

Sheffield Plan: Our City, Our Future

Interim Sustainability Appraisal/ Strategic Environmental Assessment on Citywide Options Report

November 2015

Development Services



This document can be supplied in alternative formats,
please contact:

Sheffield Plan Team
Sheffield City Council
Tel: 0114 205 3075
Email: sheffieldplan@sheffield.gov.uk
www.sheffield.gov.uk/sheffieldplan

CONTENTS

Non-Technical Summary	5
Introduction.....	10
The Scope of the Sustainability Appraisal	12
Sustainability Appraisal Methodology	13
What Is This Report Appraising?	16
Vision, Aims and Objectives	17
Undertaking the Appraisal	28
Appraising Employment Growth Options.....	33
Appraising Housing Growth Options.....	41
Conclusion and Next Steps	55
Appendix 1: Sustainability Appraisal Framework.....	56
Appendix 2: Appraisal Of Employment Growth Options	59
Appendix 3: Appraisal Of Housing Growth Options.....	61

TABLES

1	Steps of Sustainability Appraisal Stage B	12
2	Signposts to where requirements of the SEA Directive have been fulfilled	13
3	Appraisal of Sheffield Plan Aims and Objectives	18
4	Scale of Likely Impacts in relation to Sustainability Aim.	27

NON-TECHNICAL SUMMARY

Relationship between the Sheffield Plan and the Sustainability Appraisal Process

This report has been produced to inform the production of the Sheffield Plan. The Sheffield Plan will set out the agenda for how Sheffield will develop over the next 15-20 years. It will guide development in the city by setting out how and where new development will take place.

This report sits alongside two other consultation documents:

- Sheffield Plan Citywide Options for Growth to 2034 Document, which is the first stage of making the Sheffield Plan
- Draft Sustainability Appraisal/SEA Scoping Report, which sets out the scope and approach to assessing, predicting and monitoring the impacts of the Sheffield Plan on sustainability aspects.

The draft Sustainability Appraisal/SEA Scoping Report outlines the social, economic and environmental conditions and trends in Sheffield, and relevant plans and programmes which would feed into the Sheffield Plan. It proposes the approach that will be used to predict, appraise and monitor the effects of the Sheffield Plan on all aspects of sustainability. It sets out how the approach to appraising the Plan meets the requirements of European and national legislation. This will ensure that the Plan promotes sustainable development.

The Citywide Options for Growth to 2034 Document is the first stage of the Sheffield Plan. It sets out the challenges and opportunities for the city, and provides a range of options for the nature and scale of development in Sheffield over the next 15-20 years.

This Sustainability Appraisal Report appraises two aspects of the Citywide Options for Growth to 2034 Document, in relation to its likely impacts on the key sustainability issues for Sheffield:

- The emerging Vision, Aims and Objectives of the Sheffield Plan
- The housing and employment growth options – comparing the sustainability and suitability of each option, by identifying their likely positive and negative impacts. It also considers what further work is needed to understand any currently uncertain impacts, and what mitigation measures need investigating in relation to potential significant effects.

The appraisals use the approach set out in the draft Sustainability Appraisal/SEA Scoping Report, and appraise the options for their likely impacts using the Sustainability Appraisal Framework in Appendix 1. The sustainability appraisal, and subsequent consultation comments, will inform the later stages of developing the Sheffield Plan.

Appraisal of the Vision, Aims and Objectives

The Vision, Aims and Objectives of the emerging Sheffield Plan have been tested against the Sustainability Aims. The findings confirm that the Sheffield Plan and the Sustainability Appraisal Framework are closely matched and support each other, with Aims and Objectives anticipating mitigation and protection of any potential conflicts.

Appraisal of Future Growth Options

The sustainability appraisal appraises and tests the suitability of these options against a range of sustainability aims. The full results are set out in the appendices 2 & 3.

Employment Growth Options

The employment options in Sheffield assume an alternative to that already set out in the Core Strategy, which is:

- City Centre, Upper Don Valley, Lower Don Valley and Outer South East, Chapeltown/Ecclesfield, Stocksbridge/Deepcar, Sheaf Valley, Blackburn Valley, Holbrook and Orgreave as main locations for new offices and manufacturing, distribution and warehousing
- Priority office location is only City Centre
- Promotion of high-tech knowledge based industries, but there is no promotion of the Advanced Manufacturing Park/Sheffield Business Park.
- Support City Centre, District Centres and Local Centres. If no in- or edge-of-centre sites are available, retail and leisure can go anywhere.

The realistic alternatives proposed in the Citywide Options for Growth to 2034 Document are:

Main Employment Locations for Offices, Manufacturing, Distribution and Warehousing

- A. City Centre, Upper Don Valley, Lower Don Valley and Outer South East as main locations for new offices and manufacturing, distribution and warehousing; Chapeltown/Ecclesfield, Stocksbridge/Deepcar, Sheaf Valley, Blackburn Valley, Holbrook and Orgreave - for B-class uses providing employment opportunities close to new homes

Advanced Manufacturing locations

- B. Manufacturing development focused around the Advanced Manufacturing Park and Sheffield Business Park area; with identification of land not currently designated for business and industrial use.

Priority Office Locations

Supplementary options to the Core Strategy approach are:

- C. Higher densities of office development in City Centre

- D. Target for office development in Advanced Manufacturing Park/Sheffield Business Park area
- E. Limited amount of office development in other outlying areas of well-connected locations e.g. Hillsborough, Crystal Peaks, Chapeltown, Stocksbridge

Retail and Leisure Locations

- F. Meadowhall Shopping Centre and retail parks identified as commercial centres where retail and leisure development is preferred, if no in- or edge of centre sites are available

Appraisal Findings

All the options proposed show more positive impacts than the current Core Strategy approach. Therefore, together they would provide a synergistic positive impact. However, there are still some unknown impacts which would need investigating through appraisal of site options or appraisal of policies, to ensure mitigation would be required at the planning application stage. The largest number of unknown impacts is for the options at the Advanced Manufacturing Park, as this would introduce new employment site allocations at a new location identified in the Employment Land Review to meet the economic sustainability Aims.

Housing Growth Options

Option A

Continue with the current strategy of concentrating new development on brownfield sites within the existing urban areas and make an additional allowance for windfalls on larger sites. Develop sites at similar densities to those achieved in the past.

Option B

Make more intensive use of sites within the existing urban areas by:

- (a) A further emphasis on City Centre living as a part of a strategy for mixed use within the area bounded by the Inner Ring Road and Kelham/Shalesmoor (this could include some taller buildings in certain locations).
- (b) Relaxing amenity standards and reducing off-street parking provision in existing neighbourhoods close to District and Neighbourhood Centres, resulting in higher overall densities (meaning smaller houses and apartments would make up a greater proportion of the new homes built in those locations).
- (c) Relaxing policies for the protection of open space to enable some surplus urban green space to be developed, with the money generated being invested in improving the quality of remaining areas.

Option C

Remodelling parts of the existing urban area to enable the reallocation of poorer quality employment uses for housing. Locations proposed for these are:

- (a) Neepsend/Shalesmoor
- (b) Attercliffe

Option D

Plan for a limited number of larger urban extensions (at least 1,000 homes) into the Green Belt in locations that are well served by, or have potential to be served by, the Supertram network or rail services. Locations proposed for these are:

- (a) Stocksbridge/Upper Don Valley
- (b) East Sheffield (as extension to the Waverley in Rotherham Borough)
- (c) South East Sheffield
- (d) East of Norton

Option E

Develop multiple smaller urban extensions around the built up areas and allow redevelopment of large brownfield sites in the Green Belt for housing.

Typically, developments would have capacity for up to 300 homes though potentially with a small number of larger extensions in the four locations identified under Option D.

Appraisal Findings

Each option would make a positive contribution towards having enough housing land in Sheffield. Not all the options may need to be taken forward to provide sufficient numbers of new homes to meet all Sheffield's need within Sheffield. But further consideration of potential site options will be needed during the next stage of plan preparation, to ascertain the extent of the likely impact and the significance of each option. This will help in weighing which combination of options would maximise beneficial effects, which of the negative impacts are significant, and which can be mitigated.

By proposing greenfield development in the Green Belt, Options D and E have the potential for significant negative impacts on Efficient Use of Land and potential negative impact on Landscape, Ecology and Geology depending on which sites are proposed. The potential for not developing any sites with landscape or ecological and geological value needs to be weighed against the need for new homes, and whether developing less housing impacts on the viability of extending or providing social and transport infrastructure. Further investigation is needed regarding public transport accessibility, although, at this stage, there remains uncertainty about whether the transport network extensions would be implemented.

Large scale development as proposed by Options C and D would allow the provision of flood and water management measures, facilities, shops, local employment, and infrastructure, and could reduce the need to travel for some people. However it would not completely negate the need to travel to distant employment areas and the potential impact on traffic congestion and air pollution elsewhere in the city.

Options A, B and C concentrate more development within the urban area, due to higher densities, thus indirectly protecting greenfield land of high quality landscape value, ecological value or archaeological value. Increasing capacity of the City Centre and Kelham is positive on many impacts directly and indirectly impacted by its accessible location. Although as with the other urban options, intensification will support the viability of centres and current facilities, but may make it difficult to

provide the health, education and other facilities, open space and flood and water management measures required to accompany the increased population.

The options do not factor in any additional dwelling capacity from Employment Land Review sites which are not attractive for strategic or local employment use. This could provide additional dwelling capacity, depending on their performance in site sustainability appraisals, which could counter the drop of dwelling capacity due to the need to provide additional infrastructure and facilities.

Unrealistic options ruled out

We have already ruled out the following housing options on the grounds that they are not reasonable alternatives for accommodating growth in Sheffield, because of the closeness of the city's boundary to the Peak District, the high quality landscape value of land and the lack of any sustainable location or facilities to expand from.

- *Growth of the smaller villages and hamlets, which are little more than loose clusters of homes and farms and lack local services and facilities.*
- *Building a major new settlement in the countryside*

Next Stages

The report emphasises the difficulty of appraising citywide growth options in isolation, and not being able to take on board synergies with other future parts of the Sheffield Plan. Without the accompanying detail on sites and policies, it is difficult to predict with certainty the likelihood, significance and scale of cumulative impacts, particularly in relation to certain parts of the city. Also, in the absence of detailed development management policies, it is not known whether sufficient efforts would be made by the Sheffield Plan to mitigate effects.

The next step is to use the findings from these Sustainability Appraisals, other evidence and the consultation comments to refine the citywide growth options. Feeding into this will be the assessment of site options, and policy options, both on a site-specific level but also cumulatively. This will allow the assumptions and findings in this report to be tested and updated. The next interim Sustainability Appraisal Report for the next Sheffield Plan stage will outline the reasons for selecting the preferred approaches in light of the alternatives, and why any options were rejected.

INTRODUCTION

Context of this Report

1. This document reports on the Sustainability Appraisal of Sheffield's Citywide Options for Growth to 2034 Document, which uses the approach outlined in the draft Sustainability Appraisal Scoping Report. This ensures that the impacts of the Plan on the social, economic and environmental conditions of Sheffield are considered and the Plan is developed in a way which meets the city's needs and protects its characteristics. The consultation on this report sits alongside the consultation on the other two documents:
 - Draft Sustainability Appraisal and Strategic Environmental Assessment Scoping Report
 - Citywide Options for Growth to 2034 Document

Links between the three consultation documents

2. The aim of Sustainability Appraisal is to promote sustainable development through the integration of environmental, social and economic considerations into the preparation of planning documents. Sustainability appraisal of Local Plan documents is required by Government, to ensure that plans contribute to the statutory objective of contributing to the achievement of three dimensions of sustainable development: social, economic and environmental¹. In addition to this, EU legislation requires that Strategic Environmental Assessment (SEA) is carried out for Local Plans. The requirement for undertaking SEAs and Sustainability Appraisals on Local Plans is set down more fully in the Scoping Report accompanying this document. Both of the Sustainability Appraisal and SEA requirements are combined in this report.
3. The draft Sustainability Appraisal/SEA Scoping Report sets out the approach that will be used to predict, appraise and monitor the effects of the Sheffield Plan on all aspects of sustainability. It sets out how the approach to appraising the Plan meets the requirements of European and national legislation. This will ensure that the Sheffield Plan promotes sustainable development.
4. Stage B of the Sustainability Appraisal Process (see Chapter 4) requires options to be developed and refined for the Sheffield Plan, and tested via the Sustainability Appraisal process. This will inform the further refining of the options until a preferred approach is taken in the Sheffield Plan.
5. The Citywide Options for Growth to 2034 document outlines the range of options for employment and housing growth which the Council is consulting on as part of the development of the Sheffield Plan. The Sheffield Plan, once adopted in 2018, will set out the spatial policies, guidance, land use designations and site allocations for the plan period, against which all planning applications and development proposals in the district will be assessed.

¹Planning and Compulsory Purchase Act, 2004, chapter 39

6. This sustainability appraisal report assesses the options presented in the Citywide Options for Growth to 2034 document for their likely significant sustainability impacts, and the compatibility of the Sheffield Plan, Vision, Aims and Objectives against the Sustainability Aims.

Other complementary assessments

7. A separate Habitats Regulation Assessment has been undertaken, which is available as part of the consultation.
8. Views on the equalities impacts of the Citywide Options for Growth Document are being sought through that document, as equality issues could be brought to light from the consultation questions as well as other aspects of the Document. However, where there are obvious equality or health implications from the options, these have been included in the discussion of the Sustainability Appraisal of the options. A more comprehensive equality impact assessment will be taken once the options are worked up further and when sites and policies are being considered.

THE SCOPE OF THE SUSTAINABILITY APPRAISAL

9. The Sustainability Appraisal process covers five stages, the first of which is Stage A which is: setting the context and objectives, establishing the baseline and deciding on the scope of the Sustainability Appraisal.
10. The draft Sustainability Appraisal and Strategic Environmental Assessment Scoping Report covers Stage A and is being consulted on at the same time as this report. It informs the approach taken in this report, but will be updated as required as a consequence of the consultation and any future plans, strategies and baselines which need to be taken into account in future Sustainability Appraisals. Any updates will be reflected in subsequent Sustainability Appraisals.
11. The Scoping Report sets out:
 - The need for Sustainability Appraisals and Strategic Environmental Assessments and Other Assessments
 - The five-stage Sustainability Appraisal Process, as outlined in the Planning Practice Guidance².
12. It outlines, for Stage A:
 - Relevant Plans, Programmes and Strategies that will inform the development of the Sheffield Plan.
 - Social, economic and environmental baseline characteristics of Sheffield
 - Sheffield's Key Sustainability Issues.
 - The Sustainability Appraisal Framework, to be used to predict, appraise and monitor the effects of the Plan.
 - The Approach to assessing how impacts will be assessed in relation to Annex II of the SEA Directive.
 - How the approach to the Sustainability Appraisal meets the SEA Directive.
13. From this scoping exercise, 17 Sustainability Aims, as part of the Sustainability Appraisal Framework, have been established, covering the social, economic and environmental aspects of Sustainability for Sheffield. These Aims and accompanying appraisal criteria will be used to test Sheffield Plan options and policies to ensure that they are addressing the issues Sheffield faces and to assess the likely impacts of the options. The Sustainability Appraisal Framework can be found at Appendix 1.
14. Readers are directed to the Scoping Report for more information on the process.

² Planning Practice Guidance on Sustainability appraisal requirements for Local Plans Paragraph: 013Reference ID: 11-013-20140306

SUSTAINABILITY APPRAISAL METHODOLOGY

Sustainability Appraisal Approach

- 15. This report covers Stage B of the Sustainability Appraisal process which is about Developing and refining alternatives and assessing effects.
- 16. This initial Sustainability Appraisal report details steps B1-B4 and demonstrates how they have been properly carried out during the production of the Local Plan so far.
- 17. Table 1 shows which parts of the report contain the appraisals and where the findings are reported back.

Table 1 Steps of Sustainability Appraisal Stage B

Stage B: Developing and refining alternatives and assessing effects	Where this can be found in this document
1 - Test the Sheffield Plan Vision, Aims and Objectives against the sustainability appraisal framework.	Chapter 5
2 - Develop the Sheffield Plan options including reasonable alternatives	Citywide Options for Growth to 2034 Document Chapter 4 of this report.
3 - Evaluate the likely effects of the Local Plan and alternatives	Sustainability Appraisal Appendices 2 & 3 and Chapters 6, 7 and 8
4 - Consider ways of mitigating adverse effects and maximising beneficial effects.	Chapters 7, 8 and 9.
5 - Propose measures to monitor the significant effects of implementing the Local Plan.	<i>Not in this document Left to the Sustainability Appraisal Report of the Publication Version of the Plan</i>

Based on Planning Practice Guidance on Sustainability Appraisals

- 18. The approach to the Sustainability Appraisal is set out in the Scoping Report. Chapter 6 sets out detailed principles within steps B3 and B4 which guide the sustainability appraisals of the city-wide housing and employment growth options.

Initial SA/SEA Report

- 19. The findings of the Sustainability Appraisals of the citywide (strategic) options are reported in this document and will feed into the next plan-making stage. When read alongside the Scoping Report, this document covers many of the SEA requirements of preparing a Sustainability Appraisal Report (Stage C) as illustrated in Table 2. It does not provide them all as it is only an interim report informing the refinement of options in the Sheffield Plan,
- 20. There is no requirement to consult on the Sustainability Appraisal Report (Stage D) until the Publication Draft stage of the Sheffield Plan or to set out monitoring

measures yet. However, the aim of the Sustainability Appraisal process is to illustrate the benefits and risks of different policy approaches, in order to enable a transparent decision making process. Therefore it is recommended that public and stakeholder involvement is undertaken on the Sustainability Appraisal concurrently with consultation on the Sheffield Plan. This not only ensures more effective public consultation on alternative courses of action, but also helps justify why specific policy approaches or allocation choices are taken forwards whilst others have been rejected.

Compliance with the SEA Directive

21. European Directive 2001/42/EC (the 'SEA Directive') requires production of an Environmental Report identifying, describing and evaluating the likely significant environmental effects of implementing the plan or programme, and reasonable alternatives, taking into account the objectives and the geographical scope of the plan or programme³. Although the Sheffield Plan process is not sufficiently advanced for this report to be the Environmental Report, it still covers many of the aspects required by such an Environmental Report.
22. Government guidance recommends including requirements of the SEA Directive within the Sustainability Appraisal process. This report therefore covers not only likely significant environmental effects but also social and economic effects of the plan. However, it is important to distinguish elements of the report that refer directly to the SEA Directive, in order to satisfy that requirements have been met. Table 2 below provides 'signposts' to relevant sections in this report and accompanying documents, to illustrate where these requirements have been met.

Table 2 Signposts to where requirements of the SEA Directive have been fulfilled

Article	The SEA Directive's Requirements	Where covered in the SA Report
5(1) (a)	An outline of the contents, main objectives of the plan or programme	Scoping Report Chapter 3 and SA/SEA Report Chapter 5
	and relationship with other relevant plans and programmes;	Scoping Report and Topic papers
5(1) (b)	The relevant aspects of the current state of the environment	Topic papers and Scoping Report
	and the likely evolution thereof without the implementation of the plan or programme;	Topic papers & Chapter 8 of the Scoping Report SA/SEA Report Chapters 7 & 8 and Appendices 2 & 3

³ European Directive 2001/42/EC

Article	The SEA Directive's Requirements	Where covered in the SA Report
5(1) (c)	The environmental characteristics of areas likely to be significantly affected;	Scoping Report Chapter 7 & Topic papers
5(1) (d)	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 Chapter 7 & Topic papers
5(1) (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 and Topic Papers
5(1) (f)	The likely significant effects ⁴ on the environment including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.	SA/SEA Report Chapter 6, 7 & 8 and Appendices 2 and 3
5(1) (g)	The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	SA/SEA Report Chapter 7, 8 and 9.
5(1) (h)	An outline of the reasons for selecting alternatives dealt with,	Citywide Options for Growth to 2034 Document
	and a description of how the assessment was undertaken including any difficulties encountered in compiling the required information;	Scoping Report and SA/SEA Report Chapter 7
5(1) (i)	A description of the measures envisaged concerning monitoring;	For future SA/SEA Reports at Stage C and D
5(1) (j)	A non-technical summary of the information provided under the above headings;	SA/SEA Report

⁴ These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

WHAT IS THIS REPORT APPRAISING?

What is being appraised in this report?

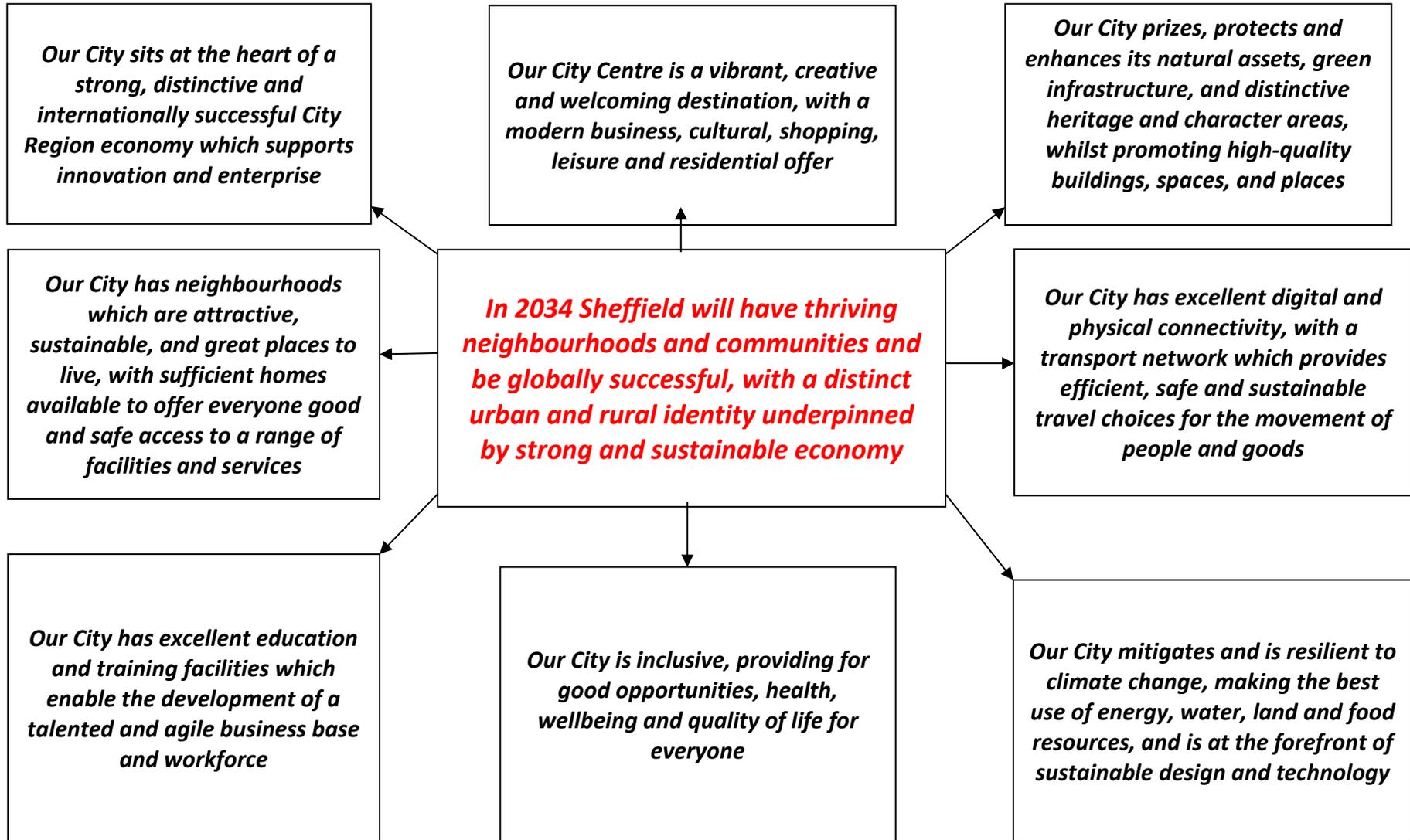
23. The Citywide Options for Growth to 2034 document is the first stage of developing the Sheffield Plan. It looks at the main areas for change in Sheffield and highlights the challenges and opportunities they present. It presents:
 - The challenges and opportunities for the city
 - The draft Sheffield Plan Vision, Aims and Objectives
 - A range of growth options about the nature and scale of development in Sheffield over the next 15-20 years.

24. The following chapters provide a summary of the findings of the Sustainability Appraisal for:
 - The emerging Vision, Aims and Objectives of the Sheffield Plan
 - The housing and employment growth options – comparing the sustainability and suitability of each options, by identifying the likely positive and negative impacts of the options.

25. Chapters 7 and 8 relating to the employment and housing growth options set out:
 - Reasonable alternatives and any rejected options
 - The effects of each alternative, appraised against the draft Sustainability Appraisal Framework set out in the draft 2015 Scoping Report
 - It also considers what further work is needed to understand any currently uncertain impacts and what mitigation needs investigating in relation to potential significant effects.

VISION, AIMS AND OBJECTIVES

Sheffield Vision and Aims



Appraising Vision, Aims and Objectives

26. The appraisal of the Vision, Aims and Objectives against the Sustainability Aims is in Table 3 on the next page.
27. This appraisal identifies the compatibility between the draft Sheffield Plan Vision and Objectives and the Sustainability Aims, any potential synergies but also any conflicts and tensions between the Aims.

Appraisal Findings

28. The environmental Sustainability Aims and the environmental Aims and Objectives of the Sheffield Plan have the closest match, as their primary purpose is protection. The economic, and education and training Sustainability Aims provide a context for the economic and educational aspirations of the city, which engage not only land use but the versatility of users of the city (e.g. visitors, businesses, employers, educators and trainers) and the reputation of the city. The equality aspects of Inclusion and Opportunities and Health and Wellbeing of the Sheffield Plan are integrated across all the economic and social Sustainability Aims. All sustainability aims relate well to the Vision, Aims and Objectives. The role of utility infrastructure is missing from the Sustainability Aims as this is to be considered in relation to deliverability and is a prerequisite of alternatives to be appraised by the sustainability appraisal. The emphasis of developing within the urban area would indirectly protect agricultural land and economic mineral resources; although these are not explicitly referred to in the Sheffield Plan aims. This reflects the relatively minor importance of them in relation to other more major aspects of the Sheffield economy, and the lack of quality and value of these resources within the Sheffield boundary.
29. It is accepted that any growth or development within Sheffield could have environmental impacts (climate change, traffic congestion, air pollution) unless mitigated. The Sheffield Plan aims are assumed to operate in an interrelationship with each other. Therefore it is assumed that any conflicts from development upon environmental or social objectives would be mitigated or tempered depending on the negative impact they could otherwise cause. Indeed the recognition for some of this mitigation is included in the Sheffield Plan aims, e.g. in relation to flood risk. The compatibility discussion in the Scoping Report discusses where potential conflicts may occur. Further work on options will tease out more these inherent conflicts, and discuss how to weigh them up, and resolve them in the most positive sustainability outcome.

Table 3 Appraisal of Sheffield Plan Aims and Objectives

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<p><i>Our City sits at the heart of a strong, distinctive and internationally successful City Region economy which supports innovation and enterprise</i> Objectives:</p> <ul style="list-style-type: none"> • Successful and ambitious large, medium and small businesses building a future based on Sheffield's competitive advantages in the areas of advanced manufacturing; education, learning and knowledge; creative and digital industries; advanced technology, research and innovation; medical technology and services; and sports science. • Sheffield recognised internationally as the outdoor leisure capital of the UK. • A city of creative and innovative enterprise, globally renowned for nurturing, valuing and supporting invention and entrepreneurialism. • Businesses which are able to respond quickly and successfully to economic opportunities and which have collaborative networks across the city and City Region. 	<p>These Sheffield Plan aims and objectives relate most strongly to the Sustainability Aims: <i>A vibrant and competitive economy with good job opportunities available to the whole community.</i></p> <p>The objectives of Sheffield being the outdoor leisure capital of the UK, and education as one of Sheffield's competitive sectors relies on the following Sustainability Aims being met: <i>Open space and cultural, leisure and recreational facilities available for all</i> <i>High quality natural landscapes protected and poor landscapes enhanced.</i> <i>Education and training opportunities provided which build the skills and capacity for the whole population and which encourage lifelong learning.</i></p> <p>Any growth brings uncertain impacts in relation to the locational and transport implications, and the effect on air pollution and climate change. The appraisal of growth options will consider this more, and it will need addressing through appraisal of sites and policies.</p>
<p><i>Our City Centre is a vibrant, creative and welcoming destination, with a modern business, cultural, shopping, leisure and residential offer</i> Objectives:</p>	<p>This Sheffield Plan Aim's particular focus on the City Centre as a destination, which is a highly accessible location both within Sheffield and from outside, supports the following Sustainability Aims:</p>

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<ul style="list-style-type: none"> • A visitor destination of international repute with a variety of global brands, events and accommodation choices for visitors. • A thriving independent scene where retailers, cafés, museums and art galleries can access the buildings and spaces to suit their needs. • World-class public spaces, streets and landmark tall buildings which are distinctive to Sheffield. • A desirable place to live for a broad range of households, including families and older people, along with the amenities to support sustainable neighbourhoods. 	<p><i>A vibrant and competitive economy with good job opportunities available to the whole community</i></p> <p><i>Use of land which supports regeneration of the urban area and protection of valuable soil and mineral resources.</i></p> <p><i>Significant development focused in locations that reduce the need to travel and the fullest possible use made of public transport, walking and cycling,</i></p> <p><i>An efficient transport network which maximises access and minimises detrimental impacts</i></p> <p>It can also support the following Sustainability Aims:</p> <p><i>Open space and cultural, leisure and recreational facilities available for all, specifically appraisal criteria relating to encouraging and promoting tourism and enabling appropriate provision of cultural, leisure and recreation (CLR) activities/venues.</i></p> <p><i>Decent and appropriate housing available to everyone,</i></p> <p><i>An attractive, high quality built environment that works well and lasts.</i></p> <p>It relies on a range of social sustainability aims in relation to Housing, Health Services and Education as well as provision of essential facilities locally, and a high quality built environment. The only potential risk or uncertainty with this Aim is if people do not make use of the sustainable modes of transport, in which case local congestion and air quality issues may make the City Centre less attractive.</p>

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<p><i>Our City has distinctive neighbourhoods which are attractive, sustainable, and great places to live, with sufficient homes available to offer everyone good and safe access to a range of facilities and services</i></p> <p>Objectives:</p> <ul style="list-style-type: none"> • Sufficient attractive, affordable and high quality homes across the city and City Region, with strong transport and digital connectivity between communities. • Successful housing markets across all tenures, in all areas of the city, with increased demand for housing in areas where it is currently low. • A successful, accessible district or neighbourhood centre, providing local shops, health services and other community facilities, at the heart of every neighbourhood. 	<p>This Sheffield Plan Aim's emphasis on housing has positive impacts on the following Sustainability Aims:</p> <p><i>Decent and appropriate housing available to everyone</i></p> <p><i>A vibrant and competitive economy with good job opportunities available to the whole community</i></p> <p><i>An efficient transport network which maximises access and minimises detrimental impacts</i></p> <p>The transport and centre approach also supports:</p> <p><i>Significant development focused in locations that reduce the need to travel and the fullest possible use made of public transport, walking and cycling, and the economic appraisal criteria to improve the vibrancy of the City's retail offer in the City centre, District or Local Centres</i></p> <p><i>Health services provided for the health needs of the whole population and which tackle health inequalities is supported from a facility angle but also new housing will potentially mean improved health by reducing the risk of over-crowding.</i></p>
<p><i>Our City prizes, protects and enhances its natural assets, green infrastructure, and distinctive heritage and character areas, whilst promoting high-quality buildings, spaces, and places</i></p> <p>Objectives:</p> <p><i>Natural Assets and Green Infrastructure</i></p> <ul style="list-style-type: none"> • Sheffield's unique natural setting of valleys, woodland, trees, rivers and wetlands safeguarded and enhanced. • Biodiversity safeguarded and enhanced throughout urban 	<p>This Sheffield Plan Aims and Objectives encompass a whole range of environmental Sustainability Aims:</p> <p><i>Open space and cultural, leisure and recreational facilities available for all, particularly the appraisal criteria which would:</i></p> <ul style="list-style-type: none"> • Enable people to have access to sufficient good quality open space, near to their homes • Improve access to wildlife and green spaces, through delivery of green infrastructure • Improve access to the countryside through public rights of

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<p>and rural areas.</p> <ul style="list-style-type: none"> • Parks, playing fields and other open space protected, enhanced or created to meet the needs of the community. • New development focused in the most sustainable locations, with efficient use made of brownfield sites to minimise urban sprawl and loss of countryside. • Access to green spaces and countryside enhanced, though improvements to footpaths, cycle routes and public transport. <p><i>Distinctive Heritage and Character</i></p> <ul style="list-style-type: none"> • The character and distinctiveness of neighbourhoods enhanced, and existing local character and built and natural features respected to provide the context for new development. • Buildings and areas that are attractive, distinctive or of heritage value in urban and rural settings preserved and enhanced. • The landscape and character of the villages and countryside, including the urban/rural fringe protected and enhanced. <p><i>High-quality buildings, spaces and places</i></p> <ul style="list-style-type: none"> • Sustainable buildings and urban spaces which are of a high quality and are well planned, optimising sustainable design and use of resources. • The built environment maintained and safeguarded in areas where it is already of good quality. 	<p>way or cycle paths</p> <p>And all the appraisal criteria of the following Aims: <i>An attractive, high quality built environment that works well and lasts.</i> <i>Ecological and geological assets created, conserved, managed and enhanced.</i> <i>Use of land which supports regeneration of the urban area and protection of valuable soil and mineral resources.</i></p> <p>Although there is no explicit protection in the Sheffield Plan to soil, agricultural land and economic reserves, they are indirectly protected through protection of the countryside.</p> <p><i>High quality natural landscapes protected and poor landscapes enhanced.</i></p> <p>There are indirect positive links to other Sustainability Aims relating to energy and water resources and climate change.</p>

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<ul style="list-style-type: none"> • Design and townscape improved and new character created in areas where the built environment is of poor quality. 	
<p><i>Our City has excellent education and training facilities which enable the development of a talented and agile business base and workforce</i></p> <p>Objectives:</p> <ul style="list-style-type: none"> • A city of well-educated and confident young people who have the knowledge and skills to access existing and future education and employment opportunities • A range of further education and employment opportunities to enable working people to stay in Sheffield and to attract new talent to enhance the workforce. • Employers supported by talented and adaptable employees, with the skills and abilities to help build successful businesses, and a commitment to lifelong learning. • Businesses which invest in the development of the city's economy by providing a range of jobs and high quality training and development opportunities. 	<p>The Sheffield Plan Aim is most closely matched by the following Sustainability Aim: <i>Education and training opportunities provided which build the skills and capacity for the whole population and which encourage lifelong learning.</i></p> <p>Although this would also support: <i>A vibrant and competitive economy with good job opportunities available to the whole community</i></p> <p>And also reducing the need to travel outside Sheffield.</p>
<p><i>Our City is inclusive, providing for good opportunities, health, wellbeing and quality of life for everyone</i></p> <p>Objectives:</p> <p><i>Inclusion & Opportunities</i></p> <ul style="list-style-type: none"> • Investment and renewal directed to neighbourhoods that lack adequate facilities and services, or those that suffer from an unsatisfactory environment, particularly in the 	<p>While there are no direct Sustainability Aims relating to Inclusion and Opportunities and Health and Wellbeing, inclusivity is at the centre of many of the economic and social Sustainability Aims. For example: <i>Decent and appropriate housing available to everyone</i>, many of which have directed related appraisal criteria. <i>A vibrant and competitive economy with good job</i></p>

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<p>north and east of the city.</p> <ul style="list-style-type: none"> • New development designed and located to benefit those who are currently excluded and vulnerable. • A wider choice of housing provided through more mixing of house types and tenures, to meet the needs of the whole community, including older people and disabled people. • Workplaces located where they are accessible to all by a range of transport options, particularly from areas of high unemployment. • Services and facilities, and the spaces around and between them, located and designed to be safe and accessible to all. <p>Health & Wellbeing</p> <ul style="list-style-type: none"> • A healthy environment, which includes space for physical activity and informal recreation and does not subject people to unacceptable levels of pollution, noise or disturbance. • Unfit or low-demand housing replaced or improved so that everyone has the opportunity to live in a decent home. • Streets and spaces which encourage walking and cycling and which are accessible to people with mobility difficulties. • A safe and secure environment, minimising physical hazards and opportunities for crime. 	<p><i>opportunities <u>available to the whole community</u>.</i> <i>Education and training opportunities provided which build the skills and capacity <u>for the whole population</u> and which encourage lifelong learning.</i> <i>Health services provided for the health needs <u>of the whole population</u> and which tackle health inequalities.</i> <i>Open space and cultural, leisure and recreational facilities <u>available for all</u>.</i></p> <p>The Sheffield Plan lists some ways in which health and wellbeing is taken into account in the Sheffield Plan. However the Health Topic paper accompanying the Scoping Report highlights that almost all the Sustainability Aims (although less so with some of the environmental protection Aims), and therefore the relevant Sheffield Plan Aims, link closely to the wider determinants of health. Some of these Sustainability Aims which closely tie to the listed Sheffield Plan objectives are: <i>Significant development focused in locations that reduce the need to travel and the fullest possible use made of public transport, walking and cycling</i> <i>An attractive, high quality built environment that works well and lasts.</i> <i>Open space and cultural, leisure and recreational facilities available for all.</i> <i>Air quality improved and impacts of environmental pollution minimised or mitigated.</i></p>

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<ul style="list-style-type: none"> • Opportunities for peaceful enjoyment of urban neighbourhoods and tranquil areas of the countryside safeguarded. 	
<p><i>Our City mitigates and is resilient to climate change, making the best use of energy, water, land and food resources, and is at the forefront of sustainable design and technology</i></p> <p>Objectives:</p> <p><i>Sustainable Use of Resources</i></p> <ul style="list-style-type: none"> • A city at the forefront of research, design and development of local and global solutions to address the issues of energy, food, water and land scarcity and the impact of climate change, and at the forefront of proactively applying these solutions in new development. • Residents, businesses and organisations able to operate effectively and successfully with access to affordable energy and water resources. • Reuse of previously developed land and existing buildings maximised. • Contaminated land restored and put into beneficial use. • Air and water quality improved in excess of minimum requirements. • Waste reduced, re-used, used as energy, composted or recycled, and land requirements for disposal met. <p><i>Resilience to Climate Change</i></p> <ul style="list-style-type: none"> • The likelihood and impact of flooding decreased by reducing surface water run-off and not developing in 	<p>A whole range of environmental Sustainability Aims would benefit from this Sheffield Plan Aim:</p> <p><i>Greenhouse gas emissions minimised and the impact of climate change effectively managed.</i></p> <p><i>Air quality improved and impacts of environmental pollution minimised or mitigated.</i> Particularly in relation to air and water quality and contaminated land.</p> <p><i>Energy consumption minimised and use of sustainable energy sources maximised.</i></p> <p><i>Minimal production of waste and the reuse, recycling and recovery of waste maximised.</i></p> <p><i>Water resources protected and enhanced.</i></p> <p><i>Use of land which supports regeneration of the urban area and protection of valuable soil and mineral resources.</i></p>

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<p>locations where flood risk is unacceptable but, where development cannot be avoided in areas of potential flooding, implementing appropriate mitigation measures.</p> <ul style="list-style-type: none"> • Buildings designed to reduce obsolescence and to withstand and not exacerbate extreme variations in temperature, thereby providing an acceptable environment for occupiers and minimising the urban heat island effect. 	
<p><i>Our City has excellent digital and physical connectivity, with a transport network which provides efficient, safe and sustainable travel choices for the movement of people and goods</i></p> <p>Objectives:</p> <p><i>Digital and Physical Connectivity</i></p> <ul style="list-style-type: none"> • Excellent connections with the City Region, national, and international transport networks. • Public transport and walking and cycling connections improved within Sheffield, particularly between the City Centre, district centres, villages and main employment locations. • Efficient use of existing transport, utilities and telecommunications infrastructure. • Effective and efficient movement round the city, making best use of routes and ensuring that development would not increase congestion unacceptably. • A ‘Smart City’ which develops and utilises new technology to put the city at a competitive advantage and which enables local residents and businesses to prosper. 	<p>This Sheffield Plan Aim links mostly closely linked Sustainability Aims, and most of their appraisal criteria</p> <p><i>Significant development focused in locations that reduce the need to travel and the fullest possible use made of public transport, walking and cycling</i></p> <p><i>An efficient transport network which maximises access and minimises detrimental impacts</i></p> <p><i>Use of land which supports regeneration of the urban area and protection of valuable soil and mineral resources, specifically appraisal criteria to</i></p> <ul style="list-style-type: none"> • Encourage development which makes efficient use of land (e.g. by focusing development in urban area, development densities) <p>It will also have indirect benefits for a number of other economic and facility related Sustainability Aims.</p>

Sheffield Plan Aims and Objectives	Relationship with the Sustainability Aims and Appraisal Criteria
<p><i>Sustainable and Efficient Travel Patterns</i></p> <ul style="list-style-type: none"> • Development located to limit the distances people and goods need to travel, with mixing of land uses and increased opportunities for single journeys to serve several purposes. • High density development focused in the City Centre, in or at the edge of district centres, close to high frequency bus routes, Supertram stops and railway stations. • Walking and cycling encouraged by design of places and routes and by the location of facilities. • New development that generates significant trips focused in areas accessible by a choice of sustainable forms of transport. 	

UNDERTAKING THE APPRAISAL

30. Steps B2 to B4 of the Sustainability Appraisal were undertaken based on the following principles

B2 – Developing and Refining Reasonable Alternatives

Developing Reasonable Alternatives

31. The sustainability appraisals in Appendices A and B compare reasonable alternatives to ascertain the likely effects of the alternatives.
32. Planning Practice Guidance recommends that reasonable alternatives are identified and considered at an early stage in the plan making process. The Planning Practice Guidance offers advice on reasonable alternatives and their assessment. Reasonable alternatives are the different realistic and deliverable options considered by Sheffield Planning Authority in developing the Sheffield Plan. They must be sufficiently distinct to highlight the different sustainability implications of each so that meaningful comparisons can be made.
33. Chapters 7 and 8 set out the realistic alternatives for the housing and employment growth. These options are described and justified in more detail in the Citywide Options for Growth to 2034 Document.

Likely Evolution without implementation of the Sheffield Plan

34. The SEA directive requires that the likely evolution of the environment without implementation of the plan be assessed. The Review of the Existing situation in the Scoping Report and accompanying Topic Papers consider this scenario. Chapter 8 of the Scoping Report describes the general effect of not having an adopted Sheffield Plan, in relation to not achieving sustainable development. Chapters 7 and 8 describe the “do-nothing”/“business-as-usual” option to be evaluated alongside the employment growth options and the housing growth options.

B3 & B4 – Evaluation of the likely effects of Options and potential areas for further investigation or mitigation

35. The Sustainability Appraisals outlined at Appendix 2 and 3 were undertaken by planning officers responsible for different Sustainability Aims. A select group representing social, economic and environmental aspects of Sustainable Development then re-assessed the appraisals for assumptions, consistency and gaps.

Sustainability Appraisal Framework

36. The Sustainability Appraisal Framework being consulted on in the draft Scoping Report was used for the appraisal of the performance of the alternatives and identification of any likely effects. The Sustainability Appraisal Framework can be found at Appendix 1.

Appraising the effects of each Option

37. The growth options depict different options for housing or employment development in Sheffield in the next 15 years. Therefore, the impacts in the sustainability appraisal are cumulative and top-down, because the options are high-level with no site-specific detail.

Prediction of likely significant effects

38. For each of the options, the appraisal should identify and evaluate the “likely significant effects” on the baseline/likely future trends, drawing on the sustainability issues identified through the scoping report.

39. Appendices 2 and 3 include:

- a categorisation of the likely impacts for each Sustainability Aim, in relation to their significance and whether they are positive or negative.
- a discussion of the likely impacts of each option or sub-option. The discussion compares the impacts of the options to the “do-nothing” approach and the impacts of any sub-options are compared to the general impacts of the Option overall, to pull out differences.

40. Every effort is made to predict effects accurately, however this is inherently challenging given the high level nature of the options under consideration.

41. For most of the citywide growth options, it is not possible to accurately predict significant effects, but it is possible to comment on the merits of the options in more general terms. This is helpful, as it enables a distinction to be made between alternatives even where it is not possible to distinguish between them in terms of “significant effects”.

42. The discussion of the merits of the options is seen as much more useful than the performance scoring matrix, as the commentary can draw out uncertainties or degrees of significance or particular aspects of the effects.

Categorisation of Impacts

The same key as set out in the scoping report is used and replicated in Table 4.

Table 4 Scale of Likely Impacts in relation to Sustainability Aim

	LIKELY impact in relation to Sustainability Aim
YY	Strong support for Aim (i.e. significant positive impact is likely)
Y	Some support for Aim (i.e. minor positive impacts likely to outweigh negative impacts)
O	Option likely to have no or neutral impact insofar as the benefits and drawbacks appear equal and neither is considered significant
X	Some minor conflict with Aim (i.e. minor negative impact(s) likely not to be outweighed by positive impacts)
XX	Significant conflict with Aim (i.e. significant negative impact is likely)
?	Uncertain or insufficient information on which to base an assessment at this stage.
-	No link with this Sustainability Aim

43. Neutral impact can include minor negative impacts which are sufficiently mitigated.
44. However the Uncertainty symbol has been expanded to show what appraisal of which type of option would be required to increase the certainty of the likelihood of the impact on an Aim. At this high level stage, such a synergistic appraisal has not been undertaken.
45. The additional key is:

?S	<i>if site assessment would provide more certainty</i>
?P	<i>if policy assessment would provide more certainty</i>
?C	<i>if cumulative impact of sites would provide more certainty</i>

General Uncertainties

46. The uncertainty symbol indicates that we cannot be sure at this stage whether there would be a positive or a negative impact, and whether it would be significant or not. At later stages of assessment, it may become clear that certain options lead to a positive effect overall, or a negative effect. But for other options, there may still be the potential for there to be both positive and negative impacts at different spatial scales or in different areas.
47. Some of these uncertainties can be resolved by later assessments of other parts of the Plan. For example, Appraisals of Site Options can only determine whether there would be a likely significant impact upon certain Aims e.g. Historic Environment; Open Space and Landscape; Ecology and Geology; Quality of Agricultural Land; Public Transport Accessibility; Air Quality; and Climate Change. However, some likely significant impacts will still be uncertain at that stage due to the lack of detail, which would come only at the planning application stage. At this stage, there is still an uncertainty about whether the Sheffield Plan will have policies which would be able to sufficiently mitigate negative impacts identified either at the site option stage or only at the policy appraisal stage. Therefore, appraisals of policies relevant to all the Aims will be required. In terms of resolving some of the uncertainty still outstanding at this sustainability appraisal stage, appraisals are particularly required for the Aims listed above and for Water Resources and Energy, Design and Built Environment.
48. Monitoring of the Plan will indicate whether the policies are being implemented correctly to prevent significant impacts that they are meant to.
49. **Cumulative assessments** with input from stakeholders, and sometimes with a bottom-up approach (i.e. cumulative impact of sites), will be required to determine impact on Waste, Education, Health, Transport Infrastructure, and Utilities Infrastructure, and how and whether additional infrastructure can be accommodated where needed on an appropriate scale taking account of any impact on the dwelling numbers which can be accommodated. Many of the uncertainties depend upon the policies relating to these subjects - many of them

will not prevent the level of development proposed. Open space impact could be due to loss of open space or increased population leading to existing open space being insufficient.

50. There are also **uncertainties, outside the planning system**, which will remain even when further detail on the Plan emerges. For example, uncertainties about whether travel behaviour will change and whether commercial public transport operators will extend and/or improve the public transport network, and if transport funding bids would be successful. There is also uncertainty about how much of a reduction in car use/ ownership there would be even with significant improvements to the public transport network.

General Assumptions in relation to impact

51. There are number of general assumptions made for all options in relation to the impact:

Probability	Unless the impact is likely, an uncertainty score is given (?). The degree of uncertainty is explored further below this table.
Positive or negative impact	Indicated by the key + or -
Significant or minor impact	Indicated by the key. However without knowing the scale, extent and location of site there is a lot of uncertainty about the scale of significance.
Timescale & permanency /irreversibility	It is assumed that the impact will start any time after the start of the Plan period and be permanent, unless indicated.
Geographic scale	This will be indicated in the discussion

52. Specific assumptions and uncertainties will be given in the discussion below of the impact of Options per Aim.

APPRAISING EMPLOYMENT GROWTH OPTIONS

53. The Employment Growth Options are set out in the Citywide Options for Growth to 2034 document along with a set of consultation questions. They reflect the recommendations in the Employment Land Review and the most recent work on the Strategic Economic Plan (SEP). This work suggests very few additional site allocations are needed, apart from ones that would be required at the Advanced Manufacturing Park/Sheffield Business Park, to take account of the up-to-date strategies that the new Sheffield Plan will need to address (see Economy Topic Paper accompanying the Draft Sustainability Appraisal Scoping Report).
54. The options offer a slight modification to the locational approach to the current Core Strategy Approach, which would be the “do-nothing” option.
55. The Core Strategy approach is:
 - City Centre, Upper Don Valley, Lower Don Valley and Outer South East, Chapeltown/Ecclesfield, Stocksbridge/Deepcar, Sheaf Valley, Blackburn Valley, Holbrook and Orgreave as main locations for new offices and manufacturing, distribution and warehousing
 - Priority office location is only City Centre
 - Promotion of high-tech knowledge based industries, but there is no promotion of the Advanced Manufacturing Park/Sheffield Business Park.
 - Support City Centre, District Centres and Local Centres. If no in- or edge-of-centre sites are available, retail and leisure can go anywhere.
56. This includes the proposed employment allocations in the Pre-Submission City Policies and Sites Document and the Policy Areas on the accompanying Proposals Map.
57. The options reflect potential emphases for the use of land identified at the Advanced Manufacturing Park/Sheffield Business Park through the Employment Land Review.

General Assumptions

58. If the Employment Land Review options were not pursued through the Sheffield Plan, Sheffield’s approach to employment land would not reflect the latest locational and quantitative demand. Therefore cumulatively some of the impacts may not be that different to the Core Strategy, although locational emphases may increase impacts in particular locations.

Reasonable Alternatives

59. The realistic alternatives proposed in the Citywide Options for Growth to 2034 Document are:

Main Employment Locations for Offices, Manufacturing, Distribution and Warehousing

Core Strategy Policies CS3, CS5, CS8, CS9, CS10, CS11, CS12, CS13, CS28, CS30, CS32, CS33

60. All the areas identified in Option A are identified in the Core Strategy as main locations for new offices and manufacturing, distribution and warehousing.
- A. City Centre, Upper Don Valley, Lower Don Valley and Outer South East as main locations for new offices and manufacturing, distribution and warehousing; Chapeltown/Ecclesfield, Stocksbridge/Deepcar, Sheaf Valley, Blackburn Valley, Holbrook and Orgreave - for B-class uses providing employment opportunities close to new homes

Advanced Manufacturing locations

61. Core Strategy Policy CS5 covers high tech knowledge based industries, but there is no promotion of the Advanced Manufacturing Park/Sheffield Business Park.
- B. Manufacturing development focused around the Advanced Manufacturing Park and Sheffield Business Park area; with identification of land not currently designated for business and industrial use.

Priority Office Locations

Core Strategy Policies CS4, CS10, CS13, CS33
Core Strategy approach - Majority of offices in City Centre

62. There are no realistic alternatives offered to the City Centre being the main location for new office development. A number of supplementary options are proposed.
- C. Higher densities of office development in City Centre
 - D. Target for office development in Advanced Manufacturing Park/Sheffield Business Park area
 - E. Limited amount of office development in other outlying areas of well-connected locations e.g. Hillsborough, Crystal Peaks, Chapeltown, Stocksbridge

Retail and Leisure Locations

Core Strategy Policies CS7, CS18
Core Strategy Approach - Support City Centre, District Centres and Local Centres. If no in- or edge-of-centre sites are available, retail and leisure can go anywhere.

63. The alternative proposed option is:

F. Meadowhall Shopping Centre and retail parks identified as commercial centres where retail and leisure development is preferred, if no in- or edge of centre sites are available

64. Further detail, implications and dwelling estimates for each option are set down in Chapter 5 of the Citywide Options for Growth for 2034 Document and should be read alongside this sustainability appraisal assessment. The justification for the options approach is also based on the findings in the Employment Land Review.
65. The Sustainability Appraisal will tease out the sustainability implications of pursuing different options and what the impacts would be. This appraisal will be one of the factors which influence the preferred approach at the next stage. This may indicate that certain options are being pursued together, and which should have most emphasis within the preferred approach at the next stage.

Any Alternatives not considered and why

66. No other alternatives were considered

Appraising the effects of each Option

67. This assessment is a cumulative assessment with a top-down approach.
68. Appendix 2 sets out a discussion of likely impacts of each Option, compared to the “do-nothing” option.

Effects of Options in relation to Aims

69. The effects of different options on an Aim are fairly distinct, and therefore the symbols in Appendix 2 allow comparison between the options, although the discussion explains the choice of symbol.
70. The effects of the options should be read alongside the appraisal criteria used to assess them (at Appendix 1).
71. The following Aims have no link with the Employment Growth Options:
- Education and training opportunities provided which build the skills and capacity for the whole population and which encourage lifelong learning.
 - Decent and appropriate housing available to everyone.
 - Health services provided for the health needs of the whole population and which tackle health inequalities.
 - Open space and cultural, leisure and recreational facilities available for all.
72. The following Aims have an uncertain impact, irrespective of the option, in that it depends upon policies and policy implementation:
- An attractive, high quality built environment that works well and lasts.
 - The historic environment protected and enhanced

- Water resources protected and enhanced.
- Energy consumption minimised and use of sustainable energy sources maximised.

No further commentary is given about the Sustainability Aims listed above.

73. A comparison of the effects for the other Sustainability Aims is given below:

Sustainability Aim 1: A vibrant and competitive economy with good job opportunities available to the whole community.

74. All of the options, with the exception of Option F, would have a positive impact on this sustainability aim, as they would ensure that a quality portfolio of sufficient employment locations is promoted which would be attractive to the market and for the most part, in accessible locations. While both Option A and the Core Strategy approach would have a significant positive benefit, this is a cumulative position, while the other options focus on more narrower aspects of employment provision, and therefore only have a minor positive impact. Option A is more beneficial than the Core Strategy because it takes account of the findings of the Employment Land Review, as do Options B, C and D.
75. Without Options B and D, the Sheffield Plan would not take advantage of the attractiveness of the Advanced Manufacturing Park/Sheffield Business Park area to employers, and would not fully promote the development and expansion of clusters or networks of knowledge based businesses and industries. Option E would enable the City Centre to meet the need for more office development in the best location from an economic perspective. Options which intensify office uses in the City Centre (Option D) or allow a limited amount of office development in well-connected locations (Option E) will support the vibrancy of the City Centre or identified district centres in Option E.
76. Identifying Meadowhall Shopping Centre and retail parks (Option F) as commercial centres would have a negative impact on the confidence of potential investors in existing centres.

Sustainability Aim 6: Significant development focused in locations that reduce the need to travel and the fullest possible use made of public transport, walking and cycling.

77. The Core Strategy approach has a neutral impact as locational policies encourage the main employment areas to be in locations accessible by public transport. The Sheffield Plan options could lead to less need to travel outside Sheffield for work, as they would reflect the updated demand for employment land, reflecting the jobs growth target at the Sheffield City Region. The options emphasise certain employment priorities for different locations, so the assessment investigates whether these locations would support the Aim.
78. However there would be a negative impact from the general approach taken in the Core Strategy of allowing retail and leisure development anywhere if there

are no in- or edge-of centre available locations. In contrast, the alternative Option F proposing Meadowhall Shopping Centre and retail parks as commercial centres would have a positive impact, as these locations are accessible by public transport, although capacity impacts would need to be considered too.

79. Option A has a positive impact, as fewer locations would be strategic employment locations, and there would be more opportunities for local employment, thus reducing the need to travel. Although having employment areas locally does not mean that the right jobs are available or obtained by local people.
80. Most of the office development options have a positive impact because they continue to have the city centre as the main location for office development, or also identify other outlying well-connected locations for limited office development. The city centre is the most accessible location in the city and this would allow opportunities to travel by public transport. The well-connected locations would also allow public transport access and reduce the need to travel, by supporting sustainable housing growth in these locations. It may also enable shorter journeys, which can often be made by walking or cycling.
81. Locating more development at the Advanced Manufacturing Park/Sheffield Business Park– whether it be manufacturing (option B) or office development (option D) would have negative/neutral impact. Currently, the area is not particularly accessible by public transport and therefore without investment in infrastructure and public transport services, there could be an increase in journeys by private car resulting in air quality and congestion issues. However, the large size of the site means that cumulatively, demand is likely to be increased to such a level that investment in the necessary infrastructure is more likely to be justified. Policies would need to be put in place to ensure that the trips associated with developments on this site are managed, and more sustainable travel choices are enabled.

Sustainability Aim 7: An efficient transport network which maximises access and minimises detrimental impacts

82. Some of the impacts are uncertain and require site assessments, for example, in relation to the current Core Strategy approach and the alternative approach to main locations for offices, manufacturing, distribution and warehousing (Option A). However there would be a negative impact from the general approach taken in the Core Strategy to allowing retail and leisure development anywhere if there are no in- or edge-of centre available locations. This impact would be neutralised with the identification of the accessible locations of Meadowhall and retail parks being identified as commercial centres (Option F).
83. One assumption being made is that more development will lead to increased demand for public transport which will increase the justification for new infrastructure within planning policies and necessary funding bids. There are a number of uncertainties about the likelihood and significance of this, as this depends of individual travel behaviour, whether commercial transport operators

actually choose to improve or extend the public transport network, and whether funding bids for more transport infrastructure are successful.

84. Most of the office development options have a positive impact because they continue to have the city centre as the main location for office development, or also identify other outlying well-connected locations for limited office development. Similar to Meadowhall Shopping Centres and retail parks (option F), these locations are very accessible by public transport, it would support efficient use of the transport network.
85. Locating more development at the Advanced Manufacturing Park/Sheffield Business Park– whether it be manufacturing (option B) or office development (option D) would have a neutral impact because whilst overall, journeys to and from the site will increase, this increase in demand is likely to help to justify the necessary investment in transport infrastructure. There are uncertainties however, as outlined above (eg success of funding bids, travel behaviour change). Policies would need to be put in place to ensure that the travel and infrastructure needs associated with cumulative developments on this site are managed and/or mitigated.

Sustainability Aim 8: Use of land which supports regeneration of the urban area and protection of valuable soil and mineral resources.

86. Most of the employment sites proposed at the Pre-Submission stage are on non-urban brownfield land. The Core Strategy approach and Options A, C and F are proposing development only within the existing urban area, therefore having a positive impact on this Aim.
87. The comparatively few new sites are mostly expected at the Advanced Manufacturing Park/Sheffield Business Park as a result of Options B and D would need site investigations to ascertain whether there would be any loss of non-urban land, and if any of it was high quality agricultural value

Sustainability Aim 11: High quality natural landscapes protected and poor landscapes enhanced.

88. Most of the employment sites proposed at the Pre-Submission stage are on urban brownfield land, and therefore have no landscape value. The Core Strategy approach and Options A, C and F are proposing development only within the existing urban area, therefore having a positive impact on this Aim. The comparatively few new sites are mostly expected at the Advanced Manufacturing Park/Sheffield Business Park as a result of Options B and D would need site investigations to ascertain whether there would be any loss of non-urban land, and if any of it was high quality landscape value.

Sustainability Aim 12: Ecological and geological assets created, conserved, managed and enhanced.

89. Most of the employment sites proposed at the Pre-Submission stage or sites that would be affected by the most of the options would be on urban brownfield land, so there are likely to be no significant adverse effects on ecology.
90. The comparatively few new sites are mostly expected at the Advanced Manufacturing Park/Sheffield Business Park as a result of Options B and D would need site investigations to ascertain whether there would be any loss of non-urban land, and if any of it was high quality landscape value

Sustainability Aim 14: Greenhouse gas emissions minimised and the impact of climate change effectively managed

91. Site assessments will be required to ascertain whether the climate or flood risk could be worsened or mitigated. Therefore the impact is uncertain.

Sustainability Aim 15: Air quality improved and impacts of environmental pollution minimised or mitigated

92. The Sheffield Plan options reflect the updated demand for employment land, reflecting the jobs growth target at the Sheffield City Region. There is some net commuting into Sheffield, causing localised air pollution problems especially around the motorway but also on arterial routes. More consideration is needed about the scale of development at particular locations, through site investigation.
93. Policies would need to be put in place which checked sites not allocated to see if there are locations where air quality would become such a significant issue to prevent a particular development use. It's more likely that changes to a planning application, in terms of design and layout and other mitigation measures would make the air pollution level acceptable to human health by enabling developments to meet the proscribed EU limit values on air quality. Thus the impact is neutral for all options.
94. The potential air pollution increase at the Advanced Manufacturing Park/Sheffield Business Park area (Option B and D) has already been discussed under Aims 6 and 7, if public transport infrastructure was not put in place. However policies put in place in relation to Aims 6 and 7 would help to manage trips associated with developments, and indirectly manage air pollution levels.

Sustainability Aim 17: Minimal production of waste and the reuse, recycling and recovery of waste maximised.

95. All the employment growth options in Sheffield will need a cumulative assessment by Waste stakeholders.

Conclusion

96. All the options proposed show more positive impacts than the current Core Strategy approach. Therefore together they would provide a synergistic positive impact. However there are still some unknown impacts which would need investigating through appraisal of site options or appraisal of policies, to ensure mitigation would be required at the planning application stage. The largest number of unknown impacts is for the options at the Advanced Manufacturing Park, as this would introduce new employment site allocations at a new location identified in the Employment Land Review to meet the economic sustainability Aims.

APPRAISING HOUSING GROWTH OPTIONS

97. The Housing Growth Options are:

- **Option A**

Continue with the current strategy of concentrating new development on brownfield sites within the existing urban areas and make an additional allowance for windfalls on larger sites. Develop sites at similar densities to those achieved in the past.

- **Option B**

Make more intensive use of sites within the existing urban areas by:

- (a) A further emphasis on City Centre living as a part of a strategy for mixed use within the area bounded by the Inner Ring Road and Kelham/Shalesmoor (this could include some taller buildings in certain locations).
- (b) Relaxing amenity standards and reducing off-street parking provision in existing neighbourhoods close to District and Neighbourhood Centres, resulting in higher overall densities (meaning smaller houses and apartments would make up a greater proportion of the new homes built in those locations).
- (c) Relaxing policies for the protection of open space to enable some surplus urban green space to be developed, with the money generated being invested in improving the quality of remaining areas.

- **Option C**

Remodelling parts of the existing urban area to enable the reallocation of poorer quality employment uses for housing. Locations proposed are:

- (a) Neepsend/Shalesmoor
- (b) Attercliffe

- **Option D**

Plan for a limited number of larger urban extensions (at least 1,000 homes) into the Green Belt in locations that are well served by, or have potential to be served by, the Supertram network or rail services. Locations proposed for these are:

- (a) Stocksbridge/Upper Don Valley
- (b) East Sheffield (as extension to the Waverley in Rotherham Borough)
- (c) South East Sheffield
- (d) East of Norton

- **Option E**

Develop multiple smaller urban extensions around the built up areas and allow redevelopment of large brownfield sites in the Green Belt for housing.

Typically, developments would have capacity for up to 300 homes though potentially with a small number of larger extensions in the four locations identified under Option D.

98. Further detail, implications and dwelling estimates for each option are set down in Chapter 5 of the Citywide Options for Growth Document and should be read alongside this sustainability appraisal assessment. The methodology for the dwelling estimates are set out in the associated Planning for Housing: Background Paper.
99. Option A is the current Core Strategy approach (which is reflected in the SHLAA), requiring different densities in different parts of the city according to their relative accessibility. However, other densities may be permitted where development achieves good design, reflects the character of an area or protects a sensitive area. Option A also includes the current SHLAA approach to assumptions regarding suitability of particular land uses for housing. For example, the SHLAA approach does not assume any housing potential for land in the proposed Industrial areas, Business and Industrial areas and General Employment Areas shown on the Pre-Submission Proposals Map.
100. This is the nearest to the “do nothing” approach which is reflected in the baseline trends. However Option A also questions whether the current assumptions in relation to windfalls (sub-options (b) and (c)) are accurate and whether they need amending.

Reasonable Alternatives

101. The Housing Growth Options are reasonable options but they are not exclusive alternatives. For example, Option A is not sufficient to provide enough housing land to meet the city’s identified housing needs; therefore the preferred approach will need to take forward Option A alongside other Options.
102. The Sustainability Appraisal will tease out the sustainability implications of pursuing different options and what the impacts would be. This appraisal will be one of the factors which influence the preferred approach at the next stage. This may indicate that certain options are being pursued together, and which should have most emphasis within the preferred approach at the next stage.
103. Pursuing all five options would maximise the amount of housing that could be accommodated in Sheffield, meaning less would need to be accommodated in neighbouring districts. Therefore there needs to be consideration of the implications for the neighbouring local planning authorities of not pursuing all the options and sub-options.

Impacts beyond Sheffield Planning Authority Boundary

104. If more growth had to be accommodated in neighbouring districts, it would also cause more commuting, worsening air quality particularly for the community of Tinsley, would not support an efficient transport network within Sheffield, and would have negative equality impacts on those forced to commute.

Any Alternatives not proposed and why

105. The following two options have been ruled out on the grounds that they are not reasonable alternatives for accommodating growth in Sheffield.

Growth of the smaller villages and hamlets

106. The smaller villages and hamlets (Bolsterstone, Brightholmlee, Dungworth, Ewden, Midhopstones, Ringinglow, and Whitley) are all currently washed over by the Green Belt. They are all located in high quality landscape areas and, with the exception of Whitley, are close to the Peak District National Park boundary. Most of them are little more than loose clusters of a few houses and farms and lack local services and facilities. Significant growth in these locations would, therefore, be unsustainable.

Building a major new settlement in the countryside

107. There is nowhere in Sheffield where such a large-scale free-standing new settlement could be accommodated. This is because:

- On the eastern, southern and northern sides of the district the edge of the built-up areas is already close to the city's boundary.
- On the western side of the district much of the countryside is of high landscape quality and borders the Peak District National Park.

108. A new settlement could be considered within other districts within Sheffield City Region and, depending on its location, it could help meet housing need in Sheffield. If pursued by other districts, they would appraise this option in their sustainability appraisals.

Appraising the cumulative effects of each Option

109. This assessment is a cumulative assessment with a top-down approach.

110. Appendix 3 sets out first for each Option, a discussion of its likely impacts if all sub-options were taken forward, with a performance score based on the likely impact. The discussion of the impacts of the sub-options pulls out the differences between the sub-option and the overall Option overall.

Effects of Options in relation to Aims

111. Appendix 3 shows scoring of impacts, but the text below compares the options.

112. The effects of the options on the Sustainability Aims should be read alongside the appraisal criteria used to assess them (at Appendix 1).

Sustainability Aim 1: A vibrant and competitive economy with good job opportunities available to the whole community.

Assumptions:

113. If housing growth is not provided for, this would limit the jobs growth that the city could achieve. Employment land needs to be accompanied by housing land to ensure sufficient accommodation for workers or there will be more commuting

into Sheffield from elsewhere. However it is acknowledged that not everyone will live where they work or be able to choose work where they live. Sheffield is a net importer of jobs and therefore a commuting destination, but providing sufficient housing in Sheffield and a choice of employment in the city allows the possibility to live in Sheffield. It does however depend upon when jobs become available and the Employment Land Review indicates that the behaviour of a highly skilled workforce is that they do not necessarily move to where their jobs are and are willing to travel further.

Effects:

114. As long as the housing need is provided in the Sheffield Travel to Work area, whether the housing is provided in Sheffield or elsewhere in that area would not affect this Aim. Therefore most of the housing growth options have a neutral impact on this Aim. Land considered in the options does not need to be considered for employment because the Core Strategy approach provides enough land for employment (in the short and medium term but not for the latter part of the Local Plan period). These options safeguard land for employment which is not all necessarily needed, as indicated in the Employment Land Review.
115. Option B of concentrating even higher densities at District and Neighbourhood Centres and City Centre (sub-options (a) and (b)) would also increase the population available to support local centres, therefore having the likely cumulative secondary impact of improving the viability of local centres and the City Centre.
116. In the case of Option C, the impact is uncertain as an assessment is needed to determine whether any of the poorer quality employment sites at Neepsend/Shalesmoor and Attercliffe are still needed.
117. The large scale of housing growth proposed by Options C and D would allow the possibility of providing local employment and local shops and facilities.

Sustainability Aim 2: Education and training opportunities provided which build the skills and capacity for the whole population and which encourage lifelong learning.

118. Overall all options are seen as having a neutral impact as the NPPF requires that infrastructure is provided, and the local education authority has a responsibility to ensure provision of education facilities.
- 119.
120. Option A and B differ from the others, in that a high proportion of the sites are windfalls and therefore this uncertainty of where they are located makes it difficult to accurately forecast growth a long time ahead at a local level and anticipate the impact of accommodating the resultant low additional pupil numbers in particular schools. Schools across Sheffield are generally full, and additional education provision is being added to provide for currently known future need only. The Education Service work to a short (max 5 year) timescale for providing education facilities which is largely based on demographics and planning permissions, so there is an assumption that this education need will be

accommodated, even if it may be difficult to provide it financially or in terms of land availability.

121. Family housing can still be developed at higher densities (Option B), and so larger numbers could lead to increased need for education provision, compared to Option A, and with more difficulty to find sites because of greater housing market pressure and the reduction in the number of surplus open spaces. Sites for Option E would need assessing as to whether the education need could be accommodated within the existing schools or expansions of them, although these smaller accretion sites alone (unless clustered together) are less likely to generate need for whole new schools. Allowing accretion sites in the Green Belt would however allow the possibility for these to be developed, not simply for housing, but for existing as well as future school provision, or for a range of housing and compatible uses which could include education.
122. Options C and D propose larger scale housing development. While this would lead to greater number of school pupils to be accommodated, there is greater likelihood that new schools would be the best option for accommodating these numbers, and the large areas for development or re-development give potential that land would be available to accommodate any new schools.
123. Further work on cumulative impact of sites will give even greater certainty.

Sustainability Aim 3: Decent and appropriate housing available to everyone.

124. Each option would make a positive contribution towards this Aim, although depending on which combination of options A-E are taken forward this may or may not provide sufficient numbers of new homes to meet all Sheffield's need within Sheffield.
125. The urban intensification option (Option B) is likely to lead to a greater amount of smaller housing which could better reflect the needs of smaller households, partly in relation to older population. But it might also cause an oversupply of smaller homes, therefore not meeting the needs of larger families. The Strategic Housing Market Assessment does not go down to this level of detail to appraise fully.
126. Option C would only contribute to housing delivery in latter part of the plan period, though some vacant sites could be developed earlier. This option would focus most new housing development in 1 or 2 areas. If this option alone was pursued alongside Option A, it would provide an insufficient range of housing sites throughout the whole city, resulting in consequent issues of deliverability and meeting market needs in some areas. A similar issue would arise if sub-option (b) of Option B was pursued alone alongside Option A, and insufficient housing choice would be available because housing development in the City Centre and Kelham is likely to be dominated by apartments.
127. Option E alongside Option A would spread development more evenly around the city, providing wider choice in a range of areas. There is the potential that this option may result in numerous small housing estates which are

disconnected from the rest of the urban area, therefore the design policies would be critical in preventing this.

Sustainability Aim 4: Health services provided for the health needs of the whole population and which tackle health inequalities.

128. Overall all options are seen as having a neutral impact as the NPPF requires that infrastructure is provided. While smaller sites are needed for health facilities than education provision, there are still difficulties in finding available and affordable sites or buildings currently in some urban areas of Sheffield due to housing market pressure, as this pressure could extend with Options A, B and C concentrating on the existing urban area.
129. The predicament about lack of certainty about where sites will be arising from Options A and B applies to this Aim too (See Aim 2). Health facilities are needed by all, but probably needed more often by older people or people with poor health, many of which are disadvantaged in other ways. Therefore the distribution of smaller or affordable properties may lead to greater pressure on current health facilities. Higher densities (Option B) will lead to more pressure on health facilities.
130. Sites for Option E would need assessing as to whether the health need could be accommodated within the existing health facilities or expansions of them, although these smaller accretion sites alone (unless clustered together) are less likely to generate need for whole new schools. Allowing accretion sites in the Green Belt would however allow the possibility for these to be developed, not simply for housing, but for existing as well as future school provision, or for a range of housing and compatible uses which could include health facilities.
131. Options C and D propose larger scale housing development. While this would lead to greater number of people needing health facilities, the large areas for development or re-development are likely to provide available land to accommodate new facilities.
132. Cumulative assessments of sites will be required at the next stage of plan preparation.

Sustainability Aim 5: Open space and cultural, leisure and recreational facilities available for all.

133. Option A includes within its dwelling potential, a few open spaces not in active use that could be achievable and available. As these open spaces have not been tested to see if they are surplus, development of some of these open spaces could lead to a negative impact, but the very low number would mean it would be very minor. It would not affect physical activity and health as they are not available to be used.
134. Sub-option B (c) would have a neutral impact on this Aim, as only Open Space which is surplus would be available for housing development. There may be

some impact on health, but likely to be minor, if there are other spaces available. Site and cumulative assessments of sites are required.

Sustainability Aim 6: Significant development focused in locations that reduce the need to travel and the fullest possible use made of public transport, walking and cycling.

135. The impacts are mostly uncertain as they depend on the site locations. Option A and B follow the current Core Strategy approach, requiring higher densities in more accessible locations. This would support the use of alternative modes of travel to the car. However the availability of land would lead to housing being “slotted in” where it can and therefore may not necessarily be in the locations which would reduce the need to travel and make best use of more sustainable modes of travel. It would depend on each individual site.
136. The City Centre (sub-option B(b), Neepsend/Shalesmoor (sub-option C(a) and Attercliffe sub-option C(b)) locate significant levels of development in locations which are well-located in terms of public transport accessibility and in terms of being near employment areas.
137. Sub-option B(b) suggests the right locations (District and Neighbourhood Centres) for reduce off-street parking, as these accessible locations may encourage alternative means of travelling. But people still aspire to have car even if they use it infrequently and therefore this option could result in on-street parking pressure, possibly affecting road safety.
138. Site assessments are needed for the Large Scale Urban Extensions Option, as to whether they are located sufficiently close to good public transport accessibility. The only sub-option with any certainty on this matter is the East of Norton (sub-option D(d)) which is located close to the tram. There is potential that the other options will lead to significant development being located where it is not accessible by public transport. The potential issues this raises in relation to an efficient transport network are explored further under Aim 7.
139. Although Options D and E have the potential to be far from public transport, mitigation measures could be put in place to provide local facilities and employment, which would reduce the need to travel further to them, and would support walking and cycling.
140. Allowing development in the Green Belt through Options D and E allows the potential for provision of essential facilities and infrastructure (see Aims 2 and 4) to be provided close to existing and new populations.
141. Option D (Larger Urban Extensions) is also proposed at a large enough scale that there would be potential space to accommodate some local employment, as a mitigation measure. The alternative would be that all the residents would need to travel to employment elsewhere. Providing local employment widens the choice allowing some people to work locally, although there is no guarantee that local people would desire or secure those jobs.

Sustainability Aim 7: An efficient transport network which maximises access and minimises detrimental impacts

142. The overall growth of Sheffield will result in absolute cumulative increases in road traffic, potentially leading to traffic congestion. However the significance and location of this congestion, in comparison to a positive impact on the public transport network, could vary between options, due to the scale and location of development.
143. Option A is not likely to lead to sufficient growth in any particular location to make the transport network more efficient, but again this would depend on each individual site, irrespective of whether there is high density living as proposed in the sub-options of Option B.
144. Options which locate significant development where alternative modes of transport are accessible (e.g. City Centre (sub-option B(b)); and Neepsend/Shalesmoor (sub-option C(a)) and Attercliffe (sub-option C(b)) may have lower than expected increases in road traffic, and higher levels of public transport use. These options would have a positive impact because larger populations in such existing accessible locations could make the existing transport network more viable. This allows the potential for improvements to existing services and transport infrastructure close by, and therefore is likely to have a positive impact.
145. Concentrations of a large population in large scale urban extensions (Option D) would also make it viable to extend the public transport network and this opportunity could be flagged up through policies and pursued through funding bids. However there is no certainty that funding bids would be successful, or that commercial transport operators would take advantage of such opportunities. In the absence of such certainty, any Green Belt extensions (Options D and E) which are not currently accessible by public transport are assumed to have a negative impact because most people will need to travel to distant employment areas. The exception is the East Sheffield sub-option which is close to the Advanced Manufacturing Park. Thus large scale travel from them would have a negative impact on arterial routes in terms of traffic congestion, particularly if they are also on arterial routes themselves (e.g. East Sheffield sub-option D(b)). This is may be mitigated to some degree by providing local employment sites, but it is not known whether this mitigation would make more than a negligible improvement.

Sustainability Aim 8: Use of land which supports regeneration of the urban area and protection of valuable soil and mineral resources.

146. The options are clear cut in terms of certainty and likelihood. Options A-C would have a positive indirect impact as development would be mostly limited to the built-up area and mostly concentrate on the re-use of previously developed land; however Options B and C would have a greater positive impact than Option A, in that higher densities will mean less non-urban land would need to be developed.

147. While Options D and E have direct negative impacts with no means of mitigation, as they would result in a permanent loss of agricultural land or sterilisation of economic mineral resources. The uncertainty with Options D and E are only around whether the land to be lost is best value agricultural land and that can be investigated through site assessments.

Sustainability Aim 9: An attractive, high quality built environment that works well and lasts.

148. The effect of developing or re-developing sites for housing within the existing built environment will depend upon policies requiring good design and their implementation. Therefore the impact of most of the Options is uncertain.

149. Remodelling (Option B) will however lead to a higher quality built environment than currently, as it would lead to complete change in the environment to make it suitable for residential development.

Sustainability Aim 10: The historic environment protected and enhanced

150. The effect on protecting and enhancing the historic environment will depend upon policies and policy implementation, particularly in relation to good design. Therefore the impact of most of the Options is uncertain.

Sustainability Aim 11: High quality natural landscapes protected and poor landscapes enhanced.

151. Option A includes a few sites with landscape value, which were proposed at the Pre-Submission consultation on greenfield site allocations. More land-take is expected with Option D (large scale Green Belt extensions) than Option E (multiple smaller Green Belt releases) and therefore there is potential for more land with high landscape value to be affected with Option D. Both Options D and E may be found to have other over-riding sustainability benefits which override the negative impact on high landscape value. Site assessments will ascertain whether the areas/sites proposed coincide with land with high quality landscape value, and therefore the significance of the impact for each Option.

Sustainability Aim 12: Ecological and geological assets created, conserved, managed and enhanced.

152. Option A includes a few greenfield sites with mitigation to protect ecological value, but no sites where development would lead to a significant negative ecological impact. Therefore, this Option has a neutral impact, as would sub-option B(c) to develop on surplus open spaces, as open spaces would not be surplus if they have significant ecological or geological value.

153. With all the other options, there is an uncertain impact, because site assessments are required to assess whether there is ecological value, and whether development would lead to a significant negative impact or could be mitigated. Options B and C provide the least scope for this negative impact,

due to their location in the urban area and the high level of previously developed land. Option C is seen as having a positive impact because there are no sites with significant ecological or geological value in this area.

154. The amount of land considered would be greater with Option E (multiple smaller Green Belt releases) than Option A and potentially even greater with the Large Urban Extension Option (D), where there may be other over-riding sustainability benefits to include development of land with high ecological and geological value alongside other sites. Site assessments will ascertain whether the areas/sites proposed coincide with land with high quality ecological and geological value, and therefore the significance of the impact for each Option.

Sustainability Aim 13: Water resources protected and enhanced.

155. The effect of protecting and enhancing water resources will depend upon development management policies in the draft plan and how those policies are implemented. Therefore the impact of most of the Options on this aim is uncertain.

Sustainability Aim 14: Greenhouse gas emissions minimised and the impact of climate change effectively managed

156. Site assessments will be required to ascertain whether the climate or flood risk could either be worsened or mitigated, although the city centre, Neepsend/Shalesmoor and Attercliffe (sub-options B(b), C(a) & C(b)) are in flood risk area. While the effect on flood risk is expected to be mitigated, the effect on climate change will also depend on policies and policy implementation. Therefore, the impact is uncertain.
157. Any option which only requires redevelopment of existing built form (e.g. Option D and some of Option A and B) would have a neutral impact on flood risk. Option B proposes reduced amenity green space and loss of open space (sub-option B(c)) which would have negative impact on climate change, air quality due to the removal of vegetation. Intensification could worsen the Urban Heat Island effect and the majority of sites are small, which means that there would be only limited opportunities to provide water and flood management and sustainable design on-site. Therefore there would be a negative impact.
158. Options D and E propose the most development on greenfield land, which would negatively affect surface water run-off and potential for flooding. However, large scale development or re-development options C and D allow the greatest potential to accommodate flood and water management measures and sustainable design. Therefore Option C has a positive impact and option D a neutral impact, unless there are other known mitigation issues that also need investigating. This likelihood is not so certain for Option E without site assessments.

Sustainability Aim 15: Air quality improved and impacts of environmental pollution minimised or mitigated.

159. Any additional development could worsen air pollution, through increased traffic levels, except in those cases when a polluting industrial use is being removed. No areas have been identified in the growth sub-options which have heavy industrial polluting uses, but noise polluting uses and contamination would need to be removed for Option C areas to make them suitable for residential development, which would lead to an overall positive impact. It is also hoped that the increase in car trips would be minimised due to the location of Option C areas (Neepsend/Shalesmoor) and Attercliffe) and the City Centre (sub-option B(b) being close to public transport. Car trip numbers are not expected to change substantially due to a change from employment use to residential use.
160. Where options support Aim 6, housing development would be located where alternatives to car travel were available, therefore the air pollution effect may not be as high as for other options. Policies would need to be put in place which checked sites to see if there are locations where air quality would become such a significant issue to prevent a particular development use. It is more likely that changes to a planning application, in terms of design, layout and other mitigation measures, would make the air pollution level acceptable to human health by enabling developments to meet the proscribed EU limit values on air quality. Thus the significance of any impact is uncertain.
161. Most options will have a negative impact on arterial routes, except capacity of the City Centre and Kelham (sub-option B(b)) even though air and noise pollution from the Inner Ring Road will need mitigating.
162. The impact of Options A and B will be difficult to ascertain because the sites may not be known, but they are not likely to be located in locations optimal for public transport accessibility. Option B would also result in a reduction in amenity space and loss of open spaces (sub-option B(c)), and the vegetation within them which could absorb air pollution. However reducing off-street parking could encourage alternative means of travelling and could limit increases in air pollution. It is not known if this is overall significant or neutral for Option B.
163. Site-specific air pollution increases for areas in new Options D and E are seen to be insignificant against the current low or non-existent air pollution levels in those areas. However their distance from employment areas will mean traffic from them is likely to have the most negative impact on arterial routes, particularly if they are also on arterial routes (e.g. East Sheffield sub-option D(b)).

Sustainability Aim 16: Energy consumption minimised and use of sustainable energy sources maximised.

164. The effect on this Aim will depend upon policies and policy implementation. Therefore the impact of most of the Options is uncertain. The exceptions are sub-options B(b) and C(a) – City Centre and Attercliffe, some of which is close enough to have potential to link into the District Heating Network.

Sustainability Aim 17: Minimal production of waste and the reuse, recycling and recovery of waste maximised.

165. This is uncertain as it will require a cumulative assessment by Waste stakeholders.

Conclusion

166. Each option would make a positive contribution towards having enough housing land in Sheffield. Not all the options may need to be taken forward to provide sufficient numbers of new homes to meet all Sheffield's need within Sheffield. But further consideration of potential site options will be needed during the next stage of plan preparation, to ascertain the extent of the likely impact and the significance of each option. This will help in weighing which combination of options would maximise beneficial effects, which of the negative impacts are significant, and which can be mitigated.

167. By proposing greenfield development in the Green Belt, Options D and E have the potential for significant negative impacts on Efficient Use of Land and potential negative impact on Landscape, Ecology and Geology depending on sites. The potential for not developing any sites with landscape or ecological and geological value needs to be weighed against the need for new homes, and whether developing less housing impacts on the viability of extending or providing social and transport infrastructure. Further investigation is needed regarding public transport accessibility, although there remains the uncertainty about whether the transport network extensions would be implemented.

168. Large scale development as proposed by Options C and D would allow the provision of surface flood and water management measures, facilities, shops, local employment, and infrastructure, and could reduce the need to travel for some people. However it would not completely negate the need to travel to distant employment areas and the potential impact on traffic congestion and air pollution elsewhere in the city.

169. Options A, B and C concentrate more development within the urban area, due to higher densities, thus indirectly protecting greenfield land of high quality landscape value, ecological value or archaeological value. Increasing capacity of the City Centre and Kelham is positive on many impacts directly and indirectly impacted by its accessible location. Although as with the other urban options, intensification will support the viability of centres and current facilities, but may make it difficult to provide the health, education and other facilities, open space and flood and water management measures required to accompany the increased population

170. The options do not factor in any additional dwelling capacity from Employment Land Review sites which are not attractive for strategic or local employment use. This could provide additional dwelling capacity, depending on their performance in site sustainability appraisals, which could counter the drop of dwelling capacity due to the need to provide additional infrastructure and facilities.

CONCLUSION AND NEXT STEPS

171. The Sustainability Appraisal and comparison of options in this report identifies which options are likely to be sustainable in which ways, and highlights potential negative impacts which may require mitigation.
172. The SEA Directive guidance recognises the importance of the complex relationship between policies, plans and impacts, and specifically requires that the cumulative⁵, synergistic⁶ and secondary⁷ impacts of implementing the plan as a whole are evaluated.
173. The report emphasises the difficulty of appraising citywide growth options in isolation, and not being able to take on board synergies with other future parts of the Sheffield Plan. Without the accompanying detail on sites and policies, it is difficult to predict with certainty the likelihood and significance and scale of cumulative impacts, particularly in relation to certain parts of the city. Without knowing the detail of policies, it is not known whether the Sheffield Plan would adequately mitigate effects.
174. This report does however highlight sustainability aspects for future investigation. It also invites comment from other stakeholders on whether the right assumptions and conclusions have been drawn about options.

Next Steps

175. The next step is to use the findings from these Sustainability Appraisals, other evidence, and consultation comments to develop the next stage of the Plan. Feeding into this will be the assessment of site options, and policy options, both on a site-specific level but also cumulatively. This will allow the assumptions and findings in this report to be tested and updated. The next interim Sustainability Appraisal Report for the next Sheffield Plan stage will outline the reasons for selecting the preferred approach in light of the alternatives and why any options were rejected.

⁵ 'Cumulative' defined as '*the net result of environmental impact from a number of projects and activities*' from Sadler (1996) Environmental Assessment in a Changing World: Evaluating Practice to Improve Performance. International Study of Effectiveness of Environmental Assessment Final Report; International Association for Impact Assessment and Canadian Environment Assessment Agency

⁶ 'Synergistic' defined as '*cumulative effects that result when the interaction of a number of impacts is greater than the sum of the individual impacts*'. From Cooper, L.M. (2004) Guidelines for Cumulative Effects Assessment in SEA of Plans, EPMG Occasional Paper 04/LMC/CEA, Imperial College London

⁷ 'Secondary' defined as '*effects that are consequential from direct or primary effects of the action*'. From Cooper, L.M. (2004) Guidelines for Cumulative Effects Assessment in SEA of Plans, EPMG Occasional Paper 04/LMC/CEA, Imperial College London

APPENDIX 1: SUSTAINABILITY APPRAISAL FRAMEWORK

From Draft Scoping Reporting

Sustainability Aims	Appraisal Criteria: Would the option...
<p>1. A vibrant and competitive economy with good job opportunities available to the whole community.</p>	<ul style="list-style-type: none"> • Contribute to the supply of good quality land for office and industrial uses? • Support job growth? • Support the development of employment sites in the priority economic regeneration areas? • Help provide a quality portfolio of commercial sites and premises that are available for development? • Promote the development and expansion of advanced manufacturing? • Improve the vibrancy of the City's retail offer in the City Centre, District or Local Centres? • Encourage and support tourism?
<p>2. Education and training opportunities provided which build the skills and capacity for the whole population and which encourage lifelong learning.</p>	<ul style="list-style-type: none"> • Meet need for well-designed education and/or training facilities? • Locate education and/or training facilities close to the communities they serve, in suitable environments and which are accessible by good public transport? • Help to provide a diverse range of learning opportunities? • Help to ensure that local schools have the capacity to meet the needs of new housing developments?
<p>3. Decent and appropriate housing available to everyone.</p>	<ul style="list-style-type: none"> • Support the creation of successful housing markets in housing renewal areas? • Assist with the provision of sufficient new homes to meet local needs (taking into account requirements of location, size, type and affordability)? • Ensure that homes are well designed and provide enough space for types of household they are intended for? • Integrate new housing development with existing communities? • Help to create mixed income communities by providing a better mix of house types and tenures (including affordable housing)? • Provide housing to meet the needs of all vulnerable people and disadvantaged groups (including people on low incomes, older people, people needing supported housing, BME communities, people with disabilities and Gypsies and Travellers)?
<p>4. Health services provided for the health needs of the whole population and which tackle health inequalities.</p>	<ul style="list-style-type: none"> • Meet needs for health services and facilities? • Help to ensure that health facilities will be available to meet the needs of new housing developments? • Locate health facilities close to the communities they serve and/or be accessible by good public transport?

Sustainability Aims	Appraisal Criteria: Would the option...
5. Open space and cultural, leisure and recreational facilities available for all.	<ul style="list-style-type: none"> • Enable people to have access to sufficient good quality open space, near to their homes? • Improve access to wildlife and green spaces, through delivery of green infrastructure? • Improve access to the countryside through public rights of way or cycle paths? • Enable appropriate provision of cultural, leisure and recreation (CLR) facilities? • Encourage and support tourism?
6. Significant development focused in locations that reduce the need to travel and the fullest possible use made of public transport, walking and cycling.	<ul style="list-style-type: none"> • Enable shorter journeys, improve modal choice and integration of transport modes to encourage or facilitate walking, cycling and public transport? • Enable shorter journeys by locating homes near to the main employment areas (City Centre/Lower Don Valley/ Upper Don Valley/ Sheaf Valley)? • Locate high trip generating uses and job opportunities (offices, built leisure, retail) where there is good access by public transport? • Make more efficient use of the car (e.g. through car sharing or providing opportunities to make linked trips)? • Result in essential services (e.g. health services, shops, leisure facilities and opportunities to access the natural environment) being available within easy reach of people's homes by foot, cycle or public transport? • Provide levels of car parking which are appropriate to the location (i.e. lower levels of provision where other modes of transport are more viable)?
7. An efficient transport network which maximises access and minimises detrimental impacts	<ul style="list-style-type: none"> • Lead to unacceptable levels of traffic congestion? • Support movement of freight by means other than road? • Support the development of good road and rail links to other cities and international airports? • Make more efficient use of, or improve the viability of, existing public transport services? • Create an attractive and safe transport network for non-car users (pedestrians, cyclists, etc.)?
8. Use of land which supports regeneration of the urban area and protection of valuable soil and mineral resources.	<ul style="list-style-type: none"> • Result in the reuse of previously developed land and vacant buildings? • Encourage development which makes efficient use of land (e.g. by focusing development in urban area, development densities)? • Protect and enhance the best and most versatile agricultural land, and in so doing, safeguard soil quality? • Avoid the sterilisation of economic mineral reserves?
9. An attractive, high quality built environment that works well and lasts.	<ul style="list-style-type: none"> • Promote city-wide characteristics around: distinctive settlement layouts, townscapes, buildings, topography and natural features. • Optimise the potential of a site and promote attractive and locally distinct places and buildings? • Protect and enhance the character and functionality of higher quality environments whilst improving poor quality environments? • Promote inclusive design principles? • Promote safe and secure environments? • Promote places that function well for all users now and in the future? • Improve the landscape, quality of streets and the public realm? • Promote sustainable design principles?
10. The historic environment protected and enhanced	<ul style="list-style-type: none"> • Preserve Conservation Areas, Listed buildings and their settings • Preserve archaeological sites and their settings

Sustainability Aims	Appraisal Criteria: Would the option...
11. High quality natural landscapes protected and poor landscapes enhanced.	<ul style="list-style-type: none"> • Minimise the impact of development on the Peak District National Park and the wider countryside? • Protect and enhance valued landscapes and the character of rural areas? • Value and protect local diversity and local distinctiveness? • Safeguard individual landscape features such as hedgerows, dry-stone walls and ponds? • Preserve or improve woodland or tree cover in appropriate locations? • Result in the restoration and appropriate after-use of mineral extraction and landfill sites?
12. Ecological and geological assets created, conserved, managed and enhanced.	<ul style="list-style-type: none"> • Protect and improve the diversity of wildlife habitats and species or make provision for their long-term management? • Reduce habitat fragmentation, enhance native species, and help deliver habitat restoration (helping to achieve Biodiversity Action Plan Targets)? • Provide opportunities for habitat creation (e.g. through the landscaping of new development)? • Protect and improve green corridors and links to maximise connectivity between wildlife habitats? • Safeguard important geological sites?
13. Water resources protected and enhanced.	<ul style="list-style-type: none"> • Protect and where possible enhance the quality of the water environment? • Safeguard watercourses?
14. Greenhouse gas emissions minimised and the impact of climate change effectively managed.	<ul style="list-style-type: none"> • Reduce greenhouse gas emissions through sustainable design and layout, and construction practices? • Minimise risk to people and property from fluvial and surface water flooding, and incorporate sustainable drainage measures? • Improve or provide flood defences in areas at risk from flooding? • Reduce or not worsen the Urban Heat Island effect?
15. Air quality improved and impacts of environmental pollution minimised or mitigated.	<ul style="list-style-type: none"> • Minimise air quality impacts arising from new development, including from traffic generation? • Locate sensitive uses where health risks from poor air quality is minimised? • Minimise, and where possible improve on, unacceptable effects of noise, odour, vibration and light pollution? • Minimise, and where possible address, land contamination?
16. Energy consumption minimised and use of sustainable energy sources maximised.	<ul style="list-style-type: none"> • Minimise energy consumption in the construction or use of buildings? • Support the use or development of renewable energy sources? • Help to maximise the potential of District Heating Networks?
17. Minimal production of waste and the reuse, recycling and recovery of waste maximised.	<ul style="list-style-type: none"> • Support the re-use or recovery of waste through recycling, composting or energy recovery? • Improve access to facilities that encourage the minimisation, reuse and recycling of waste and recovery of energy from waste? • Minimise waste to landfill (including by the re-use of secondary aggregates; and supporting the development and use of innovative soil remediation techniques)?

APPENDIX 2: APPRAISAL OF EMPLOYMENT GROWTH OPTIONS

Sustainability Aims	Economy	Education and Training	Housing	Health Services	Open Space, Culture & Leisure	Locations affecting Travel	Transport Network	Use of land	Built Environment	Historic Environment	Landscapes	Ecology & Geology	Water	Climate Change	Pollution	Energy	Waste	<p>Key - Likely impacts in relation to Sustainability Aim, using appraisal criteria to guide this assessment</p> <p>0 Neutral impact or equal negative & positive impact Y Minor Positive YY Significant Positive N Minor Negative NN Significant Positive - No link with Aim ? Uncertain ?S if site assessment would provide more certainty ?P if policy assessment would provide more certainty ?C if cumulative impact of sites would provide more certainty</p> <p>Discussion of significant effects (including need/ability to mitigate)</p>
EMPLOYMENT OPTIONS																		
CURRENT CORE STRATEGY APPROACH. Pre-submission employment allocations	Y	-	-	-	-	O	?	Y	?	?	Y	O	?	?	O	?	?	<p>It provides enough land for employment (in the short and medium term, but not for latter part of Local Plan period), to meet Sheffield's residents. It also does not sufficiently promote knowledge-based industries, due to a lack of a strategic approach towards the Advanced Manufacturing Park. It assumes that dominance of existing uses will be ensured, as per the Table H1 in the Pre-Submission City Policies and Sites Document. Locational policies encourage accessibility by public transport, therefore offering alternatives to car travel, however there are still likely to be air pollution increases in arterial routes from any additional development. Site assessment required as to whether climate change would be worsened or mitigated. Many other aspects are site specific. Most of the employment sites are on non-urban land and brownfield land (and therefore indirectly positively supporting high quality natural landscapes and efficient use of land), so there are likely to be no significant adverse impacts on ecology.</p>
MAIN EMPLOYMENT LOCATION ALTERNATIVES																		
Core Strategy approach - Core Strategy Main Locations for Offices, Manufacturing, Distribution and Warehousing	Y	-	-	-	-	O	?	Y	?	?	Y	O	?	?	O	?	?	<p>Locationally Chapeltown/Ecclesfield, Stocksbridge/Deepcar, Sheaf Valley, Blackburn Valley, Holbrook and Orgreave don't meet the strategic employment needs for the city and would leave sites open to pressure for change away from employment use to uses, such as housing, which they wouldn't be sustainable or suitable locations for. There would be less choice in terms of employment supply, but there would still be a positive impact.</p>
(A) City Centre, Upper Don Valley, Lower Don Valley and Outer South East as main locations for new offices and manufacturing, distribution and warehousing; Chapeltown/Ecclesfield, Stocksbridge/Deepcar, Sheaf Valley, Blackburn Valley, Holbrook and Orgreave - for B-class uses providing employment opportunities close to new homes	Y	-	-	-	-	Y	?	Y	?	?	Y	O	?	?	O	?	?	<p>City Centre, Lower Don Valley, Upper Don Valley and South East are the only areas needed for strategic employment; the others will still serve a local employment function, and reduce the need to travel. No new sites and little change in type of polluting uses.</p>
ADVANCED MANUFACTURING ALTERNATIVES																		
(B) Manufacturing development focused around the Advanced Manufacturing Park and Sheffield Business Park	Y	-	-	-	?	O	O	?	?	?	?	O	?	?	O	?	?	<p>This would support the development and expansion of clusters and networks of knowledge businesses and industries and take advantage of the economically attractive location. There are a number of uncertainties, without knowing site locations. The area is not particularly accessible by public transport and therefore without investment in infrastructure and public transport services, there could be an increase in journeys by private car resulting in air quality and congestion issues. The large-scale development proposed here is likely to increase demand to a level that investment in the necessary infrastructure is justified.</p>

Sustainability Aims	Economy	Education and Training	Housing	Health Services	Open Space, Culture & Leisure	Locations affecting Travel	Transport Network	Use of land	Built Environment	Historic Environment	Landscapes	Ecology & Geology	Water	Climate Change	Pollution	Energy	Waste	<p>Key - Likely impacts in relation to Sustainability Aim, using appraisal criteria to guide this assessment</p> <p>0 Neutral impact or equal negative & positive impact Y Minor Positive YY Significant Positive N Minor Negative NN Significant Positive - No link with Aim ? Uncertain ?S if site assessment would provide more certainty ?P if policy assessment would provide more certainty ?C if cumulative impact of sites would provide more certainty</p> <p>Discussion of significant effects (including need/ability to mitigate)</p>
EMPLOYMENT OPTIONS																		
PRIORITY OFFICE LOCATION ALTERNATIVES																		
Core Strategy approach - Majority of offices in City Centre	Y	-	-	-	-	Y	Y	Y	?	?	Y	O	?	?	O	?	?	This Employment Land Review would support a continuation of this approach, however the supply of office sites in the City Centre is limited. The city centre is the most accessible location in the city, and therefore this would allow opportunities to travel by public transport, take advantage of and benefit an efficient transport network. Some health services are also provided in city centre which workers can access, although additional services may be required.
(C) Higher densities of office development on sites within the Priority Office Areas in City Centre	Y	-	-	-	-	Y	Y	Y	?	?	Y	O	?	?	O	?	?	This would have a greater positive impact than the Core Strategy approach, because it would allow more high quality office space to be provided in a very accessible location. Less would need to be provided elsewhere in less accessible locations.
(D) Target for office development in Advanced Manufacturing Park/Sheffield Business Park	Y	-	-	-	-	N/O	N/O	?	?	?	?	?	?	?	O	?	?	The Advanced Manufacturing Park/Sheffield Business Park is the most attractive location for office development from an employers' viewpoint and this would support the knowledge based industries already there. There are a number of uncertainties, without knowing site locations. The area is not particularly accessible by public transport and therefore without investment in infrastructure and public transport services, there could be an increase in journeys by private car resulting in air quality and congestion issues. The large-scale development proposed here is likely to increase demand to a level that investment in the necessary infrastructure is justified.
(E) Limited amount of office development in other outlying areas of wellconnected locations e.g. Hillsborough, Crystal Peaks, Chapelton, Stocksbridge	Y	-	-	-	-	Y	Y	Y	?	?	Y	O	?	?	O	?	?	Having limited office development in other wellconnected locations would reduce the need to travel and support sustainable housing growth in these locations. These would be existing identified employment sites.
RETAIL AND LEISURE ALTERNATIVES																		
Core Strategy Approach - Support City Centre, District Centres and Local Centres. If no in- or edge-of-centre sites are available, retail and leisure can go anywhere.	Y	-	-	-	-	N	N	Y	?	?	Y	O	?	?	O	?	?	If no in- or edge of centre locations are available, retail and leisure uses can go anywhere, which may not be in locations which would reduce the need to travel or allow fullest possible use to be made of public transport, walking or cycling. It would also not support an efficient transport network. This impact would only be ascertained at the time of a planning application
(F) Meadowhall Shopping Centre and retail parks identified as commercial centres where retail and leisure development is preferred if no in- or edge of centre sites are available	N	-	-	-	-	Y	O	Y	?	?	Y	O	?	?	O	?	?	Preferring Meadowhall and retail parks as a location for retail and leisure development above other less accessible out of centre locations, may diminish the confidence of potential investors in existing centres. If no in- or edge of centre sites are available, out of centre locations such as Meadowhall and retail parks are accessible locations which could allow trips to be linked, thus reducing the need to travel.

APPENDIX 3: APPRAISAL OF HOUSING GROWTH OPTIONS

Sustainability Aims	Economy	Education and Training	Housing	Health Services	Open Space, Culture & Leisure	Locations affecting Travel	Transport Network	Use of Land	Built Environment	Historic Environment	Landscapes	Ecology & Geology	Water	Climate Change	Pollution	Energy	Waste	<p><u>Key - Likely impacts in relation to Sustainability Aim, using appraisal criteria to guide this assessment</u></p> <p>0 Neutral impact or equal negative & positive impact Y Minor Positive YY Significant Positive N Minor Negative NN Significant Positive - No link with Aim ? Uncertain</p> <p>?S if site assessment would provide more certainty ?P if policy assessment would provide more certainty ?C if cumulative impact of sites would provide more certainty</p> <p>Discussion of significant effects (including need/ability to mitigate)</p>
A Urban Capacity Approach	O	O	O	O	? S C	? C	? C	Y P	? P	? P	Y P	O P	? P	? S	? P	? P	? C	<p>- This option does not impact on the ability of the Sheffield Plan to provide enough land for employment, as long as sufficient housing is provided in the Sheffield Travel to work area. This option assumes that dominance of existing uses will be ensured, as per the Table H1 in the Pre-Submission City Policies and Sites Document. It safeguards current Industrial/Business and Industry/General Employment Areas for employment, assuming they are not suitable for housing. This option does not adequately reflect the Employment Land Review, that some employment sites need not be safeguarded for employment uses, and may be available for housing development.</p> <p>- This option does not impact on the ability of the Sheffield Plan to provide enough land for employment- It provides some land for housing but insufficient to meet needs. This option could rectify a previous underestimate of large windfalls and would reduce housing pressure elsewhere. It has the same sustainability implications as the status quo situation, although a little more housing would be provided.</p> <p>- The dwelling potential includes a few open spaces not in active use that could be achievable and available. As these open spaces have not been tested to see if they are surplus, development of some of these open spaces could lead to a negative impact, but the very low number would mean it would be very minor. It would not affect physical activity and health as they are not available to be used.</p> <p>- Much of the housing that would be delivered through this option would be on smaller sites and it would be difficult to accurately forecast growth and anticipate any limited need for school & health facility or utility expansion. Concerns about health impact have already been raised at Pre-Submission stage for some areas of the city.</p> <p>- Housing would be 'slotted in' and therefore may not necessarily be in the locations which would reduce the need to travel and make best use of more sustainable modes of travel. It would depend on each individual site. Therefore there are likely to be air pollution increases on arterial routes from any additional development. Unlikely to be sufficient growth in any particular location to make transport network more efficient, but again this would depend on each individual site.</p> <p>-Accessibility, reduction in need to travel and ability to make more efficient use of the transport network will vary between sites</p> <p>- This option makes use of existing infrastructure within urban area and makes most efficient use of land with 95% of sites identified in the SHLAA being on brownfield sites. Very few sites are non-urban sites to have the question about landscape value.</p> <p>- Site assessment required as to whether climate change would be worsened or mitigated. Many other aspects are site specific.</p> <p>- Additional capacity through sub-options (b) and (c) would not affect any additional non-urban land than identified in the Pre-Submission allocation (so no additional impact on agricultural land, landscapes, ecology or geology)</p>
B Urban Intensification	Y	O	O	O	? S C	? S	? C	Y P	? P	? P	Y P	? P	? P	N	? P	? P	? C	<p>- Higher densities everywhere, differentiated by accessibility to centres and public transport and developing on surplus open space makes efficient use of land as more intensification of brownfield land is proposed and no additional development proposed in non-urban areas, protecting landscapes.</p> <p>- It improves the viability of local businesses and facilities, and the vitality of local centres.</p> <p>- Education impact will vary depending on sub-option and the density of housing, although family housing is still possible at higher than current densities, with good design.</p> <p>- More people will lead to additional pressure on health facilities. Increased housing market pressure through intensification makes it more difficult to provide land for additional education and health provision.</p> <p>-More smaller housing reflects better housing fit to smaller households, partly in relation to older population. But it might also cause an over supply of smaller homes, therefore not meeting the needs of larger families. Sheffield Housing Needs Assessment does not go down to this level of detail to appraise fully.</p> <p>- Surplus open spaces need looking at in terms of ecology and geology and impact on Green Network.</p> <p>-Loss of open spaces and reduced amenity green space would have negative impact on climate change, air quality, health and surface water run-off. Intensification will worsen Urban Heat Island effect and majority of sites are small, which means that there would be only limited opportunities to provide water and flood management and sustainable design on-site.</p> <p>- Transport and travel impacts will vary depending on the sub-option and site location</p>

Sustainability Aims	Economy	Education and Training	Housing	Health Services	Open Space, Culture & Leisure	Locations affecting Travel	Transport Network	Use of land	Built Environment	Historic Environment	Landscapes	Ecology & Geology	Water	Climate Change	Pollution	Energy	Waste	
																		<p><u>Key - Likely impacts in relation to Sustainability Aim, using appraisal criteria to guide this assessment</u></p> <p>0 Neutral impact or equal negative & positive impact Y Minor Positive YY Significant Positive N Minor Negative NN Significant Positive - No link with Aim ? Uncertain</p> <p>?S if site assessment would provide more certainty ?P if policy assessment would provide more certainty ?C if cumulative impact of sites would provide more certainty</p>
																		Discussion of significant effects (including need/ability to mitigate)
(a) Increase density of sites (excluding City Centre, Kelham and areas undergoing urban remodelling)	Y	O	Y	O	? S C	O	O	Y	?	?	Y	?	?	N	?	?	?	<p>Same impacts as general Urban Intensification Option except:</p> <ul style="list-style-type: none"> - Family housing is still possible at slightly higher densities than existing, meaning there would be an education impact. - Reducing off-street parking provision close to District and Neighbourhood Centres may encourage alternative means of travelling, and would limit increases in air pollution but it could result in on-street parking pressure, possibly affecting road safety. - Higher density living in locations accessible to public transport would mean short distances to work and services, and improve viability of public transport and mean that walking and cycling become more viable alternatives to the car for shorter journeys. This could lead to higher level of public transport provision, although the population increase may not be significant enough for this investment. Either impact depends on public transport operators and/or design of residential developments. - Reducing amenity space would reduce amount of permeable surfaces which limit surface run-off and increase flooding.
(b) Increase capacity of the City Centre and Kelham	O	O	Y	O	N	Y	Y	Y	?	?	Y	?	?	N	Y	Y	?	<p>Same impacts as Option A except for following.</p> <ul style="list-style-type: none"> - Apartment development in City Centre is more attractive to young professionals, students and older people, while there will be some family housing in Kelham which is being anticipated in education plans for the next few years. - Very few local shops, facilities and open space in Kelham Island for current small residential population, but City Centre is closeby. - City Centre and Kelham Island sites have no ecological value to protect. - As the city centre is the most accessible place to elsewhere in the city by public transport, and many short journeys could be made by walking and cycling, there would be a negligible increase in air quality from development, although air and noise pollution from Inner Ring Road would need mitigating. - Flood and water management measures and design needed to mitigate flood risk. - City Centre sites have potential to link into District Heating Network. <p>Same impacts as general urban intensification option B except in relation to the following:</p> <ul style="list-style-type: none"> -Loss of employment sites would not affect Economic Aim, and would fit in with Employment Land Review. - Increasing capacity in City Centre and Kelham would improve vibrancy of City Centre and Kelham but more local facilities, shops and services, open space would be needed for Kelham, including maybe health facilities. - If education need materialises, this would be on a greater scale, but uncertainty yet if it can be accommodated. - Dwelling capacity assumptions respect heritage aspects, character and ecology.
(c) Develop 1% of urban open space	O	O	Y	O	O	? S	? S	?	?	?	Y	O	?	N	N	?	?	<p>This sub-option is different from Option A based on the SHLAA which assumes a dwelling potential for achievable and available open spaces in non active use. in the following ways</p> <ul style="list-style-type: none"> -Open spaces would only be released if they were not surplus to open space use and not needed to meet other aspects of the Open Space, Culture and Leisure Aim or the Ecology and Geology Aim. While sensitive areas (e.g. Ecology and Geology) are also discounted from Option A. - Any development of open space would reduce potential surplus open space to provide additional facilities (education, health etc) needed in as a result of increased population growth from other Urban Intensification options - Greater loss of open space and vegetation than the SHLAA approach would exacerbate negative impacts on climate change, air quality, and surface water runoff and ecology.

Sustainability Aims	Economy	Education and Training	Housing	Health Services	Open Space, Culture & Leisure	Locations affecting Travel	Transport Network	Use of land	Built Environment	Historic Environment	Landscapes	Ecology & Geology	Water	Climate Change	Pollution	Energy	Waste	<p><u>Key - Likely impacts in relation to Sustainability Aim, using appraisal criteria to guide this assessment</u></p> <p>0 Neutral impact or equal negative & positive impact Y Minor Positive YY Significant Positive N Minor Negative NN Significant Positive - No link with Aim ? Uncertain ?S if site assessment would provide more certainty ?P if policy assessment would provide more certainty ?C if cumulative impact of sites would provide more certainty</p>
																		<p>Discussion of significant effects (including need/ability to mitigate)</p>
C Urban Remodelling	?	O	Y	O	N	Y	Y	Y	Y	?	Y	Y	?	Y	N	?	?	<p>The impact on employment land can only be ascertained through site assessments, in relation to the Employment Land Review - some sites are no longer needed for employment.</p> <ul style="list-style-type: none"> - This option would only contribute to housing delivery in latter part of the plan period, though some vacant sites could be developed earlier. However it would focus most new housing development in 1 or 2 areas thereby providing insufficient range of housing sites throughout the city, resulting in consequent issues of deliverability and meeting market needs in some areas. - Areas have no or little local facilities, shops, open space currently but scale of areas so remodelling can and should accommodate these uses and water and flood management and sustainable design within these flood risk areas. The scale of remodelling makes this possible through density increases, reduction in dwelling numbers or larger remodelling areas, - Re-use of brownfield sites. - Removal of industrial uses would remove contamination. - Removal of noise polluting uses and remodelling of large areas provides opportunities to change the environment to make it suitable for residential development. - Locations with existing public transport, but development at a scale which is likely to enable improvements to existing services and infrastructure
(a) Neepsend/ Shalesmoor	?	O	Y	O	N	Y	Y	Y	Y	?	Y	Y	?	Y	N	?	?	<p>Same impacts as full urban remodelling option except:</p> <ul style="list-style-type: none"> - Area would accommodate both apartments and family housing - scale of remodelling proposed has potential land to accommodate needed infrastructure and services, including education, shops, etc. - Change from employment uses to residential use would remove industrial noise polluting uses. Car trips from residential development would be fairly similar to existing commuting to employment, therefore the air pollution level would be little changed. - Car trips hopefully minimised by close location to tram and city centre, so accessible to public transport and employment areas. - Urban Capacity assessments respect listed buildings. - No ecological or geological impact
(b) Attercliffe	?	O	Y	O	N	Y	Y	Y	Y	?	Y	Y	?	Y	N	Y	?	<p>Same impacts as full urban remodelling option except:</p> <ul style="list-style-type: none"> - A substantial population increase here would help support the viability of Attercliffe centre. Existing air pollution problems are from cars using this arterial route through Attercliffe, which would be exacerbated by additional residential development, which would require mitigation. However area may be sought after due to multiple frequent public transport opportunities to city centre, employment areas and Rotherham, thereby encouraging non-car use & improving on viability of public transport. It would improve the viability of the existing Attercliffe local centre. - Additional education provision may be needed. - Sites in some parts of this area have potential to link into District Heating Network.
D A limited number of Larger Urban Extensions	O	O	Y	O	?	N	N	N	?	?	N	N	?	O	N	?	?	<p>- Local employment sites would need to be provided which would provide choice to local people. However some people would still need to travel to other employment areas, which may be distant. This could increase air and noise pollution for people living in other areas close to arterial routes.</p> <ul style="list-style-type: none"> - Large scale new development allows forecasting of need for and the provision of a whole range of health, education, local employment and transport infrastructure, open spaces, shops and services, flood and water management measures and sustainable design. It may make a location more sustainable by bringing in additional facilities. These sustainability benefits may outweigh other potential negative impacts but will need investigating in further detail on an area basis, particularly as this may result in additional land take, or higher densities. If a large enough sustainable development can be created to provide some local employment, this may reduce the need to travel and/or result in shorter journeys to employment or other services elsewhere. - This option would lead to loss of greenfield non-urban land, which would also affect surface water run-off. There may be some landscape impact where sites contribute towards making a more sustainable extension overall - as the urban extensions are proposed to be a large scale, more land with landscape or ecological value has the potential to be impacted than for Option E.

Sustainability Aims	Economy	Education and Training	Housing	Health Services	Open Space, Culture & Leisure	Locations affecting Travel	Transport Network	Use of land	Built Environment	Historic Environment	Landscapes	Ecology & Geology	Water	Climate Change	Pollution	Energy	Waste	<p><u>Key - Likely impacts in relation to Sustainability Aim, using appraisal criteria to guide this assessment</u></p> <p>0 Neutral impact or equal negative & positive impact Y Minor Positive YY Significant Positive N Minor Negative NN Significant Positive - No link with Aim ? Uncertain ?S if site assessment would provide more certainty ?P if policy assessment would provide more certainty ?C if cumulative impact of sites would provide more certainty</p>
																		<p>Discussion of significant effects (including need/ability to mitigate)</p>
(a) Stocksbridge and Upper Don Valley	O	O	Y	O	? S C	N	N	N	? P	? P	? S	? S	? P	N	N	? P	? C	<p>The following impacts are in addition to the impacts of the general Option D:</p> <ul style="list-style-type: none"> -Parts of this area suffer from lack of public transport accessibility and poor highways network, leading to traffic congestion, and air pollution on roads from this area and arterial routes to employment sites and the M1 via Stocksbridge Bypass. - Therefore investigation is needed about what facilities, public transport and services are needed to meet proposed growth here, and whether proposed growth is of sufficient scale to make such investment viable, to create a sustainable growth area. Without such investment, there would be a negative impact. - Developing on steep slopes will considerably worsen existing surface water run-off problems. Further investigation about whether this is significant or if mitigation can be put in place through improvement to sustainable drainage infrastructure off-site.
(b) East Sheffield (as an extension to Waverley in Rotherham Borough)	O	O	Y	O	? S C	? N	N	N	? P	? P	? S	? S	? P	O	N	? P	? C	<p>The following impacts are in addition to the impacts of the general Option D:</p> <ul style="list-style-type: none"> -Would exacerbate traffic congestion and air pollution problems along arterial route through Handsworth, although there is spare capacity on the bus through Handsworth going to the Advanced Manufacturing Park and development may make new public transport infrastructure viable in future years. -Additional open space anticipated in dwelling estimate for this sub-option but additional needed health and educational facilities would also be required. Large scale extensions allow possibilities to accommodate within development.
(c) South East Sheffield	O	O	Y	O	? S C	N	N	N	? P	? P	? S	? S	? P	O	N	? P	? C	<p>The following impacts are in addition to the impacts of the general Option D:</p> <ul style="list-style-type: none"> -This proposes development of agricultural land, which is cross-cut by public footpaths. -This option therefore assumes some retention of land for recreational purposes. - This area is not close to the tram.
(d) East of Norton (Sheffield District only)	O	O	Y	O	? S C	O	Y	O	? P	? P	? S	? S	? P	O	N	? P	? C	<p>The following impacts are in addition to the impacts of the general Option D:</p> <ul style="list-style-type: none"> -Re-use of contaminated brownfield land but also non-brownfield land, potentially with ecological value. - Location takes advantage of tram closeby.
E Multiple Smaller Green Belt Releases	O	O	Y	O	? S C	N	N	N	? P	? P	? S	? S	? P	? S	N	? P	? C	<p>- This option alongside Option A would spread development more evenly around the city, providing wider choice in a range of areas. But it may result in numerous small housing estates which are disconnected from the rest of the urban area.</p> <ul style="list-style-type: none"> - Distances from employment areas and no scope for additional local employment provision due to limited number of sites and site size would lead to more commuting/air pollution along arterial routes, which may affect already deprived areas. - Increases in local air pollution would be insignificant relative to effect on arterial roads. - Not known yet whether locations are accessible to public transport, good public open space and existing community facilities however sites may be not be large enough to create the critical mass needed for new infrastructure, including for education and public transport. - Less efficient use of land due to lower density development than in the urban area. Development would in turn affect the character of the areas, but they would be large enough for opportunities for water and flood management and sustainable design. - Any Green Belt releases would lead to a permanent loss of non-urban land, including agricultural land, and may lead to more surface water run-off. <p>There could be an minor adverse impact on landscape, ecology or archaeology, although sites which would have had a significant negative impact would only be considered if there were many overriding sustainability benefits. The impact would be spread out the city.</p>