in Table 2-2.

Table 2-2: Sustainability topics covered in the Sustainability Appraisal

SEA Directive and SA guidance requirements		Definition in relation to this SA
Environmental	Landscape	Local landscape character; protected and notable landscapes; key local landscape features.
	Biodiversity (including flora and fauna)	Designated nature conservation sites; protected and notable species and habitats; trends in condition and status.
	Water	Chemical and biological water quality; surface and groundwater resources; waterbody hydromorphology; flood risk.
	Soil (including geology)	Variety of rocks, minerals and landforms; the quantity and distribution of high quality soil; land contamination.
	Cultural heritage (including architectural and archaeological heritage)	Protected and notable heritage assets and their setting; human induced physical changes to the environment; pressures on the historic environment, heritage assets and their setting.
	Air	Air quality issues.
	Climatic factors	Regional climate patterns; trends in greenhouse gas emissions and the sources of these emissions; mitigation measures and adaptation options to manage climate change.
Social	Population	Where people live and work; population trends and demographics; housing; education; inequality and deprivation; key community facilities; accessibility.
	Human health	Trends and patterns in human health; recreation opportunities.
Economic	Economy	Local economic and employment conditions.
	Material assets	Critical transport and other infrastructure; community services; green infrastructure and open space.
	Waste	Waste collection and recycling patterns.
The interrelationship between the above factors		The relationship between environmental features and issues.

2.1.2 Stages in the Sustainability Appraisal process

The ODPM guidance sets out a five-stage process (A to E) to be followed (see Table 2-3). This Environmental Report builds upon the Scoping Report (Stage A) and covers stages B and C of the process wherein the context and objectives of the Sustainability Appraisal are identified and the scope of the assessment is determined. For the purposes of this assessment, stages A1 to A4 will be completed, whilst stage A5 comprises consultation on this Scoping Report, which will be conducted as outlined in Section 6 of this document.

Table 2-3: Stages in the Sustainability Appraisal process

SA stages and tasks	Purpose		Where covered in the SA
Stage A	Setting the context and SA objectives, establishing the baseline and deciding on the scope.		Scoping Report (August 2017)
Stage B	Developing and refining options and assessing effects		
	(B1) Test the plan proposals against the SA framework.	To identify potential synergies or inconsistencies between the objectives of the plan and the SA objectives and help in developing alternatives.	Environmental Report Section 3 and 4 and Appendix A
	(B2) Develop the plan options including reasonable alternatives.	To develop and refine strategic alternatives.	Environmental Report Section 3 and 4 and Appendix A
	(B3) Predict the effects of the options, including alternatives.	To predict the significant environmental effects of the plan proposals and alternatives.	Environmental Report Section 3 and 4 and Appendix A
	(B4) Evaluate the likely effects of the plan proposals and alternatives.	To predict the effects of the plan proposals and reasonable alternatives and assist in the refinement of the plan.	Environmental Report Section 3 and 4 and Appendix A
	(B5) Consider ways of mitigating adverse effects and maximising beneficial effects.	To ensure that adverse effects are identified and potential mitigation measures are considered.	Environmental Report Section 3 and 4 and Appendix A
	(B6) Propose measures to monitor the significant effects of implementing the Local Plan.	To detail the means by which the environmental performance of the plan can be assessed.	Environmental Report Table 2-6
Stage C	Preparing the Environmental Report		Environmental Report
Stage D	Consulting on the draft Local Plan and the Environmental Report		Environmental Report (to be completed)
Stage E	Monitoring the significant effects of implementing the Local Plan		Final Environmental Report and Adoption Statement (to be prepared)

The relationship between the SA process and development of the Local Plan is summarised in Figure 2-1.

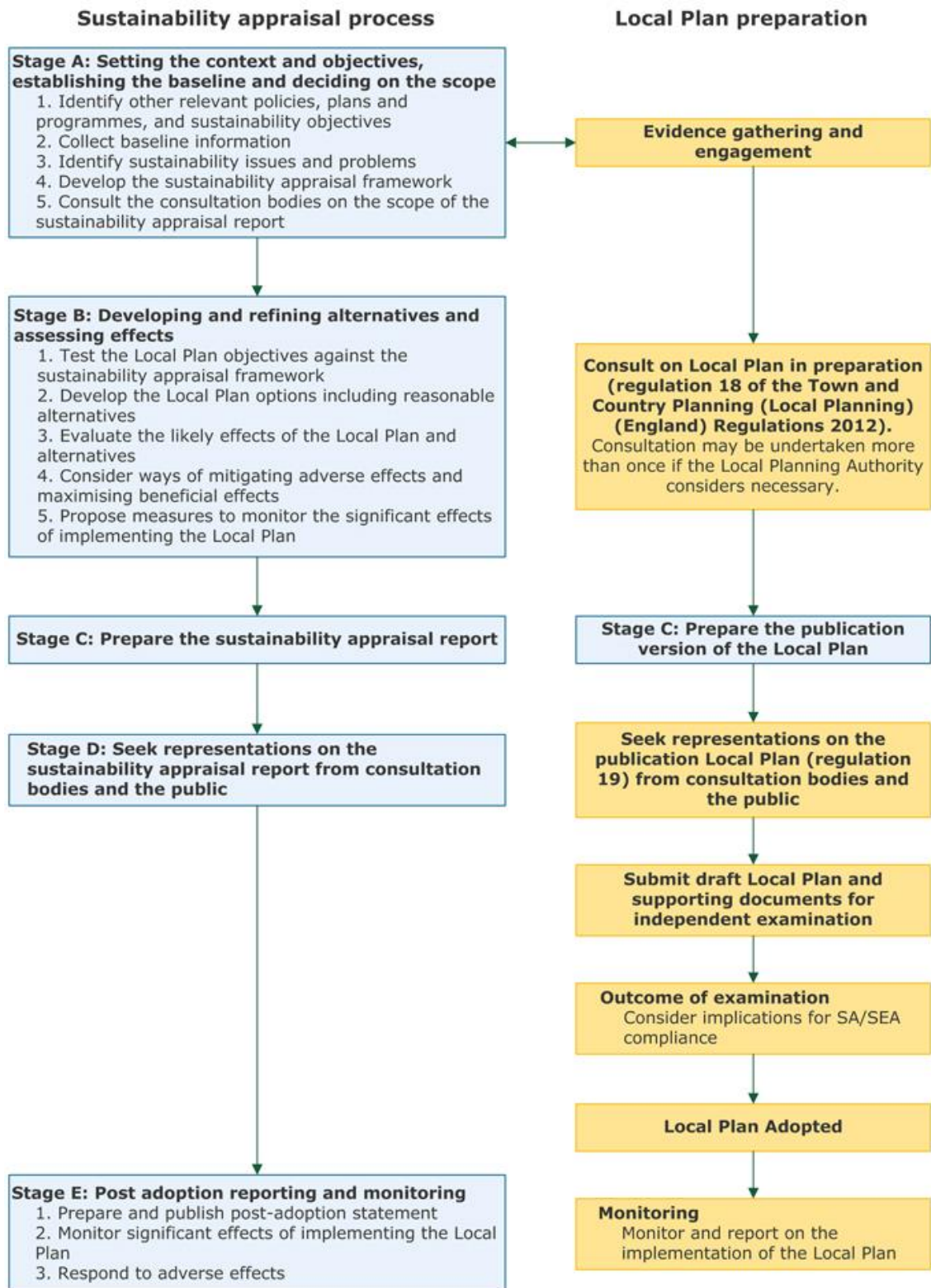


Figure 2-1: Key stages of Local Plan preparation and their link with the Sustainability Appraisal process (DCLG, 2014)

2.2 Key sustainability issues in North Lincolnshire

Baseline information was collected during the SA scoping stage (Stage A) in relation to each of the sustainability topics, many of which are inter-linked. A desk study was undertaken to

identify baseline information, which was used to determine the key environmental, social and economic characteristics of North Lincolnshire. The information search included information from a range of sources including the following organisations:

- North Lincolnshire Council
- Natural England
- Environment Agency
- Office for National Statistics
- Historic England
- Joint Nature Conservation Committee (JNCC)

Where information was available, key sustainability targets and objectives were identified; established and predicted trends in the status or condition of environmental features was described; and significant environmental and sustainability issues were highlighted.

The baseline review identified a range of sustainability issues affecting North Lincolnshire. A summary of these issues is provided in Table 2-4.

Table 2-4: Summary of the key sustainability issues in North Lincolnshire

Sustainability topic		Key sustainability issues
Environmental	Landscape character	<ul style="list-style-type: none"> • Pressure on landscape character and condition from habitat fragmentation, urban intrusion and commercial agriculture intensification in all LCAs. • New development in the future could affect landscape character and quality, and also impact upon levels of tranquillity. • Intensification of agricultural practices are affecting traditional landscape features and rural landscape characteristics. • A lack of access to the countryside is a significant issue affecting recreation opportunities for local people.
	Biodiversity and nature conservation	<ul style="list-style-type: none"> • All sites designated for nature conservation are at risk of damage because of housing and commercial development pressure and associated water quality impacts and human disturbance. • North Lincolnshire is dominated by arable farmland and fields, with a decline in hedgerows in some areas – this habitat type favours only a small suite of species • The dominance of arable farmland contributes to eutrophication and water quality issues in many waterbodies, along with other sources of point and diffuse pollution. • Lack of agri-environment schemes and positive management activity hinders the reversal of habitat loss. • Fragmentation of land into many small sites creating isolated habitats, with species that cannot alter their distribution. • The increasing spread of invasive non-native species. • Effects of climate change may also pose a risk to flora and fauna as they cannot adapt to changing climatic conditions, or shift their range in order to survive. • Coastal squeeze due to climate induced sea level rise may impact on intertidal habitats of the Humber. • Decline in waterbird populations from the Humber Estuary. • Efforts to create habitat in North Lincolnshire are prevalent, for example through the Humberhead Levels Nature Improvement Area resulting in new wetland habitat.
	Water environment	<ul style="list-style-type: none"> • Increases in water demand are predicted to cause a water supply deficit in the future. • The quality of North Lincolnshire's waterbodies is generally of moderate status, with pollution from surface water runoff within urban areas and agricultural land affecting water quality. • Groundwater is vulnerable to pollution associated with contaminated land, with aquifers overlain by soils with high leaching potential. • Further development could increase the amount of surface water runoff and cause further disturbance and degradation of the habitat and water quality of these watercourses. • Flooding within North Lincolnshire has the potential to create pathways through which contamination sources could cause pollution. • A large area of North Lincolnshire has a medium to high risk of flooding and are likely to experience an increase in the number of flood events due to climate change increasing rainfall intensity, as well as new areas becoming at risk of flooding.
	Land	<ul style="list-style-type: none"> • Development on brownfield land or land at risk of contamination could cause the release of contaminants into groundwater or surface waters. • Contaminated runoff could impact on environmental receptors such as nature conservation sites, and reduce the water quality of watercourses such as the Humber Estuary.

Sustainability topic	Key sustainability issues
	<ul style="list-style-type: none"> • Demand for housing could potentially affect good quality agricultural land, reducing the amount of land in North Lincolnshire available for agriculture. • There is a risk of compliance issues with environmental legislation, such as the WFD, due to potential risks to water quality from contaminants. • Continued industrial activities could release contaminants into the environment through pollution incidents such as release of the chemicals or dust from quarrying. • Loss of geodiversity through poorly planned development and lack of management.
	<p>Historic environment</p> <ul style="list-style-type: none"> • The intrinsic cultural value of the area plays a vital role in defining its distinctive character and identity and it should be conserved and protected. • Some Scheduled Monuments, listed buildings and Conservation Areas are considered to be at risk and/or under threat. • Development pressure will continue to threaten designated and undesignated heritage assets. • Climate change has the potential to threaten heritage assets, in particular from flooding and erosion.
	<p>Air quality</p> <ul style="list-style-type: none"> • Greater pressures in air quality may occur in the future through increases in the population in North Lincolnshire, and associated development, increased traffic congestion, and agriculture. • Continued emissions to air from manufacturing and extractive industries within North Lincolnshire could decrease air quality. • Expansion of Humberside Airport and Humber Ports are likely to worsen air quality in the immediate area. • Deterioration in air quality may lead to the introduction of more AQMAs to address local impacts on air quality.
	<p>Climate</p> <ul style="list-style-type: none"> • North Lincolnshire's climate will change in the future, with increased summer temperatures, decreased summer rainfall, increased winter rainfall and increased frequency of severe weather events. • Increased rainfall and severe weather events increase the flood risk, which is expected to result in adverse impacts on utility, residential, industrial and transport infrastructure with subsequent economic consequences. • There is increased risk to public health due to increased summer temperatures and increased flood risk. • Biodiversity may be negatively impacted by climate change, particularly along North Lincolnshire's watercourses. • There is significant potential for and likely demand for growth in renewable energy provision in the area. Therefore, there is potential for conflict between renewable energy generation and other land uses and issues associated with environmental impacts. • Energy demand and consumption is likely to rise as a result of increased population and development due to economic growth.
Social	<p>Population</p> <ul style="list-style-type: none"> • Longer life expectancies, and higher birth rates than death rates are leading to a growing population. • Significant pressure may arise from an increasing ageing population in North Lincolnshire, coupled with an outward migration of younger, educated, people. This has decreased the dependant population ratio, which is expected to decrease further in the future. • Population increases leading to a substantial need for further housing and improved social, leisure, and transportation infrastructure, as well as increased demand for water. • Within North Lincolnshire there is a lack of affordable, high quality housing. • A growing population will place increased demand on a range of community services and facilities, and also increased competition for jobs.

Sustainability topic		Key sustainability issues
		<ul style="list-style-type: none"> Accommodation for the Gypsy and Traveller community needs to be increased, and cultural awareness of Gypsies and Travellers needs to be increased. There are a number of health issues such as obesity that affect the community, which increases the vulnerability of the population and places further demands on community health services and facilities. There are areas of deprivation that creates disparity across North Lincolnshire, particularly relating to poor accessibility of rural areas. Crime rates increased have in the last year, despite a decreasing trend observed from 2014 and 2015. Tackling crime remains a key priority in urban areas in Scunthorpe and the Crosby area. A low proportion of the population, aged 16 to 64, have achieved a degree due to a lack of access to higher education, and lack of graduate job opportunities.
Economic	Local economy	<ul style="list-style-type: none"> North Lincolnshire average income is slightly lower than the England national average. The manufacturing sector employs a much greater proportion of people compared to the national average, which is in decline creating concerns for the sustainability of the manufacturing industry in North Lincolnshire. The agricultural economy is also in decline in rural areas due to mechanisation, creating a low number of jobs in these areas. New industries within North Lincolnshire, such as the renewable energy industry, and technology and sciences, largely located on the South Humber Bank, should be increased to promote diversification of the local economy.
	Material assets	<ul style="list-style-type: none"> There is a lack of accessibility and public transport infrastructure in rural areas. Car use is increasing and the number of cars is predicted to grow significantly in the future, which will place additional pressure on the road transport network in the area. Rural villages are important community hubs and the services they provide need to be protected and enhanced. The quantity and quality of green open space and recreational space provision is generally average.
	Waste and minerals	<ul style="list-style-type: none"> Recycling in North Lincolnshire still remains relatively low even though rates exceed the regional and national average. Future population increases are likely to place increased pressure on waste management systems and facilities. New waste management measures should consider promotion of sustainable design to minimise waste generation and the impact on the environment. Lincolnshire's large mineral deposits continue to be exploited and represent an important economic activity in North Lincolnshire. Further increase in mineral extraction could place additional pressure on North Lincolnshire's transport networks, and potentially increase the risk of contamination of the environment, and impact the natural, built and historic environment. Continued exploitation of the North Lincolnshire's mineral resources should seek to contribute to the social and economic needs of North Lincolnshire whilst also ensuring robust environmental protection. Cessation of mineral exploitation, such as peat extraction, provides considerable opportunity to restore priority habitats.

2.3 Sustainability Appraisal framework

The SA framework is used to identify and evaluate the potential environmental issues associated with the implementation of the Local Plan. The framework comprises a set of SA objectives that have been developed to reflect the key environmental, social and economic issues identified through the baseline information review (see Figure 2-2). These objectives are supported by a series of appraisal criteria, which are used to measure the potential significance of the sustainability issues, and associated indicators, which can be used to monitor the effects of implementation of the Local Plan.



Figure 2-2: Development of the Sustainability Appraisal framework

The spatial objectives and spatial strategy options set out in the Issues and Options document are tested against the SA framework to identify whether they will contribute to, or conflict with, the achievement of each SA objective. Table 2-5 summarises the purpose and requirements of the SA objectives, appraisal criteria, and indicators.

Table 2-5: Definition of Sustainability Appraisal objectives, appraisal criteria and monitoring indicators

Item	Purpose
Objective	Provide a benchmark 'intention' against which the sustainability effects of the plan can be tested. They need to be fit-for-purpose and represent the key sustainability issues of relevance to the Local Plan area.
Appraisal criteria	Aid the assessment of impact significance. Provide a means of ensuring that key environmental and sustainability issues are considered by the assessment process.
Monitoring indicator	Provides a means of measuring the progress towards achieving the sustainability objectives over time. Needs to be measurable and relevant and ideally relies on existing monitoring networks.

2.3.1 Sustainability Appraisal objectives and appraisal criteria

Sustainability Appraisal objectives and appraisal criteria have been set for each of the sustainability receptors (see Table 2-6). They were informed and developed by baseline information collected during the scoping process and the key environmental protection and sustainability themes identified by the plans, programmes, and policies (PPP) review.

These objectives were revised in response to comments received during the consultation phase on the SA Scoping Report and in light of additional baseline information.

Table 2-6: Sustainability Appraisal objectives, appraisal criteria and monitoring indicators for North Lincolnshire

SA receptor		SA objective	Appraisal criteria	Monitoring indicators
Environmental				
Landscape character	1	Protect and enhance the integrity and quality of North Lincolnshire's urban and rural landscapes, maintaining local character and sense of place.	<ul style="list-style-type: none"> Protect and enhance landscape character. Safeguard setting of settlements and nationally important landscapes. Protect and enhance areas of tranquillity. Promote schemes designed to enhance landscape and built character into new development. Minimise detrimental visual intrusion. 	<ul style="list-style-type: none"> Change in quality of landscape character and condition. The condition and quality of new characteristics introduced to the environment. Percentage of open countryside. Change in areas designated for their landscape value.
Biodiversity and nature conservation	2	Protect and enhance biodiversity, habitats and species.	<ul style="list-style-type: none"> Protect and enhance designated sites including SPAs, SACs, Ramsar sites, SSSIs, NNRs, LNRs, LWSs and Local Geological Sites. Protect and enhance priority habitats and species, and ancient woodland and veteran trees. Contribute to the protection and creation of new priority habitats. Promote biodiversity on farmland. Avoid habitat fragmentation and increase connectivity of habitats. Enhance community engagement with biodiversity. Encourage protection and provision of green/open spaces. Avoid the spread of invasive non-native species. 	<ul style="list-style-type: none"> Condition of designated sites. Planning applications refused/granted in designated sites, green wedges, wildlife corridors, and other areas of biodiversity value. Number of planning applications granted with conditions/obligations requiring biodiversity enhancement. Area of biodiversity habitat delivered through strategic site allocations. Percentage of land designated as nature conservation sites as a result of Local Plan policies. Completed development that has resulted in the loss or creation/restoration of priority habitats. Percentage of farmland with agri-environment schemes or within positive management agreements.
Water environment	3	Protect and improve the quality and quantity of the water in North Lincolnshire's surface and groundwaters.	<ul style="list-style-type: none"> Contribute to the achievement of WFD objectives. Ensure sustainable management of water resources. Protect and where possible improve drinking water quality. Improve water quality in North Lincolnshire's watercourses. Enhancement and recreation of natural watercourses. Increase the use of SuDS. 	<ul style="list-style-type: none"> Water quality of the area's watercourses. Number of pollution incidents. Number of SuDS schemes installed. Number of schemes contributing to WFD objectives. Percentage of waterbodies achieving 'Good' overall status, and improving in status.

SA receptor		SA objective	Appraisal criteria	Monitoring indicators
	4	Reduce the risk of flooding to existing communities and ensure no new developments are at risk.	<ul style="list-style-type: none"> Minimise the risk of flooding to people and properties. Promote and increase the use of SuDS that result in Greenfield or better run-off rates. Only development appropriate to the Flood Zone shall take place. All new development takes account of the 2016 Climate Change allowances. 	<ul style="list-style-type: none"> Number of developments accompanied by a Surface Water Management Plans. Number of SuDS schemes installed. Percentage of households at risk of flooding. Number of new developments (in areas at risk of flooding) incorporating flood risk mitigation.
Land	5	Protect North Lincolnshire's important soil resources.	<ul style="list-style-type: none"> Reduce soil erosion and protect and enhance soil quality and quantity. Prevent the loss of Grade 1 and Grade 2 ALC land. Reduce contamination of soils from development, industry or agriculture. Promote the use of brownfield land for development where possible. Increase the remediation and regeneration of contaminated land. 	<ul style="list-style-type: none"> Area of greenfield land, or land of high environmental value (important for flood management, biodiversity or climate change mitigation/adaptation), affected by development. Number of developments on brownfield land. Areas of ALC grading 1 and 2 lost to development. Number of land remediation schemes.
Air quality	6	Improve local air quality.	<ul style="list-style-type: none"> Maintain and improve local air quality. Promote measures that will remove the occurrence of AQMAs. Promote measures that will reduce the deposition and impacts of air pollutants on biodiversity. Reduce the impacts on air quality from transport. Prevent/mitigate the generation of air pollution. 	<ul style="list-style-type: none"> Rate of transport modal shift across North Lincolnshire. Exceedances of air quality objectives. Nitrogen dioxide, sulphur dioxide and particulate emissions. Deposition rates of air pollutants on land important for biodiversity and comparison to critical loads. Population living in AQMAs. Number of complaints received regarding odour nuisance.

SA receptor		SA objective	Appraisal criteria	Monitoring indicators
Climate	7	Reduce the impacts of climate change and reduce greenhouse gas emissions.	<ul style="list-style-type: none"> • Deliver schemes that promote habitat and species resilience and adaptability to the effects of climate change, particularly regarding coastal squeeze. • Promote measures that minimise greenhouse gas emissions, and increase energy efficiency. • Minimise the likely impacts of climate change through promotion of appropriate adaptation measures in new development. • Promote the development of renewable energy generation. • Promote water efficiency measures in new development. • Reduce waste and increase re-use, recycling and energy produced of waste. • Promote measures that reduce the need to travel and travel distances. • Promote measures to reduce the need to travel by car. • Promote use of public transport. 	<ul style="list-style-type: none"> • Total greenhouse gas emissions in North Lincolnshire. • Improvements to quality and quantity of the Green Infrastructure network in North Lincolnshire. • New development achieving 'good', 'very good' or 'excellent' BREEAM or EcoHomes rating. • Proportion of total electricity consumption from renewable sources. • Energy and water use per household. • Condition of designated sites. • Waste to landfill, recycling and composting rates. • Peak traffic flows. • Number of public transport services and cycle routes created. • % change in number of people using public transport.

SA receptor		SA objective	Appraisal criteria	Monitoring indicators
Historic environment	8	Conserve and enhance the historic environment, heritage assets and their settings.	<ul style="list-style-type: none"> • Conserve and enhance designated and non-designated heritage assets, their settings and the wider historic environment. • Reduce the number of heritage assets at risk. • Maintain and enhance the character and distinctiveness of Conservation Areas and settlements. • Promote high-quality design. • Promote heritage-based sustainable tourism. • Provide for increased access to and enjoyment of the historic environment. • Promote heritage-led regeneration. • Increase the social benefit derived from the historic environment. • Protect and enhance the character and appearance of historic landscapes and townscapes, maintaining and strengthening local distinctiveness and sense of place. • Support the sustainable use of historic farmsteads. • Maintain the hydrological conditions of water-dependent heritage assets particularly in the Trent and Ancholme Valleys, and Humberhead Levels. 	<ul style="list-style-type: none"> • Planning applications granted/refused that affect the designated and non-designated heritage assets and their settings. • Loss of, or damage to, heritage assets including the historic landscape. • Number of heritage assets on the Heritage at Risk and Lincolnshire Heritage at Risk registers. • % change in number of visits to historic sites. • Number of heritage assets provided with interpretation and made accessible to the public. • Number of planning applications where archaeological investigations were required prior to and/or following planning approval. • Number of archaeological reports and archives deposited with and added to the Historic Environment Record. • Number of high-quality historic farmstead conversions.
Social				
Population	9	Reduce deprivation.	<ul style="list-style-type: none"> • Increase community engagement and decision-making. • Reduce poverty and social exclusion. • Reduce crime and the fear of crime. • Improve attainment levels in schools, and increase access to higher education. • Increase accessibility between urban and rural areas. 	<ul style="list-style-type: none"> • Local and sub-regional measurements of deprivation. • Life expectancy between wards. • Crime rates. • Self-reported measure of people's feeling of safety. • Rates of participation of democratic processes. • Inequality measures, such as education/attainment levels and wages. • % BME working age people in employment.

SA receptor	SA objective	Appraisal criteria	Monitoring indicators
	10 Promote healthy and active lifestyles in North Lincolnshire.	<ul style="list-style-type: none"> • Maintain and increase access to high quality healthcare facilities. • Promote active and healthy lifestyles. • Promote recreational and leisure opportunities and access to open space. • Increase regular participation in physical activities and sport. 	<ul style="list-style-type: none"> • Life expectancy rates. • Death rates for cancer, circulatory disease, accidents and suicides. • All-age all-cause mortality rates. • Obesity levels. • Number of people exercising regularly. • Self-reported measure of people's overall health and wellbeing.
	11 Improve access to affordable housing and ensure an appropriate mix of dwelling sizes, types and tenures within local communities.	<ul style="list-style-type: none"> • Provide an adequate supply of housing. • Reduce homelessness. • Make best use of existing housing stock. • Provide quality and flexible homes that meet the needs of the community. • Provide accommodation for the Gypsy and Traveller community. 	<ul style="list-style-type: none"> • Number of housing completions and projected completions. • Housing quality in new housing development based on Building for Life Assessments. • Net additional Gypsy and Traveller pitches. • Number of households living in temporary accommodation. • Homelessness rates.
Economic			
Local economy	12 Promote a sustainable economy, improve skills and employability, and diversify rural economy.	<ul style="list-style-type: none"> • Promote retention of existing jobs and create new employment opportunities. • Increase diversity in the range of job opportunities in rural communities. • Ensure an adequate supply of a range of sites in terms of types and quality for employment uses. • Improve access to opportunities for education, learning and skills training for all sectors of the community. • Support the creation of flexible jobs to meet the changing needs of the population. 	<ul style="list-style-type: none"> • Amount of completed retail, office and leisure development. • New business registration rates. • Employment rates. • Proportion of unemployed economically active people. • Average earnings. • Percentage of population that have attained a qualification of NVQ2 and above. • Proportion of 18-24 year olds enrolled in training, full time education or employment. • % of 16 year olds achieving 5+ GCSEs Grade A*-C. • No. of residents attending university. • Business surveys of staff/skills shortages.

SA receptor		SA objective	Appraisal criteria	Monitoring indicators
Material assets	13	Increase access to a wide range of services and facilities.	<ul style="list-style-type: none"> • Improve availability and accessibility of key local facilities, including healthcare, education, retail and leisure. • Promote the development of a range of high quality, accessible community, cultural and leisure facilities. • Maintain and enhance rural facilities. • Increase voluntary and community infrastructure. • Increase the quantity and improve the quality of green infrastructure and open space. 	<ul style="list-style-type: none"> • Number of people with adequate access to key services (e.g. hospitals, health centres, residential homes, schools). • Availability and accessibility of a range of community, cultural and leisure facilities. • Access to services and facilities by public transport, walking and cycling. • The amount and quality of open green space.
Mineral resources	14	Ensure sustainable management of North Lincolnshire's mineral resources.	<ul style="list-style-type: none"> • Increase the retention of mineral workings for biodiversity, landscape and the general public. • Reduce the use of minerals and increase the reuse of material on and off site. • Safeguard existing development from the environmental effects of mineral workings. 	<ul style="list-style-type: none"> • Total aggregates extracted from within North Lincolnshire. • Amount of mineral extraction areas designated for environmental protection. • Total aggregates used within North Lincolnshire. • Environmental incidents from mineral extraction facilities. • The area of mineral and waste sites restored to priority habitat.

2.3.2 Assessing impacts and impact significance

The unmitigated impacts of the spatial objectives and spatial strategy options on achieving the SA objectives have been identified through the analysis of the baseline conditions, key sustainability issues, and use of professional judgement.

The significance of effects has been scored using the 11-point scale summarised in Table 2-7. A significant impact (positive or negative) occurs where there is potential for a widespread, long-term effect that causes a substantial change (increase or decrease) in the quality, health or condition of a particular resource, or in a particular socio-economic characteristic. A minor impact occurs when changes are generally localised, short-term or insubstantial. Where there was a high degree of uncertainty regarding the likelihood and potential significance of an impact (either positive or negative), it was scored as uncertain.

Table 2-7: Impact significance key

Impact significance	Impact symbol
Significant positive impact on the SA objective	✓✓
Tendency to a significant positive impact on the SA objective	✓✓?
Minor positive impact on the SA objective	✓
Tendency to a minor positive impact on the SA objective	✓?
Neutral impact on the SA objective	0
Tendency to a minor negative impact on the SA objective	X?
Minor negative impact on the SA objective	X
Tendency to a significant negative impact on the SA objective	XX?
Significant negative impact on the SA objective	XX
Positive and negative impacts on the SA objective	✓ / X
Impact on the SA objective cannot be predicted (uncertain)	?

The spatial objectives and spatial strategy options have been evaluated in light of their potential cumulative, synergistic and indirect effects on the SA objectives. The assessment of these effects has been informed by the baseline data collected at this scoping stage, professional judgement and experience with other SEAs/SAs, as well as an assessment of national, regional and local trends.

Throughout the assessment the following has applied:

- Positive, neutral and negative impacts have been assessed, with uncertain impacts highlighted.
- The duration of the impact has been considered over the short, medium and long term where this is feasible.
- The reversibility and permanence of the impact has been considered where this is feasible.
- In-combination effects have also been considered.

2.4 Approach to assessing Issues and Options

The spatial objectives and spatial strategy options were each assessed individually against the full suite of SA objectives. This assessment was achieved using impact matrices and multi-criteria assessment methods.

At this relatively early stage in the Local Plan process, it was not possible to identify precisely how spatial objectives or strategy options would be implemented. Therefore, objectives and options were assessed based upon the information presented in the draft Issues and Options document and where required, clarification was sought from North Lincolnshire Council on the scope of individual objectives or options, or how they may be implemented.

The outcomes of the assessment work are detailed in individual appraisal tables included in Appendix A. Each table includes a short summary of the appraisal findings and a description of any assumptions made in completing the appraisal. A summary description of the

outcomes identified is provided in Section 3 (Spatial Objectives) and 4 (Spatial Strategy Options).

2.4.1 Description of alternatives considered

Planning Practice Guidance (DCLG, 2015) states that *“A sustainability appraisal is a systematic process that must be carried out during the preparation of a Local Plan. Its role is to promote sustainable development by assessing the extent to which the emerging plan, when judged against reasonable alternatives, will help to achieve relevant environmental, economic and social objectives.”* The guidance confirms that ‘reasonable alternatives’ *“are the different realistic options considered while developing the policies in the draft plan.”*

For this SA, the reasonable alternatives are the spatial options developed by North Lincolnshire Council to deliver the Local Plan spatial vision and spatial objectives. These options have been developed in accordance with NPPF guidance with respect to sustainable development.

As the Council is seeking viewpoints on the issues and sources of evidence, which may contribute to the development of, policies for Creating Sustainable Communities & Better Places there are no reasonable alternatives to assess at this point in time. These policies will be assessed as part of the Sustainability Appraisal for the Preferred Options.

2.4.2 Links to the Habitat Regulations Assessment

The European Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) (known as ‘the Habitats Directive’), as implemented through the Conservation of Habitats and Species Regulation 2010 (as amended) (‘the Habitat Regulations’), requires a Local Planning Authority to carry out a Habitat Regulations Assessment (HRA) of its Local Plan.

The purpose of the HRA is to establish whether the Local Plan will have a ‘likely significant effect’ on sites designated for their nature conservation interest at an international level. These sites (known collectively as ‘European Sites’) include Special Areas of Conservation (SAC), Special Protection Areas (SPA), and by UK Government policy, Ramsar sites.

The HRA and SA processes are separate; nonetheless, there is some overlap in what they aim to achieve. A draft HRA Screening Assessment has been prepared (JBA Consulting, 2017c) and has been used to inform the outcomes of the SA.

2.5 Sustainability Appraisal details

2.5.1 When was the Sustainability Appraisal undertaken

The SA was undertaken in September and October 2017 alongside the development of the draft Issues and Options document.

2.5.2 Who carried out the appraisal

Completion of the SA is the responsibility of North Lincolnshire Council. The Council appointed a team of consultants from JBA Consulting to prepare the SA on its behalf, and the consultant team worked closely with the Spatial Planning team at the Council to complete the work.

2.5.3 Limitations and difficulties encountered

Sustainability Appraisal is an important and valuable exercise in identifying and balancing sustainability effects against each other. However, it does not represent the entire analysis required to determine the acceptability of a plan objective or option. Even where one option scores positively in terms of sustainability, it may not be appropriate for other reasons that are not highlighted here.

Care must also be taken not to treat SA as a quantitative exercise. It is not simply a matter of how many potential positive or negative impacts are identified in the appraisal. For some objectives or options, one positive effect may outweigh several negative effects, and vice versa.

Interpretation of some spatial objectives and spatial strategy options was required to enable the appraisal to be completed. Any assumptions made in this interpretation are described in the individual appraisal tables. Where required, clarification was sought from North Lincolnshire Council on the scope of individual objectives and options.

3 Assessment of the Spatial Objectives

3.1 Introduction

An assessment of the spatial objectives has been undertaken, with each objective assessed against the SA objectives, to determine whether they would support (positive impact) or conflict (negative impact) with achievement of these sustainability goals. Cumulative effects across the different SA objectives are also shown. The outcomes of this appraisal work are provided in Appendix A and summarised in Table 3-1.

It is important to bear in mind that a negative impact highlights areas where the Local Plan should consider ways to mitigate that potential effect, either through modification or clarification of the objective, or through safeguarding measures within the Local Plan (specific policies or guidance) that seek to avoid or mitigate an effect. However, a negative effect does not mean that the spatial objective is intrinsically unsustainable.

It should also be noted that there is considerable uncertainty about the impacts of the spatial objectives as they are very high-level and broad in scope, and contain very little information regarding the detail on how and where they would be implemented or focused. In general, the more specific the objective, the greater certainty there is in the effects identified. Nonetheless, a certain degree of interpretation has been necessary to clarify the purpose of each objective upon which an assessment could then be made. Appendix A provides further information on the purpose of each objective.

3.2 Appraisal summary

The appraisal has identified a range of potential impacts, which are summarised as follows:

- Spatial objectives 1 to 5 are broadly focused on growth and development. The SA has identified that these objectives present a range of potential negative impacts on the environmental sustainability objectives, and on biodiversity and water resources/quality in particular. It is likely that greater economic activity and new development (new housing, employment sites and supporting infrastructure), together with a larger population, will increase the risk of disturbance, damage and loss of habitats (North Lincolnshire's habitats currently experience damage and fragmentation due to development pressure), whilst increasing demand for water (water supply is already forecast to be in deficit in the future) and potentially reducing water quality (current water quality is generally moderate due to pollution from agricultural and urban runoff).
- Conversely, spatial objectives 1 to 5 would have largely positive social and economic effects. The local economy (currently reliant upon manufacturing and agricultural sectors) would benefit significantly from new development and infrastructure provision across the area, as well as initiatives to diversify and strengthen the rural economy. The local population would also benefit significantly from new housing development across the district, which would seek to deliver a wide range of high quality, well designed housing that meets the demands of differing groups (including older people and Gypsy and Traveller communities). This is particularly important given the predicted increase in population. Access to key local services and facilities would also be positively affected, although there is a risk that new house building (and associated population increase) would not be matched by an increase in provision of local services, placing existing facilities under increased pressure. Levels of social deprivation would also benefit from these spatial objectives due to increasing availability of accommodation, new job opportunities, and greater access to services.
- Efforts to tackle the causes and impacts of climate change may be adversely affected by several of the spatial objectives that seek to promote and increase economic activity and new development. Whilst the spatial objectives do focus on reducing flood risk and encourage more prudent use of local resources, including energy and waste, there is a risk that the benefits achieved would be outweighed by the impacts of a growing population, economy, and supporting development. The impacts of climate change could affect a wide range of other aspects of the area, including the natural environment and public health.

- Several of the objectives could potentially conflict with each other. Aims to protect the natural and historic environment could conflict with objectives to promote economic growth and new development. The Local Plan would need to carefully balance the focus and stimulus of each objective, and underpinning policies, so as to ensure that delivery of one is not to the disadvantage of another.
- The objective to protect and enhance the natural, built and historic environment, is predicted to have the widest positive outcomes. It would directly benefit the environmental sustainability objectives but would also have positive outcomes for social aspects, including public health and access, and also help to strengthen the local economy. The only negative impact identified is in relation to housing provision, as greater protection could conflict with proposals for new house building.
- Objectives to promote aspirations and increase quality of life for residents and visitors alike may have a significant positive effect in relation to social deprivation and public health. These objectives would increase the provision of, and access to, educational, social, sporting, health, recreational, and cultural facilities; encourage greater economic prosperity; and reduce inequality in North Lincolnshire. The aim to improve access to education would be particularly important due to relatively poor attainment levels in the area. However, the impacts of these objectives in relation to other sustainability considerations, including environmental factors, would be largely neutral.
- Flood risk would benefit from objectives to tackle the effects of climate change, but would be largely unsupported by the other spatial objectives. There is a considerable focus on reducing flood risk to new development (by seeking to locate new development away from floodplains), but the objectives largely fail to promote measures to reduce flood risk to existing communities, meaning that they would likely fail to contribute to tackling a factor behind social deprivation in North Lincolnshire.
- Minerals resources would largely be unaffected by most of the spatial objectives, but would benefit significantly due to an emphasis on the sustainable management and exploitation of the existing resources.

3.2.1 Recommendations

A range of potential negative effects have been identified. Most of these effects are associated with objectives and options that seek to increase development or economic activity in North Lincolnshire. The following recommendations are therefore made to reduce or avoid these adverse effects:

- Safeguards within the Local Plan should be provided to protect and enhance environmental features/resources.
- The allocation of land (for housing, employment, and other uses) should take account of the full range of environmental considerations, especially when sites are located outside or close to the fringe of urban areas.
- The Local Plan should promote high-quality and sustainable design that respects the protection of environmental features and seeks opportunities for their enhancement.
- The spatial objective to protect and enhance the natural environment should be further strengthened so that it recognises the importance of areas outside designated sites for biodiversity.
- The Local Plan should recognise that growth in tourist numbers could conflict with objectives relating to housing and could place additional demands on local services and facilities to the detriment of residents. Safeguarding policies protecting local assets and housing stock over growth in the tourist sector should be provided, whilst the effects of the Local Plan policies should be carefully monitored on an annual basis.
- The Local Plan should seek to reduce the effects of new development on air quality and climate change by promoting use of sustainable materials, low carbon technologies, renewable energy generation, energy efficiency measures, and sustainable transport options.

Table 3-1: Summary of the sustainability appraisal of the spatial objectives

Objective	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Supporting & Growing Our Economy	✓/X	X	X	0	X	X	X	✓/X	✓	0	0	✓✓	✓	0
2	Supporting Sustainable Communities	✓/X	X	X	0	0	X	X	✓/X	✓	0	✓✓	✓	✓	0
3	Meeting Our Housing Need	X	X	X	0	X	X	X	X	✓	0	✓✓	✓✓	X	0
4	Delivering Infrastructure for Growth	X	X	X	0	0	✓	✓	0	✓	✓	0	✓✓	✓	0
5	Supporting Our Rural Areas and Countryside	0	X	X	0	X?	✓/X	✓/X	0	✓	0	✓	✓✓	✓✓	0
6	Protecting and Enhancing Our Natural, Built and Historic Environment	✓✓	✓✓?	✓	0	✓	✓	✓	✓✓	0	✓	X	✓	✓	0
7	Promoting High Quality Design	✓	✓?	✓?	0	0	0	✓	✓	✓	0	✓	✓	0	0
8	Raising Our Aspirations	0	0	0	0	0	0	0	0	✓✓	0	0	✓✓	✓	0
9	Supporting Our Quality of Life	0	0	0	0	0	0	X	✓	✓✓	✓✓	0	✓	✓✓	0
10	Developing Our Visitor Economy	✓	✓/X	X	0	0	X	X	✓✓	0	✓	X	✓✓	X	0
11	Tackling Climate Change	0	✓	✓	✓✓?	0	✓	✓	0	0	0	X?	✓/X	0	0
12	Efficient Use of Our Resources	0	✓	✓✓	0	✓	✓	✓✓	0	0	0	X?	✓/X	0	✓
13	Ensuring Minerals Supply	X	0	0	0	0	X	X	0	0	0	0	✓✓	0	✓✓
14	Delivering Sustainable Waste Management	✓/X	✓/X	✓/X	0	0	✓/X	✓	0	0	0	0	✓	✓	0

4 Assessment of the Spatial Strategy Options

4.1 Introduction

The spatial strategy options are broadly grouped into eight 'themes' with a total of 26 associated spatial strategies included within the Issues and Options document. An assessment of the options has been undertaken, with each option assessed against the SA objectives to identify whether they would contribute to, or conflict with, the achievement of these sustainability criteria. The outcomes of this appraisal are provided in Appendix A and in Tables 4-1 to 4-8.

It is important to bear in mind that the strategy options are high-level and include very little information regarding how and where they would be implemented. The appraisal of these options is therefore also necessarily high-level and a degree of interpretation and professional judgement was therefore applied to the appraisal.

4.2 Options for Growth

Five options for growth have been proposed and the appraisal has identified a range of potential impacts, which are summarised as follows:

- Option A (Scunthorpe and Market Towns) and B (Six Market Towns and Scunthorpe) would be largely positive for many of the sustainability objectives. These options would concentrate development in already highly urbanised areas and so would avoid direct impacts on more environmentally sensitive areas.
- Option C (Six Market Towns, Scunthorpe and Larger Service Centres) has the potential to deliver positive effects to most of the sustainability objectives. It would disperse development across the area, which would benefit both urban and rural communities. In addition, potential risks to the environment would be reduced as the wide spread of (lower-scale) development would mitigate against a concentration of impacts.
- Option D (New Settlement) has the potential to cause significant negative impacts to several of the environmental objectives as it would involve major new and would be likely to impact on the natural resources of the area (likely to be a rural area) in which it is located.
- Option D is predicted to have the most significant positive and negative impacts.
- Option E (Balanced Approach) has the potential to cause a range of positive and negative effects. For many of the environmental objectives there is a risk that the diffusion of new development could place pressure on natural resources, particularly in rural areas. Conversely, a greater spread of development could minimise risks to the natural environment and offer opportunities to provide environmental benefits, such as ecological enhancements or improvements to landscape character. Potential positive effects are predicted in relation to several social and economic objectives, particularly objectives to improve the housing stock and strengthen the local economy.
- All options are likely to have a negative effect on air quality (6) and climate change (7) associated with the increased emissions associated with new development.
- Conversely, all options are likely to have positive effects on the social and economic sustainability objectives and particularly in relation to the local economy as significant growth would act as a major economic stimulus in North Lincolnshire.
- Impacts on flood risk and mineral resources are considered likely to be neutral.

4.2.1 Recommendations

The following recommendations are made to reduce or avoid adverse effects:

- Safeguards within the Local Plan should be provided to protect and enhance environmental features/resources.

- The allocation of land (for housing, employment, and other uses) should take account of the full range of environmental considerations, especially when sites are located outside or close to the fringe of urban areas.
- The Local Plan should promote high-quality and sustainable design that respects the protection of environmental features and seeks opportunities for their enhancement.
- The Local Plan should seek to mitigate impacts on air quality and climate change by promoting use of sustainable materials, low carbon technologies and energy efficiency measures.
- Development should be encouraged to allow for the retention or provision of substantial green and open space.

Table 4-1: Summary of the sustainability appraisal of the strategic options for growth

		Sustainability Objectives and Impact													
Spatial strategy	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Growth	A	✓✓?	✓?	✓?	0	✓✓?	X	X	✓?	0	0	✓	✓	✓	0
	B	✓✓?	✓?	✓?	0	✓✓?	X	X	✓?	0	0	✓	✓	✓	0
	C	✓/X	✓/X	✓/X	0	✓/X	✓/X	X	✓/X	✓	✓	✓	✓	✓	0
	D	XX?	XX?	X	0	XX?	X	X	0	✓	✓	✓	✓✓	✓	0
	E	✓/X	✓/X	✓/X	0	✓/X	✓/X	X	0	✓/X	✓/X	✓	✓	✓	0

4.3 Housing

Options for housing have been developed across a range of policy areas including:

- Future Housing Growth
- Housing Land Allocations
- Housing Mix
- Housing Density
- Delivering Rural Exception Sites
- Providing Housing for Older People
- Providing Gypsy and Traveller Accommodation
- Delivery of Self-Build and Custom Build Development

The potential impacts of these policy options are summarised in Table 4-2 and key impacts are described below:

- All of the housing options would have positive effects on the provision of new housing and housing types within North Lincolnshire. Several significant positive effects on the associated sustainability objective have been identified.
- All of the options for housing growth have the potential to conflict with most of the environmental sustainability objectives. In particular, Option D (Aspirational Economic Growth) has the potential to cause significant adverse impacts as a result of the large-scale of development it proposes. Negative effects are also predicted in relation to the provision of local services, including community facilities, transport infrastructure and open space, which may all experience increased pressure through greater demand.
- All options for housing growth would benefit social and economic objectives, particularly objectives to improve the housing stock and strengthen the local economy.
- Both options for housing land allocations have the potential to cause a number of negative effects, particularly in relation to the environmental sustainability objectives; Option B is predicted to have more significant impacts because it may propose new sites in areas of high environmental sensitivity. Conversely, both options are likely to make a significant contribution to the housing sustainability objective.
- Options for housing mix and density are predicted to have very similar outcomes. Positive effects are likely for both housing and local economy sustainability objectives.
- The two options for delivering rural exception sites are predicted to have negative effects on many of the environmental sustainability objectives. Development of sites outside settlement limits increases the risk of an adverse impact on areas (undeveloped/greenfield land) of high environmental sensitivity.
- In relation to the options for providing housing to older people, Option A has the potential to adversely affect several of the environmental sustainability objectives because developers would be given complete flexibility to design housing developments that meet lower standards.

4.3.1 Recommendations

The following recommendations are made to reduce or avoid adverse effects:

- Safeguarding policies should be included in the Local Plan to promote the environmental and sustainable design of new housing developments.
- Careful and robust site selection/allocation in the Local Plan is imperative to avoid or minimise risks to particularly sensitive sites/areas.
- Policies to enhance existing facilities or provide appropriate levels of new infrastructure i.e., key local services, community facilities and transport infrastructure, should be provided to address increased pressure on existing services as a result of increased housing provision and associated population growth.

Table 4-2: Summary of the sustainability appraisal of the strategic options for housing

		Sustainability Objectives and Impact													
Spatial strategy	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Future Housing Growth	A	X	X	X	0	X	X	X	X	0	0	✓	✓	X	0
	B	X	X	X	0	X	X	X	X	0	0	✓	✓	X	0
	C	X	X	X	0	X	X	X	X	0	0	✓	✓	X	0
	D	XX	XX	XX	0	XX	XX	XX	XX	0	0	✓✓	✓✓	XX	0
Options for Housing Land Allocations	A	X	X	X	0	X?	X	X	X	0	0	✓✓	✓	X	0
	B	XX?	XX?	X	0	X?	X	X	X	0	0	✓✓	✓	X	0
Options for Housing Mix	A	0	0	0	0	0	0	0	0	0	0	✓✓	0	0	0
	B	0	0	0	0	0	0	0	0	0	0	✓	0	0	0
Options for Housing Density	A	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0
	B	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0
	C	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0

Spatial strategy	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Delivering Rural Exception Sites	A	X	X	X	0	X	X	X	X	0	0	✓✓	✓	X	0
	B	X	X	X	0	X	X	X	X	0	0	✓	✓	X	0
Options for Providing Housing for Older People	A	X	0	X	0	0	0	X	0	0	0	✓	✓	0	0
	B	0	0	0	0	0	0	0	0	✓	0	✓	✓	0	0
	C	0	0	0	0	0	0	0	0	✓	0	✓	✓	✓	0
	D	0	0	0	0	0	0	0	0	✓	0	✓	✓	✓	0
Options for Providing Gypsy and Traveller Accommodation	A	0	0	0	0	0	0	0	0	✓/X	✓	✓✓	0	✓	0
	B	0	0	0	0	0	0	0	0	✓	✓	✓✓	0	✓	0
Options for Delivery of Self-Build and Custom Build Development	A	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0
	B	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0

4.4 Economy

Options for the economy have been developed across a range of policy areas including:

- Employment Sites
- Rural Economy
- Visitor Economy
- Scunthorpe Town Centre

The potential impacts of these policy options are summarised in Table 4-3 and key impacts are described below:

- All of the options proposed would have positive effects on the local economy. Several significant positive effects on the associated sustainability objective have been identified.
- All of the options for employment site provision in North Lincolnshire have the potential to conflict with most of the environmental sustainability objectives. In particular, Option C (Allocate new employment sites) has the potential to cause significant adverse impacts as it is likely to encourage large-scale of development including development of undeveloped/greenfield land. New development would also result in significant greenhouse gas emissions during both construction and operation.
- Options to enhance the rural economy would have similar sustainability outcomes; both options could have negative impacts on the environmental sustainability objectives whilst significantly benefiting the local (rural) economy.
- An expansion of the tourist sector has the potential to impact on the air quality and climate change objectives as increasing visitor numbers would result in significant new carbon emissions. There is also a risk that these options could conflict with Local Plan objectives in relation to housing and community services/facilities, including water resources.
- In relation to Scunthorpe Town Centre, Option B (significantly amend the Town Centre boundary to allow a greater/different mix of town centre uses) would appear to contribute to more of the sustainability objectives.

4.4.1 Recommendations

The following recommendations are made to reduce or avoid adverse effects:

- Safeguarding policies should be included in the Local Plan to promote the environmental and sustainable design of new housing developments.
- Careful and robust site selection/allocation in the Local Plan is imperative to avoid or minimise risks to particularly sensitive sites/areas.
- The Local Plan should include policies to protect local assets and housing stock over growth in the tourist sector.
- The Local Plan should promote policies that seek to reduce carbon emissions across the area as a result of all economic activities. This includes policies that promote the retention of existing important habitats and creation of new habitats; protection of soil resources; improved sustainable waste management; and measures to promote renewable energy generation, energy efficiency, sustainable and high-quality design, and sustainable transport options.

Table 4-3: Summary of the sustainability appraisal of the strategic options for the economy

		Sustainability Objectives and Impact													
Spatial strategy	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Employment Sites Within North Lincolnshire	A	X	X	X	0	X	X	XX	X	0	0	0	✓✓	0	0
	B	X	X	X	0	X	X	X?	X	0	0	0	✓	0	0
	C	XX?	XX?	X	0	X	X	XX	X	0	0	0	✓✓	0	0
	D	0	X	X	0	X	X	XX	X	0	0	0	✓✓	0	0
Options for North Lincolnshire's Rural Economy	A	X	X	X	0	X	0	✓/X	0	0	0	0	✓✓	0	0
	B	X	X	X	0	X	0	✓/X	0	0	0	0	✓✓	0	0
Options for the Visitor Economy	A	✓	✓/X	X	0	0	X	X	✓	0	✓	X	✓✓	X	0
	B	✓	✓/X	X	0	0	X	X	✓	0	✓	X	✓✓	X	0
Options for Scunthorpe Town Centre	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B	✓/X	0	0	0	0	0	✓	✓/X	0	0	✓	✓	✓	0

4.5 Natural and Historic Environment

Options for the natural and historic environment have been developed across a range of policy areas including:

- Biodiversity and Geodiversity
- Landscape
- Blue and Green Infrastructure
- Local Green Spaces
- Historic Natural and Built Heritage
- Flood Risk
- Water Efficiency
- Renewable Energy and Low Carbon Energy

The potential impacts of these policy options are summarised in Table 4-4 and key impacts are described below:

- Many of the options are likely to have positive effects in relation to the sustainability objectives.
- Of the two options proposed for the protection of biodiversity and geodiversity, Option A (creation of buffer zones around development proposed adjacent to a designated site) has the potential to have a number of beneficial effects not provided by Option B (encourage enhancement of designated sites). Option A would not only further distance development from such a sensitive site, but the creation of a buffer zone (potential new habitat, public open space or green infrastructure) would provide a range of additional benefits for landscape character, land and soil quality, water quality, air quality, climate change, public health, and local facilities.
- In relation to landscape, Option A (continue with the current policy approach to designate landscapes) would appear to be the best of the four options proposed. This is due to greater uncertainty associated with Options B to D in the level of protection that would be achieved.
- For blue-green infrastructure provision, Option A (create a green and blue infrastructure strategy) scores better against a number of the sustainability objectives. Option A provides greater certainty that the infrastructure created will achieve strategic aims and support delivery of the Local Plan strategic vision.
- In relation to local green space, Option B (designate specific land through the Local Plan) has more positive impacts on the sustainability objectives than Option A (use a criteria-based approach to development) because local green space would be specifically designated and protected, and because there is less of a link to the delivery of new development and therefore more certainty regarding the wider outcomes that could be achieved.
- In relation to historic natural and built heritage, Option A (Provide specific policies to safeguard designated and non-designated heritage) has the potential to provide greater protection to North Lincolnshire's cultural and historic heritage than Option B (Have an overarching development management policy) or Option C (Rely on national guidance contained in the NPPF and NPPG), as it also covers assets that are considered of local importance, but not designated. They are all expected to benefit the local economy, by attracting greater levels of tourism to the area. The NPPF arguably cannot be solely relied upon for protection of heritage assets, and as a result the benefits associated with Option C carry a greater level of uncertainty.
- In relation to flood risk, there are several clear differences between Option A (no development in the functional floodplain) and the other three options (each of which may allow some development in the floodplain). By restricting any development on the functional floodplain, Option A ensures greater protection for these areas and minimises adverse impacts that could be associated with new development. Conversely, this option may restrict new development, making it harder to achieve related Local Plan policies, particularly those seeking to manage a growing

population in the area and a growing need for affordable housing and greater access to community facilities, and could potentially create barriers to economic investment.

- With regards to water efficiency, Option A (implement a higher water efficiency standard) has the potential to make a positive contribution to several of the environmental sustainability objectives as it may lead to lower water use and greater surface and groundwater availability; conversely, it could affect the delivery of new housing developments. Option B (continue with the current standard) could exacerbate the effects of climate change as water demand increases with a growing population and increased development.
- In relation to renewable energy, Option A (designate areas in the Local Plan for renewable/low carbon development) has the potential for a significant positive impact in relation to the climate change objective. Decarbonisation of the energy supply is a key measure required to mitigate the impacts of climate change and a greater percentage of renewable energy would make an important contribution to renewable energy and carbon emissions targets.

4.5.1 Recommendations

The following recommendations are made to reduce or avoid adverse effects:

- Safeguarding policies should be included in the Local Plan to protect and enhance environmental features, whilst employment land allocations should account for the full range of environmental, social and economic considerations, especially when located outside or close to a flood zone.

Table 4-4: Summary of the sustainability appraisal of the strategic options for the natural and historic environment

		Sustainability Objectives and Impact													
Spatial strategy	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Biodiversity and Geodiversity	A	✓	✓✓	✓	0	✓	✓	✓	0	0	✓	0	✓/X	✓	0
	B	0	✓	0	0	0	0	0	0	0	0	0	✓/X	0	0
Options for Landscape	A	✓✓	✓	✓	0	✓	0	0	✓	0	✓	0	✓/X	✓	0
	B	✓✓?	✓?	✓?	0	✓?	0	0	✓?	0	✓?	0	✓/X	✓?	0
	C	✓✓?	✓?	✓?	0	✓?	0	0	✓?	0	✓?	0	✓/X	✓?	0
	D	✓✓?	✓?	✓?	0	✓?	0	0	✓?	0	✓?	0	✓/X	✓?	0
Options for Green and Blue Infrastructure	A	✓	✓	✓	✓	✓	✓	✓	✓	0	✓	0	✓	✓	0
	B	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?	0	✓?	0	✓/X	✓	0
Options for Local Green Spaces	A	✓?	✓?	✓?	✓?	✓?	✓?	✓?	0	0	✓?	0	✓/X	✓?	0
	B	✓	✓	✓	✓	✓	✓	✓	✓	0	✓	0	0	✓	0

		Sustainability Objectives and Impact													
Spatial strategy	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for the Historic Natural and Built Heritage	A	✓	0	0	0	0	0	0	✓✓	0	0	0	✓	0	0
	B	✓	0	0	0	0	0	0	✓	0	0	0	✓	0	0
	C	✓?	0	0	0	0	0	0	✓?	0	0	0	✓	0	0
Options for Flood Risk	A	✓	✓	✓	✓✓	0	0	✓	0	0	0	X	X	0	0
	B	X	X	X	✓/X	0	0	X	0	0	0	✓	✓	0	0
	C	X	X	X	✓/X	0	0	X	0	0	0	✓/X	✓/X	0	0
	D	X	X	X	✓/X	0	0	X	0	0	0	✓/X	✓/X	0	0
Options for Water Efficiency	A	✓?	✓	✓✓	✓	0	0	✓✓	0	0	0	X?	X?	0	0
	B	0	0	✓/X	0	0	0	X	0	0	0	0	0	0	0
Options for Renewable Energy & Low Carbon Energy	A	0	X?	0	0	0	0	✓✓?	0	0	0	0	✓	0	0
	B	0	0	0	0	0	0	✓	0	0	0	0	✓/X	0	0

4.6 Minerals

Options for minerals management and utilisation have been developed in relation to the following policy area:

- Managing the Impact of Minerals Development

The potential impacts of the policy options are summarised in Table 4-5 and key impacts are described below:

- No negative impacts have been identified for any of the options assessed.
- Option A (specific policies in the Local Plan for managing the impacts and promoting restoration/after-use) is likely to deliver greater sustainability benefits than Option B (no specific policies) because it includes policies that provide an additional level of protection against environmental impacts associated with mineral developments, whilst also serving to provide a greater stimulus for the subsequent restoration of minerals sites for alternative uses.

4.6.1 Recommendations

No specific recommendations are made with respect to minerals management.

4.7 Waste management

Options for waste management have been developed in relation to the following policy areas:

- Identifying Sites for Waste Management
- Managing the Impact of Waste Management

The potential impacts of the policy options are summarised in Table 4-6 and key impacts are described below:

- No negative impacts have been identified for any of the options assessed.
- In relation to identifying sites for waste management, the potential impacts of the three options are broadly similar. However, Option A (identify specific sites or locations in the Local Plan) would provide a higher level of certainty that appropriate waste management facilities would be delivered and this is reflected in the more positive sustainability scores that are attributed to this option.
- With respect to managing the impacts of waste management, both options would have largely positive effects on all sustainability objectives. However, Option A provides for the inclusion of specific policies in the Local Plan to manage these impacts, whilst Option B instead relies on national planning policy to guide local decision-making. Option A provides a greater degree of protection for the environment (including local communities) and in doing so also provides greater certainty regarding how issues associated with waste management will be resolved.

4.7.1 Recommendations

No specific recommendations are made with respect to waste management.

Table 4-5: Summary of the sustainability appraisal of the strategic options for sustainable minerals management

Spatial strategy	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Managing the Impact of Mineral Development	A	✓	✓	✓	0	✓	✓	0	0	0	✓	0	✓	✓	✓✓
	B	✓?	✓?	0	0	✓?	0	0	0	0	✓?	0	✓?	✓?	✓?

Table 4-6: Summary of the sustainability appraisal of the strategic options for waste management

Spatial strategy	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Identifying Sites for Waste Management	A	✓	✓	✓	0	✓	✓	✓	0	0	0	0	✓	✓	✓
	B	✓?	✓?	✓?	0	✓?	✓?	✓?	0	0	0	0	✓?	✓?	✓?
	C	✓?	✓?	✓?	0	✓?	✓?	✓?	0	0	0	0	✓?	✓?	✓?
Options for Managing the Impact of Waste Development	A	✓	✓	✓	✓	✓	✓	✓	✓	0	✓	0	0	✓	0
	B	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?	0	✓?	0	0	✓?	0

4.8 Infrastructure

Options for the provision of new infrastructure have been developed in relation to the following policy areas:

- Infrastructure Provision
- Sustainable Transport

The potential impacts of the policy options are summarised in Table 4-7 and key impacts are described below:

- In relation to infrastructure provision, the potential impacts of the two options are complex and are related to how and where new development may be delivered and the status of existing supporting infrastructure.
- Option A (growth strategy determined by making best use of existing infrastructure) has the potential to negatively affect several of the social and economic sustainability objectives. This option will both constrain new development and will also inhibit delivery of new infrastructure (physical, social and environmental). This could increase stress on existing infrastructure and adversely affect the local economy, levels of social deprivation, and public health. In addition, there is potential for a range of negative environmental effects associated with increased pressure on environmental infrastructure, and increased emissions associated with greater use of existing facilities.
- Option B (growth should not be constrained by existing infrastructure) may also have a range of negative effects, although there is perhaps greater uncertainty regarding several of these. Benefits are anticipated in relation to a range of socio-economic objectives as this option will help facilitate both new development and new infrastructure. This in turn has the potential to have a range of impacts on the environmental objectives.
- With regards to sustainable transport, a range of largely positive and neutral effects are predicted, with only small differences between the three options. Option C (seek contributions to infrastructure to support sustainable transport) would appear to offer the largest benefits because there is greater certainty that infrastructure improvements would be delivered.

4.8.1 Recommendations

The following recommendation is made to reduce or avoid adverse effects:

- There is a risk that population growth in the area could place an increased strain on existing infrastructure. The Local Plan would need to recognise that population growth will occur and this will place strain on existing facilities; this will need to be mitigated through increased infrastructure provision regardless of whether new development is delivered.

4.9 Delivering Development

Options for delivering development have been developed in relation to the following policy area:

- Development Limits

The potential impacts of the policy options are summarised in Table 4-8 and key impacts are described below:

- A range of effects, both positive and negative, are predicted. Option A (continue to apply development limits to settlements) will continue to constrain new development to existing settlement boundaries. This reduces the potential for environmental impacts associated with development in surrounding areas. However, a negative impact may occur in relation to air quality as development is concentrated in certain

areas. In relation to socio-economic sustainability objectives, the effects are likely to be largely neutral; however, there is a risk that restricting development to existing settlement limits could have a negative effect as it potentially constrains the delivery of new development.

- Option B does not restrict the location of new development to existing settlement limits. Risks of a negative impact on several of the environmental sustainability objectives therefore increase. However, there may be potential positive effects in relation to housing provision and the local economy as the removal of the settlement limit constraint may help facilitate increased housing development in the area.
- In relation to Option C, no details of an alternative approach are provided and therefore the impacts in relation to all the sustainability objectives are uncertain.

4.9.1 Recommendations

The following recommendation is made to reduce or avoid adverse effects:

- Safeguards within the Local Plan should be provided to protect and enhance environmental features/resources.
- The allocation of land (for housing, employment, and other uses) should take account of the full range of environmental considerations, especially when sites are located outside or close to the fringe of urban areas.
- The Local Plan should promote high-quality and sustainable design that respects the protection of environmental features and seeks opportunities for their enhancement.
- The Local Plan should seek to mitigate impacts on air quality and climate change by promoting use of sustainable materials, low carbon technologies and energy efficiency measures.

Table 4-7: Summary of the sustainability appraisal of the strategic options for infrastructure

		Sustainability Objectives and Impact													
Spatial strategy	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Infrastructure Provision	A	0	X?	0	0	0	X	X?	0	X?	X?	0	X?	XX?	0
	B	✓/X	✓/X	X?	0	X?	✓/X	X	0	✓?	✓?	✓	✓	✓/X	0
Options for Sustainable Transport	A	0	0	0	0	0	✓	✓	0	✓	✓	0	0	✓	0
	B	0	0	0	0	0	✓?	✓?	0	✓?	✓?	0	0	✓?	0
	C	0	0	0	0	0	✓	✓	0	✓	✓✓	0	✓	✓✓	0

Table 4-8: Summary of the sustainability appraisal of the strategic options for delivering development

		Sustainability Objectives and Impact													
Spatial strategy	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Options for Development Limits	A	✓	✓	✓	0	✓	X	✓	✓/X	0	0	0	0	0	0
	B	X?	X?	X?	0	X?	✓?	0	X?	0	0	✓	✓	0	0
	C	?	?	?	?	?	?	?	?	?	?	?	?	?	?

5 Implementation

5.1 Monitoring the significant impacts of the Local Plan

The significant sustainability effects of implementing a Local Plan must be monitored in order to identify unforeseen adverse effects and to be able to undertake appropriate remedial action. The Appraisal Framework contained in this report includes suggested indicators in order to monitor each of the sustainability objectives (see Table 2-6); however, these may not all be collected due to resource limitation and difficulty in data availability or collection.

Guidance stipulates that it is not necessary to monitor everything included within the Appraisal Framework, but that monitoring should focus on significant sustainability effects.

Upon adoption, the Local Plan will be accompanied by an Adoption Statement, which will outline those monitoring indicators most appropriate for future monitoring of the Plan in line with Regulation 16 of the Environmental Assessment of Plans and Programmes Regulations 2004.

5.2 Consultation

A key aspect of the SA process is consultation. The SA process provides a mechanism to ensure that stakeholder engagement requirements are achieved by providing interested parties/organisations and the public an opportunity to inform the process and comment on decisions taken. Stakeholder engagement also ensures that economic, environmental, and social issues, constraints and opportunities are identified and assessed throughout the development of the Local Plan.

This Environmental Report will form part of the public consultation on the Issues and Options document. It will be sent to the statutory consultation bodies (Natural England, Historic England and the Environment Agency) and will be available for view on North Lincolnshire Council's website alongside the Issues and Options document.

5.3 The next steps

The next step for the SA process is to continue applying the appraisal methodology at the Preferred Options stage, as options are refined and preferred options become clear. This will include appraisal of the various proposed site allocations for development and draft development management policies. This process will take into consideration the most up-to-date evidence to assess the draft policies for North Lincolnshire.

The Environmental Report will then be finalised and published for consultation alongside the draft Local Plan.

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A Appendix A: Appraisal Summary

Spatial Objectives

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Supporting & Growing Our Economy	✓/X	X	X	0	X	X	X	✓/X	✓	0	0	✓✓	✓	0

Appraisal summary:

This objective aims to promote economic growth across North Lincolnshire, increasing business growth, investment and job creation, as well as provide new employment land and supporting infrastructure. In doing so, it seeks to ensure new development is delivered in sustainable locations, whilst also enhancing the provision of retail, leisure, cultural and community activities in Scunthorpe, the Market Towns, and district and local centres.

The objective is likely to support several sustainability appraisal objectives, whilst potentially conflicting with several others. Neutral impacts are also likely in relation to several objectives. Whilst little information is contained within the spatial objective regarding the type, location, scale or design of economic growth, it is likely that greater economic activity and the provision of new employment sites and supporting infrastructure will have a negative effect on several environmental objectives, including biodiversity (2), water resources (3), soil resources, air quality and greenhouse gas emissions (7).

Conversely, economic growth is an essential component of sustainability objective 12 and will directly support the aim to create new employment opportunities and employment sites, in both the main urban areas and smaller rural centres. It is also an explicit aim of the objective to increase employment levels, which will support the sustainability objective to reduce poverty and social deprivation (9). The objective has the potential to promote job retention across the area and in doing so support community cohesion and reduce social exclusion. The spatial objective also seeks to promote the provision of associated community facilities (13), improving access to community, cultural and leisure activities.

Mixed impacts are predicted in relation to both local landscape quality/character (1) and heritage (8). There is potential for both positive effects i.e., regeneration initiatives delivering landscape improvements, and negative effects i.e., inappropriate economic development impacting upon landscape character or the setting of heritage assets. Such effects are site specific and will be dependent upon the type, scale and design of new infrastructure that is created. Neutral impacts are predicted in relation to local health levels (10) and housing provision (11), whilst the objective is also not likely to contribute to reduced flood risk (4).

Impact mitigation:

Several potential negative effects have been identified. This is because economic growth and greater economic activity in the area, particularly if this requires new development and infrastructure, is likely to adversely affect several environmental objectives. Safeguards within the Local Plan can be provided to protect and enhance these environmental features/considerations, whilst adherence to Government guidance and delivery of high quality and sustainable design will also contribute to the avoidance or mitigation of potential negative effects. Employment land allocations, when being developed, should take account of the full range of environmental considerations, especially when located outside or close to the fringe of urban areas.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	Supporting Sustainable Communities	✓/X	X	X	0	0	X	X	✓/X	✓	0	✓✓	✓	✓	0

Appraisal summary:

This spatial objective aims to support sustainable communities across North Lincolnshire, ensuring new homes and jobs are created, and are supported by a high-quality environment, services and infrastructure. New development will in turn support vitality, viability and economic performance of the area. Communities will also be encouraged to publish neighbourhood plans, if they are appropriate.

The principal purpose of this objective is to promote new, sustainable development to benefit local communities. Whilst the objective provides little information regarding the type, location or scale of new development envisaged, new development has the potential to have a negative effect on several environmental objectives, including biodiversity (2), water resources (3), air quality (6) and carbon emissions (7). This is due to the potential for new development to be located in areas of higher environmental sensitivity and as a result of a potential increase in population (attracted by new, high quality development), use of natural resources (to construct and operate the developments), and the generation of waste and emissions (including emissions to air from cars, homes, and other buildings).

This objective is predicted to have a significant positive impact on housing provision in the area (11) and may also have a positive effect in relation to social deprivation (9) by strengthening community cohesion, reducing social exclusion, and improving access. The objective also supports economic growth and diversification (12) and is likely to have a positive effect on the provision and accessibility of local services and facilities (13). Mixed impacts (positive and negative) are predicted for local landscape character and quality (1) and the historic environment (8). Whilst the spatial objective aims to create new, sustainable developments within a high-quality environment (positive), significant new development may adversely affect the natural and cultural landscapes as pressure for new development competes with conservation of local features (negative).

With a focus on sustainable development in locations that are most appropriate, the objective should not support development in areas at high risk of flooding, but conversely, may not contribute to greater protection for areas that already experience a high flood risk (4); in addition, the objective should not support new development on high-quality agricultural land (5). and is also unlikely to have an impact on healthy living (10) in North Lincolnshire.

Impact mitigation:

Whilst several potential negative impacts are predicted for this objective, at this stage these are not predicted to be significant. Whilst environmental impacts can arise from new development, application of national regulations and local guidance on sustainable development and protection of the environment should seek to avoid or mitigate these effects. In addition, safeguards within the Local Plan can protect environmental features, whilst promoting the delivery of high quality and sustainable design that respects the protection of environmental features and seeks opportunities for their enhancement.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
3	Meeting Our Housing Need	X	X	X	0	X	X	X	X	✓	0	✓✓	✓✓	X	0

Appraisal summary:

This objective aims to promote new housing development across North Lincolnshire, and in doing so, ensure the delivery of a wide range of high quality, well designed housing that meets the needs of the area's existing and future residents.

Whilst the scale of new housing is not referred to, it is likely that significant new housing development would be required to meet future predicted population increase and to address issues associated with affordability and provision of an appropriate housing mix. As such, significant new development has the potential to adversely affect landscape character (1), biodiversity (2), water resources (3), soil resources (5), air quality (6), climate change (7), and the historic environment (8). Construction of new housing development, and a potential increase in population, would place greater demand on natural resources, generate additional waste and emissions, and may cause substantial damage, degradation and disturbance of sensitive environmental features. As this spatial objective does not mention an increase in provision of local services and facilities to accommodate new housing, it could place existing facilities under increasing pressure (13). These impacts are currently identified as minor on the basis that Government regulation and guidance would ensure development does not take place in the most sensitive areas and that a considerable proportion of new development is on already developed land; however, these impacts could become significant if large-scale greenfield development is required.

Conversely, this spatial objective would provide significant support for new housing development, as well as providing homes that will better meet the needs of the community, both at present and into the future (11). Providing a greater housing stock would also provide an important economic stimulus for the local economy (12), increasing inward investment and creating new employment and training opportunities. Provision of a wider housing mix, particularly more affordable homes, housing for older people, and for people with specific needs could also provide a positive effect in relation to social deprivation (9) as such measures would support greater community cohesion and reduce social exclusion.

Whilst the objective does not specifically reference sustainable development or ensuring new housing development is delivered in the best and most appropriate locations, national and local policy should steer development away from areas at high risk of flooding (4) and should constrain new development on high-quality agricultural land (5). Also, this objective is unlikely to have an effect on healthy lifestyles (10) or material resources (14).

Impact mitigation:

New housing development could give rise to a range of adverse environmental impacts. It is therefore very important that the location of new development is selected with environmental considerations as an integral aspect, so as to avoid more sensitive areas and environmental features. Safeguards within the Local Plan can be provided to protect and enhance these environmental features/considerations, whilst adherence to Government guidance and delivery of high quality, sustainable design will also contribute to the avoidance or mitigation of potential negative effects. New housing allocations, when being developed through the Local Plan process, should take account of the full range of environmental considerations.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
4	Delivering Infrastructure for Growth	X	X	X	0	0	✓	✓	0	✓	✓	0	✓✓	✓	0

Appraisal summary:

This objective aims to deliver the infrastructure needed to support economic growth and new development in North Lincolnshire. This would include a connected, well maintained public, private and green transport network that facilitates economic development and increases community access to facilities and services.

The objective specifically seeks to support economic growth (12) through provision of better transport infrastructure – poor or congested transport connections forming a key barrier to economic output. In addition, the objective aims to increase access (13) for residents to important facilities and services, without increasing the need to travel. This would be achieved through greater transport choices, increasing local service provision, and through alternative means of delivering services (i.e., online). Increasing accessibility would make a positive contribution to reducing social deprivation (9), whilst a focus on developing the walking and cycling network, and greater provision of green infrastructure, would benefit healthy lifestyles (10).

However, increased development may adversely impact upon a number of the environmental objectives, including landscape character (1), biodiversity (2), and water resources (3). Conversely, several environmental parameters may be positively impacted by greater provision of more sustainable travel choices. In particular, air quality (6) and climate change (7) may benefit through reduced transport emissions associated with private car use.

Impact mitigation:

Whilst no significant adverse impacts have been identified at this stage, several negative effects are possible, particularly in relation to several of the environmental sustainability objectives. Policy safeguards should be provided within the Local Plan to ensure robust protection of environmental features, whilst allocation of land for new transport infrastructure should take account of the full range of environmental considerations; this includes avoidance of new development in high-sensitivity areas and inclusion of appropriate policy wording to ensure robust mitigation is required where negative impacts are predicted.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
5	Supporting Our Rural Areas and Countryside	0	X	X	0	X?	✓/X	✓/X	0	✓	0	✓	✓✓	✓✓	0

Appraisal summary:

This spatial objective seeks to support the rural areas of North Lincolnshire, by encouraging diversification of the rural economy, enhancing local facilities and infrastructure, and by promoting appropriate development in rural areas.

Increased development in rural areas could have negative impacts on several of the environmental objectives. Biodiversity (2) could be adversely affected, as development takes place on green, open space, agricultural land (5), or in areas of high environmental sensitivity. This includes an increase in the conversion of redundant agricultural buildings for alternative uses. New development may also place an increasing demand on water resources (3).

Mixed effects are predicted in relation to air quality (6) and climate change (7). New development could result in increased emissions to air; conversely, the greater provision of local jobs and services could reduce travel distances, thereby reducing transport emissions.

This spatial objective could have a positive effect on social deprivation (9) by generating new employment in rural areas, thereby increasing the affluence and viability of rural communities. This objective could also promote new housing development (11) to meet local needs and demands. In addition, the objective could make a significant contribution to supporting economic growth and diversification (12) in rural areas and encourage the provision of, or access to, local services and facilities (13).

Impact mitigation:

New development in rural areas could result in a range of environmental impacts. Safeguards within the Local Plan can be provided to protect and enhance these environmental features/considerations, whilst adherence to Government guidance and delivery of high quality and sustainable design will also contribute to the avoidance or mitigation of potential negative effects. New development allocations (housing and employment), when being developed through the Local Plan process, should take account of the full range of environmental considerations and cumulative effects of multiple developments are effectively considered, with appropriate mitigation established to minimise adverse effects.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
6	Protecting and Enhancing Our Natural, Built and Historic Environment	✓✓	✓✓?	✓	0	✓	✓	✓	✓✓	0	✓	X	✓	✓	0

Appraisal summary:

This objective seeks to protect and enhance the natural, built and historic environments in North Lincolnshire. It has a focus on the area's designated nature conservation sites, important landscapes, and areas of open space and green infrastructure.

The objective has the potential to support most of the environmental sustainability objectives. It specifically aims to protect important landscapes (1), wildlife sites (2), and the historic environment (8) and in doing so is likely to benefit water quality and water resources (3) and soil quality (5). Air quality (6) and climate change (7) are also likely to benefit due to the protection and enhancement of habitats, which will help maintain air quality and provide a carbon sink.

As a result of more robust protection of the environment, other benefits may be realised. The objective would support the rural economy and tourism economies (which rely upon high environmental quality), which together are vitally important components of the local economy (12). The protection and enhancement of the area's landscapes, open spaces and green infrastructure would also have a positive effect in relation to sustainability objectives 10 and 13, by increasing opportunities for recreation and leisure, and accessibility to these key community facilities.

The only potential negative effect identified is in relation to housing (11) as greater environmental protection could conflict with the provision of new homes or supporting development. This is a particular risk should a significant level of new housing development be proposed that includes multiple greenfield allocations.

Impact mitigation:

The only potential adverse impact identified at this stage is in relation to housing; however, this objective does not preclude new housing from being developed but instead should guide new housing development away from areas of high environmental or cultural sensitivity. In addition, whilst the spatial objective seeks to protect and enhance the natural environment, this objective could be further strengthened so that it recognises the importance of areas that are not designated for biodiversity conservation.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
7	Promoting High Quality Design	✓	✓?	✓?	0	0	0	✓	✓	✓	0	✓	✓	0	0

Appraisal summary:

This objective seeks to ensure all new development in North Lincolnshire is designed to a high standard that reflects local landscape and townscape characteristics. It also aims to ensure new development is accessible, safe and secure, and promotes efficient use of resources.

High quality design that meets the latest design guidance and regulations, and incorporates environmental sustainability considerations, would potentially have a positive effect in relation to several of the sustainability objectives. It would help to protect and potentially enhance local landscape/townscape character and quality (1), benefitting the historic environment (8). This objective may also support measures to reduce natural resource use and waste generation, and increase energy efficiency and biodiversity enhancement, potentially benefitting biodiversity (2), water resources (3), and climate change (7). In addition, the objective is likely to make a positive contribution in relation to housing (11), the local economy (12), and social deprivation (9) by improving accessibility and safety, and helping to meet the needs of the various groups that have differing housing requirements. Neutral impacts are predicted for several other sustainability objectives including flood risk (4), soil quality (5), air quality (6), and community services/facilities (13).

Impact mitigation:

As negative impacts have not been identified, specific mitigation is not required at this stage.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
8	Raising Our Aspirations	0	0	0	0	0	0	0	0	✓✓	0	0	✓✓	✓	0

Appraisal summary:

This objective seeks to encourage greater economic prosperity and reduce inequality in North Lincolnshire. It aims to do this by increasing the opportunities for education and skills training in the area, for both young people and adults. This would better equip the workforce to meet the needs of local business and industry.

This objective is likely to have significant positive effects in relation to social deprivation (9) and the local economy (12), and may also benefit accessibility to local services (13). Improving provision of education services may improve attainment levels and contribute to a decrease in deprivation. The local economy may be positively affected from improved education and training, as a more skilled workforce would benefit local businesses and industry.

An aim to increase the provision of education in the area is unlikely to have any direct impacts on environmental sustainability objectives. There is a risk that greater economic prosperity and economic growth could place additional pressure on natural resources and sensitive environmental features; however, a more educated and prosperous community may place environmental protection as a greater priority leading to positive effects on environmental features.

Impact mitigation:

As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
9	Supporting Our Quality of Life	0	0	0	0	0	0	X	✓	✓✓	✓✓	0	✓	✓✓	0

Appraisal summary:

This spatial objective seeks to increase the quality of life in North Lincolnshire, by increasing provision of, and access to, educational, social, sporting, health, recreational and cultural facilities. This aims to increase the wellbeing of residents and visitors, and reduce social, economic and environmental deprivation.

The objective supports a number of the sustainability objectives and has the potential for a significant positive effect in relation to social deprivation (9), healthy lifestyles (10), and access to community facilities (13). Improving community facilities – educational, social, sporting, health, recreational, and cultural – would improve quality of life and wellbeing, reducing social deprivation and exclusion; it would increase opportunities for recreation and leisure, promoting active and healthy lifestyles, and opportunities to participate in sport; it would also enable greater access to services, helping to meet local needs, and creating strong and thriving communities. As a result, the objective is likely to benefit the local economy (12) through provision and use of new facilities.

Neutral impacts are identified in relation to the environmental sustainability objectives (1–6); whilst provision of new facilities could entail new development, it is anticipated that much of this would be located within urban areas on previously developed land, and thus would avoid the most sensitive environments in North Lincolnshire. The exception to this is in relation to climate change (7); the spatial objective promotes greater activity (access) and supports provision of new facilities. This would increase carbon emissions and count against emissions reduction targets.

Impact mitigation:

As significant negative impacts have not been identified, specific mitigation is not required at this stage. The only negative impact identified is in relation to climate change as a result of increased carbon emissions associated with greater social, leisure and recreational activity in the area. New or enhanced facilities should be located where they are easily accessible by sustainable travel options to minimise emissions associated with increased access.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
10	Developing Our Visitor Economy	✓	✓/X	X	0	0	X	X	✓✓	0	✓	X	✓✓	X	0

Appraisal summary:

This Objective seeks to encourage growth of North Lincolnshire's tourist economy. It aims to achieve this by exploiting the area's high quality natural environment and cultural heritage, and promoting established tourist attractions, including the Humber Estuary, Normanby Hall, Waters Edge Visitor Centre and the Market Towns.

As the tourism industry is centred on the area's natural and historic assets, an expansion in the tourism sector may have positive effects for landscape (1), biodiversity (2) and the historic environment (8) as any future growth should support the protection and possible enhancement of the area's most important assets. However, any such expansion would need to be carefully managed to prevent an increase in visitor numbers from undermining this protection and potentially causing adverse impacts as a result of increased damage and disturbance (to features, their setting and their enjoyment). This is a particular risk for biodiversity (2) as increasing visitor numbers could lead to greater disturbance to biodiversity throughout the area.

Increased visitor numbers could also cause a range of other effects: the area's water resources could be placed under additional demand (3); carbon emissions could increase, resulting in adverse effects on climate change (7) and local air quality (6); and additional stress could be placed on local facilities (13). Increasing visitor numbers could provide an important economic stimulus, but could also have an adverse impact on housing provision (11), as more properties, particularly in rural areas, are used as short-stay or holiday lets. These adverse effects could be significant if visitor numbers increase substantially.

Sustained growth of the tourism sector would have a significant positive impact on the local economy (12), as tourist numbers and spend increase, stimulating economic activity in a range of other support sectors (i.e. hospitality, accommodation, retail, transport, etc), increasing their value and creating additional employment opportunities. This economic stimulus could help reduce social deprivation levels if new employment opportunities extend to the more deprived communities in the area.

Impact mitigation:

No significant adverse impacts have been identified. However, growth of the tourism industry would need to be carefully managed and monitored to ensure increasing visitor numbers do not undermine the quality of North Lincolnshire's landscapes, or create unsustainable levels of damage or disturbance to sensitive habitats and species. The Local Plan would need to recognise that growth in tourist numbers could conflict with objectives relating to housing and could place additional demands on local services and facilities to the detriment of residents. Safeguarding policies protecting local assets and housing stock over growth in the tourist sector, should be provided, whilst the effects of the Local Plan policies should be carefully monitored on an annual basis to ensure issues are identified at the earliest opportunity.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
11	Tackling Climate Change	0	✓	✓	✓✓?	0	✓	✓	0	0	0	X?	✓/X	0	0

Appraisal summary:

This objective seeks to tackle the causes and impacts of climate change in North Lincolnshire. It aims to promote sustainable flood management, encouraging new development to incorporate flood management in its design whilst seeking to locate it away from areas at risk of flooding, and also encourage low or zero carbon technologies and energy efficient building design, whilst promoting sustainable land management and the protection of habitats.

A principal aim of this spatial objective is to reduce flood risk associated with new development by encouraging development away from areas at risk of flooding and/or incorporating flood risk management measures into the design of the development. These aims are likely to have a potentially significant positive impact in relation to the flood risk sustainability objective (4); however, the objective does not specifically prohibit development in flood risk areas and so positive impacts could be reduced if substantial new development was located in such areas. In addition, the objective does not seek to reduce flood risk to existing communities, meaning that it would likely fail to contribute to tackling a factor behind social deprivation in the area (9).

Other positive effects of this objective may include greater protection for habitats benefitting biodiversity (2) and protection of the water environment and sensitive water features (3). The objective also seeks to tackle carbon emissions by encouraging low and zero carbon technologies, and energy efficient building design, which would benefit air quality (6) and climate change mitigation (7).

Conversely, a potential negative effect of the objective may be in relation to housing (11) as limiting areas for housing development and encouraging appropriate building design could discourage or inhibit new housing development and place greater pressure on the area's existing housing stock.

In relation to the local economy (12), impacts are predicted to be both positive and negative; the economy may benefit from new initiatives to promote low/zero carbon technologies, which offers possible diversification opportunities, as well as through improvements to the natural environment (due to its influence on the visitor economy). Alternatively, additional constraints may be placed on development, increasing costs and potentially discouraging investment.

Neutral impacts are predicted in relation to landscape (1), soil quality (5), healthy lifestyles (10), community services/facilities (13), and mineral resources (14).

Impact mitigation:

No significant negative impacts have been identified at this stage. However, there is a risk that this objective could conflict with Local Plan objectives in relation to housing. The Local Plan would need to ensure these issues are carefully balanced as further development in the floodplain could impact upon other sustainability objectives. The Local Plan could seek to promote greater housing density on suitable sites or make better use of existing housing stock. In addition, this spatial objective fails to address impacts on climate change associated with emissions from the transport sector, a significant contributor to the area's carbon emissions. Whilst impacts in relation to climate change are likely to be positive, this objective could be more robust and set out a greater ambition towards tackling the causes and impacts of climate change.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
12	Efficient Use of Our Resources	0	✓	✓✓	0	✓	✓	✓✓	0	0	0	X?	✓/X	0	✓

Appraisal summary:
 This objective seeks to encourage more prudent use of North Lincolnshire's resources, including energy, water, soils, minerals and waste. It promotes greater efficiency in the use of land and promotes sustainable building design and construction to reduce resource demands, waste generation, and pollution associated with new development. It also promotes greater use of renewable energy and low carbon energy, providing that new development does not have an unsustainable impact on the area's landscapes and communities. The objective is likely to have a positive effect in relation to tackling the causes and impacts of climate change (7) as it seeks to reduce carbon emissions across all sectors and promote more efficient use of the area's natural resources (14). This could lead to improvements in air quality (6) and soil quality (5), and also have beneficial effects for water resources/quality (3) and biodiversity (2), as the objective would increase protection for these environmental assets and discourage unsustainable resource use. Conversely, the objective could have a negative effect in relation to housing (11) and the local economy (12). The objective could support initiatives to promote higher quality, energy efficient, building design, which could conflict with aspirations to significantly increase housebuilding across the area, as these initiatives could increase developer costs and place greater restrictions on achieving acceptable developments. This could in turn have an adverse effect on the local economy, discouraging investment in the housing market. However, any such adverse effect on the economy could be balanced by a growth in other sectors, such as in renewable energy generation, technology innovation, and tourism. Landscape (1), flood risk (2), the historic environment (8), health (10), and accessibility to local services (13) are unlikely to experience direct impacts from this objective, but may be indirectly benefitted from a reduction in waste and pollution, including lower emissions to air.

Impact mitigation:
 As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
13	Ensuring Minerals Supply	X	0	0	0	0	X	X	0	0	0	0	✓✓	0	✓✓

Appraisal summary:
This objective seeks to ensure the sustainable management of North Lincolnshire's mineral resources. Exploitation of these resources must take account of social and environmental impacts, whilst development would not be supported where it conflicts with the supply of the area's most economically important resources. Mineral extraction is an intrusive process, and as a result, it can cause a wide range of negative impacts. The objective does not specifically state that new minerals sites will be developed but instead seeks to ensure their continued supply, presumably from existing sources. As such, whilst environmental impacts are possible, robust management of these sites would be required under existing consenting and permitting systems, reducing the risks to the environment. Should additional minerals sites be developed, then this assessment would need to be reviewed.
This objective is likely to have a significant positive effect in relation to mineral resources (14) and the local economy (12). The objective specifically aims to safeguard important minerals sites and ensure a sustainable supply. The minerals sector represents an important component of the local economy and so measures to promote the sustainable exploitation and management of minerals resources would ensure this sector continues to make a significant contribution. Should a further increase in minerals exploitation be proposed, this could provide a considerable stimulus to the local economy.
Potential negative effects have been identified in relation to landscape (1), air quality (6), and climate change (7). Extraction of mineral resources would continue to have a detrimental effect on local landscape character and would result in significant emissions to air, in terms of pollutants and also carbon emissions associated with the extraction, processing, and transportation of the minerals.

Impact mitigation:
As significant negative impacts have not been identified, specific mitigation is not required at this stage. However, several minor negative effects have been predicted due to impacts on the environment as a result of continued minerals extraction. Mitigation of these effects could include sensitive restoration of sites or increased screening where minerals sites are located in sensitive landscapes, and measures to reduce emissions to air (including pollutants and carbon emissions; this could include offsetting schemes and used of more energy efficient technologies (for abstraction, processing and transport of minerals).

Objective Ref.	Option	Sustainability Objectives and Impact													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
14	Delivering Sustainable Waste Management	✓/X	✓/X	✓/X	0	0	✓/X	✓	0	0	0	0	✓	✓	0
<p>Appraisal summary: The objective seeks to reduce the amount of waste generated in North Lincolnshire. It would encourage re-use and recycling initiatives, and would also promote the development of new waste management facilities whilst protecting existing facilities from incompatible development. More robust waste management and a reduction in waste generation would be likely to have a range of positive environmental effects by reducing the impacts of waste and waste pollution on the landscape (1), biodiversity (2), the water environment (3), and air quality (6). It would also benefit climate change (7) as a reduction in waste generation would also reduce emissions associated with the waste management sector and potentially reduce energy use across a wide range of other sectors. However, the development of new waste management facilities could have detrimental effects on the environment if located in sensitive areas or close to sensitive environmental features. These facilities could also generate localised air quality issues. The objective is likely to have a positive effect in relation to the local economy (12) and local facilities (13). More robust waste management could increase the waste management sector (increasing recycling and waste disposal industries) and promote job creation, whilst the creation of new waste management sites would facilitate greater access to this key local service.</p> <p>Impact mitigation: This objective has the potential to cause several adverse impacts as a result of the development of new waste management facilities. However, these impacts could be effectively managed through careful site management away from sensitive environmental areas or in close proximity to residential areas. Safeguards within the Local Plan can protect environmental features, whilst promoting the delivery of high quality and sustainable design that respects the protection of environmental features and seeks opportunities for their enhancement.</p>															

Spatial Strategy Options

Options for Growth		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Scunthorpe and Market Towns.	✓✓?	✓?	✓?	0	✓✓?	X	X	✓?	0	0	✓	✓	✓	0
B	Six Market Towns and Scunthorpe	✓✓?	✓?	✓?	0	✓✓?	X	X	✓?	0	0	✓	✓	✓	0
C	Six Market Towns, Scunthorpe and Larger Service Centres	✓/X	✓/X	✓/X	0	✓/X	✓/X	X	✓/X	✓	✓	✓	✓	✓	0
D	A New Settlement	XX?	XX?	X	0	XX?	X	X	0	✓	✓	✓	✓✓	✓	0
E	A Balanced Approach	✓/X	✓/X	✓/X	0	✓/X	✓/X	X	0	✓/X	✓/X	✓	✓	✓	0

Appraisal summary:

The five options for growth set out differing broad-scale approaches on where to concentrate development within North Lincolnshire. Essentially, options focus development in urban areas or in rural areas, to varying degrees. Option A proposes to focus development within Scunthorpe, supported by growth to a lesser extent in the six market towns of Brigg, Barton upon Humber, Epworth, Crowle, Kirton in Lindsey, and Winterton (this is a continuation of the current Core Strategy). Option B proposes to focus growth equally in Scunthorpe and the six market towns, with limited development supported in smaller rural settlements. Option C would disperse development across Scunthorpe, the six market towns, as well as Larger Service Centres across North Lincolnshire. This would place greater emphasis on rural villages to accommodate growth, and the scale of development would be proportionate to their scale, character, and capacity. Option D proposes to develop a new settlement, or a significant expansion of an existing settlement. This approach would need to be linked with another option as it would take time to develop a new community and would be unlikely to meet the needs of the entire area. Option E comprises a balanced approach to the location of new development in North Lincolnshire, and would essentially be a mixture of Options A to D. It would have a North Lincolnshire-wide focus, spreading development across the area's towns and villages beyond Scunthorpe, the market towns, and Larger Service Centres. Levels of growth in towns and villages would be dependent on their sustainability and ability to accommodate development, taking into consideration infrastructure, services, transport, employment, and environmental constraints. Larger development would still take place in Scunthorpe and the market towns.

Option A could be largely positive for many environmental aspects. This is due to the concentration of development in already highly urbanised areas and thus minimising development in rural areas, which are likely to be more environmentally sensitive and support more natural environmental features. Significant positive impacts may occur for landscape quality (1) since this approach minimises the potential for major development outside Scunthorpe and the Market Towns, and therefore will provide protection for existing high landscape character and quality elsewhere in the area. In addition, this option may have significant benefits for land and soil quality (5) as rural farmland is unlikely to be impacted. Positive impacts may also occur for biodiversity (2) and water quality (3), and will also provide new housing development (11) and provide an economic stimulus (12) for Scunthorpe and the Market Towns. This will not necessarily benefit the entire area (rural settlements in particular may experience a degree of exclusion), but it has the potential to benefit the major population centres in the area. Conversely, negative impacts may occur in relation to air quality (6), as air pollutants may become further concentrated in Scunthorpe (as well as Market Towns), which could cause a health issue for local residents, and climate change (7), as this option supports new development, which will lead to increased carbon emissions.

The impacts of Option B are likely to be very similar to Option A since development remains concentrated in Scunthorpe and the Market Towns, but with greater emphasis on the latter. At this stage, it is not possible to identify distinct differences between options A and B, although there is potential for less of a positive effect in relation to the protection of landscape character (1) and land and soil quality (5), as greater development in the Market Towns could place greater pressure on the fringes of the settlements and on the surrounding

Options for Growth		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	<p>countryside areas. However, positive impacts are still expected since development should largely remain within the settlement limits.</p> <p>Option C would promote development in the Larger Service Centres as well as Scunthorpe and the Market Towns. However, the scale of development proposed would be proportionate to their capacity and as such is likely to be relatively limited. Nonetheless, several of the environmental benefits associated with options A and B may not be realised through this option as it will promote development close to more environmentally-sensitive areas and increase risks such as damage and disturbance due to greater access to these areas. The adverse effects on air quality (6) may be reduced compared to Option A and B, as pollutants emitted by new development will be more dispersed; however, this risk would be closely associated with the scale and type of development facilitated and there is a risk that inappropriate development could create localised air quality issues. A range of positive impacts in relation to the social and economic objectives may be realised as spreading new development across North Lincolnshire may improve access to facilities and infrastructure (13), including recreational access to the countryside (10). Housing (11) and local economy (12) are also likely to benefit as new economic activity and job creation are more evenly distributed across the area.</p> <p>Option D has the potential to cause significant negative impacts to several of the environmental objectives including landscape (1), biodiversity (2) and soil quality (5) as it would involve the development of a new settlement; this new settlement would have a major impact on the natural resources of the area (likely to be a rural area) in which it is located. In addition, this option is likely to have a negative effect on air quality (6) and climate change (7) associated with the increased emissions associated with the development (construction) and use of an entirely new settlement. Conversely, positive effects may be attributed to the social and economic objectives and particularly in relation to the local economy (12) as this option could act as a major economic stimulus in North Lincolnshire.</p> <p>Option E comprises a balanced approach that could incorporate aspects of the other four options; the actual make-up of this option would be dependent on growth requirements and specific sustainability, environmental and socio-economic constraints. Consequently, this option could cause positive or negative impacts for many of the SA objectives – the environmental and social objectives in particular – which would be dependent upon how this option is implemented. At this stage it is not possible to fully predict what these effects may be; further assessment of this option would be required when more information is available. Nonetheless, positive effects on housing (11) and the local economy (12) would be likely, as would negative effects on climate change (7) as a result of increased carbon emissions associated with new development.</p> <p>Impact mitigation:</p> <p>Several potential significant negative effects on environmental objectives have been identified in relation to Option D. This is due to the major environmental disturbances that would be experienced through the development of a new settlement. These risks could be mitigated in part through careful selection of the location for the new development, avoiding areas with high environmental sensitivity. In addition, safeguards within the Local Plan can be provided to protect and enhance environmental features/considerations, whilst adherence to Government guidance and delivery of high quality and sustainable design will also contribute to the avoidance or mitigation of potential negative effects.</p> <p>All options are likely to promote significant new development and negative effects have been identified in relation to air quality and climate change. The Local Plan should seek to mitigate these effects by promoting use of sustainable materials, low carbon technologies and energy efficiency measures. Development should also be designed to allow for the retention or provision of substantial green and open space to benefit from the filtration and carbon sink effects of new habitats.</p>														

Options for Future Housing Growth		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Baseline Population Growth: 365 homes per year	X	X	X	0	X	X	X	X	0	0	✓	✓	X	0
B	Medium Economic Projection: 452 homes per year	X	X	X	0	X	X	X	X	0	0	✓	✓	X	0
C	Longer Term Economic Growth: 583 homes per year	X	X	X	0	X	X	X	X	0	0	✓	✓	X	0
D	Aspirational Economic Growth (Core Strategy): 754 homes per year	XX	XX	XX	0	XX	XX	XX	XX	0	0	✓✓	✓✓	XX	0

Appraisal summary:

Each of these options seek to deliver significant new housing within North Lincolnshire. This is to address several issues including increasing local housing supply to benefit both the existing population and predicted future population growth; meet the needs of groups with differing housing requirements; and support economic growth and the retention of the local labour force. Option D will aim to deliver more than twice the number of homes each year than Option A.

The location of these new homes has not yet been determined and so it is not possible to comprehensively assess the potential impacts of each option. However, it is likely that the provision of significant new housing would have a range of negative effects on the environment. A high level of new housing would inevitably place pressure on undeveloped/greenfield land and would be likely to adversely affect existing landscape character and quality (1), biodiversity (2), water (3) and soil resources (5), as well as increase the risk of an impact on local air quality (6) and heritage assets (8). New development on this scale would also result in significant greenhouse gas emissions during both construction and operation, adversely affecting the achievement of targets to reduce such emissions, whilst also potentially inhibiting objectives to increase resilience and adaptability to climate change (7). There is also a potential risk to material assets, particularly provision of key local services, community facilities, transport infrastructure and open space, which may all experience increased pressure through greater demand. The scale and significance of these effects is likely to increase as the number of homes to be delivered also increases, so Option D has the potential to significantly impact on many of the environmental objectives.

The provision of new homes is also likely to contribute to several of the sustainability appraisal objectives. In particular, the provision of new homes will improve access to affordable accommodation and is likely to help meet the needs of different groups by increasing the range of dwelling sizes, types and tenures (11). Significant house building is also likely to have a positive economic impact (12) supporting economic growth in the construction sector, providing new job opportunities for residents and improving skills and employability. The greater the scale of house building, the greater the benefits likely to be realised.

Neutral effects on several sustainability appraisal objectives are also predicted. These include social deprivation (9) and the health of the local population (10), as well as on local mineral resources (14). In addition, it is likely that increased housing will have a neutral impact in relation to reducing flood risk (4); application of Government policy and guidance would minimise the risk of inappropriate new development in areas at risk of flooding. In addition, these options do not include measures to reduce flood risk to existing areas and it is not likely that new development will reduce flood risk to existing communities.

Impact mitigation:

A large number of negative impacts have been identified, particularly in relation to Option D where the particularly large volume of new housing has the potential to cause a wide range

Options for Future Housing Growth		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
of significant adverse environmental impacts. However, many of these impacts can be mitigated through appropriate safeguarding policies in the Local Plan. These include environmental protections and measures to promote the environmental and sustainable design of new housing developments. Careful and robust site selection/allocation in the Local Plan is imperative to avoid or minimise risks to particularly sensitive sites/areas. In addition, policies to enhance existing facilities or provide appropriate levels of new infrastructure i.e., key local services, community facilities and transport infrastructure, can mitigate negative impacts.															

Options for Housing Land Allocations		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Seek to take forward existing unimplemented housing land allocations to meet the housing needs	X	X	X	0	X?	X	X	X	0	0	✓✓	✓	X	0
B	Seek to allocate alternative sites to meet the housing needs	XX?	XX?	X	0	X?	X	X	X	0	0	✓✓	✓	X	0

Appraisal Summary:

Both options seek to allocate land for housebuilding in North Lincolnshire. Option A seeks to use existing allocations that have yet to be allocated whilst Option B would effectively deallocate existing housing sites and seek to allocate alternative sites through the Local Plan process.

Both options will involve development of significant areas of land and therefore it is anticipated that they could have an adverse effect on several of the environmental objectives including landscape character and quality (1), biodiversity (2), water resources (3), air quality (6) and climate change (7), and the historic environment (8). In relation to Option A, these impacts are likely to be relatively minor as the acceptability of the development on the allocated sites has already been determined through the development on the current Local Plan and its supporting Sustainability Appraisal. For Option B, there is a risk that new sites could be allocated in areas of higher environmental sensitivity, including agricultural land (5), and whilst the Local Plan would seek to mitigate any significant adverse impacts identified, it is possible that sites in such areas could still be taken forward as other benefits outweigh potential negative effects. As such, it is possible that adverse effects on these environmental objectives could be more significant than for Option A.

In addition, by increasing housing provision in the area, both options have the potential to adversely impact on the provision of local services and facilities (13), as a larger population may place existing services under additional pressure.

Assuming that both options reflect agreed housing targets and Government guidance regarding affordable housing, they are likely to have a significant positive impact in relation to housing (11) by increasing housing provision in the area, and are also likely to have a positive effect on the economy (12), as they will provide an economic stimulus and also provide new job opportunities and opportunities to develop new skills and training.

It is anticipated that social deprivation (9), healthy lifestyles (10), and material assets (14) would remain largely unaffected by both options.

Impact Mitigation:

Many of the negative environmental impacts associated with development of new housing can be minimised or mitigated using safeguarding policies in the Local Plan and through a robust site allocation process that seeks to avoid the most sensitive sites and ensures development-level mitigation actions are identified. New housing developments can be designed to maximise sustainability, and environmental protections regarding the selection of sites can minimise impacts on landscape character and biodiversity. Policies to enhance services and facilities in the area may be needed to mitigate negative impacts associated with an increasing population.

Options for Housing Mix		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Ensure all housing developments provide a mixture of house types, that reflect the SHMA 2017	0	0	0	0	0	0	0	0	0	0	✓✓	0	0	0
B	Ensure all housing developments provide a mixture of house types on a case-by-case basis, using evidence which is different to the SHMA.	0	0	0	0	0	0	0	0	0	0	✓	0	0	0

Appraisal Summary:

These two options concern the housing mix that housing developments would need to deliver. As such, they have a largely neutral impact on most of the SA objectives as the housing mix on a development site is unlikely to affect environmental criteria or social or economic factors. The exception to this is in relation to housing (11) as both options support this objective, which aims to ensure an adequate supply of housing and provide housing that meets the needs of the local community (through an appropriate mix of dwelling sizes, types, and tenures). Option A would provide a housing mix that reflects the most recent (2017) SHMA recommendations and as such is likely to have a significant positive effect in relation to this objective. For Option B, the housing mix would be determined on a case-by-case basis; whilst this approach would provide greater flexibility to deliver different housing mixes at different sites that reflect particular local requirements, there is greater uncertainty with this option as to what outcomes would be achieved and there is a risk that required volumes of particular housing types or tenures may not be delivered. Therefore, whilst this option is still likely to have a positive impact in relation to the housing objective, this uncertainty is reflected in the assessment score.

Impact Mitigation:

As negative impacts have not been identified, specific mitigation is not required at this stage.

Options for Housing Density		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Set the housing density based on evidence from the NL SHLAA	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0
B	Determine housing density on a site by site basis, through the Development Management process.	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0
C	Set out specific density requirements for each site within planning policy	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0

Appraisal Summary:

These three options consider different approaches to setting housing density for new housing developments. The current Core Strategy contains a policy on housing density, derived from evidence from the Strategic Housing Land Availability Assessment (SHLAA), which states that "Housing Development should be in keeping with the character of the area, and should support development of sustainable, balanced communities". Option A would continue to apply the recommendations from the SHLAA when setting housing density. Option B would not follow the SHLAA recommendations but would determine housing density on a case-by-case basis through the planning application process. Option C proposes a third approach whereby housing density for each site allocation is set out in the Local Plan as policy.

Whilst the three options propose different approaches to setting housing density, no information is available regarding the implications of these approaches on density levels that would be set. As such, it is not possible at this stage to determine whether the options would be likely to impact upon many of the SA objectives. Housing density (1) could have implications for some of these objectives, primarily landscape (1), biodiversity (2), water resources (3), air quality (6), climate change (7), healthy lifestyles (10) and community services (13), with a high housing density potentially creating adverse effects. However, each of these options should take account of wider environmental, social and sustainability considerations when setting housing density for different housing developments, reducing the risk of an adverse effect. Therefore, at this stage of the Local Plan process, the assessment considers that the impact on the majority of objectives is likely to be neutral. The exceptions to this are in relation to housing (11) and the local economy (12), which are both likely to benefit from these options as they effectively support the provision of new housing in the area and will help facilitate the design and approval of new development. This will benefit the local economy as a clear framework setting out the guidelines for new housing development will provide greater certainty, which will in turn increase investor confidence in the local economy.

Impact Mitigation:

As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Options for Delivering Rural Exception Sites		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Continue with current approach – delivering affordable housing through rural exception sites, delivering 100% affordable homes on these sites.	X	X	X	0	X	X	X	X	0	0	✓✓	✓	X	0
B	Seek to provide affordable housing on rural exception sites, allow inclusion of market housing to cross-subsidise affordable provision.	X	X	X	0	X	X	X	X	0	0	✓	✓	X	0

Options for Delivering Rural Exception Sites		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<p>Appraisal Summary:</p> <p>Both options aim to increase the provision of affordable housing in North Lincolnshire and seek to achieve this through development on 'rural exception sites', which are sites adjacent to existing settlements but outside their development limits. Such sites would not normally be considered for development. Option A seeks to deliver only affordable housing on these sites, whilst Option B would allow the inclusion of market-led housing types on these sites also. No information is available at this stage regarding the number of rural exception sites that could be included in the Local Plan or the number of houses that could be delivered through this policy.</p> <p>Both options have the potential to adversely impact upon the environmental objectives. Development of sites outside settlement limits increase the risk of an adverse impact on landscape character (1), biodiversity (2), water resources (3), soil quality (5), air quality (6), climate change (7), and the historic environment (8). Impacts on many of these aspects are linked to the risk of development on previously undeveloped (greenfield) land or the potential to impact on land with or adjacent to designated sites/features, and because of a potential increased population placing additional pressure on local resources (causing damage, disturbance or depletion). There is a risk that this development may affect agricultural land and impact upon both soil quality and water resources. In addition, there is a risk that development could be delivered in areas at risk of flooding (although this would be contrary to current Government guidance).</p> <p>The scale of impact is difficult to predict at this stage due to a lack of information regarding the number of exception sites and number of houses that would be delivered by either of these policies; therefore, there is a risk that this assessment might under-estimate the significance of impacts if the scale of new development (numerous exception sites) is large. Conversely, if the scale of development is very low (few exception sites) then the risk of an adverse impact on many of the environmental objectives will be lower.</p> <p>Positive effects are predicted in relation to housing (11) and the local economy (12). The delivery of new affordable housing is a key aspect of the housing objective; Option A is considered likely to have a significant positive effect on this objective as it is an implicit purpose of this option to deliver 100% affordable housing. For Option B, the amount of affordable housing is not specified and there is uncertainty regarding what proportion would be market housing; whilst this option is still likely to have a positive effect for this objective, this uncertainty means that there is a risk that this option will not deliver the required level of affordable housing.</p> <p>In addition, positive effects on the local economy are predicted for both options as new house building would act as an economic stimulus for the area.</p> <p>Impact Mitigation:</p> <p>Many of the negative environmental impacts associated with development of new housing can be minimised or mitigated using safeguarding policies in the Local Plan and through a robust site allocation process that seeks to avoid the most sensitive sites and ensures development-level mitigation actions are identified. New housing developments can be designed to maximise sustainability, and environmental protections regarding the selection of sites can minimise impacts on landscape character and biodiversity. Policies to enhance services and facilities in the area may be needed to mitigate negative impacts associated with an increasing population.</p>															

Options for Providing Housing for Older People		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Allow developers to make their own decisions on house types and building standards.	X	0	X	0	0	0	X	0	0	0	✓	✓	0	0
B	Require developers to build a proportion of houses within housing schemes to the new optional building regulations standard aimed at making homes more accessible and adaptable.	0	0	0	0	0	0	0	0	✓	0	✓	✓	0	0
C	Require developers to build bungalows, level access flats, multi-generational housing, sheltered housing or extra care housing as a proportion of all new development.	0	0	0	0	0	0	0	0	✓	0	✓	✓	✓	0
D	Allocate specific sites for housing schemes for older people or those requiring extra care.	0	0	0	0	0	0	0	0	✓	0	✓	✓	✓	0

Options for Providing Housing for Older People		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<p>Appraisal Summary: These four options each consider different ways to provide housing for older people in North Lincolnshire. Option A would not place any requirements on developers to incorporate housing for older people into development proposals; instead developers would be given complete flexibility to design housing developments that meet lower standards and deliver house types that suit the developer. Option B would require developers to ensure a certain (as yet unspecified) proportion of houses meet optional building standards, which are aimed at making homes more accessible. Option C would require developers to build a certain proportion of housing specifically tailored for older people. Option D would allocate specific sites for older people, within which all houses would be built to suit their needs.</p> <p>All four options would largely have a neutral impact in relation to the environmental objectives as the requirement for, or scale of, older people's housing is not likely to affect these criteria. The exception is in relation to Option A where the lack of policy guidance steering new development could result in development proposals that impact on local landscape character (1), whilst application of lower building standards may mean that new housing is less energy efficient, which could adversely affect the climate change objective (7). Each of the options is likely to have a positive impact in relation to housing provision (11) and the local economy (12). Whilst there is a risk that this option will not cater for the needs of older people, it will support the delivery of new housing in the area, which is required to meet both current and future housing requirements. New housing development would provide an economic stimulus (12). It is predicted that options B–D would also have a positive effect in relation to social deprivation (9) as an increase in housing for older people may help alleviate social exclusion experienced by older people who are unable to live in the local community or find the housing a barrier to participating in community life. Linked to this, options B–D may also have a positive impact on accessibility (13) as they would support older people to continue living in existing local communities close to key facilities and services. This benefit may not be realised in relation to Option D if new housing allocations are located away from existing communities, facilities and services.</p> <p>Impact Mitigation: As significant negative impacts have not been identified, specific mitigation is not required at this stage.</p>															

Options for Providing Gypsy and Traveller Accommodation		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Seek to allocate sites as part of residential allocations.	0	0	0	0	0	0	0	0	✓/X	✓	✓✓	0	✓	0
B	Seek to allocate sites specifically for Gypsies and Travellers and travelling show people.	0	0	0	0	0	0	0	0	✓	✓	✓✓	0	✓	0

Appraisal Summary:
 Both options seek to deliver additional housing sites for use by Gypsies, Travellers and travelling show people. Option A would achieve this by accommodating these groups as part of regular residential allocations, whilst Option B would allocate separate sites for specific use by these groups.
 Both options would be unlikely to have an impact on the environmental objectives (1-8). In relation to the social and economic objectives, provision of additional sites for use by Gypsies, Travellers and travelling show people would help alleviate levels of social deprivation experienced by these groups (9) and would make a positive contribution towards promoting healthy lifestyles (10) and community facilities (13) by helping to enable access by these groups to healthcare facilities, recreational opportunities, public open space, and other key local facilities. These impacts might be more significant through Option A through which sites for Gypsies, Travellers and travelling show people would likely be more integrated into the wider community. This might help break-down barriers between these groups and the wider community, reducing social exclusion and helping to promote educational attainment levels. Conversely, there is a risk that the wider community could perceive these groups as a risk as a result of widespread negative perceptions. There is also a risk that these groups may not wish to integrate into the wider community due to concerns that they could experience prejudice or a loss of identity. Option B might alleviate some of these issues because these groups would be accommodated on their own specific sites; however, such an approach might reduce some of the beneficial effects described for Option A because it would maintain a physical barrier between these groups and the wider community. Nonetheless, both options are likely to make a significant contribution to the housing objective (11) as they will provide new accommodations sites for these groups.

Impact Mitigation:
 As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Options for Delivery of Self-Build and Custom Build Development		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Promote local authority land available specifically for self-builders via the Self-Build and Custom Build Register.	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0
B	Provide specific serviced plots on larger residential schemes specifically for self-builders.	0	0	0	0	0	0	0	0	0	0	✓	✓	0	0

Appraisal Summary:

Both Options seek to support the self-build and custom build housing sector by providing allocated sites within which these forms of housing would be encouraged. Option A would allocate local authority land for this purpose, whilst Option B would instead allocate plots on larger residential schemes for self and custom build homes.

The availability of self-build and custom build plots is unlikely to have an effect on most SA objectives. However, both options are likely to have a positive effect in relation to housing provision (11) because they will contribute towards the area's housing targets and will improve access to a mix of dwelling sizes and types. They are also likely to make a positive contribution to the local economy (12) as an increase in self-build and custom build housing will provide an economic stimulus, creating new job opportunities and increasing opportunities for education, learning and skills training in the housing sector and supporting industries.

Impact Mitigation:

As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Options for Employment Sites Within North Lincolnshire		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Retain all existing allocated employment sites as identified within the Housing and Employment Land Allocations DPD.	X	X	X	0	X	X	XX	X	0	0	0	✓✓	0	0
B	Consider alternative uses on some of the sites which are currently allocated for employment.	X	X	X	0	X	X	X?	X	0	0	0	✓	0	0
C	Allocate new sites for employment uses within North Lincolnshire.	XX?	XX?	X	0	X	X	XX	X	0	0	0	✓✓	0	0
D	Allocate new sites for employment uses within North Lincolnshire alongside the area's main transport corridors.	0	X	X	0	X	X	XX	X	0	0	0	✓✓	0	0

Options for Employment Sites Within North Lincolnshire		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<p>Appraisal Summary:</p> <p>These four options propose differing approaches to the allocation of employment sites in North Lincolnshire. Option A would simply retain existing employment site allocations as identified in the Housing and Employment Land Allocations Development Plan Document (DPD). This includes a mix of sites across the area including sites on the outskirts of Scunthorpe and the Market Towns, and sites in more rural areas close to main transport links. No additional employment site allocations would be provided. Option B could result in some of these existing site allocations being de-allocated and used for different purposes; sites in rural areas would instead accommodate uses that are acceptable to their countryside locations (i.e., agriculture, forestry, recreation, tourism etc), whilst sites on the edge of Scunthorpe and the Market Towns would offer scope for a wider range of alternative uses, including housing. Option C would abandon allocations in the DPD and allocate new sites for employment uses. This may result in an overall increase or decrease in employment site allocations in the area. Option D would also allocate new sites for employment uses but would focus these allocations alongside North Lincolnshire's main transport links. The location of these new employment sites has not yet been determined and so it is not possible to comprehensively assess the potential impacts of each option.</p> <p>Each option has the potential to have an adverse impact on most of the environmental objectives as new development may place pressure on undeveloped/greenfield land and would be likely to adversely affect existing landscape character and quality (1), biodiversity (2), water (3) and soil resources (5), as well as increase the risk of an impact on local air quality (6) and heritage assets (8). These issues may be particularly significant in relation to options C and D because new site allocations could be located in areas of higher environmental sensitivity. New development would also result in significant greenhouse gas emissions during both construction and operation (7). These options would be expected to have a positive effect in relation to the local economy (12) as providing new employment infrastructure will support investment and an increase in economic activity, and could help diversify the local economy, which in turn could provide new job opportunities and access to skills and training.</p> <p>However, some differences may be apparent between the options; Option B may result in a reduction in the number of employment sites or could promote alternative uses that have lesser environmental risks or support other objectives i.e., agricultural use (5), recreation purposes (10) or new housing (11). Such uses may generate fewer carbon emissions and so may not have such an adverse effect on climate change objectives (7). However, a reduction in employment site provision may impact on the local economy (12) as less employment land provision or a narrower range of employment sites may make economic investment and growth harder to achieve. In addition, Option D aims to focus employment sites along the area's main transport corridors; this approach may reduce the significance of the potential environmental impacts, particularly in relation to landscape.</p> <p>Impact Mitigation:</p> <p>Allocation of employment sites has the potential to have a significant adverse effect on the climate change objective as the construction and operation of new development would result in significant new carbon emissions. To mitigate this effect, the Local Plan should promote policies that seek to reduce carbon emissions across North Lincolnshire as a result of all activities. This includes policies that promote the retention of existing important habitats and creation of new habitats; protection of soil resources; improved sustainable waste management; and measures to promote renewable energy generation, energy efficiency, sustainable and high-quality design, and sustainable transport options.</p> <p>In addition, Option D has the potential to significantly affect landscape character and biodiversity. These impacts can be minimised or mitigated using safeguarding policies in the Local Plan and through a robust site allocation process that seeks to avoid the most sensitive sites and ensures development-level mitigation actions are identified.</p>															

Options for North Lincolnshire's Rural Economy		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Support and encourage genuine proposals for rural enterprise within North Lincolnshire's rural areas. This option would help to facilitate and encourage small-scale employment proposals and help to reduce the need to travel in our rural areas.	X	X	X	0	X	0	✓/X	0	0	0	0	✓✓	0	0
B	Allocate sites for small-scale rural employment opportunities. This option would target specific small-scale employment proposals within the rural area allowing new/established enterprises the scope to grow.	X	X	X	0	X	0	✓/X	0	0	0	0	✓✓	0	0

Options for North Lincolnshire's Rural Economy		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<p>Appraisal Summary:</p> <p>These two options seek to support and promote North Lincolnshire's rural economy by enabling the development of new rural employment sites. Option A would include a policy to facilitate small-scale development (building conversions where agricultural buildings are no longer needed and limited new development) to promote rural enterprise. Option B would specifically allocate sites for small-scale employment proposals.</p> <p>Both options may have minor adverse effects on several of the environmental objectives caused by the construction and operation of new development (including conversion of existing buildings). Landscape character (1), biodiversity (2), water resources (3), and soil resources (5) may experience some negative effects due to damage or disturbance. Emissions to the atmosphere (7) caused by the operation of businesses may adversely impact on the climate change objective (7), but this may be more than offset by reduced transport emissions as people in rural areas are then able to work closer to home. Both options may make a significant positive contribution to the local economy (12), helping to support and grow rural enterprise, and potentially diversify the rural economy, whilst also creating new employment opportunities.</p> <p>Impact Mitigation:</p> <p>Many of the negative environmental impacts associated with development of new rural employment sites can be minimised or mitigated using safeguarding policies in the Local Plan and through a robust site allocation process that seeks to avoid the most sensitive sites and ensures development-level mitigation actions are identified. This includes policies that promote the retention of existing important habitats and creation of new habitats; protection of soil resources; improved sustainable waste management; and measures to promote renewable energy generation, energy efficiency, sustainable and high-quality design, and sustainable transport options.</p>															

Options for the Visitor Economy		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Concentrate on existing tourist sectors. This option would look to retain and expand existing tourist facilities in North Lincolnshire.	✓	✓/X	X	0	0	X	X	✓	0	✓	X	✓✓	X	0
B	Develop new tourist attractions. This option would be to seek and encourage new tourist attractions into North Lincolnshire.	✓	✓/X	X	0	0	X	X	✓	0	✓	X	✓✓	X	0

Options for the Visitor Economy		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<p>Appraisal Summary:</p> <p>These two options seek to expand the tourism sector in North Lincolnshire. Option A would achieve this by focusing on expanding existing tourism sectors and existing tourist facilities. Option B would seek to diversify the tourism sector and encourage new tourist attractions and facilities. No information is currently available on the scale of growth that would be achieved or where new tourist attractions/facilities would be located.</p> <p>Both options would have broadly similar impacts. As much of the tourism industry is centred on the area's natural and historic assets, an expansion in the tourism sector may have positive effects for landscape (1), biodiversity (2), and historic environment (8) as this expansion would rely upon the preservation and possible enhancement of the district's most important assets. However, this expansion would need to be carefully managed otherwise increasing visitor numbers could undermine this protection and potentially cause adverse impacts as a result of increased damage and disturbance. This is a particular risk to biodiversity (2) where an increase in visitor numbers could lead to greater disturbance to sensitive areas throughout the area.</p> <p>Increased visitor numbers could also cause a range of other effects: an increase in visitor numbers could place additional demand on the area's water resources (3); could increase carbon emissions, resulting in adverse effects on climate change (7) and local air quality (6); and place additional stress on local facilities (13). Increased visitor demand for accommodation could act as an economic stimulus, but could also have an adverse impact on housing provision (11) as more properties, particularly in rural areas, are used as short-stay or holiday lets. These adverse effects could be significant if visitor numbers increase substantially.</p> <p>Significant positive impacts are likely on the local economy (12) as the tourism sector grows, stimulating economic activity in a range of other support sectors (i.e., food, accommodation, retail, etc), creating additional employment opportunities. This economic stimulus could help reduce social deprivation levels if new employment opportunities extend to the more deprived communities in North Lincolnshire.</p> <p>Impact Mitigation:</p> <p>A range of potential negative effects have been identified for these options. An expansion of the tourist sector has the potential to impact on the air quality and climate change objectives as increasing visitor numbers would result in significant new carbon emissions. To mitigate this effect, the Local Plan should promote policies that seek to reduce carbon emissions across the area as a result of all activities. This includes policies that promote the retention of existing important habitats and creation of new habitats; protection of soil resources; improved sustainable waste management; and measures to promote renewable energy generation, energy efficiency, sustainable and high-quality design, and sustainable transport options.</p> <p>There is also a risk that these options could conflict with Local Plan objectives in relation to housing and community services/facilities, including water resources. Growth of the tourism industry would need to be carefully managed and monitored to ensure increasing visitor numbers do not place additional demands on local services and facilities to the detriment of residents. Safeguarding policies protecting local assets and housing stock over growth in the tourist sector, should be provided, whilst the effects of the Local Plan policies should be carefully monitored on an annual basis to ensure issues are identified at the earliest opportunity.</p>															

Options for Scunthorpe Town Centre		Sustainability Objectives and Impact													
Objective Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Retain or make only minor amendments to the Town Centre boundary, including the primary shopping as it currently is.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	Significantly amend the Town Centre boundary, including the primary shopping frontages, to allow a greater/different mix of town centre uses.	✓/X	0	0	0	0	0	✓	✓/X	0	0	✓	✓	✓	0

Appraisal Summary:

These two options seek to revitalise Scunthorpe town centre, which is the main retail and service centre in North Lincolnshire. Option A will retain the town centre in its present form and promote it as a retail centre, whilst Option B will expand the centre boundary and diversify its uses. Both options are likely to have neutral impacts in relation to most of the environmental objectives. The exception is in relation to Option B, which could have a positive effect in relation to Scunthorpe's townscape, with redevelopment and regeneration initiatives potentially improving landscape character and quality (conversely, inappropriate development or regeneration could have an adverse effect). In addition, Option B could have a positive effect in relation to climate change as diversifying town centre use, to include new employment, housing and recreation uses, could reduce carbon emissions associated with the transport sector as people are able to live, work and spend their leisure time in closer proximity. This is reflected in potential positive effects in relation to several of the social objectives, including housing provision (11) and access to community facilities (13). Option B is also likely to have a positive effect on the local economy (12) as it could help stimulate and support regeneration initiatives that could lead to an important economic stimulus for the area's economy.

Impact Mitigation:

As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Options for Biodiversity and Geodiversity		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	In addition to the requirement to protect all biodiversity and geodiversity designated sites, where development is proposed adjacent to a designated site a buffer zone will be required around the site.	✓	✓✓	✓	0	✓	✓	✓	0	0	✓	0	✓/X	✓	0
B	In addition to the requirement to protect all biodiversity and geodiversity designated sites, the enhancement of existing biodiversity in such designated sites should be encouraged through the development of adjacent sites.	0	✓	0	0	0	0	0	0	0	0	0	✓/X	0	0

Appraisal summary:

These two options seek to deliver additional protection and enhancement to designated wildlife sites in North Lincolnshire. This is to address the key challenge of balancing the delivery of new development against the need to protect biodiversity and geodiversity. Option A involves setting aside a physical area of land around development sites that are adjacent to a designated site, with the intention that this will create a buffer, reducing potential impacts (i.e., damage, disturbance, fragmentation, etc.) associated with the development. Option B comprises encouraging enhancement of the designated site as part of the delivery of the new development. A key difference between these options, which could have an important influence over the wider impacts of each option, is that Option A would create a physical buffer, distancing the development site from the protected site to some degree, whereas Option B, whilst encouraging enhancement of the designated site, could result in development immediately adjacent to the site. It should be noted that both options are inherently tied to the delivery of new development, which may have both positive (economic and social) and negative (environmental) impacts; it is assumed that the Local Plan will seek to mitigate such negative effects through additional policy protections.

The scale and nature of buffer zones (Option A) or enhancements (Option B) has not yet been determined. However, it is likely that both options will have a positive impact on biodiversity (2), as both options will deliver additional protections. However, Option A is likely to have a more of a significant impact on biodiversity (2) as it will provide a physical buffer between the development and the designated site, which will both reduce impacts on the site and also offer opportunities for new habitat creation and creation of new green infrastructure.

As option A would involve the retention or creation of a buffer area, additional benefits may be realised; these include positive effects on landscape character and quality (1), land and soil quality (5), and water quality (3). Additional indirect benefits of Option A may include improved local air quality (6), as vegetation cover in the buffer zone could filter air pollutants;

Options for Biodiversity and Geodiversity		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	<p>new access to green space and opportunities for recreation, promoting healthy lifestyles (10); and provision and protection of green infrastructure (13). There may also be a minor positive impact on climate change (7) as new habitats could offset carbon emissions from the new development. Many of these additional indirect benefits are unlikely to be realised for Option B, as they are connected to the creation of the buffer area rather than to the enhancement of the designated site.</p> <p>In relation to potential impacts on the local economy (12), these may be both positive and negative. Minor positive impacts through new job creation associated with creation of the new buffer areas (Option A), their management, and other linked economic opportunities (i.e., recreation activities). It's also possible that delivery and management of enhancement measures to designated sites may deliver some minor economic benefits (Option B). However, it is also possible that these biodiversity measures may create additional costs and constraints for development, which could discourage developers from investment in schemes in North Lincolnshire.</p> <p>For historic environment (8), deprivation (9), housing (11), and mineral development (14) these options are unlikely to have an impact either directly or indirectly unless there are specific circumstances linked directly to specific development proposals; at this stage of the Local Plan process, it is not possible to reasonably predict any such effects.</p> <p>Impact mitigation:</p> <p>As significant negative impacts have not been identified, specific mitigation is not required at this stage.</p>														

Options for Landscape		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Continue with the current policy approach adopted within the Core Strategy and North Lincolnshire Local Plan saved policies that designate landscapes.	✓✓	✓	✓	0	✓	0	0	✓	0	✓	0	✓/X	✓	0
B	Include a criteria-based policy that is applicable to both rural and urban areas to protect landscape with important character.	✓✓?	✓?	✓?	0	✓?	0	0	✓?	0	✓?	0	✓/X	✓?	0
C	Identify areas of specific landscape character by setting out what makes them special using the North Lincolnshire Character Assessment.	✓✓?	✓?	✓?	0	✓?	0	0	✓?	0	✓?	0	✓/X	✓?	0
D	Rely on the National Landscape Character Areas and the North Lincolnshire Landscape Areas (included in the Supplementary Planning Guidance) to guide development proposals without creating specific policy/policies.	✓✓?	✓?	✓?	0	✓?	0	0	✓?	0	✓?	0	✓/X	✓?	0

Appraisal summary:

Each of these options is focussed on protecting landscape quality in North Lincolnshire. Option A promotes continuation of the existing policy-based approach to designate landscapes and assess development proposals in line with this. Option B advocates the use of a new criteria-based policy approach; it is assumed this would set out a series of benchmarks relating to landscape quality that new development proposals would be tested against. Both Option C and D rely on guidance-based approach rather than specific Local Plan policies to promote landscape protection. Option C would use the North Lincolnshire Character Assessment, which identifies areas of unique character, to guide whether development is acceptable. Option D would use a range of national and local guidance to achieve this aim.

Options for Landscape		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	<p>Given that all four options aim to protect landscape quality (1), significant positive impacts may be realised with each option. However, at this stage it is not possible to identify potential differences between the options as a result of uncertainties as to how effective this protection would be. Option A advocates a continuation of the current policy-approach in which the protection measures are clearly set out; this would offer a robust measure against which development proposals could be determined. Option B adopts a criteria-based approach and the level of protection afforded would depend upon the specific criteria established; these criteria could provide very strong protection or conversely could be relatively weak. Options C and D utilise a guidance-based approach, which is potentially open to greater interpretation than a policy-approach, and as such, could provide less protection. With options B–D, there is greater uncertainty in the level of protection that would be achieved.</p> <p>Protection of landscape character and quality may provide wider benefits including positive effects for biodiversity (2), water quality (3), land and soil quality (5), historic environment (8), recreational amenity (10), and green infrastructure (13). Negligible effects are predicted for flood risk (4), air quality (6), climate change (7), deprivation (9), housing (11), and mineral development (14).</p> <p>Potential mixed impacts could occur in relation to the local economy (12). Robust landscape protection could provide an important contribution to the delivery of the Local Plan Vision, supporting the desired growth tourism economy, and helping to make North Lincolnshire an attractive place for investment and for people to live and work. Conversely, landscape protection could constrain development and could discourage investment in the area if policies/guidance are considered too restrictive.</p> <p>Impact mitigation: As negative impacts have not been identified, specific mitigation is not required at this stage.</p>														

Options for Green and Blue Infrastructure		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Create a Green and Blue Infrastructure Strategy linking parks, natural green spaces, historic landscape and waterscapes providing quality greenspace between settlements, connecting town to country with a natural and recreational resource.	✓	✓	✓	✓	✓	✓	✓	✓	0	✓	0	✓	✓	0
B	Identify specific opportunities for major development proposals to provide additional green infrastructure to help provide any missing links in the network.	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?	0	✓?	0	✓/X	✓	0

Appraisal summary:

These options aim to increase green and blue infrastructure provision in North Lincolnshire, and improve connectivity between such areas to create a coherent network across the area. Option A involves creating a strategy to link parks, green space, historic landscapes and waterscapes, and with a particular focus on connecting rural and urban areas. Option B proposes to create new infrastructure through delivery of major development proposals. New infrastructure is therefore inherently connected to new development and there is a risk that this approach may be less strategic and more piecemeal, leading to greater uncertainty as to whether a coherent green/blue infrastructure network would be created. Overall, Option A is likely to provide greater certainty that the infrastructure created will achieve strategic aims and support delivery of the Local Plan Vision, whilst there is greater uncertainty associated with Option B over what would be achieved and its suitability.

The type and amount of infrastructure that will be created is currently unknown, however, it is likely both options may have a positive impact on landscape (1), biodiversity (2), the water environment (3), air quality (6), and land and soil quality (5) as they have the potential to lead to greater environmental protection and enhancement. The provision of green and blue infrastructure may also improve flood risk management (4). Increasing the connectivity of green space and waterbodies may also contribute to adaptation to climate change (7), as habitats are connected and allow species to shift their range according to changing climate. It is possible both these options may benefit the historic environment (8) through providing increased access to, and enjoyment of, historic assets in the area. However, for Option A there is greater certainty that such effects may be realised. For Option B, provision of new blue/green infrastructure is directly linked to the delivery of major new development proposals; such proposals could have negative environmental impacts (i.e., direct impacts on biodiversity, water resources and carbon emissions, and present possible risks to landscape quality and soil resources), which would need to be balanced against any benefits achieved through new infrastructure provision.

In terms of socio-economic benefits, both options may provide new recreation opportunities and increase accessibility, which may benefit healthy and active lifestyles (10), and could

Options for Green and Blue Infrastructure		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	<p>lead to the delivery of new infrastructure assets in the area (13).</p> <p>The local economy (12) may benefit from both options as provision of new green infrastructure may create new job opportunities, whilst supporting increased tourism and recreation. In addition, improving existing infrastructure and creating new infrastructure may make North Lincolnshire a more attractive place for investment and for people to live and work. However, for Option B, the requirement to provide green and blue infrastructure alongside major development may be viewed as a burden for developers and discourage investment in North Lincolnshire. Therefore, there is potential for mixed impacts associated with Option B on the local economy (12).</p> <p>Negligible impacts are predicted in relation to social deprivation (9), housing (11), and mineral resources (14).</p> <p>Impact mitigation:</p> <p>As significant negative impacts have not been identified, specific mitigation is not required at this stage.</p>														

Options for Local Green Spaces		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Develop a criteria-based policy approach to development that is applicable to all development sites.	✓?	✓?	✓?	✓?	✓?	✓?	✓?	0	0	✓?	0	✓/X	✓?	0
B	Designate specific land as LGS through the Local Plan in accordance with the requirements of the NPPF.	✓	✓	✓	✓	✓	✓	✓	✓	0	✓	0	0	✓	0

Appraisal summary:

These options seek to provide the protection of existing green space and provide new green space within North Lincolnshire. Option A would utilise a criteria-based policy approach against which new development proposals would be assessed – new development meeting specified thresholds would be required to deliver new green space. This would lead to a development-orientated approach to delivery of new green space, whereby new green space would only be created if new development is delivered. Conversely, Option B would take a more strategic approach and would designate land as green space in the Local Plan. This approach would provide greater certainty that new green space would be created and would provide a more holistic approach to the identification and designation of green space.

In relation to Option A, positive impacts may be achieved in relation to many of the SA objectives. However, there is some uncertainty regarding the scope of the criteria used to test development proposals against; these criteria could give rise to significant new green space or relatively little. As a result, there is some uncertainty regarding the scale of wider benefits that this option may create. Nonetheless, Option A has the potential to have positive effects for landscape quality (1), biodiversity (2), water environment (3), flood risk (4), land and soil quality (5), air quality (6), climate change (7), and the historic environment (8). In addition, greater provision of green space has the potential to improve access to recreation opportunities, promoting healthy lifestyles (10). Furthermore, it should be noted that green space provision (13) would be inherently linked to the delivery of new development, and therefore any positive effects, particularly in relation to environmental criteria, would need to be balanced against potential negative effects associated with the new development. Mixed impacts are predicted in relation to the local economy (12). Provision of new green space would support objectives to make North Lincolnshire an attractive place for investment and for people to live and work. Conversely, linking this directly to new development could constrain development proposals and could discourage investment in the area if these constraints are considered too restrictive.

Similar positive impacts are likely to be realised for Option B. However, since areas of land would be specifically designated and protected as local green space and because there is less of a link to the delivery of new development, there is likely to be more certainty regarding the wider outcomes that could be achieved.

No impacts are predicted in relation to deprivation (9), housing (11), and mineral development (14) for both options.

Impact mitigation:

As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Options for the Historic Natural and Built Heritage		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Provide specific policies to safeguard historic landscapes, archaeological sites, listed buildings and conservation areas, together with non-designated identified buildings of townscape merit.	✓	0	0	0	0	0	0	✓✓	0	0	0	✓	0	0
B	Have an overarching development management policy to protect all heritage assets and retain conservation areas.	✓	0	0	0	0	0	0	✓	0	0	0	✓	0	0
C	Rely on national guidance contained in the NPPF and NPPG to retain all heritage assets.	✓?	0	0	0	0	0	0	✓?	0	0	0	✓	0	0

Appraisal summary:

Each of these three options aims to protect heritage assets in North Lincolnshire. Although designated heritage features (such as listed buildings, scheduled monuments, and conservation areas) are protected under legislation, added levels of protection may come from policy protection in the Local Plan. No specific details on the specific policies that might be implemented for Option A, or what an overarching development management policy might entail for Option B, are presented. However, for Option C, the NPPF sets out in section 12 (paragraphs 126 to 141) guidance for local authorities to conserve and enhance the historic environment. It includes information on what to consider when approving proposed developments regarding heritage. Option A and B would take this NPPF guidance and extend it within the Local Plan, reinforcing the importance of heritage protection and limiting the risk of adverse impacts on heritage features. Option A would go beyond Option B, taking into account non-designated buildings of townscape merit.

The historic environment (8) is likely to benefit from each of these options. For Option A, there is potential for a significant positive effect because a policy approach to protection covers all designated heritage assets and is extended to include some non-designated assets that are locally important. Option B, whilst providing some of this protection, is not so comprehensive and therefore has less potential to achieve significant positive effects. For Option C, the NPPF advises local planning authorities to include strategies/policies in Local Plans for the conservation and enjoyment of the historic environment and heritage at risk. Therefore, it arguably cannot be solely relied upon, without support through the Local Plan. This creates some uncertainty regarding the effectiveness of such an approach and therefore in the outcomes it would achieve.

Landscape and landscape character (1) may benefit from each of the options, since heritage features are often key features of a landscape, particularly in townscapes, and can make a significant contribution to landscape character and quality i.e., Isle of Axholme. In addition, positive effects are predicted for the local economy (12) as protection of heritage assets will support objectives to grow the tourism economy and will protect landscape/townscape quality, helping to make North Lincolnshire a more attractive place for investment and to live and

Options for the Historic Natural and Built Heritage		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	work. Neutral impacts are predicted in relation to biodiversity (2), water environment (3), flood risk (4), land (5), air quality (6), climate change (7), deprivation (9), health (10), housing (11), material assets (13), and minerals (14).														
	Impact mitigation: As significant negative impacts have not been identified, specific mitigation is not required at this stage.														

Options for Flood Risk		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	No development should be allowed in areas of functional flood plain.	✓	✓	✓	✓✓	0	0	✓	0	0	0	X	X	0	0
B	Some development should be allowed in areas of high flood risk if the benefits outweigh the risk.	X	X	X	✓/X	0	0	X	0	0	0	✓	✓	0	0
C	Continue with the flood risk management approach set out in the North Lincolnshire Core Strategy.	X	X	X	✓/X	0	0	X	0	0	0	✓/X	✓/X	0	0
D	Develop a flexible policy approach in compliance with national and local policy (i.e., to not create flood risk on-site or elsewhere and to provide safe development) to development in flood risk areas bearing in mind we have many existing settlements within flood risk areas.	X	X	X	✓/X	0	0	X	0	0	0	✓/X	✓/X	0	0

Appraisal summary:

These options focus on approaches for managing new development in areas at risk of flooding. North Lincolnshire is particularly vulnerable to flooding, and the need for development needs to be balanced against this risk and managed appropriately. Option A proposes to prohibit all new development in the 'functional floodplain', which are areas where water has to flow or be stored in times of flood. Option B, proposes to permit certain development in areas of high flood risk if it is clear that the benefits of delivering this development outweigh the risks or negative impacts. Option C would continue the existing policy approach as set out in the current Local Plan, whereby some development may be permitted in areas of high flood risk where certain tests are met (i.e., the development provides wider sustainability benefits that outweigh flood risk, the development should be on previously developed land or should demonstrate that no such land is available, and that the development needs to demonstrate that it is safe and does not increase flood risk elsewhere). Option D promotes a more flexible approach than proposed under Option C, whereby development in flood risk areas may be permitted if it can demonstrate that it is safe and does not increase flood risk elsewhere.

Option A has the potential to have positive effects in relation to many of the environmental objectives. By restricting any development on the functional floodplain, it ensures greater

Options for Flood Risk		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	<p>protection for these areas and minimises adverse impacts that could be associated with new development. As a result, benefits are predicted for landscape character (1), biodiversity (2), and the water environment (3). This option may also have a positive effect in relation to climate change (7) as it supports adaptation and helps safeguard the resilience of local communities and the natural environment to the impacts of climate change. A significant positive effect is predicted for flood risk (4) as such an option would remove riverine/estuarine flood risk from new development proposals. Conversely, negative effects have been identified in relation to housing (11) and the local economy (12). This is because this option may restrict new development, making it harder to achieve related Local Plan policies, particularly those seeking to manage a growing population in the area and a growing need for affordable housing and greater access to community facilities, and could potentially create barriers to economic investment.</p> <p>Options B–D, will enable some new development in flood risk areas, subject to them meeting slightly different criteria, with Option B potentially offering a less restrictive approach to new development than the other two options. However, these options will not provide the same level of protection of the floodplain as Option A, and so could lead to adverse effects on several of the environmental objectives. In contrast, these options have the potential to support housing (11) and local economy (12) objectives as they will facilitate development in areas at high risk of flooding; for options C and D, these benefits are less certain because of the more robust tests likely to be applied before development can proceed and it is possible that positive effects in relation to housing and local economy may not be achieved if these tests are too rigorous or appropriate development proposals are not proposed. In addition, as some development may be allowed in areas at risk of flooding, mixed impacts are predicted in relation to flood risk (4); the exact scale and nature of these impacts would depend upon the type and scale of development permitted.</p> <p>Impact mitigation:</p> <p>Several potential minor negative effects have been identified. For Option A, these relate to potential constraints this option could have on development by restricting available development land. For Options B–D, these negative effects are in relation to adverse environmental impacts as a result of new development being permitted in floodplain areas. However, at this stage it is not possible to determine whether these negative effects would be significant. This will depend upon the detail of each option and how they are applied through the development management process. As such, no specific mitigation is proposed at this stage beyond identifying that safeguards within the Local Plan should be provided to protect and enhance environmental features, whilst employment land allocations should account for the full range of environmental, social and economic considerations, especially when located outside or close to a flood zone.</p>														

Options for Water Efficiency		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Implement the higher water efficiency standard of 110 litres of water usage per person per day through a future Local Plan Review.	✓?	✓	✓✓	✓	0	0	✓✓	0	0	0	X?	X?	0	0
B	Continue to use the Building Regulations Standard of 125 litres of water usage per person per day.	0	0	✓/X	0	0	0	X	0	0	0	0	0	0	0

Appraisal summary:

These options seek to address the issue of future water resource availability, which is currently under stress and is likely to experience greater stress in the future due to a growing population (increasing water demand) and because of the impacts of climate change. Option B promotes continuation of the current efficiency target of 125 litres per person per day, whilst Option A would seek to achieve a higher standard of 110 litres per person per day, which would result in a considerable reduction in water usage in North Lincolnshire. This option would place a burden on housing developers and the water companies to provide the necessary infrastructure to achieve this higher standard.

Option A is likely to have a significant positive impact on the water environment by providing greater protection of, and potentially improving, water resources (3) in the area, and may also have a significant positive effect in relation to climate change (7) as greater water availability could help mitigate a range of associated impacts and support adaptation requirements. This may lead to lower water use and greater surface and groundwater availability, which could provide benefits for biodiversity (2) and local (riverine) landscape character (1). In addition, lower water usage could increase capacity in water treatment facilities, reducing the risk of surface water flooding (4). Conversely, potential negative effects may occur in relation to the housing (11) and local economy (12) objectives as the increased burden of delivering water efficiency measures could adversely affect the delivery of new housing developments.

Option B is also likely to positively impact on the sustainable management of water resources (3), but potentially to a lesser extent than Option A, and possibly only in the short to medium term. As the local population increases, water demand would also increase, which could place additional, and possibly unsustainable, pressure on water resources. This would exacerbate the impacts of climate change (7) as continued or increased water stress could inhibit climate change mitigation and adaptation requirements. As a result, Option B is less likely to achieve other environmental benefits (to landscape, biodiversity, and flood risk).

Impact mitigation:

Several potential negative effects have been identified. These are associated with potential additional costs associated with delivering greater water efficiency (Option A) and potential negative impacts on water resources and climate change adaptation (Option B). At this stage it is not possible to predict whether these impacts are likely to be significant. However, it is recommended that safeguards are included within the Local Plan to help address these issues, whilst adherence to Government guidance and delivery of high quality and sustainable design will also contribute to the avoidance or mitigation of potential negative effects. Employment land allocations, when being developed, should account for the provision of affordable housing whilst considering climate change adaptation.

Options for Renewable Energy & Low Carbon Energy		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Designate areas within the Local Plan for renewable and low carbon energy development (for example wind turbines and solar photovoltaic) without detrimental harm to North Lincolnshire landscape character and residential amenity.	0	X?	0	0	0	0	✓✓?	0	0	0	0	✓	0	0
B	Require all new major development to provide a percentage of their forecast energy needs from onsite renewable and low-carbon energy technologies.	0	0	0	0	0	0	✓	0	0	0	0	✓/X	0	0

Appraisal summary:

Both options aim to decarbonise the energy supply within North Lincolnshire, reducing GHG emissions so as to contribute to the mitigation of climate change impacts, and to improve the security of energy supply in the future. This will help the Local Plan deliver the requirements of the Climate Change Act 2008. Option A will designate specific areas in the area where renewable and low-carbon energy development will be permitted. It also specifically includes a requirement for this to be achieved without harm to the landscape or residential amenity. This option therefore takes a strategic approach to energy generation and seeks to provide certainty to renewable energy developers regarding the acceptability of such development proposals. This acceptability is not linked to the delivery of other development. However, the option does not state what scale of renewable energy generation will be achieved. Option B aims to deliver renewable and low-carbon energies via a requirement for new major development to provide a percentage of their energy forecasts from onsite renewable and low-carbon technologies. Therefore, renewable/low-carbon energy generation is inherently linked to major new development. Also, there is some uncertainty associated with Option B, as the scale of energy generation is again unknown.

Option A has the potential for a significant positive impact in relation to the climate change objective (7). Decarbonisation of the energy supply is a key measure required to mitigate the impacts of climate change and a greater percentage of renewable energy would make an important contribution to renewable energy and carbon emissions targets. The significance of the benefits realised by this option would depend upon the scale at which it is applied. A positive effect is also predicted in relation to the local economy (12), as this option could provide a stimulus for greater renewable energy generation, together with the delivery of ancillary infrastructure, which could create new jobs in the area. In relation to most other objectives, this option is likely to have a negligible effect; this includes landscape (1) and residential amenity (10), which would be specifically protected under this option. The exception to this is in relation to biodiversity, which could be adversely affected if the renewable energy generation facilities are located in areas of high ecological sensitivity.

Option B also has the potential to make a positive contribution to the climate change objective (7). However, this option is directly linked to the delivery of new major development and therefore potential benefits as a result of reduced carbon emissions need to be balanced with increased emissions associated with the development itself. In addition, there is perhaps

Options for Renewable Energy & Low Carbon Energy		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<p>less certainty that smaller and micro-scale renewables will provide the same benefits as large-scale renewable infrastructure. Neutral impacts are predicted for all the other SA objectives with the exception of the local economy (12) where a mixed outcome is possible; whilst increased renewable energy provision may provide an economic stimulus, it may also inhibit new development as it will increase costs and create an additional constraint.</p> <p>Impact mitigation:</p> <p>Option A could present a potential risk to biodiversity if large-scale renewable energy generation infrastructure is located in areas of high ecological sensitivity. Safeguards and policies within the Local Plan can be provided to address this issue, whilst adherence to Government guidance and delivery of high quality and sustainable design will also contribute to the avoidance or mitigation of potential negative effects. Option B may have a negative effect in relation to the local economy, as it could place an additional burden on developers, deterring investment in the district. However, this can also be addressed through other policies in the Local Plan that could serve to stimulate new development.</p>															

Options for Managing the Impact of Mineral Development		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Set out specific policies in the Local Plan for managing the impacts of mineral development on the wider environment and the restoration/after-use of mineral workings.	✓	✓	✓	0	✓	✓	0	0	0	✓	0	✓	✓	✓✓
B	Do not include specific policies on managing the impacts of mineral development on the wider environment and the restoration/after-use of mineral workings. This would result in us relying on higher level national planning policy.	✓?	✓?	0	0	✓?	0	0	0	0	✓?	0	✓?	✓?	✓?

Appraisal summary:

Both options aim to ensure a steady and adequate supply of minerals, and safeguard key resources and infrastructure, whilst managing the wider impacts of mineral extraction and processing. A key difference between these options is that Option A includes policies that provide an additional level of protection against environmental impacts associated with mineral developments, whilst also serving to provide a greater stimulus for the subsequent restoration of minerals sites for alternative uses (i.e., agriculture, biodiversity or recreation). Option B does not promote a policy approach and instead relies on national planning guidance. Therefore, Option A provides greater certainty that stated aims could be achieved and that post-operation restoration would take place, whilst Option B offers less protection against impacts associated with mineral workings.

For Option A, positive impacts are predicted in relation to several of the sustainability objectives. A policy approach to manage the impacts of mineral development are likely to afford greater protection to landscape character and quality (1), habitats and species (2), water resources (3), land and soil quality (5), and air quality (6). Other positive effects may be achieved in relation to healthy lifestyles (10), local economy (12) and access to community facilities (13), should post-operation regeneration deliver new community recreational facilities. This option is also likely to have a significant positive effect in relation to material assets (14) since it would specifically promote sustainable management of the area's mineral resources.

The uncertainty associated with Option B due to the lack of specific policies to manage the impacts of mineral development is reflected in the scoring. Therefore, the potential for positive impacts associated with Option B may not be fully realised.

Impact mitigation:

As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Options for Identifying Sites for Waste Management		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Identify specific sites or locations in the Local Plan for sustainable waste management facilities.	✓	✓	✓	0	✓	✓	✓	0	0	0	0	✓	✓	✓
B	Use criteria-based policies to ensure that sustainable waste management facilities are developed in the most sustainable and appropriate locations.	✓?	✓?	✓?	0	✓?	✓?	✓?	0	0	0	0	✓?	✓?	✓?
C	Do not include any specific sites/locations or criteria-based policies and rely on national policy.	✓?	✓?	✓?	0	✓?	✓?	✓?	0	0	0	0	✓?	✓?	✓?

Appraisal summary:

Each of these three options aims to effectively manage waste generated in North Lincolnshire. In order to achieve this, new waste management facilities need to be built, particularly as the population of North Lincolnshire is predicted to grow. Option A would prescribe and select new sites for these facilities within the Local Plan, taking into account national guidance requirements. This additional layer of protection within the Local Plan would provide a high level of certainty that appropriate waste management facilities would be delivered. Option B aims to permit sites based on a criteria-based approach. It is assumed that these criteria will set out a series of benchmarks that new development proposals will be tested against, and those that meet these criteria will be permitted. Since the criteria are currently unknown, there is a greater degree of uncertainty associated with this option. Option C effectively refers decision making on sustainable waste management sites to national policy, and does not specifically set out policies in the Local Plan. Although the NPPF sets out a relatively comprehensive list of criteria and guidance to select suitable sites, the opportunity to tailor this to specific requirements/features of North Lincolnshire is missed. In addition, without Local Plan policies, there is greater uncertainty regarding whether the necessary waste management facilities would be delivered. Therefore, this option is considered to be less robust than other options as extra levels of protection are not afforded in the Local Plan.

The potential impacts of the three options are broadly similar. Positive effects are predicted for many of the environmental objectives as enhanced and sustainable waste management would reduce impacts associated with waste disposal (legal and illegal) on the environment. In particular, it could promote greater recycling, which could have benefits for climate change (7), and reduces the need to extract raw materials (14). In addition, positive effects are also likely in relation to the local economy (12) and material assets (13) as new waste infrastructure would provide a community benefit and both an economic stimulus (providing new opportunities for waste-related jobs) and potential economic cost saving (in comparison to having to dispose of waste outside the area).

Negligible impacts are predicted for flood risk (4), deprivation (9), health and lifestyle (10), and housing (11) since there is no direct linkage to improving these sustainability objectives through waste management.

Options B and C have the potential to deliver similar impacts (including benefits); however, as there is greater uncertainty in how these two options would be delivered and the benefits

Options for Identifying Sites for Waste Management		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<p>they would achieve, this uncertainty is reflected in the scoring.</p> <p>Impact mitigation: As significant negative impacts have not been identified, specific mitigation is not required at this stage.</p>															

Options for Managing the Impact of Waste Development		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Set out specific policies in the Local Plan for managing the impacts of waste development on the wider environment.	✓	✓	✓	✓	✓	✓	✓	✓	0	✓	0	0	✓	0
B	Do not include specific policies on managing the impacts of waste development on the wider environment and rely on higher level national planning policy.	✓?	✓?	✓?	✓?	✓?	✓?	✓?	✓?	0	✓?	0	0	✓?	0

Appraisal summary:

These two options make provisions to manage the impacts of waste management and associated facilities on the wider environment. Option A provides for the inclusion of specific policies in the Local Plan to manage these impacts. Option B does not prescribe specific policies, and instead relies on national planning policy to guide local decision-making. Option A provides a greater degree of protection for the environment (including local communities) and in doing so also provides greater certainty regarding how issues associated with waste management will be resolved. In relation to Option B, there is greater uncertainty how local waste management issues will be managed and what level of protection will be afforded to wider environmental considerations.

Both options have the potential to have positive impacts in relation to most SA objectives. These include landscape quality (1), biodiversity (2), water quality (3), flood risk (4), land and soil quality (5), air quality (6), climate change (7), historic environment (8), health and recreation of the local population (10), and material assets in terms of green space (13). However, due to the greater uncertainty associated with Option B, there is also greater uncertainty regarding its impacts and this is reflected in the above scores.

Negligible impacts on deprivation (9), housing (11), local economy (12), and mineral development (14) may occur, since the management of environmental impacts are unlikely to have a bearing on these sustainability objectives.

Impact mitigation:

As no significant negative impacts have been identified, specific mitigation is not required at this stage.

Options for Infrastructure Provision		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	The Local Plan's growth strategy should be determined by making the best use of existing infrastructure.	0	X?	0	0	0	X	X?	0	X?	X?	0	X?	XX?	0
B	The Local Plan's growth strategy should not be constrained by existing infrastructure capacity and location.	✓/X	✓/X	X?	0	X?	✓/X	X	0	✓?	✓?	✓	✓	✓/X	0

Appraisal summary:

These two options consider the relationship between growth and infrastructure provision. To achieve the Local Plan Vision, new development (particularly housing and employment), will be required and this will have to be matched by the necessary infrastructure. Option A states that growth should be limited by existing infrastructure provision, which could place additional strain on facilities, whereas Option B does not include such a limit on growth; this could lead to the delivery of new development in-advance of the necessary infrastructure or without any additional infrastructure provision. For the purposes of this assessment, it is assumed that new infrastructure provision would be delivered, although its delivery is not inherently tied to that of the new development.

The potential impacts of these two options are complex and are related to how and where new development may be delivered and the status of existing supporting infrastructure. Also, infrastructure encompasses a wide range of facilities including physical (roads, railways, cycle and footpath networks, utilities and energy supply networks), social (community buildings, education, health facilities, sport and recreation and employment or training opportunities) and environmental (areas for nature and blue and green infrastructure). As such, it is very difficult to predict the impacts of these options at this stage. Therefore, this assessment provides an initial, indicative assessment, and will need to be reviewed again as the Local Plan progresses and further information is made available regarding the scope of these options.

Option A has the potential to have a range of negative effects. This option will both constrain new development and will also inhibit delivery of new infrastructure (physical, social and environmental). This would increase stress on existing infrastructure (13) as a result of the predicted population increase. Possible negative effects on the local economy (12), due to this constraint on development, and social deprivation (9) and healthy lifestyles (10) as a result of reduced access to high-quality community facilities and recreational opportunities, may be experienced. In addition, there is potential for a range of negative environmental effects including impacts on biodiversity (2) associated with increased pressure on environmental infrastructure, air quality (6) due to increased congestion on the local road network, and climate change (7) due to increased emissions associated with greater use of existing facilities. These negative effects would need to be mitigated through reduced pressure on existing infrastructure assets, which is only likely to be achieved through a stable or falling population.

Option B may also have a range of negative effects, although there is perhaps greater uncertainty regarding several of these, and as such, many of the effects have been identified as mixed. Option B will not constrain new development to existing infrastructure provision and so is likely to lead to provision of new infrastructure. However, the timescale for its delivery is not inherently connected to that of the new development and so there is a potential lag (possibly a significant lag) between new development and new supporting infrastructure. Overall, this option is likely to have benefits for a range of socio-economic objectives including social deprivation (9), healthy lifestyles (10), housing (11), and local economy (12) as it will help facilitate both new development and (the eventual delivery of) new infrastructure. This in turn has the potential to have a range of impacts on the environmental objectives. New development and new infrastructure provision could adversely affect landscape character and quality (1), biodiversity (2), water resources (3), soil quality (5) air quality (6) and carbon emissions (7). Conversely, potential positive benefits in relation to several of these objectives may be achieved depending upon the type, scale and timescale for new infrastructure provision, as it may reduce the impacts associated with existing infrastructure use (i.e., traffic congestion impacts on air quality, or recreational disturbance impacts on sensitive wildlife).

Options for Infrastructure Provision		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	sites) or create new infrastructure (13) that would provide additional benefits (i.e., new green infrastructure that would provide a filter affect improving local air quality and new habitat for wildlife). However, this option would potentially remove some of the constraints to new development.														
	Impact mitigation: Several potential negative effects have been identified. The most significant of these is in relation to possible impacts on accessibility to community services (13) associated with Option A. There is a risk that population growth in the area could place an increased strain on existing infrastructure that would ultimately affect its quality and community accessibility. The Local Plan would need to recognise that population growth will occur and this will place strain on existing facilities; this will need to be mitigated through increased infrastructure provision regardless of whether new development is delivered.														

Options for Sustainable Transport		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Require new developments to demonstrate within a Transport Statement how they facilitate walking and cycling and the use of public transport. This option would require applicants to demonstrate how they would try to reduce car dependence in new developments.	0	0	0	0	0	✓	✓	0	✓	✓	0	0	✓	0
B	Require that new developments make available information on walking, cycling and public transport links to all new residents. This option would require developers to provide information to new residents/occupants on the public transport options available to them and the walking and cycling routes within the locality.	0	0	0	0	0	✓?	✓?	0	✓?	✓?	0	0	✓?	0
C	Seek contributions to infrastructure to support sustainable transport choices through S106 agreements. This option would require S106 funding towards	0	0	0	0	0	✓	✓	0	✓	✓✓	0	✓	✓✓	0

Options for Sustainable Transport		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	the provision of sustainable transport measures by, for example, bus provision, walking routes and cycling routes.														

Appraisal summary:

Each of these three options aims to reduce the need to travel by private car and to encourage people to choose more sustainable forms of transport, which are primarily walking, cycling and use of public transport services. However, they differ in the ways they would seek to achieve this objective and in their outcomes. Option A would require housing developers to demonstrate how they would reduce car dependence before a development is granted approval. Option B would require developers to make information on public transport and cycling/walking infrastructure available to new residents. Option C would seek financial contributions from developers to deliver new transport infrastructure or facilities. For Option A, positive impacts are predicted for air quality (6) and carbon emissions (7) as new development would need to demonstrate reduced car usage and increased use of public transport and walking/cycle infrastructure. This is likely to lead to the provision of new infrastructure or public transport facilities, which would benefit social deprivation (9), healthy lifestyles (10) and accessibility to services (13) as such infrastructure/facilities are likely to be accessible to everyone. However, this approach is piecemeal and would rely on local developments to deliver individual measures. There is also uncertainty as to how such a policy approach would be implemented and how robustly it would be enforced. Option B has the potential to deliver similar positive effects; however, there is greater uncertainty with this option because the developer would be obliged only to provide information rather than demonstrate reduced car usage and potentially provide new infrastructure/facilities. This uncertainty is reflected in the assessment scoring. Option C is also likely to achieve similar benefits; however, there is greater certainty that infrastructure improvements would be delivered as it would ensure developers make a financial contribution enabling North Lincolnshire Council to deliver identified infrastructure requirements. This approach is more holistic and strategic, and has the potential to have significant positive effects in terms of improving access to services (13) and promoting healthy lifestyles (10). However, this option does not place any obligation on developers to demonstrate how car usage would be reduced, meaning that use of new public transport or walking/cycling infrastructure may be more than matched by an increase in car use.

Impact mitigation:

As significant negative impacts have not been identified, specific mitigation is not required at this stage.

Options for Development Limits		Sustainability Objectives and Impact													
Option Ref.	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	Continue to apply development limits to settlements as set out in the existing Core Strategy (2011) and Housing and Employment Land Allocations DPD (2016) and review them, as required, through the Local Plan process.	✓	✓	✓	0	✓	X	✓	✓/X	0	0	0	0	0	0
B	Do not apply settlement development limits and instead use criteria-based policies within the Local Plan to determine whether a development proposal is sustainable.	X?	X?	X?	0	X?	✓?	0	X?	0	0	✓	✓	0	0
C	An alternative approach (please tell us).	?	?	?	?	?	?	?	?	?	?	?	?	?	?

Appraisal summary:

These three options consider whether settlement development limits should be used to determine the suitability of new development. Option A proposes to continue to apply development limits that already exist, thereby restricting new development to within these areas. Proposals for new development would be more strictly controlled under this option and would normally be limited to uses suitable to existing locations. Option B seeks to employ a criteria-based policy approach (criteria yet to be defined), whereby developments are assessed against a series of criteria to determine their appropriateness. Option B removes some of the certainty that the development limits (Option A) provides to communities and others as it may enable new development to be consented that is located outside existing settlements.

Option A will continue to constrain new development to existing settlement boundaries. This reduces the potential for environmental impacts associated with development in surrounding areas and as such this option is likely to have a positive effect in relation to landscape quality (1), biodiversity (2), water quality (3), and land and soil quality (5). In addition, this approach is also likely to have positive effects on climate change as it means new development (and users of that development) will be located closer to existing transport and community facilities, potentially reducing the need for car usage and associated carbon emissions. Conversely, a negative impact may occur for air quality (6), as development is concentrated in certain areas, increasing the concentration of air pollutants within the settlement limits. Negligible impacts are predicted for flood risk (4), and for several of the socio-economic objectives including deprivation (9), health and lifestyle (10), housing (11), local economy (12), material assets (13), and mineral development (14). In relation to several of these – housing and local economy in particular – there is a potential case to be made that restricting development to existing settlement limits could have a negative effect as it potentially constrains the delivery of new development.

Option B does not restrict the location of new development to existing settlement limits. Although the criteria to assess the appropriateness of the development to the location is likely to take account of environmental factors, the risks of effects to the wider environment are greater. As such, there is potential for negative impacts in relation to landscape character and

Options for Development Limits		Sustainability Objectives and Impact													
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	<p>quality (1), biodiversity (2), water quality (3), and land and soil quality (5). However. Given the lack of information at this stage regarding the criteria that would be applied and the added undefined location of future development, there is considerable uncertainty associated with Option B and the impacts it could have. A positive impact may occur for air quality (6), as increasing the distance between development may help alleviate localised air quality issues. In addition, there are potential positive effects in relation to housing (11) and local economy (12) as the removal of the settlement limit constraint may help facilitate increased housing development in the area.</p> <p>Impact mitigation:</p> <p>Several potential negative effects have been identified, which are associated with risks to the environment that arise from new development. These potential negative impacts need to be balanced against the need to provide adequate facilities and housing for the local population. Safeguards and policies within the Local Plan can be provided to address these issues, whilst adherence to Government guidance and delivery of high quality and sustainable design will also contribute to the avoidance or mitigation of potential negative effects.</p>														

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