
Lincoln Strategy Area Growth Study
Options Report

Produced by OpenPlan in association with Rose Regeneration and University of Lincoln Business School

Updated March 2016

Lincoln Strategy Area Growth Study: Options Report

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1. INTRODUCTION

- 1.1 The Central Lincolnshire Local Plan Team¹ commissioned OpenPlan, Rose Regeneration and Lincoln Business School (University of Lincoln) to consider spatial options for growth in and around Lincoln. The main aims of this study have been to define an appropriate “Lincoln Strategy Area” and to recommend an optimum spatial strategy for growth within that area over the next 20 years – the strategy most likely to meet twin objectives of *sustainability* and *deliverability*².
- 1.2 The study and its recommendations have informed the emerging **Central Lincolnshire Local Plan**, so it has been particularly important to:
- 1) use a sound and objectively based methodology; and,
 - 2) base findings on a clear, evidence-based understanding of the social, economic and physical connections between Lincoln and the “Strategy Area” that focuses on Lincoln as its main urban centre.
- 1.3 The four (possibly five) alternative growth options to be considered were outlined in the study brief as follows:
- 1) *Focus meeting all of Lincoln’s future needs on an expanded Lincoln City extending beyond its current boundaries via a collection of sustainable urban extensions, with limited development in surrounding villages;*
 - 2) *Focus meeting Lincoln’s future needs in and around Lincoln via some sustainable urban extensions, up to and not beyond the existing and proposed bypasses. Additional major development focussed on a few identified surrounding villages;*

¹ The Central Lincolnshire Local Plan is being prepared jointly by and for The City of Lincoln, West Lindsey and North Kesteven District Councils and Lincolnshire County Council and this study has been commissioned jointly by those authorities.

² The purpose of the study was described in a “Request for Quotation” document issued on 15th October 2014.

- 3) *Focus meeting Lincoln’s future needs in and around Lincoln, up to but not beyond the existing and proposed bypasses. Additional development distributed proportionately between lots of surrounding villages depending on existing services, facilities and capacity.*
 - 4) *Focus meeting Lincoln’s future needs in and around Lincoln, up to but not beyond the existing and proposed bypasses, with additional development located in one or more new, self-contained settlement identified close enough to the City to be accessible by cycle or public transport.*
 - 5) *Any other reasonable options, which might arise as part of the work, or following consideration of views during the Local Plan consultation periods*
- 1.4 Alternative growth options have been identified and evaluated through a process that has involved:
- 1) **Evidence Base Review**³, including, but not restricted to:
 - Strategic Housing and Economic Land Availability Assessment (SHELAA);
 - Strategic Housing Market Assessment (SHMA);
 - Economic Development Needs Assessment (EDNA);
 - 2) **Policy Review** (current and emerging policy at local and national levels);
 - 3) **Spatial Definition of the Lincoln Strategy Area;**
 - 4) **Spatial Definition of Potential Growth Options;**
 - 5) **Identification of Key Principles;**
 - 6) **Formulation of Assessment Criteria**, based on the Sustainability Objectives identified for appraisal of the Central Lincolnshire Local Plan as a whole and adapted to the Strategy Area context;

³ A full list of the “evidence base” items reviewed for the purposes of this study can be found in Appendix 2.

- 7) **Sustainability Appraisal of the Options**, using the Assessment Criteria to appraise each option so as to identify the one(s) that can be expected to produce the most sustainable development outcome overall.

1.5 The selected growth option must be both sustainable and deliverable. Deliverability will be explored further through on-going stakeholder consultation associated with the Local plan and infrastructure delivery but, at this stage, options have been treated as deliverable if:

- 1) a large proportion of the land required for development has been identified in the SHLAA the SHEELA and/or the emerging proposals for Sustainable Urban Extensions (indicating that there is landowner /developer interest in bringing that land forward for development);
- 2) there are no obvious reasons to expect that development could not be brought forward during the Local Plan period, or that the necessary 5 years minimum supply of land for housing development could not be maintained;
- 3) there is a reasonable expectation that required infrastructure could be delivered in time, either as part of the development or in association with it (it is assumed that this will involve a mixture of public and developer funding⁴).

1.6 This report is based on careful consideration of the information available at the time of its preparation and its findings and recommendations have been reviewed in the light of further relevant information including public consultation undertaken as part of the Local Plan process.

1.7 Section 2 provides an overview of the methodology and Sections 3 to 4 explain in the basis for the recommendations presented in section 6.

⁴ The growth study has been coordinated with the work of the Central Lincolnshire Infrastructure and Viability Task Group, coordinated by Lincolnshire County Council.

- 1.8 A similar study has been undertaken to consider options for growth in and around Gainsborough and this too will be taken in to account in preparing the Central Lincolnshire Local Plan.

2. METHODOLOGY

Evidence Review

2.1 In relation to phase 1, a comprehensive list of documentary evidence was identified in collaboration with the client. This included both extant and in draft material, which was relevant to an assessment of the definition and growth needs of a Lincoln Strategy Area within Central Lincolnshire.

2.2 38 documents were identified and reviewed using a common template. The documents were grouped into the following categories: Housing, Economy, Health, Natural and Built Environment, Transport and Infrastructure, Settlements, Viability and Delivery, Local Plan Documents

2.3 This template was then moderated through a group discussion amongst the delivery team, and final judgements were made to inform the key learning from it. The template itself covered the following themes:

- **Content and Context:** what is the purpose and content of the evidence, and who has produced it?
- **Robustness:** how reliable are the data/processes underpinning the evidence – has it for example used credible data sources, tested and accepted models, or been subject to consultation?
- **Application to Options:** does the evidence provide any particular emphasis on, or implications for, the four growth options?
- **Strategic Significance:** how does the evidence contribute to our understanding of future population and employment growth in the Lincoln Strategy Area? How does it relate to or inform the Local Plan?

- **Relevance to National Planning Policy Framework (NPPF) Themes:** which of the 12 NPPF themes does the evidence address?
- **Criteria Implications:** what (if any) of the issues emerging from the evidence need to form part of the assessment criteria?

Identification of Gaps

2.4 Our evidence review revealed a comprehensive coverage of most issues. The only area, which required the commissioning of additional evidence, at this stage, was the provision of most up-to-date commuting data from the 2011 census. Crucially, this information has allowed us to break down levels of economic activity below district boundaries and has enabled us to make an evidence-based judgement on those portions of North Kesteven and West Lindsey district which should be included within the Lincoln Strategy Area for the assessment of its housing and employment share of the overall needs of the Central Lincolnshire area.

Objectives

2.5 The review of extant data and the provision of the new commuting information have enabled us to confirm the key objectives of the study, namely:

- 1) to effectively describe the boundaries of the Lincoln Strategy Area;
- 2) to break out from the Central Lincolnshire data the amount of employment and housing land it is likely to need to the end of the plan period;
- 3) to consider this in terms of four options governed by a consideration of sustainability and deliverability;
- 4) to make an evidence-based assessment of which of these options is likely to be most appropriate; and,
- 5) to describe that option in practical detail.

Assessment Process

2.6 The assessment of the most appropriate of the four options identified in the introduction, in the context of the objectives for this study, has involved a logical process linked to the following steps:

- 1) Identification of the extent of currently allocated but unused housing and employment sites within the Lincoln Strategy Area;
- 2) Establishment of the net additional amount of land required having taken 1, above, into account;
- 3) Assessment of the capacity of the currently identified sustainable urban extensions to meet this demand – including consideration of the potential, where appropriate, to accelerate the bringing forward of land on these sites within the plan period;
- 4) Identification of possible additional sites identified through the Strategic Housing and Employment Land Availability Study (consideration of these sites does not constitute endorsement);
- 5) Considering at a general (non-detailed) level the issues for these sites in terms of the sustainability and deliverability⁵ criteria, set out in the assessment criteria below, and aggregating that to identify a potential capacity figure for each relevant settlement and neighbourhood in the Lincoln Strategy Area;
- 6) Mapping the land identified through steps 1-4, above, onto the four options.

2.7 Our approach is set out in Figure 1.

⁵ Key issues considered in relation to deliverability include (in the specific context of proposed usage – i.e. residential or employment use class): cost of infrastructure to access the site, cost of infrastructure to service the site (including site remediation costs), section 106 and potential CIL costs, any other obvious likely planning conditions and their cost, the likely market response to the development in terms of the potential return on development, site development timescales, potential community response to the development, any other unique site specific issues of relevance.

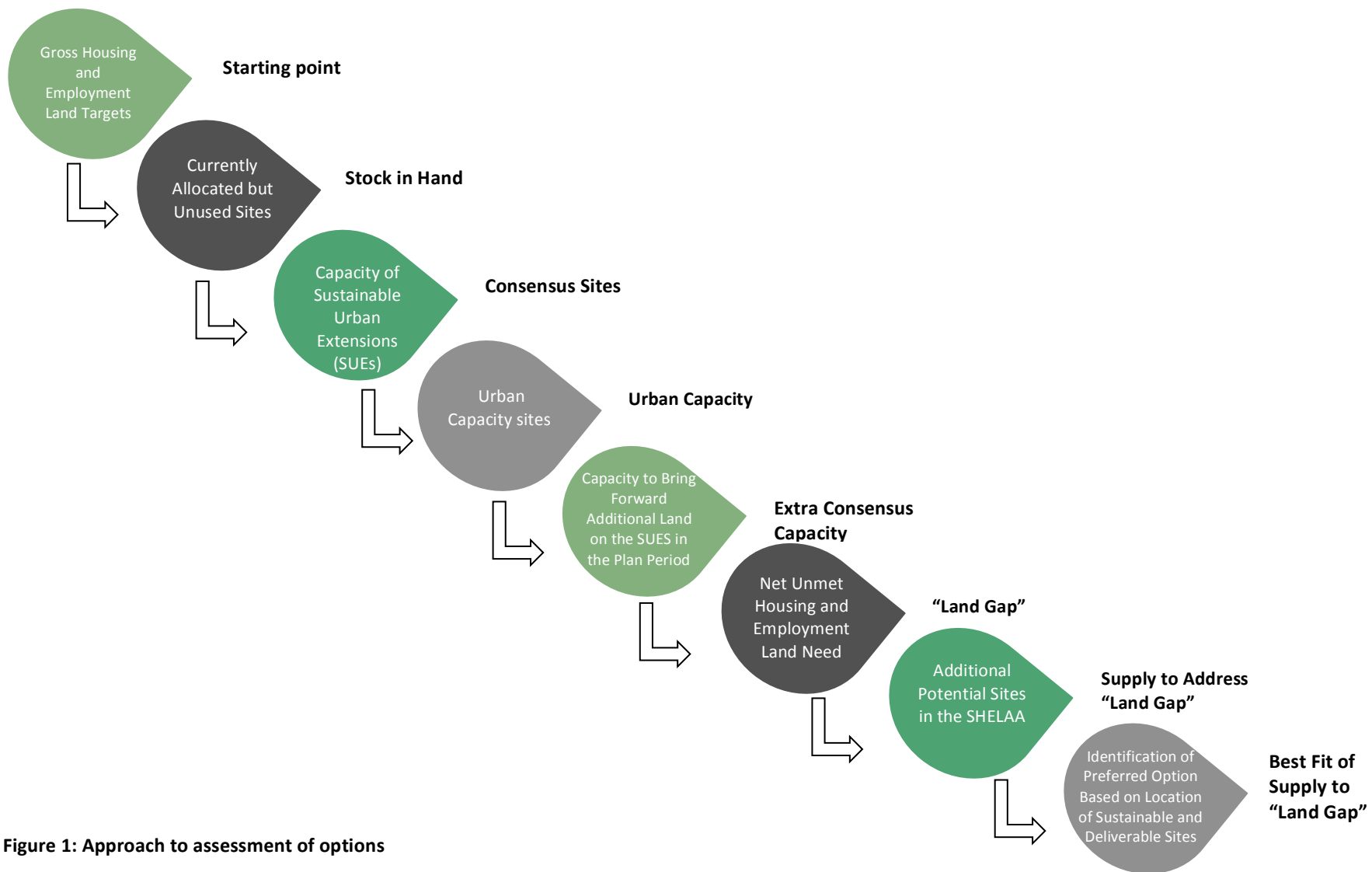


Figure 1: Approach to assessment of options

Defining and Comparing the Options

2.8 The assessment process has identified options that work best in terms of meeting the needs of the Lincoln Strategy Area. This has enabled the broad location of land which can meet the identified need for the Strategy Area within the Plan period to be considered leading to an assessment of the option which best meets its needs.

Outline of Assessment Criteria

2.9 To enable each alternative growth option to be evaluated consistently and objectively, the extent to which it satisfies each of the criteria listed below has been assessed. The selection of criteria has been informed by the Sustainability Objectives/Integrated Impact Assessment Objectives being applied in assessing the whole Central Lincolnshire Local Plan as well as by the matters outlined in the preceding sections of this report.

- i. To encourage and support a competitive, diverse and stable economy which helps to underpin Lincoln's role as driver for Central Lincolnshire;
- ii. Reinforces and improves the City Centre as a (regional) destination for shopping, culture, leisure, learning and business;
- iii. Supports strong commercial investment opportunities for developers and other partners delivering priority schemes, including interventions in CCMP and infrastructure schemes;
- iv. Meets identified needs for a range of good quality housing and employment sites to ensure the housing stock meets the needs of the area and creates and improves access to high quality employment and training opportunities;
- v. Provides a supply of new housing and employment land on economically viable and deliverable sites;
- vi. Preserves and enhances cultural and historic environment;
- vii. Conserve and enhance biodiversity through inclusion of green linkages and support green infrastructure;

- viii. Promotes walking and cycling to reduce traffic and improve air quality and promote healthy lifestyles and maximise health and well being;
- ix. Is consistent with reducing and managing the risk of flooding;
- x. Makes efficient use of existing transport infrastructure, reducing the need to travel by car, and to ensure all journeys are undertaken by the most sustainable modes of travel;
- xi. Is consistent with the need to minimise carbon emissions and minimise pollution;
- xii. Supports healthy communities and individuals;
- xiii. Maximises opportunities for positive cultural, social and economic interaction to stimulate regeneration and ensure equitable outcomes for all;
- xiv. Achieves broad community support.

2.10 Assessment of the four alternative options has been undertaken and is detailed in Section 8.

Final Options Narrative

2.11 This process has enabled us to set out, on an area-by-area basis, with regard to sustainability and deliverability, a final option scenario to meet the employment and housing needs of the Lincoln Strategy Area to the end of the Plan period.

2.12 We have been careful to caveat the consideration of the potential of unallocated sites to meet employment or housing needs, on the basis that inclusion in our assessment does not constitute an endorsement in terms of the formal development planning process.

3. DEFINING THE STRATEGY AREA

- 3.1 This study has informed the development of policies that relate to the Lincoln Strategy Area in the Central Lincolnshire Local Plan. The study's primary purpose was to provide a detailed analysis of potential options for growth within the Lincoln area (the City of Lincoln, adjoining urban areas and surrounding villages), so that informed decisions could be made as to where that growth would be most appropriate. The study recommends a spatial strategy to guide decisions about where development should be promoted and allowed, taking an integrated view based on a range of social, economic and environmental considerations.
- 3.2 To gain a thorough understanding of relevant information and influences and to make sure that decisions made about future growth in and around Lincoln are underpinned by as robust and comprehensive an evidence base as possible, the study started by:
- a) examining and interpreting existing data to quantifying expected needs and demand for buildings and land for development;
 - b) considering relevant existing strategies, policies, guidance and commitments at local and national levels,
 - c) identifying known proposals, constraints and opportunities by considering a number of relevant reports, studies and other information sources;
 - d) defining the Lincoln Strategy Area, geographically, by considering selected data relating to what might be termed Lincoln's "sphere of influence" (primarily by looking at the operation of the housing market, travel-to-work patterns and "self-containment")⁶.

⁶ There are many other factors that could be considered when defining an urban centre's "sphere of influence – for example, shopping patterns and use of education, cultural and leisure facilities – but for the purposes of this particular study spatial patterns relating to housing and employment are considered to be the most relevant.

Those tasks involved collating and analysing many relevant evidence sources around a number of themes (such as housing, economy, health, travel and transport, green infrastructure etc.)⁷.

Spatial Definition

- 3.3 A logical and statistically robust spatial definition of the Lincoln Strategy Area has been arrived at, primarily by examining the most recent information available about travel-to-work patterns and self-containment⁸.
- 3.4 Commuting flows from the 2011 census have been used at Medium Super Output Area (MSOA) level, to determine self-containment based on the two criteria which underpin the development of travel to work patterns: namely, that for labour markets over 25,000 population, two thirds (67%) of the area's resident workforce work in the area, and at least 67% of the people who work in the area also live in the area.
- 3.5 Taking each MSOA within Central Lincolnshire and considering the following, we have identified the pattern of self-containment shown on the map at figure 2:
- the number of people who live and work in that MSOA;
 - the number of people who live in that MSOA and work in the local authority area of Lincoln; and,
 - the number of people who live in that MSOA and work in an adjoining MSOA where the self containment test set out above is met in terms of the Strategy Area.
- 3.6 The population resident within the Lincoln Strategy Area, as defined in this way, equates to 64% of the total population of the area to which the Central Lincolnshire Local Plan relates. It is recommended, therefore, that this

⁷ The relevant information from each source was collated into a documented Evidence Base, an abridged version of which is available as a separate appendix - Appendix 1.

⁸ In this context, "self-containment" means that most people living within a given area also work within that same area.

should be the starting point for apportioning the population and housing growth that needs to be provided for in land and development allocations. Providing for more than 64% of the planned growth to be within this area would in effect be a strategy for increased concentration. Conversely, providing for less than 64% of the planned growth to be within this area would represent a strategy of increased dispersal.

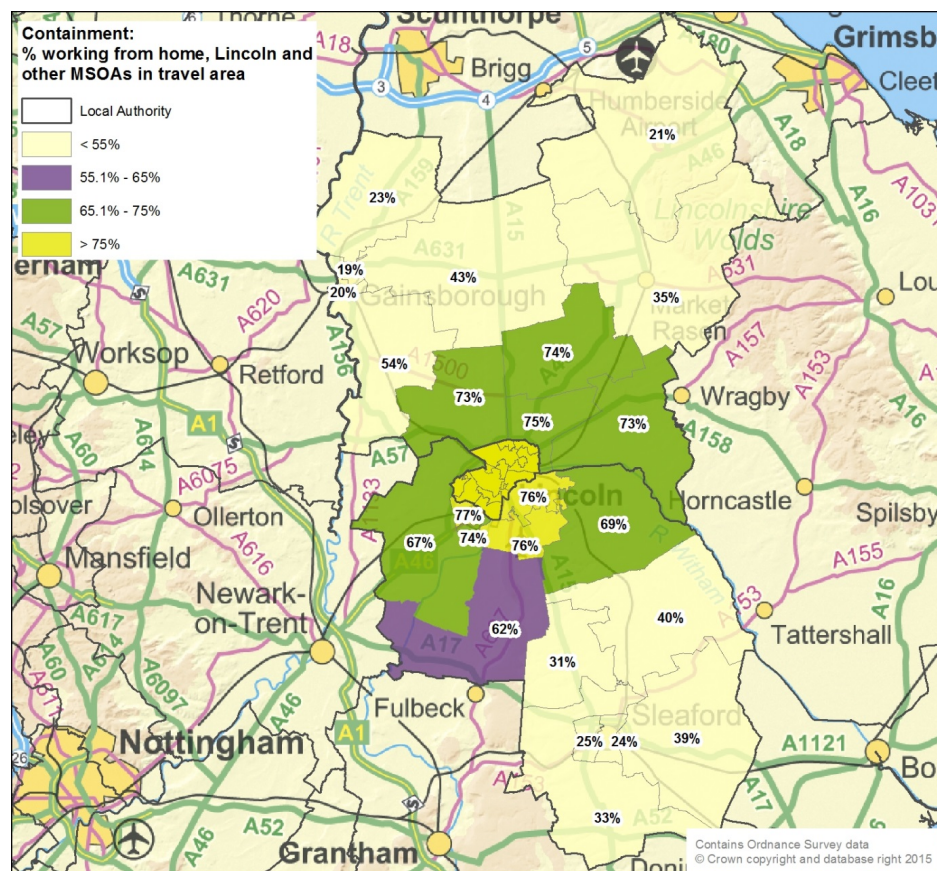


Figure 2: Spatial definition of the Lincoln Strategy Area according to “Self-Containment” of MSOAs

3.7 Following a detailed discussion with the client it was decided for the purposes of our definition to include all settlements over 60% arising from this approach due to the very clear drop-off beyond this boundary, and taking account of the local knowledge around employment patterns and travel of the client team. In essence, this approach provides a sense of the gravitational pull of those MSOAs closest to Lincoln. The current Travel to Work Area (TTWA) and Housing Market Area (HMA) boundaries are based on 2001 census data and are conceived at too broad a geographical level to enable the finer-grain assessment of self-containment within the Central Lincolnshire to be achieved without this supplementary analysis.

3.8 The MSOAs within the defined Strategy Area have been used to identify its population and sectoral share of overall employment to interpret the housing and employment land needs identified for the Central Lincolnshire area as a whole at the level of the Lincoln Strategy Area.

3.9 In terms of the assessment of housing land need, this involved a simple apportionment of the housing proposed for North Kesteven and West Lindsey based on their populations within the Lincoln Strategy Area and adding that to the housing land needs identified for the City as a local authority area.

3.10 In terms of an assessment of employment land need, this involved using Business Register and Employment Survey (BRES) data to work out what proportion of each employment sector used to assess the employment land needs in North Kesteven and West Lindsey lies within the Lincoln Strategy Area, then adding that to the established employment land needs for the City as a local authority area.

3.11 Whilst this methodology forms the core of our work and complies with good plan-making practice, account has also been given to the approaches to market areas which provide a broader context to the Lincoln Strategy Area and consideration was given to other relevant factors as part of the evaluation process. Both the Housing Market and Travel to Work Areas are currently based on 2001 Census data and perform, effectively, a different

function in terms of housing and employment respectively. They focus on self-containment within the broad geography of the City, in the context of national housing and employment markets. Our analysis enabled us to look in more detail at the intra-area relationships that underpin them at the more detailed and local level required to facilitate planning for the growth and development of the Lincoln Strategy Area within the Central Lincolnshire Local Plan area.

3.12 Within the envelope of the Strategy Area as defined above, extant documents and consultation discussions were used to contextualise the sustainability and deliverability of individual sites taking account of information on local markets for:

- 1) Shops and Services
- 2) Social Interaction, Culture and Leisure
- 3) Education
- 4) Health Care
- 5) Sport

3.13 Defining a Lincoln Strategy Area in this way does not imply that the whole of the identified area is suitable for housing and employment development. In broad terms, the boundary represents the outer limit of an area within which development to meet the housing and employment needs of the communities who look to Lincoln as their main urban centre might possibly be located, BUT, within that area, only places and sites that meet specified criteria should be considered potentially suitable for such development. Those criteria, which are all based on the concept of sustainability, are listed in paragraph 2.14, and are reflected in the Placemaking Principles described in section 5 and Information Box 1 (pg. 7).

Identifying Need

3.14 To quantify expected requirements for land and buildings over the Local Plan period⁹, the study has considered emerging “objectively assessed needs” relating primarily to housing, employment and economic development. Those are not the only uses or activities that will require additional land and buildings in the Lincoln Strategy Area during the Local Plan period, but they – and the infrastructure required to support them – are the ones that can be expected to influence the extent and location of urban growth most.

Examining Potential Supply

3.15 Having quantified “need” in terms of requirements for new housing and employment-space over the Local Plan period, the next task was to look at the potential “supply” of land and buildings from which those forecast needs could be met. Initially, the main objective has been to understand:

- whether, in broad terms, there appears to be a reasonable match between need and potential supply within the Strategy Area as a whole; and,
- again in broad terms, how land being promoted for potential development relates spatially to the options to be considered.

3.16 Relevant information relating to potential supply is contained principally in three documents:

- 1) **Central Lincolnshire Strategic Housing and Economic Land Availability Assessment (SHELAA)**, which contains information about land put forward by the owner/ developer/ Parish Council to be potentially suitable/ available for either housing or business/employment-creating development;
- 2) **Central Lincolnshire Economic Needs Assessment (EDNA)**, which assesses future demand for jobs, employment land and premises to

⁹ The Central Lincolnshire Local Plan is to cover the period up to 2036.

ensure future land allocations respond to local needs and maximise opportunities for sustainable economic growth; and,

- 3) **Assessment of sites in Lincoln**, which identifies land within the current built-up area of Lincoln (City) that is considered suitable, or potentially suitable, for development, redevelopment or, in the case of existing buildings, conversion.

3.17 Additionally, the following documents have provided relevant contextual and statistical information:

- Central Lincolnshire Strategic Housing Market Assessment;
- Sustainable Urban Extension Topic Papers for:
 - Lincoln North East Quadrant;
 - Lincoln South East Quadrant;
 - Lincoln Western Growth Corridor.

3.18 The potential supply of land for employment-creating business development is relatively large and the main issues appear to relate more to location and quality than quantity. It is likely that some sites currently allocated for business uses may be re-allocated to residential and other uses and it seems unlikely that there will be any major problem overall in allocating sufficient land of suitable quality and in appropriate locations to satisfy the requirement for 28 hectares of land to be brought forward for business development by 2036. Development land quantity requirements for the Lincoln Strategy Area therefore relate primarily to housing development.

Comparing and Evaluating Growth Options

3.19 Up to this point the study had focused mostly on the tasks of quantifying the need for new homes and workplaces, and arriving at a logical, statistically robust spatial definition of a Lincoln Strategy Area. Based

on certain assumptions about density - of development and employment – this had identified:

- a) total areas of land that would need to be made available and brought forward for housing and business development during the Local Plan period; and,
- b) the maximum extent of the geographical area within which those development needs would have to be met.

3.20 Over the next stage of the study – emphasis shifted towards considerations of place; i.e., how best to plan for the identified quantities of development to be accommodated within the identified Strategy Area in ways that will produce and maintain places that can work well and support healthy prosperous communities. This has been approached by considering a number of placemaking principles and assessing the performance of several alternative growth options against sustainability criteria. The placemaking principles and the sustainability criteria are interrelated.

Information Box 1

Placemaking Principles

It is recommended that the placemaking principles listed below (all of which are consistent with the objectives of the National Planning Policy Framework) should be used as “markers” to be referred to throughout the process of determining the most suitable places for development and the relationships between different uses and activities:

- a) **Capacity**
- b) **Connectivity**
- c) **Proximity**
- d) **Efficiency**
- e) **Environmental well-being and Ecology**
- f) **Identity**
- g) **Self-sufficiency**

These placemaking principles are detailed further in section 5.

3.21 The evaluation outcome for each growth option is summarised very briefly in Table 1, below, and the full results of the evaluation are set out in appendix 1 of this report.

Table 1: Options Evaluation Summary

OPTION 1	
Scored highest on:	Scored lowest on:
<ul style="list-style-type: none"> Encouraging competitive, diverse and stable economy (i) Reinforcing city centre as regional destination (ii) Investment and delivery of priority schemes (iii) Supporting historic and cultural environment (vi) Sustainable access and transport and low-carbon emissions (viii, x and xi) Healthy communities and individuals (xii) Cultural, social and economic interaction (xiii) Community support (xiv) 	<ul style="list-style-type: none"> Supplying land needed for housing and employment (iv and v) Flood risk management (ix)
OPTION 2	
Scored highest on:	Scored lowest on:
<ul style="list-style-type: none"> Encouraging competitive, diverse and stable economy (i) Reinforcing city centre as regional destination (ii) Supplying land needed for housing and employment (iv and v) Flood risk management (ix) 	

OPTION 3	
Scored highest on:	Scored lowest on:
<ul style="list-style-type: none"> Flood risk management (ix) 	<ul style="list-style-type: none"> Reinforcing city centre as regional destination (ii) Investment and delivery of priority schemes (iii) Supplying land needed for housing and employment (iv and v) Supporting historic and cultural environment (vi) Sustainable access and transport and low-carbon emissions (viii, x and xi) Cultural, social and economic interaction (xiii) Community support (xiv)
OPTION 4	
Scored highest on:	Scored lowest on:
<ul style="list-style-type: none"> Supplying land needed for housing and employment (iv and v) Supporting historic and cultural environment (vi) Sustainable access and transport and low-carbon emissions (viii, x and xi) Flood risk management (ix) Healthy communities and individuals (xii) Cultural, social and economic interaction (xiii) Community support (xiv) 	<ul style="list-style-type: none"> Encouraging competitive, diverse and stable economy (i) Reinforcing city centre as regional destination (ii) Investment and delivery of priority schemes (iii)

4. KEY SPATIAL ISSUES AND PRINCIPLES

- 4.1 The purpose of the Lincoln Strategy Area Growth Study is explained in the Request for Quotations (RFQ) document (October 2014) as being *“to provide a detailed analysis of the potential options for the growth of the Lincoln area. This will allow an informed decision to be made as to where the growth of Lincoln would be most appropriate and this work will therefore be a key part of the local plan evidence base”* [RFQ Paragraph 2.2]. This is clarified further in Section 3a, the study Specification, which stresses the need for the study to result in *“a clear, logical, legally compliant and robust understanding of the role of the wider Lincoln area”* and of getting *“the vision and strategy of the long term growth of Lincoln right and [having] clear evidence of how options have been developed and tested”*.
- 4.2 These are complex considerations, requiring an understanding of a wide range of information and data, coupled with an understanding of how key principles of sustainable development may be applied to produce an integrated approach to development in the context of the Lincoln Strategy Area and Central Lincolnshire.
- 4.3 The first task focused on reviewing and understanding the existing evidence base that is contained in a large number of surveys and reports undertaken recently. That information throws light on what has already happened and, to an extent, what is happening now, and it allows forecasting of what might happen in the future if certain trends continue and certain assumptions are made. However, in seeking the “best” outcomes – those that best support social, economic and environmental well-being – it will be necessary to decide whether the appropriate response is to accommodate trends or to seek to change them (or, most likely, a blend of the two). The evidence base does not, in itself, produce or dictate solutions: rather, it provides information that helps in identifying issues and requirements, formulating possible options, and assessing the relative benefits of alternative approaches.

- 4.4 Certain Key Principles will need to be applied when considering and comparing options. It is suggested that those listed below (all consistent with the objectives of the National Planning Policy Framework) should be applied when first refining the spatial definition of the Lincoln Strategy Area and then evaluating alternative options for promoting, accommodating, and managing growth within that area:

a) Capacity

A scale of growth that is realistic and desirable should be identified and the amount of additional floorspace and land required to accommodate it should be calculated so that options for delivery may be considered and compared, bearing in mind that growth may require spatial expansion, but this is not necessarily so in every case. Scope for promoting conversion and more intensive use of existing buildings and “densifying” parts of the existing built up areas should be given due consideration, alongside new-build and spatial expansion options.

b) Connectivity

The ways in which places connect – internally and with other places – is a key spatial consideration carrying complex and far-reaching impacts, including economic efficiency; scope for enterprise and innovation; resource use; social interaction; health and wellbeing; and wider environmental impacts. Consideration should include scope for economic, social and cultural interaction and the relationship between those interactions and economic and social well-being.

The desirability of connecting places (buildings, neighbourhoods, settlements, spaces...) so as to maximise benefits and minimise harm should inform the spatial definition of the Strategy Area and the evaluation of growth options.

c) Proximity

Proximity and connectivity may interrelate – but not necessarily. Places may be close to each other but poorly connected (intentionally or unintentionally) or, conversely, they may be distant from each other but well connected (for instance, by good transport links – or by good ICT

connection). Such relationships need to be considered carefully against objectives relating to matters such as transport modes; social and economic interactions; and, amenity and environmental expectations.

d) Efficiency

To an extent, efficiency may be a product of the three preceding principles – capacity, connectivity and proximity. Efficiency considerations include, minimising waste (time, resources, money...); and, maximising opportunity (for innovation and enterprise...). The spatial distribution of buildings and activities impacts significantly on the achievement of efficiency, especially in the provision of necessary infrastructure, including costs of both initial provision and on-going maintenance.

e) Environmental well-being and Ecology

Two aspects of ecology need to be considered: the impact of urban activities and development on the natural environment and ecosystems, and the “services” they provide (this may be termed “Green Infrastructure”); and, the working of urban regions as forms of ecosystems, within which synergies may be maximised.

f) Identity

Community identity and sense-of-place are important factors. Lincoln has a distinctive identity as a City; neighbourhoods within the City have their own identity; North Hykeham and villages around Lincoln each have their own identities, whilst also sharing something of the “Lincoln” identity. The growth strategy needs to be informed by – and respect – this.

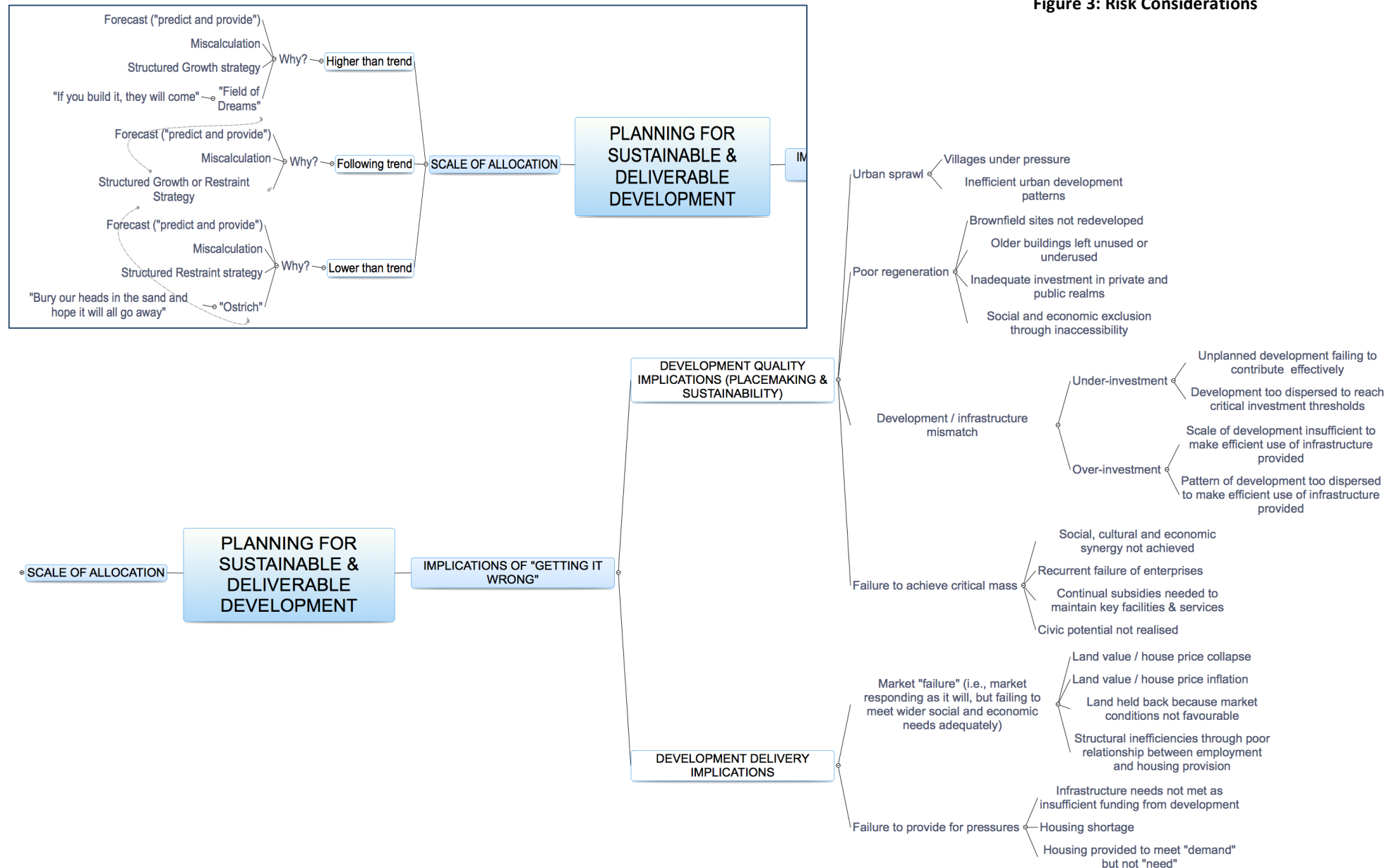
g) Self-sufficiency

The concept of self-containment has already been an important consideration in defining the spatial extent of the Lincoln Strategy Area, as explained above (see Section 2, paragraphs 2.3-2.5, and Section 4). As a component of sustainability, interacting layers of self-sufficiency will also be considered when evaluating the growth options: the Strategy Area should achieve an appropriate level of self-sufficiency, as should individual communities and neighbourhoods within it.

5. RISK ASSESSMENT CONSIDERATIONS

- 5.1 The purpose of this study has been to consider, at a broad level, the relative sustainability and deliverability of a number of urban growth options. The study has not considered individual sites in detail and its scope does not extend to quantifying the scale of need - for housing and employment land – in detail or recommending particular allocations: those are matters being addressed in the Central Lincolnshire Local Plan itself, with this study feeding in to that work as part of the evidence base.
- 5.2 As a contribution to the thought processes involved in those aspects of Local Plan preparation, we have, however, given some thought to the issues of:
- a) deciding on the scale of provision to be made for housing ; and,
 - b) considering the implications of either over-providing or under-providing when determining the overall quantities of land to be allocated for development.
- 5.3 Initial thoughts and suggestions relating to these matters are set out in the mind-maps on the next page. The larger map starts to identify implications of either over-estimating or under-estimating the scale of provision that needs to be made. The inset map explores reasons why allocations either higher or lower than the trend might be made. These are not exhaustive or definitive but have been included simply to aid the consideration of these issues.

Figure 3: Risk Considerations



6. CONCLUSIONS AND RECOMMENDATIONS

7.1 The growth option that could be expected to achieve the greatest degree of overall sustainability rating is:

Option 1 - Focus meeting all of Lincoln's future needs on an expanded Lincoln City extending beyond its current boundaries via a collection of sustainable urban extensions, with limited development in surrounding villages.

7.2 The deliverability of this option has been considered and the main aggregated components used to quantify the development capacity of the option were:

- a) Urban Capacity (i.e., sites suitable and potentially available for development or redevelopment within the current Lincoln built-up area;¹⁰
- b) The capacities of the areas identified as potential Sustainable Urban Extensions; and,
- c) the capacities of selected larger settlements considered to be suitable for further growth.

The capacities of other surrounding villages will only need to be included in the aggregation if the total capacity of a), b) and c) are found to be insufficient or there are likely to be significant problems in maintaining a 5-year supply of available housing land in the absence of some further growth in selected villages.

7.3 The initial calculation of the total capacity of the Recommended Sustainable Growth Option is 22,100 homes, plus the land required for new, employment-creating business development (28 hectares).

¹⁰ Key issues considered in relation to deliverability include (in the specific context of proposed usage – i.e. residential or employment use class): cost of infrastructure to access the site, cost of infrastructure to service the site (including site remediation costs), section 106 and potential CIL costs, any other obvious likely planning conditions and their cost, the likely market response to the development in terms of the potential return on development, site development timescales, potential community response to the development, any other unique site specific issues of relevance.

7.4 Having established those broad estimates, it was necessary to consider particular sites in greater detail to check both the capacity assumptions and the likely timing of delivery, to give reasonable certainty that the required 5 years supply of available housing land can be maintained throughout the Local Plan period.

7.5 It remains possible that some additional development might still be needed in some of the villages around Lincoln if any significant problems in delivering the preferred option are identified. However, relying on the expansion of villages to contribute significantly towards meeting strategic urban needs is considered a less sustainable approach. Nevertheless, there may be local reasons for promoting limited growth of some particular villages and the growth strategy should not prevent this, provided viability of the overall strategy would not be compromised as a result. It is presumed that this would be a matter for consideration in the context of Neighbourhood Plans prepared on a community-by-community basis.

7.6 At this stage, there remains some uncertainty about the capacity and deliverability of some of the potential infill, regeneration, and "densification" sites within the core built-up area and the approach to development within areas of flood risk has not yet been fully resolved. (Those are the weakest aspects of Option 1, which, otherwise, achieves the highest sustainability rating). In view of those uncertainties, it is recommended it would be prudent to pursue the approach outlined below as a basis for a sustainable growth strategy as it appears to offer additional capacity and flexibility, whilst maintaining a high level of sustainability.

Conclusions

7.7 This study has identified and defined the Lincoln Strategy Area as an area where 64% of Central Lincolnshire's growth can and should be accommodated based on an assessment of sustainability criteria. For growth within the Lincoln Strategy Area, once existing commitments are factored in, the focus for new allocations and growth should be:

- 1) maximising, sensitively, growth on urban sites in the Lincoln urban area, allocating known sites and making a reasonable allowance for windfall on unallocated sites;
- 2) concentrating major growth on a series of SUEs, the identification of which should be the subject of separate evidence reports, though there is clear evidence available for us to conclude that a number of large scale SUE options are available;
- 3) allocation of some sites in and on the edge of the villages in the LSA in line with the settlement hierarchy approach. This will ensure such villages continue to thrive, but are not overwhelmed by growth or their character fundamentally altered. Such sites will also assist with demonstrating short-term (5 year) delivery of housing;
- 4) not to pursue a new settlement option, because of the ability to meet the growth targets via the recommendations above, and because such new settlement options are slow to deliver and potentially have high infrastructure asks. A lack of developer interest in promoting freestanding new settlements reinforces the view not to pursue this option.

APPENDIX 1: SUSTAINABILITY ASSESSMENT OF ALTERNATIVE SPATIAL OPTIONS

Option 1 – an expanded City extending beyond its current boundaries via a collection of sustainable urban extensions (SUEs) with limited development in surrounding villages.

“Focus meeting all of Lincoln’s future needs on an expanded Lincoln City extending beyond its current boundaries via a collection of sustainable urban extensions, with limited development in surrounding villages”

Note: For the purposes of this appraisal, “limited development in surrounding villages” is treated as minor development mostly to meet local needs and local community aspirations.

Criteria	Score					Notes
	✓✓	✓	-	x	xx	
i. To encourage and support a competitive, diverse and stable economy which helps to underpin Lincoln’s role as driver for Central Lincolnshire						<p>Pros: Supports high level of interaction, collaborative competitiveness and synergy, helping to promote innovation and enterprise (“hubs” and “clusters” effect). Supports efficient and sustainable live / work relationships</p> <p>Cons: Congestion and inefficiency risks if transport system not developed appropriately. Positive impacts on rural employment may be limited.</p>
ii. Reinforces and improves the City Centre as (regional) destination for shopping, culture, leisure, learning and business						<p>Pros: Creates critical mass necessary to support higher order retail, cultural, leisure and service provision. Supports high level of interaction and synergy.</p> <p>Cons: Congestion risk if transport system not developed appropriately.</p>
iii. Supports strong commercial investment opportunities for developers and other partners delivering priority schemes, including interventions in CCMP and infrastructure schemes						<p>Pros: Focuses investment on relatively high-value assets. Promotes synergy between investments. Supports relatively high level of developer contributions towards infrastructure. Creates critical mass.</p> <p>Cons: May be some initial resistance, as requires some reconsideration of ‘conventional’ approaches to development locally (tendency has been towards more dispersed development pattern)</p>

iv.	Meets identified needs for a range of good quality housing and employment sites to ensure the housing stock meets the needs of the area and creates and improves access to high quality employment and training opportunities					<p>Pros: Brings live / work (homes and workplaces) together. Supports development of sustainable neighbourhoods. Does not compromise flexibility around the choice of employment land sites.</p> <p>Cons: Offers more limited village housing development opportunities than have become conventional. Dependence on some sites that may be more difficult / costly to develop may affect deliverability. May be some initial developer resistance, as requires some reconsideration of 'conventional' approaches to development locally (tendency has been towards more dispersed development pattern)</p>
v.	Provides supply of new housing and employment land on economically viable and deliverable sites					<p>Pros: Limits potentially wasteful and inefficient dispersal ("sprawl"). Positive concentration and urban renewal effects.</p> <p>Cons: May be some initial developer resistance, as requires some reconsideration of 'conventional' approaches to development locally (tendency has been towards more dispersed development pattern)</p>
vi.	Preserves and enhances built and historic environment;					<p>Pros: Focuses growth on urban core, maximizing opportunities for cultural interaction and potentially providing economic support to maintain historic assets.</p> <p>Cons: Some risk of conflict between 'new' and 'historic' if development not appropriately managed.</p>
vii.	Conserve and enhance biodiversity through inclusion of green linkages and support Green Infrastructure;					<p>Pros: Consistent with current policy (green wedges).</p> <p>Cons: Will require due consideration of ecological value of "brownfield" sites (potential for some conflict here).</p>
viii.	Promotes walking and cycling to reduce traffic and improve air quality and promote healthy lifestyles and maximise health and well being;					<p>Pros: Creates spatial relationships that support modal choice and modal shift. Positively concentrates employment, housing and other development in sustainable neighbourhoods.</p>

						Cons: Congestion-related pollution risk if transport system not developed appropriately.
ix.	Is consistent with reducing and managing the risk of flooding					Pros: Scale of development should be sufficient to support appropriate mitigation measures as necessary. Cons: Involves some development in areas where flood-risk reduction measures will be required.
x.	Makes efficient use of existing transport infrastructure, reducing the need to travel by car, and to ensure all journeys are undertaken by the most sustainable modes of travel					Pros: Creates spatial relationships that support modal choice and modal shift. Positively concentrates employment, housing and other development in sustainable neighbourhoods. Creates / supports critical mass necessary to operate public transport efficiently. Builds on current sustainable transport initiatives (eg, LN6) Cons: –
xi.	Is consistent with the need to minimise carbon emissions and minimise pollution					Pros: Supports low-carbon transport modes. Offers opportunities for low-carbon solutions such as district heating, waste-to-energy etc. in new sustainable urban extensions and urban core redevelopment areas. Cons: Congestion-related emissions risk if transport system not developed appropriately.
xii.	Supports healthy communities and individuals;					Pros: Provides critical mass and good accessibility. Promotes opportunities to walk / cycle between home and work etc. Enables efficient delivery of health care. Could impact positively on health of inner urban communities by reducing pollution associated with car-based commuting patterns. Cons: Could increase rural isolation in some areas if connectivity is poor.

xiii. Maximises opportunities for positive cultural, social and economic interaction to stimulate regeneration and ensure equitable outcomes for all						<p>Pros: Maximises the 'critical mass' of the city from a cultural, social and economic perspective. Offers opportunities for effective placemaking that supports interaction.</p> <p>Cons: –</p>
xiv. Achieves broad community support						<p>Pros: Likely to be relatively non-controversial in terms of key sites. Minimises perceived pressure on villages.</p> <p>Cons: –</p>

Option 2 – most development focused on Lincoln via Sustainable Urban Extensions with some major development in a few adjoining settlements.

“Focus meeting Lincoln’s future needs in and around Lincoln via some sustainable urban extensions, up to and not beyond the existing and proposed bypasses. Additional major development focused on a few identified surrounding villages”

Note:
Based on development only within “primary urban area” plus a few larger villages as necessary. For the purposes of this appraisal, this option includes the following settlements: Branston, Cherry Willingham, Metherringham, Navenby, Nettleham, Saxilby, Skellingthorpe, Washingborough, Welton, Witham St. Hugh's

Criteria	Score					Notes
	✓	✓	-	X	X	
i. To encourage and support a competitive, diverse and stable economy which helps to underpin Lincoln’s role as driver for Central Lincolnshire						<p>Pros: Supports high level of interaction, collaborative competitiveness and synergy, helping to promote innovation and enterprise (“hubs” and “clusters” effect). Supports relatively efficient and sustainable live / work relationships</p> <p>Cons: Congestion and inefficiency risks if transport system not developed appropriately.</p>
ii. Reinforces and improves the City Centre as (regional) destination for shopping, culture, leisure, learning and business;						<p>Pros: Supports higher order retail, cultural, leisure and service provision in City Centre. Supports interaction and synergy.</p> <p>Cons: Congestion risk if transport system not developed appropriately (more difficult to with greater dispersal). Commuting pattern could reduce “critical mass” benefits, compared to Option 1.</p>
iii. Supports strong commercial investment opportunities for developers and other partners delivering priority schemes, including interventions in CCMP and infrastructure schemes;						<p>Pros: Focuses investment on relatively high-value assets. Promotes synergy between investments. Supports developer contributions towards infrastructure.</p> <p>Cons: Dispersal of development may reduce the incentive to bring forward more difficult sites in core urban area.</p>

iv.	Meets identified needs for a range of good quality housing and employment sites to ensure the housing stock meets the needs of the area and creates and improves access to high quality employment and training opportunities					<p>Pros: Supports development of sustainable neighbourhoods. Does not compromise flexibility around the choice of employment land sites. Not reliant on some sites that may be more difficult / costly to develop may affect deliverability. Likely to be supported by developers as perpetuates 'conventional' approaches to development locally (more dispersed development pattern).</p> <p>Cons: May divert from delivery of urban core sites, some of which may be more difficult / costly to bring forward.</p>
v.	Provides supply of new housing and employment land on economically viable and deliverable sites;					<p>Pros: Gives substantial choice of development sites. Avoids reliance on sites that may be more difficult / costly to bring forward. Likely to be supported by developers as perpetuates 'conventional' approaches to development locally (more dispersed development pattern).</p> <p>Cons: May divert from delivery of urban core site, some of which may be more difficult / costly to bring forward.</p>
vi.	Preserves and enhances built and historic environment;					<p>Pros: Substantial proportion of growth in urban core, offering opportunities for cultural interaction and potentially providing economic support to maintain historic assets.</p> <p>Cons: Dispersal may reduce investment in historic core. May be perceived to diminish distinctive identities of some of the villages.</p>
vii.	Conserve and enhance biodiversity through inclusion of green linkages and support Green Infrastructure					<p>Pros: Consistent with current policy (green wedges).</p> <p>Cons: May impact on green space in and around some villages.</p>
viii.	Promotes walking and cycling to reduce traffic and improve air quality and promote healthy lifestyles and maximise health and well being					<p>Pros: Subject to design and provision of infrastructure and local facilities, may promote some local increases in walking and cycling.</p>

					Cons: Dispersed pattern less likely to lead to large-scale uptake of walking and cycling for main journeys overall (eg, to and from work and school). Could impact negatively on health of inner urban communities if pollution associated with car-based commuting pattern perpetuated.
ix.	Is consistent with reducing and managing the risk of flooding				Pros: Relatively less development in areas of flood risk than in Option 1 Cons: –
x.	Makes efficient use of existing transport infrastructure, reducing the need to travel by car, and to ensure all journeys are undertaken by the most sustainable modes of travel				Pros: Concentration of housing in urban core and urban extensions plus a few villages may support viable public transport services. May support Park and Ride. Cons: Greater dispersal of employment sites would make these difficult to serve by public transport.
xi.	Is consistent with the need to minimise carbon emissions and minimise pollution				Pros: May support low-carbon transport modes. Offers some opportunities for low-carbon solutions such as district heating, waste-to-energy etc. in new sustainable urban extensions and urban core redevelopment areas (perhaps less-so in villages) Cons: Risk of relatively high levels of car-dependence being maintained. Congestion-related emissions risk if transport system not developed appropriately.
xii.	Supports healthy communities and individuals;				Pros: Provides critical mass and good accessibility. Some increased opportunities to walk / cycle between home and work etc. Enables efficient delivery of health care. Cons: Requires careful planning of neighbourhood centres to make this more dispersed model effective.

					Could impact negatively on health of inner urban communities if pollution associated with car-based commuting pattern perpetuated.
xiii.	Maximises opportunities for positive cultural, social and economic interaction to stimulate regeneration and ensure equitable outcomes for all				<p>Pros: Increases the 'critical mass' of the city from a cultural, social and economic perspective (but perhaps less so than Option 1 even though people may be prepared to travel) Offers opportunities for effective placemaking (urban core and villages) that supports interaction.</p> <p>Cons: –</p>
xiv.	Achieves broad community support				<p>Pros: Urban core and urban extension developments probably broadly acceptable.</p> <p>Cons: Some potential controversy over expansion / perceived loss of identity of some villages.</p>

Option 3 – most development focused in Lincoln with additional development between lots of adjoining villages.

“Focus meeting Lincoln’s future needs in and around Lincoln up to but not beyond the existing and proposed bypasses. Additional development distributed proportionately between lots of surrounding villages depending on existing services, facilities and capacity”

Note:
For the purposes of this appraisal, this option includes, for example, the following settlements: Aurbourn, Bardney, Brant Broughton, Cherry Willingham, Eagle, Greetwell, Navenby, Nettleham, Welton, Reepham, Riseholme, Saxilby, Skellingthorpe, Swinderby, Thorpe on the Hill, Washingborough, Witham St. Hughs (that list is not exhaustive).

Criteria	Score					Notes
	?	?	-	X	X	
i. To encourage and support a competitive, diverse and stable economy which helps to underpin Lincoln’s role as driver for Central Lincolnshire;						<p>Pros: Focus on Lincoln supports interaction, collaborative competitiveness and synergy, helping to promote innovation and enterprise, but probably significantly less so than Options 1 or 2. Some positive impacts on rural employment.</p> <p>Cons: Dispersed pattern of development less likely to create critical mass to support some activities. Unlikely to produce levels of interaction and innovation that can be expected from other options. Significant risks of congestion and inefficiency if transport system not developed appropriately.</p>
ii. Reinforces and improves the City Centre as (regional) destination for shopping, culture, leisure, learning and business;						<p>Pros: Focused on Lincoln</p> <p>Cons: A more dispersed model increasing the risk of people travelling out of the Strategy Area (leakage). Less likely to create “critical mass” of interactions.</p>
iii. Supports strong commercial investment opportunities for developers and other partners delivering priority						<p>Pros: Focused on Lincoln</p>

schemes, including interventions in CCMP and infrastructure schemes;					Cons: Reduces the critical mass which impacts on development equations.
iv. Meets identified needs for a range of good quality housing and employment sites to ensure the housing stock meets the needs of the area and creates and improves access to high quality employment and training opportunities					Pros: May support sustainable development of some villages as well as some urban core neighbourhoods. Offers potentially wide range / distribution of employment land sites – including rural employment opportunities. Not reliant on some sites that may be more difficult / costly to develop may affect deliverability. Likely to be supported by developers as perpetuates ‘conventional’ approaches to development locally (more dispersed development pattern).
					Cons: Likely to divert from delivery of urban core sites and sustainable urban extensions, some of which may be more difficult / costly to bring forward. Likely to produce inefficient relationships between homes and workplaces and between businesses. Unlikely to produce levels of interaction and innovation that can be expected from other options.
v. Provides supply of new housing and employment land on economically viable and deliverable sites;					Pros: Gives widest choice of development sites. Avoids reliance on sites that may be more difficult / costly to bring forward. Extends ‘conventional’ approaches to development locally (more dispersed development pattern).
					Cons: Reduces scope for concentration of employment and related opportunities. Likely to divert from delivery of urban core sites and sustainable urban extensions, some of which may be more difficult / costly to bring forward. Likely to produce inefficient relationships between homes and workplaces and between businesses. Unlikely to produce levels of interaction and innovation that can be expected from other options.

vi.	Preserves and enhances built and historic environment;					Pros: Some investment in historic urban core – but less than other options. Possible investment in some heritage buildings in and around villages.
						Cons: May be perceived to threaten identity of villages. Unlikely to create critical mass to support expansion of cultural offer.
vii.	Conserve and enhance biodiversity through inclusion of green linkages and support Green Infrastructure					Pros: Could reduce impacts on some green spaces.
						Cons: Dispersed development could increase impacts on some green spaces.
viii.	Promotes walking and cycling to reduce traffic and improve air quality and promote healthy lifestyles and maximise health and well being					Pros: May increase opportunities for some local home / work journeys to be by foot and bike.
						Cons: Overall, likely to involve increase use of cars as alternatives unlikely to be viable / attractive in such a dispersed pattern. Dispersed pattern less likely to lead to large-scale uptake of walking and cycling for main journeys overall (eg, to and from work and school). Likely to impact negatively on health of inner urban communities by increasing pollution associated with car-based commuting pattern.
ix.	Is consistent with reducing and managing the risk of flooding					Pros: Disperses development on a network of sites, limiting the scale of overall flood risk.
						Cons: –
x.	Makes efficient use of existing transport infrastructure, reducing the need to travel by car, and to ensure all journeys are undertaken by the most sustainable					Pros: May support Park and Ride.

modes of travel					Cons: Greater dispersal of housing and workplaces unlikely to support viable public transport options. Increased dependency on cars likely.
xi. Is consistent with the need to minimise carbon emissions and minimise pollution					Pros: , waste-to-energy etc. in new sustainable urban extensions and urban core redevelopment areas (perhaps less-so in villages)
					Cons: Unlikely to support low-carbon transport modes. Offers relatively few opportunities for low-carbon solutions such as district heating. Relatively high levels of car-dependence likely to be maintained / increased. Congestion-related emissions likely to remain high.
xii. Supports healthy communities and individuals;					Pros: Maintains the live / work viability of a number of rural settlements
					Cons: Likely to impact negatively on health of inner urban communities by increasing pollution associated with car-based commuting pattern. Likely to perpetuate health risks associated with high levels of car dependency.
xiii. Maximises opportunities for positive cultural, social and economic interaction to stimulate regeneration and ensure equitable outcomes for all;					Pros: Within some rural settlements it could increase the opportunities for interaction.
					Cons: Compared with other options, minimises chances of creating and maintaining the 'critical mass' of the city from a cultural, social and economic perspective .
xiv. Achieves broad community support					Pros: —
					Cons: Can be expected to generate considerable resistance to development which might be seen to affect the current character of a number of villages

Option 4 – most growth in the City and in one or two self-contained settlements close enough to the City to be accessible by cycle or public transport.

“Focus meeting Lincoln’s future needs in and around Lincoln up to but not beyond the existing and proposed bypasses with additional development located in one or more new, self-contained settlement identified close enough to the City to be accessible by cycle or public transport”

Note:
This option is consistent with Option 1, but involves placing all the additional development in one or two other relatively self-contained settlements with good sustainable transport links to Lincoln (for the purposes of this appraisal, candidates could be, Metherringham, Saxilby, Witham St. Hugh’s)

Criteria	Score					Notes
	?	?	-	X	X	
i. To encourage and support a competitive, diverse and stable economy which helps to underpin Lincoln’s role as driver for Central Lincolnshire						Pros: Supports high level of interaction, collaborative competitiveness and synergy, helping to promote innovation and enterprise (“hubs” and “clusters” effect). Supports relatively efficient and sustainable live / work relationships Cons: Congestion and inefficiency risks if transport system not developed appropriately. “Over development” of one or two other settlements could dilute benefits overall.
ii. Reinforces and improves the City Centre as (regional) destination for shopping, culture, leisure, learning and business;						Pros: Supports higher order retail, cultural, leisure and service provision in City Centre. Supports interaction and synergy. Supports similar benefits in one or two other settlements Cons: Congestion risk if transport system not developed appropriately. Commuting pattern could reduce “critical mass” benefits, compared to Option 1, if the one or two other settlements not appropriately resourced.
iii. Supports strong commercial investment opportunities for developers and other partners delivering priority schemes, including interventions in CCMP and infrastructure schemes;						Pros: Focuses investment on relatively high-value assets. Promotes synergy between investments. Supports developer contributions towards infrastructure.

						Cons: Could reduce the incentive to bring forward more difficult sites in core urban area. “Over development” of one or two other settlements could dilute benefits overall.
iv.	Meets identified needs for a range of good quality housing and employment sites to ensure the housing stock meets the needs of the area and creates and improves access to high quality employment and training opportunities					Pros: Creates new housing market and employment opportunities in sustainable new / expanded settlements. Gives high level of focused choice. Cons: “Over development” of one or two other settlements could dilute benefits overall.
v.	Provides supply of new housing and employment land on economically viable and deliverable sites;					Pros: As above Cons: As above
vi.	Preserves and enhances built and historic environment					Pros: Sustains the viability of both Lincoln and the new / expanded settlement(s) Cons: –
vii.	Conserve and enhance biodiversity through inclusion of green linkages and support Green Infrastructure					Pros: No reason to believe it will harm green linkages Cons: –
viii.	Promotes walking and cycling to reduce traffic and improve air quality and promote healthy lifestyles and maximise health and well being;					Pros: Creates spatial relationships that support modal choice and modal shift. Positively concentrates employment, housing and other development in sustainable neighbourhoods.

						Cons: Congestion-related pollution risk if transport system not developed appropriately.
ix.	Is consistent with reducing and managing the risk of flooding					Pros: Provides choice around the selection of sites that are not challenged by flood risk.
						Cons:
x.	Makes efficient use of existing transport infrastructure, reducing the need to travel by car, and to ensure all journeys are undertaken by the most sustainable modes of travel					Pros: Creates spatial relationships that support modal choice and modal shift. Positively concentrates employment, housing and other development in sustainable neighbourhoods. Creates / supports critical mass necessary to operate public transport efficiently. Builds on current sustainable transport links.
						Cons: –
xi.	Is consistent with the need to minimise carbon emissions and minimise pollution					Pros: Supports low-carbon transport modes. Offers opportunities for low-carbon solutions such as district heating, waste-to-energy etc. in new sustainable urban extensions, the new / expanded settlements and urban core redevelopment areas.
						Cons: Congestion-related emissions risk if transport system not developed appropriately.
xii.	Supports healthy communities and individuals;					Pros: Provides critical mass and good accessibility. Promotes opportunities to walk / cycle between home and work etc. Enables efficient delivery of health care. Could impact positively on health of inner urban communities by reducing pollution associated with car-based commuting patterns. Increases sustainability levels of the new / expanded settlements.

						Cons: Could increase rural isolation in some areas if connectivity is poor.
xiii.	Maximises opportunities for positive cultural, social and economic interaction to stimulate regeneration and ensure equitable outcomes for all					Pros: Maximises the 'critical mass' of the city from a cultural, social and economic perspective. Offers opportunities for effective placemaking that supports interaction. Benefits the new / expanded settlements similarly.
						Cons: "Over development" of one or two other settlements could dilute benefits overall.
xiv.	Achieves broad community support					Pros: Creates the potential to enhance the functionality of a currently challenged rural service centre by building critical mass. Minimises perceived harm to villages.
						Cons: –