



Greater Cambridge Local Plan:

First Proposals

Sustainability Appraisal Appendices

Cambridge City Council and South

Cambridgeshire District Council

Final report

Prepared by LUC

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Contents

Appendix A	4
Consultation Comments	
Appendix B	58
Review of Plans, Policies and Programmes and Baseline Information	
Appendix C	179
Appraisal of Strategic Spatial Options	
Appendix D	358
Appraisal Criteria Applied in the SA of Site Options	
Appendix E	380
Council's justification for selecting sites to take forward for allocation and discounting alternatives	
References	390

Appendix A

Consultation Comments

A.1 This Appendix sets out the consultation comments received in relation to consultation on the previous stages of SA, namely the SA Scoping Report (December 2019) and the SA of Issues and Options (December 2019).

A.2 The bullet points below set out the comment received and the sub-bullet points set out how the comment has been addressed within the SA, or if no action has been taken, why not.

SA Scoping Report (December 2019)

Martin Grant Homes (MGH)

- The MHCLG document of March 2019 titled 'Oxford-Cambridge Arc' is a joint declaration of ambition entered into by the Government and local partners envisages substantial growth in the Arc. It establishes a target of building up to 1 million homes by 2050. These homes are necessary to deliver the Government's industrial strategy, which envisages increased productivity in order to boost economic growth and prosperity, and to deliver higher incomes (p14, *ibid*). To date, no local authority within the Arc has provided for any additional growth in their local plans above the standard housing requirement that would assist in reaching this target. The Greater Cambridge Plan should recognise and accommodate part of this wider growth. If it does not do so, it will set a precedent for other local authorities within the Arc (such as the highly productive city of Milton Keynes) to lower their ambitions, and the Government's strategy for increased growth will fail.

Appendix A Consultation Comments

- LUC response: The Scoping Report recognises the ambitions of the Oxford-Cambridge Growth Arc as part of the context (e.g. para 2.22 of the Scoping Report onwards).
- Housing affordability is a key issue for equality both nationally and more significantly, within Greater Cambridge. It is also an international issue. International companies able to offer better living standards with a smaller portion of wages needed to pay for living accommodation can tempt workers from the UK to other destinations across the globe. The government and local authorities recognise in the Oxford- Cambridge Arc document that median house price to median income ratio has been increasing across the UK, and increasing more significantly across the Arc. Savills estimates that for its economic potential to be reached, 9.6 million sqft of business floor spaces is needed across the Arc, with 680,000 homes beyond the existing pipeline. If the Arc is to deliver its employment potential, housing affordability must be addressed through the building of significant numbers of homes.
 - LUC response: Housing affordability is recognised as a key issue in Table 3.3 of the Scoping Report.
- It is noted that connectivity is a key theme of the government-local authority declaration on the Arc. Transport connections are key to the allocation of new development in sustainable locations. 3.6. Protection of the environment is a key theme running through all legislation relating to development planning. A requirement for net-gain in biodiversity does much to ensure that delivering growth is not at the cost of the environment. The Cambridgeshire and Peterborough Strategic Spatial Framework (CPSF) and the Cambridgeshire Local Transport Plan (CLTP) are referenced as a key development plan document in the Scoping Report. This document has considerable overlap with the preparation of the Greater Cambridge Local Plan. The Sustainability Appraisal should prefer policies and allocations that ensure links are made between the ambitions of the CPSF and the proposed transportation projects in the CLTP. Transportation matters and traffic generation should be key issues for the SA to consider, and to inform the Greater Cambridge Local Plan.
 - LUC response: Connectivity is addressed via SA objectives 2 (access to services and facilities), 12 (climate change mitigation) and 13 (air

Appendix A Consultation Comments

quality). A number of the SA objectives relate to environmental factors, and biodiversity is addressed via SA objective 5 (biodiversity and geodiversity). The role of the SA is to assess the likely sustainability effects of the plan and options - considering compatibility with other planning documents is outside the scope of the SA.

- Population, Health and Wellbeing. The scoping report correctly notes that the delivery of services and facilities (and access to them without recourse to a car) is an issue of health and equality. This should favour larger sites able to deliver access to such infrastructure when the sustainability appraisal of sites is carried out.
 - LUC response: The SA will be carried out in line with the methodology set out in the Scoping Report. Table A1.1 of the Scoping Report recognises that larger scale development could potentially incorporate the provision of new services. However, the SA will not automatically favour larger sites as it is uncertain at what size, which facilities will be provided and other sites may also have good access to existing services and facilities.
- One of the key issues for the delivery of housing in Greater Cambridge is the need to deliver large numbers of homes as quickly as possible, as set out in the Greater Cambridge Housing Strategy 2019- 2023, which notes the key priority to ‘increase the delivery of homes, along with sustainable transport and other infrastructure ...’. Consideration should be given to the ability of existing sites to deliver additional homes quickly, when considering options for densification, or additional delivery at locations already committed for development.
 - LUC response: Identification of reasonable alternatives is a matter for the Council as plan-makers. Nevertheless, this is covered by the densification option in the Issues and Options document.
- Table 3.1 in this section provides an interesting comparison of development locations, identifying that the majority of growth in current Local Plans is to be provided on the edge of Cambridge, with a significant number being delivered in the Cambridge Urban Area, and the total number of completions, commitment and new sites in the rural areas amounting to more development than that proposed for new settlements or

Appendix A Consultation Comments

at Cambourne (an urban extension). The Sustainability Appraisal should consider this balance of locations very carefully. In order to maximise sustainability and reduce carbon emissions, new development should be located where: -

There are good public transport links;

- Where there is employment within walkable distance;

- Where leisure and retail facilities are within walking distance;

- Where existing facilities and services can be complemented with new facilities.

- LUC response: The sustainability appraisal considers these points via SA objectives 2 (access to services and facilities), 12 (climate change mitigation) and 13 (air quality). 'Where existing facilities and services can be complemented with new facilities' is not included in the framework or assumptions. This is because it is unknown what new facilities a development would provide and how relevant areas would be identified (which is likely to be subjective).

■ Health

Guidance from the NHS and wider international research indicates that the provision of green open spaces has a linear relationship with activity levels, and a direct correlation with health. Larger sites able to deliver both incidental open spaces and good access to strategic formal sports and parkland will therefore offer better outcomes for population health. This should be factored into the Sustainability Appraisal of potential development sites.

- LUC response: SA objective 4 (health) includes consideration of open space and green infrastructure, as set out in the SA Framework (Table 11.1 in the Scoping Report). In order to ensure the SA flags any potential issues and assesses all sites on the same basis, it will not make assumptions about the green infrastructure to be provided at various sites.

■ Air and Noise Pollution

Appendix A Consultation Comments

The Scoping Report correctly identifies that air and noise pollution are key health issues for many groups in Greater Cambridge. Whilst there is a reflection that noise can to some extent be mitigated by traffic reductions and other measures in paragraph 3.68, there is no similar mitigation recognised for air pollution. Table 3.3 outlining the key sustainability issues for the Local Plan should strongly reflect the impacts of traffic on health and inequality outcomes in the SA objectives.

- LUC response: Once a draft plan is prepared, the SA will include consideration of potential measures to mitigate any negative effects identified. Potential effects of traffic on health will be included in the equivalent table in the next iteration of SA.

■ Employment

Section 2 of the Scoping Report notes the high level policy requirements introduced by the Government for the part that the Oxford Cambridge Arc is to play in the prosperity of the region (that is briefly mentioned in paragraph 4.24). 'Partnering for Prosperity', the new deal for the Cambridge-Milton Keynes- Oxford Arc is briefly referenced at paragraph 4.9. These documents together identify the high levels of employment growth that the Government expects across the Arc. The SA scoping should be clear that proposals that seek to deliver integrated employment growth at the higher levels expected from Government in relation to the Oxford Cambridge Arc will be favoured in the assessment. This criterion needs to be factored into SA objectives 14 or 15.

- LUC response: The SA considers a range of sustainability issues, not just economic and employment growth. These will be assessed through SA objectives 14 (economy) and 15 (employment). It is considered that the methodology, particularly the SA framework and assumptions for SA objective 14, already recognises that higher levels of employment growth would have a greater positive effect on this objective.

■ Transport and Air Quality

The national policy guidance listed generally contains policies that are aimed at reducing emissions from vehicles, or making emissions less noxious. These documents give very little prominence to the reduction of

vehicle movements, in contrast to the reduction of vehicle emissions. The former aim is much better in all respects: reducing vehicle movements (and encouraging active travel) are both good for the environment and our health due to better air quality, but also improve health through activity.

The Air Quality Action Plan identifies (on page 18) that modal shift from private car to public transport and active travel will impact positively on air quality. Table 2.3 of the Action Plan identifies monitoring targets relating to increases in bus patronage, cycling trips, journeys to school by means other than car, and traffic congestion. The ability to meet these measures should form a part of the SA objectives: i.e. policies and potential site allocations are rated as higher / better the more likely they are to achieve these modal shifts. This should be considered in answering the Appraisal questions under SA objective 13.

Local Transport Plan 2 contains targets to restrict any increase of transport within Cambridge city centre. The ability of policies, and sites, to reduce or limit traffic congestion should be a measure of how sustainable they are, and included in the SA objectives. Table 5.1 notes that the existing policies in the adopted Local Plans that promote sustainable and active transport based on sufficient population densities. The ability of new development to support public transport and active travel should be a key part of the Sustainability Appraisal assessment.

- LUC response: The SA has sought to list the key relevant policies. Many of these refer to modal shift or refer to emissions targets, but do not set out specifics on how these are to be achieved.

SA objective 13 already includes the questions 'Does the plan promote more sustainable transport and reduce the need to travel?' and 'Does the Plan contain measures which will help to reduce congestion?'

■ Climate Change Adaption and Mitigation

Page 97 and Table 7.1 of the Scoping Report identify that transport makes the largest contribution to carbon emissions (over 34%) in South Cambridgeshire. Whilst it is correct that the peat fens create significant mitigation, the reduction of vehicular traffic and emissions from traffic is likely to have significant impacts on climate change adaption. This lends

Appendix A Consultation Comments

weight to the criteria that include the ability to reduce vehicular traffic as key assessment elements for the Sustainability Appraisal.

- LUC response: Noted.

■ SA Framework

Table 11 sets to the SA Framework for the Greater Cambridge Local Plan. Paragraph 1.5 of the Scoping Report seeks views on any additional SA criteria that should be included. MGH comments below on each of the SA objectives, and additional objectives that should be included to ensure a robust assessment. Commentary is also provided on the appraisal questions associated with each objective.

SA 1: Housing

The Scoping Report identifies (as set out in the sections above) a larger number of policy documents, from government to local level, that indicate housing is needed to support economic development; and that high levels of economic development are required. The SA objectives (including SA objectives 14 and 15) do not include this link between housing and employment. There are two alternatives: an objective is added, or an existing objective is amended to include an objective: To deliver sufficient housing to support employment growth, locating new jobs near to new homes, and balancing jobs with homes. The Appraisal questions should include: Does the Plan support increased employment delivery with sufficient homes to support employment growth? Have homes been provided where they are accessibility to jobs, particularly by public transport, is maximised?

- LUC response: There are links between many of the SA objectives, thus for the purposes of assessment, these are necessarily somewhat siloed. The quantum of housing to be included in the plan will be subject to SA (along with any reasonable alternatives) and this assessment will take into account the relationship between housing and economic growth through assessment against SA objectives 14 and 15. SA objective 15 includes a question on whether employment opportunities are easily accessible, particularly via sustainable transport.

Appendix A Consultation Comments

■ SA 4: Public health

Appraisal question 4.2 touches on the issue of transport choices, but neglects any specific reference to public transport. Studies show that increased public transport has clear benefits to activity patterns, in addition the removal of harmful emissions from vehicles, the increase in equality provided by public transport, and the benefits to mental health (and productivity) in reducing commuting times. This is set out in the Scoping Report, see inter alia paragraphs 3.14 to 3.16 above. A separate Appraisal Question should be added: Does the Plan promote increased levels of public transport use, and better public transport density?

- LUC response: As above, there are links between many of the SA objectives, thus for the purposes of assessment, these are necessarily somewhat siloed. Consideration of air quality, via SA objective 13 (air pollution) is included because this is a determinant of human and environmental health. Equalities are considered via SA objective 3 (equalities) (although it is noted walking and cycling provide more for equalities and health due to the lower/lack of costs and emissions). Access to public transport is assessed via SA objective 12 (climate change mitigation).

■ SA 12: Minimising climate change

SA 12.4 relates to public transport provision, but simply asks whether the Plan supports access to public transport. As set out above, public transport is a key element relevant to multiple factors affecting sustainability. SA 12.4 should therefore be strengthened to read: Does the Plan support the growth of public transport networks, modal shift away from private cars and onto public transport, and access to public transport options?

- LUC response: Noted. This appraisal question will be updated.

■ SA 14: Facilitating the economy

The Appraisal questions included do not reflect the importance of economic growth that is highlighted in the Scoping Report itself, and referenced above in paragraph 3.13. SA14.1 asks whether the Plan

Appendix A Consultation Comments

provides for an adequate supply of land to meet Greater Cambridge's economic and employment needs.

SA 14.5 asks whether the Plan supports stronger links to the wider economy of the Oxford Cambridge Arc. The Scoping Report indicates a much greater requirement. Greater Cambridge is within the Arc, and new infrastructure, including East West Rail has already been announced on the basis of higher levels of economic growth. Government expects Greater Cambridge to deliver higher levels of employment to support additional growth within the Oxford Cambridge Arc; and the economic reports accompanying the evidence base produced to date (in addition to other independent research) show that substantial growth can be achieved in the area.

SA14.1 should therefore be amended to read: Does the Plan provide for a supply of land and the delivery of infrastructure that will meet the enhanced level of growth envisaged across the Oxford Cambridge Arc?

SA 14.5 is therefore no longer needed, but could be used as a separate question to relate the SA and provision of employment to infrastructure. SA 14.5 should therefore be amended to: Does the Plan provide adequate infrastructure in the right places to support enhanced levels of economic growth?

- LUC response: The SA deliberately has separate objectives relating to Greater Cambridge's economic and employment needs and those related to the Oxford-Cambridge Arc. SA 14.5 will be reworded to reflect the need to contribute to sustainable economic growth envisaged across the Arc.

■ Appendix 1

Assumptions regarding distances

The assumptions regarding distances are broadly appropriate, assuming that they are applied equally to all sites. It would be helpful to also assess sites in relation to their accessibility by bicycle, journeys which are increasing, particularly with the rise in use of micro-transport*** including e-bikes and scooters.

Appendix A Consultation Comments

- LUC response: Walking-based distances are considered appropriately precautionary, given that not everyone may have access to or be able to use a bicycle or other micro-mobility. Access to cycle routes is assessed via SA objective 12 (climate change mitigation).

■ SA objective 1

MGH propose that this objective should include a requirement To deliver sufficient housing to support employment growth, locating new jobs near to new homes, and balancing jobs with homes. The criteria for the assessment of this objective should not be based simply on housing need, or the proposed small 10% increase in housing need, but should instead be predicated on meeting the housing need for employment aspirations. Without such a requirement the Plan cannot provide sufficient housing for everyone to live in a decent home, whilst also meeting the Governments aspirations for economic growth. The criteria should therefore be: sites that fail to provide sufficient land for total housing need to support the highest economic forecasts will have negative effects (-). Sites that deliver sufficient land to support the full economic projections for the area will have significant positive effects (++).

- LUC response: See above re: assessment of housing quanta.

■ SA objective 3

The criteria and assumptions in the Scoping Report suggest that public transport implications are considered elsewhere and therefore do not need to be considered in relation to social inclusion and the equality act. This approach is incorrect. Public transport is a vital element of many of the sustainability objectives, and should therefore be considered in relation to each objective, ensuring that the weight given to support for public transport (and modal shift away from private car usage) is equal to its importance.

MGH propose that two criteria are added to the assessment assumptions.

1. If a site is within walking distance of regular public transport (1 journey every 15 minutes at peak hours) it will have a neutral effect. If a site is within walking distance of two or more bus routes with regular public transport, it will have a positive (+) effect. If a site is within walking or cycling distance of strategic transport, such as rail, guided bus, park and

Appendix A Consultation Comments

ride or proposed Cambridge Autonomous Metro, it will have a significant positive effect. 2. If a site is able to support additional public transport provision it will have a minor or significant positive effect, depending on the quality and quantum of public transport improvements that can be supported.

- LUC response: As stated above, there are links between many of the SA objectives, thus for the purposes of assessment, these are necessarily somewhat siloed. Repetition of the accessibility to transport criteria would make it harder to distinguish between sites. Nevertheless, the impacts of access to public transport on equalities will be considered in policy assessments and the assessment of cumulative effects.

■ SA objective 4

This objective includes a criteria that relates to the beneficial proximity of development to healthcare facilities. A further criterion should be added to include that: Sites that are able to deliver new healthcare facilities within walking distance of employees or residents, will have a significant positive effect.

- LUC response: It is considered appropriately precautionary for the SA to not make assumptions about the infrastructure to be delivered onsite, as this is uncertain. Being 'able to deliver' new healthcare is considered difficult to define and does not guarantee this will come forward.

■ SA objective 5

MGH disagrees that sites within 400m of locally designated sites will have an uncertain negative effect.

This will depend on the site's size and ability to offer mitigation, or its ability to offer biodiversity gains in relation to the designated site. The assumption should therefore be amended so that the uncertain negative effects apply only to sites where development is proposed within 400m of locally designated sites.

- LUC response: The SA is prepared on a precautionary basis and therefore does not make any assumptions as to mitigation measures to be provided by development.

Respondent 50054 (member of the public)

- While the Scoping Report notes (1.15 “Baseline Information”) that “It is a requirement of the Strategic Environmental Assessment process that consideration should be given to the current state of the environment”, there is little recognition of current environmental capacity issues (apart from “over-abstraction of water in this region is a key issue”) and constraints, and no evaluation of successes or failures of the current Local Plans. Cambridge’s historic environment is also threatened by Climate Change challenges (including mitigation and adaptation) and Government targets for meeting them. These are also high risk factors for Cambridge’s historic environment, with difficult choices to be made. A baseline assessment of the implications for Greater Cambridge of current Government retrofit targets is urgently needed. These issues should be identified and prioritised in both baseline information and the key Themes.
- LUC response: The SA has sought to establish the environmental, social and economic baseline based on data that is publicly available and available from the Councils. It seeks to identify potential significant effects of the plan and options feeding into this. It is acknowledged that many of the topic areas overlap, but are necessarily somewhat siloed in the SA objectives to allow ease of interpretation and comparison between options. Future iterations of the SA will more clearly state that this is the case.

Historic England

- We welcome the changes made in the Sustainability Appraisal scoping report in response to our previous consultation comments.
- LUC response: Noted.

Martin Grant Homes Ltd & Harcourt Developments Ltd (Savills)

- The MHCLG document of March 2019 titled ‘Oxford-Cambridge Arc’* is a joint declaration of ambition entered into by the Government and local partners envisages substantial growth in the Arc. It establishes a target of building up to 1 million homes by 2050. These homes are necessary to deliver the Government’s industrial strategy, which envisages increased productivity in order to boost economic growth and prosperity, and to deliver higher incomes (p14, *ibid*). To date, no local authority within the Arc has provided for any additional growth in their local plans above the standard housing requirement that would assist in reaching this target. The Greater Cambridge Plan should recognise and accommodate part of this wider growth. If it does not do so, it will set a precedent for other local authorities within the Arc (such as the highly productive city of Milton Keynes) to lower their ambitions, and the Government’s strategy for increased growth will fail.
- LUC response: This document is discussed in the SA Scoping Report, particularly from paragraph 2.22. This comment is largely for the attention of the Councils as plan-makers.

The National Trust

- The Trust welcomes the inclusion of biodiversity, landscape, and the historic environment as key issues for the SA, and recognition of the historic landscape setting of Cambridge is especially welcome. The challenge this presents for new development is referenced at page 15 of the Scoping Report and we comment further on this issue in our responses to the main consultation document. We note that the Sustainability Appraisal scoping report identifies over abstraction, also referenced in HRA scoping report, as a key issue. We share this concern, particularly in relation to the potential impacts on Wicken Fen as stated above.
- LUC response: Noted.

Appendix A Consultation Comments

- We support the intention to plan for new green spaces through the Local Plan review process, referenced at page 6 of the Scoping Report. This provides an opportunity to raise the scale of green space ambition for the Cambridge area, and should allow for the consideration of cross boundary opportunities, as identified in the Issues and Options consultation document. The SA should include recognition of the relationship of the Plan to the Wicken Vision Area, which is located in East Cambridgeshire but adjacent to the planned new town at Waterbeach, and to the South Cambridgeshire boundary.
 - LUC response: Noted. Reference to the Wicken Vision Area is included in paragraph 8.34 of the Scoping Report.

Bidwells

- Paragraphs 2.5 and 2.6 of the SA Scoping Report provide a summary of the major development sites currently allocated in adopted local plans. Specific house numbers for these sites are provided which in some cases are different from the allocation. This should be corrected. To evidence robust delivery numbers, either allocation numbers should be used, or where planning has been consented, then revised numbers would be appropriate. Clarity on what numbers will be used should be provided. In particular, the bullet point on “Land between Huntingdon Road and Histon Road” states that the dwelling numbers have been revised during pre-application discussions and a housing number is provided which differs from the allocation. As the design is ongoing for this project and indeed no planning application has yet been submitted, it is not appropriate to use a revised number which has no status. The discussion of major projects also needs to include major developments with resolution to grant outside of the local plan system, such as the Wellcome Genome Campus Application (S/4329/18/OL).
 - LUC response: Information about the source of housing numbers will be included where similar information is provided in future iterations of the SA.

Appendix A Consultation Comments

The Wellcome Genome Campus will be included in future discussions of major projects. LUC will seek advice from the Councils on any other appropriate projects to include.

- There is limited linking of the baseline information provided in the Scoping Report to the health and equalities impact assessments. The equalities aspects, in particular, are not explicitly discussed in the baseline information, but are included in the SA Framework. The report, for example, does not identify any existing problems relevant to the equalities assessment. No table similar to 11.2 is provided for equalities, which would set out how equalities considerations relate to the topics considered and the SA objectives.
 - LUC response: The SA is reliant on existing data. A separate Equalities Impact Assessment is now being undertaken, which will include more detail and the SA will draw on with regards to the equalities objective. A table similar to 11.2 was not considered appropriate, as different objectives do not relate to different protected characteristics. However, text will be added to further explain the relationship between equalities and the other SA objectives.
- A separate assessment method is proposed for equalities (positive/negative/neutral) on page 147 of the Scoping Report. It is not clear how this will relate to the SA methodology, which also identified some equality criteria within the SA objectives (SA objective 3). Are two assessment methods proposed? If so, how will outcomes from two assessments be taken into account in the local plan? Separate Equalities Impact Assessment reporting forms for each council are provided in addition to the SA and the Scoping Report. Having three documents address these issues could be confusing, particularly for vulnerable groups, leading to a “paper chase”. A means of integrating these documents, or providing clear signposting between them, should be considered.
 - LUC response: A separate Equalities Impact Assessment is now being undertaken, which will include more detail and the SA will draw on with regards to the equalities objective.

Appendix A Consultation Comments

- While detailed criteria and assumptions are proposed for site options (Table A1.1), similar detail on criteria and assumptions for other aspects of alternatives should be provided. This should be linked to the SA Framework, which currently has some assumptions and terminology which could be refined for improved rigour and transparency.
 - LUC response: Detailed criteria and assumptions are only included for site options, as site options can be informed by quantifiable, spatial data. The assessment of other alternatives will draw on these if they include a spatial element and all assessments will utilise the SA framework.
- Where the concepts of “minimise” or “maximise” are used in the SA Framework they should be defined in more detail; otherwise there is a degree of interpretation.
 - LUC response: It is not considered appropriate to define these terms quantitatively. They indicate a direction of travel and will vary depending on the policy or site being assessed.
- SA 1.3. How will “affordable homes” be defined and measured? Are these to buy or to rent? Will social housing be considered? How will student housing be considered?
 - LUC response: Affordable homes will be defined as per the NPPF definition and include any type and tenure of housing for those whose needs are not met by the market. The SA would expect the Local Plan to clearly set out the affordable housing need, without the need for the SA to interpret this.
- SA 1.4. It is assumed that “young” and old” are specified as they have been identified as a key sustainability issue. It would be useful to clarify that “young” refers to student accommodation, not children. If young does refer to students, is it duplicated in SA 1.5? Should SA 1.5 refer to “protected characteristics” under the Equalities Act?
 - LUC response: 'Young' does not refer to children, who would be considered under family housing needs, or specialist housing if in residential care. It does not relate just to students (who are not necessarily all young) but other younger adults, such as young

Appendix A Consultation Comments

professionals. This will be clarified in the next iteration of SA. SA 1.5 does not refer to protected characteristics, so as not to duplicate SA 3.

■ SA 2:

- SA 2.1. How will “supporting” these centres be determined?
- SA 2.3. How will “accessible for all” be determined?

SA 3:

- 3.1. Does integration in this case mean geographical proximity? If not, how will this be determined?
- 3.2. How will benefit and use be determined?
- 3.3. How will “meeting the needs” of groups be determined? What type of needs: housing needs, social Infrastructure needs?
- 3.4. What type of social and cultural initiatives are likely to be in the local plan?
- 3.5 Define “high level” of outdoor interaction. Should “where people mix” be changed to “accessible to all”?
- 3.6 How will removing or reducing disadvantages be measured or determined? What disadvantages have been noted to be an issue in the baseline information, could these be specifically targeted?

- LUC response: The purpose of these questions is to give an overview of the factors considered when assessing options against each SA objective. Any quantification will likely depend on the option being assessed and it is considered inappropriate to restrict what is being assessed through strict quantification - the assessment will instead be carried out against the baseline and the likely evolution of this without the plan. The SA will use evidence, where available, and professional judgement to consider whether an option or policy contributes towards achieving an objective or not.

Appendix 1 of the Scoping Report sets out how these will be determined with regards to site assessments. Other assessments will draw on these as appropriate.

Appendix A Consultation Comments

With regards to 3.1, integration refers to integration of communities. 'Neighbourhoods' will be updated to 'communities' for clarity.

With regards to 3.4, no assumptions have been made about what the Local Plan may include.

With regards to 3.6, this question has been deliberately left open to allow the broadest assessment possible. As explained above, the SA will draw on the separate EqIA.

■ SA 8:

– 8.2 Can the plan ensure contaminated land is remediated - is this a more appropriate consideration at the project level?

- LUC response: There is no reason the plan could not promote remediation of contaminated land and therefore this is considered an appropriate consideration at plan level.

■ SA 11:

– 11.4 It would be useful to provide a definition for retrofitting green infrastructure, with mind to how this could be delivered by the plan? Are there particular green infrastructure resources which are in poor condition and could benefit from retrofitting?

- LUC response: A separate Green Infrastructure Study is being prepared, which will inform GI proposals in the Local Plan.

It is considered that 'retrofitting green infrastructure' is self-explanatory.

■ SA 14

– 14.1. What type of infrastructure will be considered? Transport? Water? Social?

– 14.3. How will providing for start-up businesses and flexible working practices be measured?

– 14.5. Reference should also be included to the other growth corridors which Cambridge is involved in: Cambridge to Norwich Tech Corridor and Stanstead Growth Corridor.

- LUC response: 14.1 - This applies to any relevant infrastructure.

Appendix A Consultation Comments

14.3 - This will be assessed on the basis of whether the plan specifically provides for this or if policies could support this, such as by providing low rent workspace.

14.5 - Other growth corridors will be included in future iterations of the SA

■ SA 15

– 15.2 - Supporting equality of opportunity for all is a legal requirement; this appraisal question could be refined to target specific points of concern vulnerable groups. Definitions of groups and how “support” will be measured would be useful.

- LUC response: As explained above, the SA will draw on the separate EqIA to determine how the Local Plan will address equality issues.

Nathaniel Lichfield & Partners (Agent) [8776]

- The SA objectives identified (SA Scoping Report Section 11) do not appear to be weighted in any way, meaning in effect the SA makes no distinction as to whether one SA objective may be more or less important than another in informing which option should be taken forward; all objectives are treated equal in the analysis. Where there are competing aims between objectives, or balances to be struck, it will be necessary for the Council to consider wider policy aims and objectives and the relative importance of these.

- LUC response: The SA has deliberately not chosen to weight any objectives in order to give a clear and fair appraisal.

- Linked to the above, not all objectives have a spatial dimension to them. For example, some objectives around aspects design might be equally implemented on any site or option; in such instances the location is less important. The site appraisal and selection process should focus on those reasonable alternative spatial options where location is a differentiating factor (which the appraisal of options within the SA does to a degree, noting the “difficulties” set out para 2.19-2.22).

- LUC response: The SA will assess all reasonable alternatives identified by the Councils against all SA objectives, regardless of whether or not they have a spatial dimension.
- The SA site appraisal criteria (SA Scoping Report Appendix 1) provides a reasonable coverage of objectives and themes for assessing sites. However, we are concerned with how the criteria will be applied where sites and proposals will bring forward new infrastructure or uses, which could address deficiencies the locality. The current approach under some criteria of using distances to existing facilities, may negate the opportunity to assess whether sites could enhance wider access to such facilities by bringing forward new centres or local community facilities. It might also prejudice larger scale development that can achieve critical mass to viably deliver infrastructure (i.e. NPPF para 72). For example, the criteria under SA objective 4 indicates if a development is likely to incorporate new health or open space facilities, then it will be assessed as though those would come forward, but similarly under SA objective 2 the criteria appears to apply only to distance to existing city/town/rural centres rather than primary/secondary schools, rather than taking account of whether development could bring forward new provision of such facilities. It is imperative any implementation of the site criteria can adequately respond to the opportunity to deliver sustainable development through change, not just against baseline conditions.
- LUC response: LUC will mirror infrastructure assumptions made in the HELAA. These will be incorporated into the site appraisal criteria and applied consistently to any site appraisals.

Issues and Options

Martin Grant Homes (MGH)

- SA objective 6

The impact of development at North Cambourne is difficult to categorise in relation to this objective, as it is not specifically related to a new

Appendix A Consultation Comments

settlement, and therefore does not have the potential negative impacts that relate to development Option 4. MGH await the detailed SA of sites in order to comment more fully, but would welcome the opportunity to discuss potential impacts on the distinctiveness of Greater Cambridge's landscapes and townscapes in more detail. There is an opportunity at North Cambourne to add to the distinctiveness of Cambourne, building on the existing identity of the town and creating a strong sense of place.

- LUC response: Reasonable alternative sites will be assessed in line with the SA assumptions.

■ SA objective 7

MGH strongly disagrees that North Cambourne would be likely to have a detrimental effect on the qualities, fabric, setting and accessibility of Greater Cambridge's historic environment. There are very few heritage assets related to the site, and impacts on them through development would be limited. This issue can be explored in more detail during the SA of specific development sites.

- LUC response: Reasonable alternative sites will be assessed in line with the SA assumptions.

■ SA objective 11

The SA concludes at paragraphs 3.86 and 3.87 that because development is likely to lead to a reduction in permeable surfaces flood risk will increase. This is not accurate. All development is required to deliver surface water drainage in a sustainable way, including measures that mitigate against climate change. In other words, new development will normally mitigate flood risk by providing storm water attenuation that slows water run-off to rates based on increased rainfall. This offers flood mitigation, contrary to the initial findings of the SA. This would be the approach adopted at North Cambourne, which lies outside of any designated flood zones. MGH therefore expects that the detailed SA for the site will conclude that it can provide benefits to flood risk minimisation, and adaptability to climate change.

- LUC response: The SA has been carried out on a precautionary basis, therefore highlighting potential significant effects. In addition, these

Appendix A Consultation Comments

options have been assessed 'policy off', i.e. not making assumptions based on existing policy or making assumptions about detailed policy requirements of the emerging plan. Nevertheless the point is noted and we recommend the Councils include a policy requirement for development not to increase surface water runoff above greenfield rates.

■ SA objective 12

Assessment against this objective is particularly sensitive to the provision of public transport and the ability of development proposals to limit the impacts of vehicular traffic, as recognised in paragraph 3.92.

Option 2 (the Cambridge Airport) is assessed as being of sufficient scale to be able to deliver a range of homes, jobs, services and facilities, which could reduce the need for people to travel elsewhere. MGH has carried out an assessment of the potential increase in self-containment that could be achieved at Cambourne, together with a shift away from car usage and onto public transport. The evidence to support this approach is set out in Appendix 1, together with the assumptions made about what could realistically be achieved. Our evidence shows that there is potential to deliver a large number of homes at North Cambourne with a net zero (or minimal) effect on car journeys to Cambridge.

It is clear that, should new settlements (or expansions of existing settlements such as North Cambourne), also be located on public transport corridors, they will not necessarily have the balanced positive and negative effects of new settlements as shown in the table on p39. It is more likely that they would have the significant positive effects associated with development Option 6.

- LUC response: Reasonable alternative sites will be assessed in line with the SA assumptions. Please note that site-specific studies cannot be taken into account, as all reasonable alternatives must be considered on a level playing field, in the same level of detail.

■ SA objective 13

Objective 13, similar to Objective 12, is influenced strongly by patterns of commuting and car usage. The comments made above in relation to

Appendix A Consultation Comments

Objective 12 are also relevant to this objective, with likely positive effects from development at North Cambourne.

- LUC response: See above re: SA objective 12.

■ SA objectives 14 and 15

The assessment of this objective would be similar for Cambridge Airport and North Cambourne; or for public transport corridors and North Cambourne. The North Cambourne proposals are of sufficient size suitable to create a strong and vibrant community, well-connected to Cambridge with public transport, which would be attractive to global and local employers. The provision of a mixed-use community at North Cambourne, including a variety of employment types, would be likely to generate significant positive effects to the economy.

- LUC response: Reasonable alternative sites will be assessed in line with the SA assumptions.

■ Conclusions

MGH are mindful that this is a high level initial appraisal of options. It is clear that the MGH site, unlike Cambridge Airport, does not fit neatly into any one of the broad development options. However, it does benefit from the positive effects of new settlements, and the positive effects of development on public transport corridors. MGH looks forward to the conclusions of the individual site sustainability appraisals, and would welcome the opportunity to engage with the Councils in this process.

- LUC response: Noted.

CPRE

- 1. CPRE finds the Sustainability Appraisal of Issues and Options (SAIO) to be comprehensive and clear. However, because of its terms of reference, it does not fully consider the regional and national sustainability issues created by development within Cambridge and South Cambridgeshire. CPRE believes that some of these issues are so significant that they should have been considered in greater depth.

Appendix A Consultation Comments

- LUC response: It is assumed that the following comments expand on this statement. Those comments are referred to in turn below.
- 2. The Cambridge Green Belt was the first Green Belt outside of London and it is the smallest. Green Belts were an invention of one of our county's foremost citizens, Octavia Hill. It is therefore of historic value in its own right and furthermore provides the unique setting for the City, its collegiate buildings and its academic character and inheritance. This significance has not been acknowledged in the SAIO.
 - LUC response: As noted in paragraph 10.17 of the SA Scoping Report, Green Belt is a policy designation, rather than a sustainability designation, which has its own defined purposes and is considered separately to the SA.
- 3. The SAIO accepts the same assumption of growth as the Issues and Options Report. However, growth in itself is not sustainable and CPRE believes this assumption should be questioned by the SAIO.
 - LUC response: The SA has regard to the scope of the Local Plan, which is to provide a framework for growth. No growth is not a reasonable alternative within the national policy context.
- 4. Furthermore, the SAIO has not considered the national or regional sustainability of undertaking further major developments around Cambridge. As we stated in our response to the Issues and Options report there has been no consideration as to how this major investment of national funds in the relatively well-off south-east will further reduce or limit investment in the North of the UK. This in turn will reduce the more sustainable options of re-using the near 1 million empty properties that exist in the North and Midlands and the documented space for another 1 million properties that exists on brownfield land in Northern and Midlands towns and cities.
 - LUC response: As above, the SA has regard to the scope of the Local Plan, which is to provide a framework for planning within Greater Cambridge. Whilst cumulative effects will be considered, government investment in the area is outside the scope of SA.

Appendix A Consultation Comments

- 5. The SAIO recognises the varying quantities of best and most versatile agricultural land that the different options could cause to be built on around Cambridge. However, it does not recognise that the county of Cambridgeshire hosts a nationally significant proportion of this country's best and most versatile farm land. As we have indicated previously, by the end of this century it is probable that climate change will have caused significant loss of the Fens which currently grow 24% of UK food supply. Therefore it is imperative that the remaining best and most versatile land is not built on but preserved for food supply. This is a national sustainability issue and it should not be ignored.
 - LUC response: Noted.
- 6. It is encouraging that the SAIO recognises the issues of water resources and quality as major issues. There is already damage to the chalk streams caused by over-abstraction and the River Cam shows high stress levels in the summer months. We agree with paragraph 3.79 but we are concerned that the local authorities, driven by the NPPF, may not be taking these issues as seriously as they should and instead may be relying on the statutory duties of the water companies to dig them out of a hole. Waste water treatment capacity must be given a higher priority. The North Cambridge development requires the existing treatment plant to be moved but there is no clear decision about that yet and, if further treatment capacity is need, where will that be sited and how will it be protected from flooding?
 - LUC response: This comment is largely for the Councils as decision makers, rather than the SA.
- 7. The SAIO does not address the issue of flood risk within the context of climate change or in the context of the wider region. Existing flood zones in many parts of Greater Cambridgeshire will experience higher risk of flooding in future because of sea level rise caused by climate change (Predictions range between 1.1 – 4.7 metres by 2100). In December 2019, the Environment Agency issued a flood warning for Cottenham Lode which extends up to and under the A14 north Cambridge by-pass. Such warnings will without doubt become more frequent. Furthermore, additional run-off from more development around Cambridge will increase flood risk to communities further north such as Waterbeach, Cottenham,

Stretham, Ely and Littleport. There is no detailed indication as to how this runoff will be prevented.

- LUC response: SA objective 11 addresses flood risk and climate change, therefore recognising the link between the two. The SA Scoping Report discusses this in Chapter 7 and notes that an updated SFRA is being commissioned to inform the Local Plan.

The SA will consider potential mitigation measures for any negative effects identified once draft plan policies have been drafted.

- 8. We find that the SAIO takes a relatively superficial approach to addressing prevention of Climate Change and its mitigation. It is clearly restricted by taking its lead from the Issues and Options. As we have stated in our response to the Issues and Options, Climate Change is the most pressing issue of our time. The current proposals are predicated upon 'growth' and growth has to be halted in a controlled manner without unacceptable effects on the poorer and more vulnerable people in our society. We agree with most of what is said in paragraphs 3.92 to 3.97 when addressing SA objective 12. However, the Objective is too little, too late. The whole concept of the Cambridge-Oxford Arc must be reviewed and much of it halted and replaced with more sustainable changes in the location of housing and business and the discouragement of commuting and business travel.

- LUC response: The SA assesses the Local Plan and reasonable alternatives against the likely future baseline without the plan. The likely future baseline includes continued growth and the role of the Local Plan is to influence the scale, location and nature of this growth. As discussed above, no growth is not a reasonable alternative to the Local Plan.

The Spatial Framework for the Cambridge-Oxford Arc is important context to the Local Plan, as it seeks to promote sustainable development across the Arc through a regional approach. This is a government-led ambition, for which comments should be directed to central government consultations. Planning for sustainable growth in the Oxford-Cambridge Arc: an introduction to the spatial framework (February 2021) states that the Spatial Framework will be subject to sustainability appraisal.

<https://www.gov.uk/government/publications/planning-for-sustainable-growth-in-the-oxford-cambridge-arc-spatial-framework/planning-for-sustainable-growth-in-the-oxford-cambridge-arc-an-introduction-to-the-spatial-framework#how-we-will-develop-the-spatial-framework>).

- 9. We agree with most of paragraphs 3.98 – 3.103 but we would reiterate that if housing development is undertaken in villages and other rural communities it should be accompanied where possible by employment space, to encourage local employment and reduce commuting. We also see high speed broadband as a means of facilitating distributed employment. Both will improve the sustainability of rural communities.
 - LUC response: Noted. This point is also for the consideration of the Councils as decision-makers.

- 10. We do not agree with the principles behind SA objective 13 and hence much of the content of paragraphs 3.104 – 3.109. Society must recognise there is no such thing as “sustainable development”. All development has varying degrees of unsustainability. We accept that Options 1 and 2 are less unsustainable than the other Options. Nevertheless we are concerned by the loss of skilled engineering employment close to Cambridge that the development of Cambridge Airport, Option 2, would engender. We are also concerned that moving the Marshall's business to another location will just create sustainability issues elsewhere, not the least being the building of new facilities and the travel of existing employees.
 - LUC response: Loss of employment at Cambridge Airport is recognised in paragraph 3.105, although it is noted this may also impact related jobs not directly on the airport site. Relocation of Marshall's business elsewhere is outside the scope of the local plan, if relocated outside of the plan area. The SA will assess impacts of all reasonable alternative employment site options.

- 11. We are disappointed with the discussion of SA objective 14, paragraphs 3.110 – 3.119. Unfortunately, this is driven by the manner in which the Options have been set out so separately whereas, in reality, the likely outcome of the Plan will necessarily be a combination of these options. There are many communities across the County which are increasingly becoming commuter dormitories. Larger communities, such

as Cambourne/Bourne, Northstowe, Bar Hill, Ely, Alconbury Weald and Manea are capable of supporting significant local employment space. Many larger villages could easily support more small employment units of the type that start-ups and rural businesses require. A survey in 2010 showed that some 70% of Ely's working population on its new estates commuted to Cambridge or London. Other communities will have higher proportions of commuters. This is not a sustainable situation. Our conclusion is that the Greater Cambridge Local Plan must consider the economic and residential impact on its wider hinterland as well as within Greater Cambridge itself.

- LUC response: Paragraph 3.29 of the Issues and Options SA acknowledges that more than one of these options could be taken forward, but it has not yet decided how any such combination would look. Due to this, and in order to aid the Council's decision-making, the SA considered each option on its own merits. In-combination effects will be assessed in future iterations of the SA, once policies have been drafted.
- 12. We are concerned that better integration of public transport does not seem to be considered as a major sustainability issue.
 - LUC response: The evidence reviewed highlighted accessibility to and capacity of public transport as the key issues. It is noted that integration of public transport is also important.
- 13. We are concerned that adequate electricity supply does not seem to have been considered as a major sustainability issue.
 - LUC response: The review of baseline data did not highlight limitations to electricity supply in the area and we are not aware of any data that shows this is the case. The SA assessments assume that proposed growth options and sites can be adequately served by energy suppliers, as they would not otherwise be considered reasonable alternatives. This will be stated in the next iteration of SA.
- 14. We are concerned that no mention has been made of impact on the proposed Fenland Biosphere with its potential UNESCO designation. This is a major sustainability issue.

- LUC response: The SA baseline will be updated to acknowledge the Great Fen landscape and the ambition to have this area recognised as a UNESCO Biosphere, which will recognise the cultural and biological importance of the area and identify this as a learning resource.

Natural England

- Natural England provided comments on the Councils' Sustainability Appraisal (SA) Scoping Report in our letter dated 11 October 2019.

We are satisfied that the SA of Issues and Options report prepared by LUC (December 2019) has been prepared in a proper, logical and comprehensive manner and seeks to integrate the requirements of the Strategic Environmental Assessment (SEA) Directive, into the SA process. The approach to SA, as set out in the Scoping Report, including sustainability objectives, assessment methodology, consideration of relevant plans, policies and programmes and the SA framework appears to generally accord with the requirements of the Planning and Compulsory Purchase Act 2004. The report proposes to address relevant SA themes and topics relating to the natural environment including biodiversity and geodiversity, agriculture, open space provision, transport, air quality, water resources and resilience to climate change and flood risk.

We welcome that the findings and recommendations of the HRA will inform the relevant aspects of the SA.

Natural England is unable to provide any detailed comments on the preliminary findings of the SA. We will be pleased to provide further comment as the detailed SA emerges, through preparation of the Local Plan and evidence documents including the Councils' Green Infrastructure & Biodiversity and Integrated Water Study evidence documents. The evidence should be used to guide the most sustainable locations for development, prioritising avoidance of impacts to the natural environment including recreational pressure, air quality and water. We would also expect this to identify opportunities for development to implement significant enhancements to the ecological network. The delivery of

Appendix A Consultation Comments

enhancements should be secured through the relevant allocation and biodiversity policies.

- LUC response: Noted.

The comment regarding guiding development to the most sustainable locations and opportunities for enhancing the ecological network are largely for the attention of the Councils, as decision-makers.

- We agree with the key cross-boundary issues identified including wildlife and green infrastructure, transport and water including supply, quality, waste water and flood risk. The Local Plan will need to take a strategic approach to these issues to ensure that the proposed scale of development is sustainable and will not adversely impact the natural environment.

- LUC response: Noted.

- The effects of recreational pressure will need to be fully assessed through the HRA and Sustainability Appraisal (SA). Mitigation to address any adverse impacts will need to be identified. Consideration should be given to the findings and recommendations of the recent Footprint Ecology Visitor Survey* commissioned by the National Trust which predicts significant increases in recreational pressure to Wicken Fen Site of Special Scientific Interest (SSSI) and Ramsar site, part of the Fenland Special Area of Conservation (SAC) and the Vision Area associated with nearby development such as Waterbeach New Town. The findings also indicate risks to other nearby sites such as the adjoining Cam Washes SSSI; this nationally important site is already at risk from recreational pressure and disturbance to the notified bird interest by people and dogs.

*Saunders P., Lake S., Lily D., Panter C., (2019) Visitor Survey of the National Trust's Wicken Fen 100 Year Vision Area. Unpublished Report by Footprint Ecology.

- LUC response: Noted. The SA will take the findings of the HRA into account, particularly with regards to SA objective 5.
- With regard to air quality and health, the Plan should strive to develop a strategy and related policies that enable more sustainable travel and reduced reliance / use of private cars. Greater Cambridge requires a

Appendix A Consultation Comments

significantly enhanced sustainable transport network including enhanced and safer walking and cycling networks and better, cheaper and more frequent public transport. In addition to cleaner air and better health this will benefit wildlife and climate change.

- LUC response: Noted.
- The adopted Local Plans allocate land for 33,500 homes to 2031. However, current calculations using the Government's standard method indicates a need for 1,800 homes per year, or 40,900 homes for the Plan period 2017 – 2040. This represents significant growth and associated development pressure across Greater Cambridge. In light of the Councils' ambitious targets for zero net carbon, more efficient water use and 'doubling nature' our major concern is whether the proposed level of growth, and the additional infrastructure needed to support it, will be truly sustainable i.e. capable of having no adverse environmental impact and contributing towards the 100% BNG target. Also to ensure legal compliance it will be necessary to ensure assessment of the maximum number of houses through the SA and HRA, rather than a minima figure.
 - LUC response: The SA will consider all reasonable alternative housing quanta options identified by the Council.
- The Local Plan development strategy should be underpinned by up to date environmental evidence such as the mapping of ecological networks and enhancement opportunity areas currently being undertaken by the Councils for the green infrastructure and biodiversity evidence base. The assessment of existing and potential components of local ecological networks should inform the SA: application of the mitigation hierarchy will ensure development avoids adverse impact to the natural environment; development is instead focused on land of least environment value; and opportunity enhancement areas are linked for delivery through those developments.
 - LUC response: The SA baseline will be updated at each stage of assessment to ensure it is up to date. SA objective 5 includes consideration of ecological networks, including the opportunity areas identified through biodiversity opportunity mapping.

Appendix A Consultation Comments

- Natural England suggests that cross-cutting issues should be identified at this early stage. For example, transport infrastructure, water and sewerage, air quality, flood protection and recreation and leisure requirements can have potential implications for the natural environment and policies to deliver these requirements will need to ensure its protection and enhancement. Key issues for Greater Cambridge's natural environment include pressure on water resources, flood management, recreational pressure & deficits in accessible GI, air quality and climate change. The effects of large scale housing development on the existing green infrastructure network, through recreational pressure and disturbance, is a significant issue. Avoiding impacts by locating development away from more sensitive designated sites and habitat is critical. However, the scale of proposed growth requires additional measures to mitigate residual impacts; buffering and extending these sensitive areas to enhance their resilience to access pressure and creation of new alternative areas of accessible greenspace capable of meeting people's needs and diverting pressure away from more sensitive areas.
 - LUC response: Noted.

North Barton Road Landowners Group (North BRLOG) (Carter Jonas)

- The representations are focussed on the SA of the spatial distribution options at Paragraphs 3.38 to 3.119 and associated tables including Table 3.1.

It is acknowledged in the SA the preferred spatial distribution strategy may be based on a combination of these options, but the assessment is based on each option individually. It is considered that some of the commentary on each of the spatial distribution options and likely effects is not correct, and it is requested that a more detailed analysis of the options is required in the SA for the Draft Greater Cambridge Local Plan.

The North Barton Road Landowners Group (North BRLOG) is promoting land at South West Cambridge which is located within the Green Belt; the site would fall within Option 3: Edge of Cambridge – Green Belt. The

Appendix A Consultation Comments

findings of technical work undertaken to support the promoted site at South West Cambridge will be referred to in these representations where relevant.

The following representations are focussed on the SA of the spatial distribution options at Paragraphs 3.38 to 3.119 and associated tables including Table 3.1.

- LUC response: Noted. Reasonable alternative sites will be assessed in line with the SA assumptions at a later stage in the SA process.
- It is acknowledged in the SA that the scale of development, its design, and associated impacts will depend on the circumstances present at individual sites. It is considered that strategic sites will need to include appropriate services and facilities to meet local needs and capacity, and will need to be well-designed and include mitigation measures and enhancements to address impacts, but there is no reason why these matters cannot be satisfactorily addressed. For example, a Vision Document has been prepared for the promoted development at South West Cambridge, which has been designed to take into account landscape, heritage and ecological impacts. Mitigation measures are included to address any adverse impacts. Ecological and flood risk/drainage enhancements are provided, and the proposal includes a local centre and primary school and open space and recreation areas.

Therefore, the promoted development at South West Cambridge is capable of delivering positive outcomes when assessed against the sustainability objectives.

- LUC response: In order to consider all options on a level playing field and in the same level of detail, the SA does not take into account any proposed or potential mitigation measures.
- SA objective 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home

It is not certain when Option 2 (Edge of Cambridge – Outside the Green Belt, which relates to development at Cambridge East) will be available for development because the existing uses need be relocated, and it is also not certain whether development at the site will provide policy compliant

Appendix A Consultation Comments

levels of affordable housing. The existing operations and businesses at Cambridge Airport will need to be relocated prior to the commencement of development. The Wing development at Cambridge East, for example, is required to provide 30% affordable housing against a policy requirement for 40%. It is requested that the assessment of Option 2 against the criteria for SA1 needs to take into account these factors.

It is incorrect to assume that Option 3 (Edge of Cambridge – Green Belt) do not deliver policy compliant levels of affordable housing. The Greater Cambridge Housing Market Economics Analysis (prepared by Bidwells on behalf of North BRLOG) demonstrates that there is sufficient residual value in strategic greenfield sites on the edge of Cambridge to support planning obligations and policy requirements including affordable housing. It is requested that the assessment of Option 3 against the criteria for SA1 needs to take into account the fact that such sites are capable of providing policy compliant levels of affordable housing.

It is agreed that Option 4 (Dispersal – new settlements) do take a long time to be delivered largely because such developments are complex, and it is noted that initial predictions about the lead-in timetable for the delivery of new settlements are often unrealistic. It is also relevant to SA1 that new settlements typically do not deliver policy compliant levels of affordable housing; the amount of affordable housing provided and proposed in the initial phases of Northstowe and Waterbeach are examples where this has occurred. It is requested that the assessment of Option 4 against the criteria for SA1 needs to take into account realistic assumptions about lead in times for new settlements which will affect the supply of housing and affordable housing, and the fact that such developments are not capable of providing policy compliant levels of affordable housing.

- LUC response: The point regarding the need to relocate existing uses from Option 2 is noted, although it is understood the airport itself would not be relocated.

The current affordable housing policy requirement has not been taken into account as the new Local Plan will replace the existing Local Plan. The assessment states that Options 3 and 4 could result in a lower level of affordable housing; it does not state that affordable housing will not be delivered or have any reference to current policy requirements.

Appendix A Consultation Comments

- SA objective 12: To minimise Greater Cambridge's contribution to climate change

It is considered that the assessment of effects for Option 3 (Edge of Cambridge – Green Belt) includes negative commentary about the accessibility of edge of Cambridge sites by sustainable modes of transport, although it is acknowledged that these locations score well against this objective. The outcome of those effects will to a certain extent depend on the strategic sites selected.

It should be noted for the SA for the Draft Greater Cambridge Local Plan that the area to the west of Cambridge is the focus for a number of proposed and potential transport infrastructure projects i.e. Cambourne to Cambridge Bus Corridor, Comberton Greenway, Barton Greenway, Madingley Road Cycle Improvements, and Cambridge Autonomous Metro. It is considered that the promoted site at South West Cambridge is well related to all of these proposed and potential projects; the Cambourne to Cambridge Bus Corridor, Comberton Greenway, Barton Greenway are either within or immediately adjacent to the site.

- LUC response: Noted.
- Elevate low-emissions in new buildings above numbers of buildings and build cost. We must take a long-term view which minimises emissions as well as costs.

This response supports Passivhaus standards for all new development and improvement to energy efficiency of existing housing stock.

- LUC response: The SA assesses the contents of and options for the Local Plan. The Local Plan is not able to influence existing housing stock.

Comments regarding support for Passivhaus in new development is for the attention of the Councils as plan-makers.

Environment Agency (Mr Tony Waddams, Planning Liaison Officer) [1273]

- We welcome mention of water, flood risk, green infra and biodiversity.

We would like to be clear that with water resources in particular, Greater Cambridge is influenced beyond its immediate neighbours, and across the Anglian Water, Affinity Water and Cambridge (South Staffs) Water companies.

The plan and SEA should take account of growth impacts based on the effectiveness of existing legislation, and not assume all flood risk will be mitigated. For example much urban creep and small infill plots carry out no surface water attenuation, and SUDs are often not fully maintained in the long term. This may impact downstream.

- LUC response: Noted. The SA will assess all potential site allocations 'policy off' in the first instance, i.e. not assuming any mitigation will come forwards.

It is outside the scope of the SA to analyse the effectiveness of existing legislation.

- Water resources

The Environment Agency advises that water resources is a key issue, and current levels of abstraction (not just in Cambridge) are causing environmental effects.

The response highlights the Anglian River Basin Management Plan and highlights that limited resources and existing demand have limited the ability of waterbodies to meet 'good' status. There may be further deterioration as a result of increasing demand and/or reductions in available water supplies.

Cambridge Water company has recently (November 2019) published a new water resources management plan (WRMP), which sets out how the company will maintain customer supplies over the period 2020- 2045. The plan can be viewed here: <https://www.cambridge-water.co.uk/about-us/our-strategies-and-plans/our-water-resources-plan>. The response

Appendix A Consultation Comments

suggests that the WRMP is based on a substantially different level of growth to that being planned for in Cambridge and the wider area (Cambridgeshire and Peterborough Combined Authority). The company's assessment (using its own modest longer term growth assumptions) is that it will have sufficient supplies to meet this growth, but the response highlights that this will require increased abstraction of already over-abstracted groundwater aquifers.

The underlying condition of the rivers and groundwater aquifers is set out in our Cam and Ely Ouse Abstraction Licensing Strategy <https://www.gov.uk/government/publications/cams-the-cam-and-ely-ouse-abstraction-licencing-strategy> This shows the stress that the hydrological system is presently under as a result of abstraction.

Given the pressures on local water resources and the potential risk of deterioration as a result of increased levels of abstraction, we advise that new development in the Cambridge area, and adjacent water resource zones aims for the highest levels of water efficiency. The council should also seek CWC's assurance that it can meet the needs of the SEA growth scenarios without causing water body deterioration, or excessive water transportation and associated impact on the areas in Anglian Water's or Affinity Water's zones that would be affected.

Water efficiency measures in new development are highly unlikely to achieve the kinds of reductions in demand needed to keep high levels of growth within sustainable levels. Investment in leakage reduction and demand management by existing communities and businesses will play a big part, as will seasonal abstraction and storage. New consumptive uses such as basements that need dewatering, water reliant agriculture, food processing and some manufacturing may individually and will cumulatively have a significant impact on water availability. Suitable protective policies will be needed to manage these impacts.

- LUC response: Noted. The SA baseline will be updated at each stage of assessment to ensure it is up to date, including updating information on WRMPs, if relevant.

Consideration of other water-demanding uses will be considered through the assessment of cumulative effects.

Appendix A Consultation Comments

- The Greater Cambridge Local Plan, like any new development, which is inherently linked to population increase, risks a degradation of water quality [through both increased water demand and wastewater discharge].

New development would undoubtedly put pressure on the river quality of the Greater Cambridge area and beyond. Any increase to wastewater discharge and water usage will need to be discussed with Anglian Water, whose role it is to accommodate the additional wastewater flows.

Climate change could potentially exacerbate the impact of development on river quality. Dry weather reduces river flow and increases pollution concentration in the waterbody. Conversely, more intense rainfall episodes creates additional surface run-off from rural and urban areas, which increases the potential for water pollution. Additional rainwater in the sewerage network will likely lead to the treatment sites using overflow tanks, some of which may spill – as they are designed to do – into the rivers. These abovementioned events potentially contribute to a deterioration of water quality.

- LUC response: Noted.
- EA recognises that water has carbon impacts across its cycle.

Long distance transfer or desalinating water has significant impacts. Sustainable drainage that puts water into the ground retains a resource, and thus reduces the carbon impacts.

Overworking and drying out of soils (and particular peat) has significant carbon impacts. Sustainable land use around agriculture is critical to manage this.

Large scale restoration of wetlands and tree planting has positive impacts for biodiversity, water quality, flood risk as well as carbon sequestration. Requiring doubling of nature and making space for water would help achieve these objectives.

- LUC response: Noted. These factors will be considered through the assessment of in-combination effects.
- The local plan should identify important and valuable ecological areas, such as designated wildlife sites, and those which can be augmented and

connected... These areas should be part of a local nature recovery strategy (LNRS) and be connected to projects and partners who can help deliver the net gain.

The new plan could also acknowledge the significance of invasive non-native species (INNS) and their impacts on wildlife and the environment. INNS are considered one of the top five threats to the natural environment.

- LUC response: Noted. The threat from invasive non-native species will be recognised in the baseline.

Historic England (Mrs Debbie Mack, Historic Environment Planning Adviser) [5828]

- When considering proposed development close to the boundaries of the Local Plan area, it is important to consider impacts on the areas beyond the planning boundaries. For example, in relation to heritage assets, the impact of development upon heritage assets and their settings across the Local Plan boundary should be considered.

Regarding the North Uttlesford Garden Community you will now be aware of the Inspector's letter to the Uttlesford District Council dated 10th January which places the future of the NUGC into question.

- LUC response: Noted. The SA will consider impacts beyond the Local Plan boundary, where possible. Note that for mapped datasets that are not publicly available, we generally only have access to data within the plan area. This is now recognised within the 'Difficulties Encountered'.
- There is an important synergy between the historic and natural environment. Landscape parks and open space often have heritage interest, and it would be helpful to highlight this. It is important not to consider 'multi-functional' spaces only in terms of the natural environment, health and recreation. It can be used to improve the setting of heritage assets and to improve access to it, likewise heritage assets can help contribute to the quality of green spaces by helping to create a sense of place and a tangible link with local history...

Appendix A Consultation Comments

In Cambridge the Commons, green corridors, wedges and fingers as well as the green belt provide an important component of the landscape setting of the historic city of Cambridge. These features help to make Cambridge the special and unique place that it is today. They also serve to protect heritage assets and their settings. Cows grazing in the meadows close to the city centre, the iconic views of The Backs, the Commons and meadows all play a crucial role and form part of the character of this historic city. Maintaining and enhancing these features is critical to the future of this City.

- LUC response: Noted.
- It is crucial that plans for the future development of Cambridge ensure that the city remains compact, and the setting of the city within a high quality landscape is retained by the Cambridge Green Belt. The iconic historic core, heritage assets and the river and structural green corridors (wedges and fingers) are intrinsic to the distinct quality of the City. The unique character, based on the individual settlement morphology, place within the landscape and individual heritage must also be maintained.
- LUC response: Noted.
- Heritage Impact Assessment - In order to help refine which growth allocations to take forward, we would suggest that a Heritage Impact Assessment is undertaken of each of these sites.

All potential sites will need to be appraised against potential historic environment impacts. It is imperative to have this robust evidence base in place to ensure the soundness of the Plan. We recommend that the appraisal approach should avoid merely limiting assessment of impact on a heritage asset to its distance from, or intervisibility with, a potential site. Site allocations which include a heritage asset (for example a site within a Conservation Area) may offer opportunities for enhancement and tackling heritage at risk, while conversely, an allocation at a considerable distance away from a heritage asset may cause harm to its significance, rendering the site unsuitable. Cumulative effects of site options on the historic environment should be considered too.

- LUC response: SA objective 7 relates specifically to the historic environment. Assessments against this objective will draw on the heritage impact assessment work.

Respondent 7209 (member of the public)

- The Consultation does not directly address water supply issues nor, for example, the associated issue of the flow of the River Cam and its tributaries. The latter issue is only directly relevant to the Consultation topic of Biodiversity and green spaces, for example, the loss of biodiversity if the River dries up.

I agree with the Big Themes of the Plan but wish to stress that I am opposed to the scale of the proposed development. The supporting resource base is not there now nor, in my view, is it likely to be there in the near future. I understand that development should not be initiated until infrastructure has been built to support it. That infrastructure is not there now and will not be there in the near future.

Presently, supplying water to Cambridge is leading to over-abstraction of water from the chalk aquifer. In many years rainfall is insufficient in winter to recharge the aquifer to enable springs to flow, wetlands remain wet in summer and to support the flow of the River Cam and its tributaries in summer, as well as supply water to the homes and businesses of Cambridge. The Cam Valley Forum in its Manifesto on the River Cam (June 2019) and the report on the Water Crisis Forum by Cllr Katie Thornburrow (January 2020) have brought the topic to the fore.

Until infrastructure is put in place to supply water for the developments proposed in the Greater Cambridge Local Plan it is unwise to go ahead with the plan.

- LUC response: The Scoping Report recognises that Cambridge lies in a very dry region and water issues are assessed under SA objective 10 (water).

The comment regarding Big Themes and quantum of development is for the attention of the Council as plan-makers.

Appendix A Consultation Comments

- I note on page 82 of the Greater Cambridge Local Plan – Sustainability Appraisal Scoping Report, that Cambridge Water considers development will be greater than supply by 2035.

Stephen Tomkins and I came to that conclusion in 2013:

Evans B & Tomkins SP. (2013) CAMBRIDGE WON'T HAVE ENOUGH WATER IN 2035. So What, Issue 4 Winter, page 7. So What is a publication of the Global Sustainability Institute, Anglia Ruskin University. In the reported debate the topic was proposed by Evans and seconded by Tomkins, representatives of Cambridge Water and the Environment Agency opposed this proposal.

I am pleased Cambridge Water Company has now reached the same conclusion.

- LUC response: Noted.

Respondent 2488 (member of the public)

- Respondent questions level of growth the Councils consider to be required.

Suggests economic growth should not be considered good in itself and suggests economic growth should be concentrated in deprived areas nationally.

Highlights they will undertake an allotment survey and requests this is taken into account when plan-making.

The plan should do nothing to encourage Stansted expansion or capacity increase and should consider how to reduce aviation.

If spatial framework phase 2 goes to 2050 then local plan should have the same horizon in order to meet the aim to “provide a complementary vision for the area.”

Calls for more ambitious net zero targets (2030 instead of 2050).

The respondent also comments on the consultation process for the Local Plan.

Appendix A Consultation Comments

- LUC response: These points are for the attention of the Councils and do not comment on the SA.

■ Mitigation

I would extend the food growing point to say:

“Creating opportunities for growing, distributing and serving food.”

- LUC response: It is assumed this comment relates to SA 12 (climate change mitigation). It is noted that local food growing is part of the solution to minimising carbon emissions - this is covered under SA objective 4 and is not included here to avoid repetition/double counting. Distribution of food is beyond the scope of the local plan.

■ Adaptation

I would amend the last two points thus:

“...the adaptation of agriculture and the whole of our food system.”

“...trees and plants...resilient to a warmer climate which is drier in summer and wetter in winter.”

- LUC response: It is assumed this comment relates to SA 11 (climate change adaptation). Agriculture is outside the scope of the Local Plan.

Trees and plants are captured within 'green infrastructure'.

- The network of semi-natural spaces includes allotments. Please state that explicitly. Their primary purpose is growing food but the modern trend towards organic cultivation (and the occasional overgrown plot!) make them valuable for wildlife too. It's a significant amount of land: the city now has over 100 acres of allotments. I wonder if anyone knows the total allotment provision in South Cambridgeshire?

- LUC response: It is acknowledged that allotments can be valuable spaces for wildlife. The classification of 'semi-natural' that the SA draws on external data.

■ Sustainability appraisal 3.20 states

“Co-ordinating economic and housing growth, including considering the needs of people who work from home, could result in people working more

locally and reducing in- and out-commuting, leading to reductions in emissions of greenhouse gases and air pollutants. As such, positive effects would be expected for SA objectives ... 12: climate change mitigation and 13: air quality.”

That is simply not true unless the economic and housing growth is actually carbon-negative and actually cleans our air somehow. I think you mean that the co-ordination would act to minimise emissions and pollutants generated by the new population, which is fine, it just needs stating accurately please.

- LUC response: Future iterations of the SA will ensure terminology refers to minimising, rather than reducing, carbon emissions, as appropriate.

Respondent 50054 (member of the public)

- The SA has also failed to identify, or test, the draft Issues and Options in relation to a second, related key issue: how to manage the conflicting imperatives of economic growth and the preservation and enhancement of the historic city of Cambridge in its historic landscape setting?

The SA and Scoping Report note that all the Options will have negative effects on the historic environment, but without identifying or prioritising issues. There is inadequate recognition of Cambridge’s national and international significance as a historic city and “one of the loveliest cities in Western Europe” (David Attenborough). They do not mention that Cambridge meets at least 3 of the Outstanding Universal Value criteria (i, ii, iv) for World Heritage Site status, or suggest its historic environment should be valued accordingly. It is this level of international cultural and historic significance, expressed in the beauty of the historic city, which attracts students, workers, and visitors from all over the world. In this context historic Cambridge includes its whole associated landscape, including the upper Cam as far as Byron’s Pool and the lower Cam along the length of the Lents and Mays course as far as Baits Bite. The lower Cam section, although fully covered by Conservation Area designations, has been threatened by growth-related transport proposals; so have the

West Fields. The arguably even more significant cultural landscape between Cambridge and Grantchester and beyond has no formal protection, with the Grantchester Conservation Area boundary narrowly drawn and no Appraisal. While Grantchester Meadows are owned by Kings' College, this ownership neither provides direct protection from developments beyond their boundary, nor has any force in planning terms. The need for such protection is highlighted by the impacts on the Meadows of the combined height and bulk of the CB1 development.

This outstanding significance of Cambridge's historic environment is at high risk from growth pressures.

- LUC response: It is acknowledged that many of the topic areas overlap, but are necessarily somewhat siloed in the SA objectives to allow ease of interpretation and comparison between options. Future iterations of the SA will more clearly state that this is the case.

Cumulative and synergistic effects can only be assessed once the Council has selected a preferred approach. As such, this will be included in future iterations of the SA, once policies have been drafted.

Axis Land Partnerships [7784] / Wates Developments (Anthony Pharoah) [9007]

- In reviewing the documentation prepared by the Council we recognise that this is an early stage in the plan's preparation and that an SA is an iterative process. At the outset we would note that recent challenges at examination of local plans have included substantive criticisms of the SA which goes well beyond the legal tests and into professional planning judgement. For example, examiners in the North Uttlesford Local Plan, North Essex Local Plan and St Albans Local Plan have recently requested information on alternatives that goes beyond the legal position of "reasonable alternatives" selected by the local authority using broad questions of judgement.

- LUC response: Noted.

Appendix A Consultation Comments

- The Issues and Options Report is largely of general content without spatial or specific focus, and consequently much of the assessment is general commentary.

With only high-level options assessed at this stage, there is substantial uncertainty over the outcomes of these options. As such, the conclusions of the SA also are substantially uncertain, and more assessment is required with specific details provided on the deliverable projects which will make up these options.

There is a possibility that a preferred option will be advanced with an equally valid alternative discarded at this early stage due to lack of information. Additional assessment should take place at another local plan stage, with full assessments within the SA Framework, before any options are fully dismissed. Without a full consideration of all these options which considers substantive detail of deliverable sites, there is a risk of the plan's selected alternative not being properly justified, and the plan being found unsound at examination.

The options assessed in the issues and options report will likely only be achievable in combination with other options (e.g. some density within existing development, with some expansion to villages, etc). For transparency, the extent to which these options are likely to be combined in ultimate implementation should be made explicit in any future local plan documents which discuss these strategic options.

None of the options put forward in the Issues and Options Report are reasonable alternatives capable of meeting the objectives of the plan, as none of them is shown to be capable of meeting housing need and economic potential on their own. As none of the options are reasonable in current form, they will need to be re-assessed at a subsequent stage when sufficient detail is available to robustly evidence the selection of a preferred option.

- LUC response: Paragraph 3.29 of the Issues and Options SA acknowledges that more than one of these options could be taken forward, but it has not yet decided how any such combination would look. Due to this, and in order to aid the Council's decision-making, the SA considered each option on its own merits.

Appendix A Consultation Comments

The SA will assess all reasonable alternatives identified by the Councils at each stage of assessment. Once decisions have been made regarding which options to take forward, the SA will include a record of the Councils' reasons for this.

- The significant negative or positive effects given within the SA report are at this stage based on the limited information available misleading due to assumptions used and uncertainty attendant with such high level options. The SA Report notes a large number of points of uncertainty, but still identifies a number of significant effects (both positive and negative). However, there are assumptions for the significant effects identified which aren't clearly explained and which can be questioned. For example, Option 5 (Dispersal – villages) is attributed a significant negative effect to SA objective 6 (distinctiveness of landscapes) as it is assumed that expansion of these villages could have an adverse effect on the open countryside and landscape surrounding these villages, as well as village character. As recognised in paragraph 3.61 the actual effect will depend on the final design, scale and layout of the proposed development.
- LUC response: Assessments are considered appropriate to the level of detail provided at this stage and the uncertainty of this is recognised. With regards to the example given, relating to SA objective 6, this is based on professional judgement of experienced SA practitioners, and again, the inherent uncertainty is recognised.
- We recognise that SA is an iterative process which will evolve as a Local Plan progresses. More information should be provided on the approach to considering alternatives. The most substantive point we raise that this point is that the options set out in the Issues and Options Report should all be taken forward to subsequent local plan stages, where deliverable options should be assessed in detail, and transparent and objective assessment of these options provided at a subsequent SA stage. This will help ensure the Local Plan process and SA would support a hybrid of development scenarios which would underpin all development proposals at this stage.
- LUC response: The SA will include an overview of how reasonable alternatives were identified and the Councils' reasons for taking these forward or otherwise.

Nathaniel Lichfield & Partners (Agent) [8776]

- We draw out some specific methodological points for consideration by the Councils, the overall conclusion and synthesis of the Sustainability Appraisal for the options (paras 3.116-3.119) is broadly concurred with, in particular that overall Option 3 performs better than Options 4, 5 and 6. Good growth on the edge of Cambridge City is inherently more sustainable across the range of themes than other spatial strategies which seek to distribute this growth more widely (either to villages, in new settlements or on transport corridors). This conclusion should be reflected in the Council's next steps in determining a preferred spatial strategy.
 - LUC response: Noted.
- On SA objective 12 (climate change) the main likely effect from the different locations is rightly transport based... Indeed, the baseline should also recognise that - based on Census 2011 data - overall sustainable modes of transport (i.e. public transport, walking and cycling) in Cambridge City account for a 58% modal share*. This is only marginally reduced in the areas on the edge of the City (e.g. Queen Edith's ward on the south east edge has 57% sustainable modes*). This compares to only 16% in Bourn Ward (Cambourne). Achieving shift onto sustainable transport modes will be difficult in locations beyond the City. Even on well served public transport corridors, it is very unlikely such locations could achieve more than half of journeys to work being made by sustainable modes (e.g. bus, walking, cycling etc.); the uniqueness of Cambridge City is its ability to engender walking and cycling as a preferred mode of transport because of its location. In our view the SA appraisal does not go far enough to recognise this distinction; growth on public transport corridors, based on the baseline evidence, would a) not generate the same modal split towards sustainable modes and b) would still create longer journeys, which even if taken by bus (for example), would still have a greater impact on climate change than equivalent journeys walking or cycling (which are ultra-low impact). Option 6 should be scored relatively lower (e.g. mixed minor effects) on SA objective 12 than the equivalents for Option 2 and 3 on the edge of Cambridge.

*Lichfield's analysis, noting that their figures do not include passengers in cars and 'edge of Cambridge' analysis considered two wards.

- LUC response: The baseline will be expanded to include more information on sustainable mode share in Cambridge city, compared to South Cambridgeshire.

The SA assesses each option on its own merits, against the baseline and the likely future baseline without the plan. Effects identified are therefore not relative to other options. Nevertheless, the Councils have now developed these options, allowing more nuanced SA assessment.

- There is an inconsistency on SA objective 11 between the assessment for Option 2 reported at page 37 (i.e. “-?” minor negative but uncertain effects) and that then included on the summary table at page 47 (i.e. “+/-?” mixed significant positive and minor negative effects). It is assumed this is a typographical error, rather than a change to the scoring within the conclusion, but it risks presenting that Option 2 scores better than it actually does against climate change objectives (whereas it should be comparable with other edge of Cambridge options).
 - LUC response: Correct, this is a typographical error and will be corrected in future iterations of the SA Report.
- The assessment of SA objective 14 and at para 3.106 appears to identify concentration of economic activity as a ‘negative effect’. Furthermore, it appears to be one of the same scale as to the positive effects that could accrue from shifting towards putting such employment on transport corridors beyond the City. This misunderstands the functional economic market of Cambridge and the growth sectors which new employment land and premises will be serving (as summarised in the SA Scoping baseline). Many of these are overwhelmingly focussed within or on the immediate fringe of Cambridge City and have grown in that way because of clustering effects and agglomeration benefits. Such economic growth potential may be curtailed by dispersal of new employment provision beyond the City; the likely significant effects of pushing growth out is that, in a competitive environment, inward investment is lost to competing centres (both nationally and globally given the sectors Cambridge is home to). There are likely significant negative impacts of such an approach which are not

reflected in the SA appraisal, particularly with the assessment that Option 6: transport corridors would likely score as well as Edge of Cambridge locations on SA objective 14.

- LUC response: The SA recognises the benefits of employment development within Cambridge city. The negative effect identified reflects the fact that focusing all employment development within Cambridge city and not providing for any employment land elsewhere would not provide for economic needs within South Cambridgeshire.

Option 6 would be expected to support the economy in Cambridge city as well as elsewhere, given that development on public transport corridors would link workers to Cambridge city centre. As mentioned above, options are assessed against the baseline and likely evolution of this without the plan, rather than relative to each other.

Bidwells

- The respondent highlights the high level nature of the options assessed and the resultant uncertainty in the SA.

The actual strategy will involve some or all of these options. Moreover, there is a possibility that a preferred option will be advanced with an equally valid alternative discarded at this early stage due to lack of information. Additional assessment should take place at another local plan stage, with full assessments within the SA Framework, before any options are fully dismissed. Without a full consideration of all these options which considers substantive detail of deliverable sites, there is a risk of the plan's selected alternative not being properly justified, and the plan being found unsound at examination...

None of the options put forward in the Issues and Options Report are reasonable alternatives capable of meeting the objectives of the plan, as none of them is shown to be capable of meeting housing need and economic potential on their own. These are not positively prepared, nor justified.

Appendix A Consultation Comments

As none of the options are reasonable in current form, they all need to be re-assessed at a subsequent stage when sufficient detail is available to robustly evidence the selection of a preferred option.

Alternatives which consider combinations of the above options should be tested.

- LUC response: All reasonable alternatives identified by the Councils at this stage were subject to SA. The Councils have since carried out further consideration of spatial strategy alternatives, which will be subject to SA.

Site options will be assessed in future iterations of the SA.

The SA assessment can only reflect the level of detail of the options under consideration.

Paragraph 3.29 recognises that more than one of the assessed options could be taken forward.

It is not considered proportionate to assess all possible combinations of the spatial options presented. However, reasonable alternatives, including combined options, as identified by the Councils, will be subject to SA.

- Other policy priorities for the council could be tested through the SA alternatives process, such as closure of large portions of the city centre to motorised vehicular traffic. These are substantive issues and options for the local authority, which would benefit from the SA process.
 - LUC response: Policy options will be assessed at a later stage of SA.
- As the local authorities have both declared a climate emergency, the SA could be used to refine policy responses to climate change, as different climate change scenarios will be of interest at examination, and are a policy priority for the councils. For example, the SA could address local plan responses to climate change scenarios.
 - LUC response: The SA will assess all reasonable alternatives identified by the Councils. Climate change will be considered via SA objectives 11 (Adaptation to climate change) and 12 (Climate change mitigation). The SA will make recommendations for policies where appropriate.

Appendix A Consultation Comments

- The significant negative or positive effects given within the Issues and Options SA report are misleading due to assumptions used and uncertainty attendant with such high level options. The SA Report notes a large number of points of uncertainty, but still identifies significant effects (both positive and negative). However, there are assumptions for the significant effects identified which aren't clearly explained and which can be questioned. For example, Option 6 (Development Along Transport Corridors) is attributed a significant negative effect to SA objective 6 (distinctiveness of landscapes) as it is assumed that development along the transport corridors will "string" along transport corridors (paragraph 3.62). In practical terms this is unlikely to happen as there are so few viable locations along the transport corridors. Moreover, this possible significant effect can be managed through standard policy mitigation and is not a reason to discount this as an option. These assumptions and uncertainties fundamentally undermine the significance determination provided now, which needs to be refined at additional local plan stages.
- LUC response: As stated, the SA recognises the uncertainty in assessments and paragraph 2.17 of the Issues and Options SA states 'Due to the high level nature of options assessed at this stage, all potential effects identified are uncertain'. The role of the SA is to highlight potential effects and it takes a precautionary and transparent approach to doing so, by not assuming any particular details about design or mitigation, as explained in paragraph 2.21 of the Issues and Options SA Report. The SA does not discount any of the options.
- We note that due to uncertainty the potential for mitigation at a site specific level is not considered (paragraph 2.21). This is appropriate to the level of detail available, but it would be unhelpful to dismiss sites at this stage for which standard and not complex mitigation will accommodate development. To that end unmitigated significant effects identified at this early stage need to be refined at subsequent stages.
- LUC response: The SA does not dismiss any options or sites. In order to ensure all sites are assessed on an equal basis, the SA will not make any assumptions about mitigation when assessing site options. Any mitigation included in policy proposals will be recognised when assessing those policies.

Appendix A Consultation Comments

- These is a tendency within SA practice to rely on assumptions and/or be overly positive about emerging preferences, leading to an unbalanced assessment that does not stand up to examination. At this early stage in the SA process we advise that a means of adding objectivity to the assessment is developed and consulted on. This could be developed by the SA consultants, and could be a sensitivity test of the assessment, double-assessment by two independent parties, or another means of adding objectivity and rigour within mixed methods research such as an SA.
- LUC response: The SA is being carried out by independent consultants and professionals bound by codes of ethics by their professional bodies. It is being carried out in line with regulatory requirements and good practice and the methodology is designed to ensure a consistent assessment between options, particularly with regards to the site appraisal criteria.
- SA is an iterative process which will evolve as a Local Plan progresses. More information should be provided on the approach to considering alternatives according to the Local Development Scheme. This should set out the approach to proper justification of a selected spatial strategy, which is reasonable and deliverable through projects. Key points which should be addressed in the methodology include:
 - The stages going forward for refining the strategic options consulted on now into reasonable alternatives comprised of proposed allocations..
 - How mitigation will be considered. While it is appreciated that the legal basis is for no mitigation to be considered to ensure all sites are considered on an equal basis, this is misleading as there will be mitigation information available for some sites. A standardised approach to mitigation, allowing for the use of typical mitigation (SUDS, CEMPs, etc) and consulted on, would help with this.
 - Where large new settlements are proposed, the SA should be clear on how full allocations will be assessed where they will be delivered outside of the plan period.
 - Deliverability of major sites, including infrastructure assumptions.

Appendix A Consultation Comments

- Built out rates (which reflect infrastructure assumptions).
- Quantitative criteria applied to various site sizes, such as number of new homes required for a primary and secondary school.
- LUC response: It is the Councils' responsibility to identify and develop reasonable alternatives. The SA will assess the reasonable alternatives identified and give an outline of how those alternatives were identified.

As stated above, no assumptions will be made about mitigation when assessing site options. This is both in order to ensure all sites are assessed on an equal basis and because there is no certainty as to what will be required/come forward until the plan is adopted. The SA will be precautionary as a key role of the SA is to highlight potential issues, so that these can be addressed by Local Plan policies, or other appropriate mechanisms. Mitigation included in proposed policies will be considered when assessing those policies and when considering cumulative effects.

It is not the role of the SA to assess the deliverability of sites. If sites are not deliverable, it is assumed they will not be identified as reasonable alternatives.

Other points noted.

Appendix B

Review of Plans, Policies and Programmes and Baseline Information

Population, Health and Wellbeing

Policy Context

International

B.1 United Nations Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the 'Aarhus Convention') (1998): Establishes a number of rights of the public (individuals and their associations) with regard to the environment. The Parties to the Convention are required to make the necessary provisions so that public authorities (at national, regional or local level) will contribute to these rights to become effective.

B.2 United Nations Declaration on Sustainable Development (Johannesburg Declaration) (2002): Sets a broad framework for international sustainable development, including building a humane, equitable and caring global society aware of the need for human dignity for all, renewable energy and energy efficiency, sustainable consumption and production and resource efficiency.

National

B.3 National Planning Policy Framework (NPPF) [See reference 1].

B.4 sets out the following:

- The NPPF promotes healthy, inclusive and safe places which promote social integration, are safe and accessible, and enable and support healthy lifestyles.
- One of the core planning principles is to “take into account and support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community”.
- Local plans should “contain policies to optimise the use of land in their area and meet as much of the identified need for housing as possible”.
- To determine the minimum number of homes needed strategic policies should be informed by the application of the standard method set out in national planning guidance, or a justified alternative approach.
- “A network of high quality open spaces and opportunities for sport and recreation is important for the health and well-being of communities”.
- “Good design is a key aspect of sustainable development” and requires development supported by planning decisions to function well and add to the overall quality, beauty and sustainability of the area over its lifetime. Planning decisions should result in development which is of a quality which incorporates good architecture and appropriate and effective landscaping as to promote visual attractiveness, raises the standard more generally in the area, and addresses the connections between people and places.
- The promotion of retaining and enhancing of local services and community facilities in villages, such as local shops, meeting places, sports, cultural venues and places of worship.
- Developments should create safe and accessible environments where crime and disorder, and fear of crime, do not undermine quality of life or community cohesion.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- There is a need to take a “proactive, positive and collaborative approach” to bring forward development that will “widen choice in education”, including sufficient choice of school places.
- Paragraph 72 states that “The supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed and supported by the necessary infrastructure and facilities (including genuine choice of transport modes)”. As such the NPPF provides support for the identification of locations which are suitable for this type of development in a manner which would help to meet needs identified in a sustainable way.

B.5 National Planning Practice Guidance (PPG) [See reference 2] sets out the following:

- Local planning authorities should ensure that health and wellbeing, and health infrastructure, are considered in local and neighbourhood plans and in planning decision making

B.6 The Environmental Noise Regulations (2006) [See reference 3] apply to environmental noise, mainly from transport. The regulations require regular noise mapping and action planning for road, rail and aviation noise and noise in large urban areas. They also require Noise Action Plans based on the maps for road and rail noise and noise in large urban areas. The Action Plans identify Important Areas (areas exposed to the highest levels of noise) and suggest ways the relevant authorities can reduce these. Major airports and those which affect large urban areas are also required to produce and publish their own Noise Action Plans separately. The Regulations do not apply to noise from domestic activities such as noise created by neighbours; at work places; inside means of transport; or military activities in military areas.

B.7 Select Committee on Public Service and Demographic Change Report: Ready for Ageing? [See reference 4]: warns that society is underprepared for the ageing population. The report states that “longer lives can be a great benefit, but there has been a collective failure to address the implications and without urgent action this great boon could turn into a series of miserable

Appendix B Review of Plans, Policies and Programmes and Baseline Information

crises”. The report highlights the under provision of specialist housing for older people and the need to plan for the housing needs of the older population as well as younger people.

B.8 Fair Society, Healthy Lives (2010) [See reference 5]: Investigated health inequalities in England and the actions needed in order to tackle them. Subsequently, a supplementary report was prepared providing additional evidence relating to spatial planning and health on the basis that there is “overwhelming evidence that health and environmental inequalities are inexorably linked and that poor environments contribute significantly to poor health and health inequalities”.

B.9 Homes England Strategic Plan 2018 to 2023 [See reference 6]: Sets out a vision to ensure more homes are built in areas of greatest need, to improve affordability, and make a more resilient and diverse housing market.

B.10 Planning for the Future White Paper [See reference 7]: Sets out a series of potential reforms to the English planning system, to deliver growth faster. The White Paper focuses on the following:

- Simplifying the role of Local Plans and the process of producing them.
- Digitising plan-making and development management processes.
- Focus on design, sustainability and infrastructure delivery.
- Nationally determined, binding housing requirements for local planning authorities to deliver through Local Plans.

B.11 The Housing White Paper (2017) (Fixing our broken housing market) [See reference 8] sets out ways to address the shortfall in affordable homes and boost housing supply. The White Paper focuses on the following:

- Planning for the right homes in the right places – Higher densities in appropriate areas, protecting the Green Belt while making more land available for housing by maximising the contribution from brownfield and surplus public land, regenerating estates, releasing more small and

Appendix B Review of Plans, Policies and Programmes and Baseline Information

medium-sized sites, allowing rural communities to grow and making it easier to build new settlements.

- Building homes faster – Improved speed of planning cases, ensuring infrastructure is provided and supporting developers to build out more quickly.
- Diversifying the Market – Backing small and medium-sized house builders, custom-build, institutional investors, new contractors, housing associations.
- Helping people now – supporting home ownership and providing affordable housing for all types of people, including the most vulnerable.

B.12 Public Health England, PHE Strategy 2020-25 [See reference 9]: identifies PHE’s priorities upon which to focus over this five-year period to protect people and help people to live longer in good health.

B.13 Planning Policy for Traveller Sites [See reference 10]: Sets out the Government’s planning policy for traveller sites, replacing the older version published in March 2012. The Government’s overarching aim is to ensure fair and equal treatment for travellers, in a way that facilitates the traditional and nomadic way of life of travellers while respecting the interests of the settled community.

B.14 Laying the foundations: a housing strategy for England (2011) [See reference 11]: Aims to provide support to deliver new homes and improve social mobility.

B.15 Healthy Lives, Healthy People: Our strategy for public health in England (2010) [See reference 12]: Sets out how the Government’s approach to public health challenges will:

- Protect the population from health threats – led by central government, with a strong system to the frontline.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Empower local leadership and encourage wide responsibility across society to improve everyone's health and wellbeing, and tackle the wider factors that influence it.
- Focus on key outcomes, doing what works to deliver them, with transparency of outcomes to enable accountability through a proposed new public health outcomes framework.
- Reflect the Government's core values of freedom, fairness and responsibility by strengthening self-esteem, confidence and personal responsibility; positively promoting healthy behaviours and lifestyles; and adapting the environment to make healthy choices easier.
- Balance the freedoms of individuals and organisations with the need to avoid harm to others, use a 'ladder' of interventions to determine the least intrusive approach necessary to achieve the desired effect and aim to make voluntary approaches work before resorting to regulation.

B.16 A Green Future: Our 25 Year Plan to Improve the Environment (2018)

[See reference 13]: Sets out goals for improving the environment within the next 25 years. It details how the Government will work with communities and businesses to leave the environment in a better state than it is presently. It identifies six key areas around which action will be focused. Those of relevance to this chapter are: using and managing land sustainably; and connecting people with the environment to improve health and wellbeing. Actions that will be taken as part of these two key areas are as follows:

- Using and managing land sustainably:
 - a) Embed an 'environmental net gain' principle for development, including housing and infrastructure.
- Connecting people with the environment to improve health and wellbeing:
 - b) Help people improve their health and wellbeing by using green spaces including through mental health services.
 - c) Encourage children to be close to nature, in and out of school, with particular focus on disadvantaged areas.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- d) 'Green' our towns and cities by creating green infrastructure and planting one million urban trees.
- e) Make 2019 a year of action for the environment, working with Step Up To Serve and other partners to help children and young people from all backgrounds to engage with nature and improve the environment.

Sub National

B.17 Homes for our future: Greater Cambridge Housing Strategy 2019-2023 [See reference 14]: Sets out the strategic direction for housing activity in Cambridge City and South Cambridgeshire District. Its purpose is to set the context as to how both councils aim to meet the housing challenges facing the area, setting out key priorities for action. These include:

- Increasing the delivery of homes, including affordable housing, along with sustainable transport and other infrastructure, to meet housing need.
- Diversifying the housing market & accelerating housing delivery.
- Achieving a high standard of design and quality of new homes and communities.
- Improving housing conditions and making best use of existing homes.
- Promoting health and wellbeing through housing.
- Preventing and tackling homelessness and rough sleeping.
- Working with key partners to innovate and maximise resources available.

B.18 South Cambridgeshire Homelessness Strategy 2018-2023 [See reference 15]: Identifies four themes that need to be taken forward over the 5 year period: working closer with partner agencies to prevent homelessness; new private rent initiatives; access to information; and access to accommodation and support.

B.19 Cambridgeshire Strategy for Supporting New Communities [See reference 16]: Sets out three visions that provide the foundation to the strategy:

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Ensure that infrastructure in new communities is designed to meet the needs of the community now and in the future.
- Support the development of a self-supporting, healthy and resilient community by helping to build people's capacity to help themselves and others in order to create a good place to live, improve outcomes, support economic prosperity and make people less reliant on public services.
- Ensure that where people's needs are greater than can be met within community resources they are supported by the right services and are helped to return to independence.

B.20 Greater Cambridge Sustainable Design and Construction SPD (2020)

[See reference 17]: Produced to provide guidance on the policies within the adopted 2018 Cambridge and South Cambridgeshire Local Plans that relate to sustainability.

B.21 Cambridgeshire Green Infrastructure Strategy (2011) [See reference

18]: Outlines how the broader historic environment makes an important contribution to sense of places, sense of time and local identity and distinctiveness. The challenges highlighted including the impact of farming, the impact of climate change and development, lack of visibility of some assets, and conflicts between conservation and public access. An updated Green Infrastructure Strategy is currently being prepared.

B.22 South Cambridgeshire Recreation and Open Space Study (2013) [See

reference 19]: Provides an audit of the quantity and quality of existing provision in the district and assesses the need for future provision. An updated open space study is currently being prepared.

B.23 Cambridge Open Space and Recreation Strategy (2011) [See

reference 20]: Discusses the findings of the Open Space and Recreation Assessment. It breaks the information down by ward and provides data on the deficits in each ward and the ward's strengths and weaknesses in terms of open space provision. It also discusses the level of provision proposed in the urban extensions to the City, which have not been assessed in this Strategy, as they

Appendix B Review of Plans, Policies and Programmes and Baseline Information

have not yet been delivered on site. An updated open space strategy is currently being prepared.

B.24 Greater Cambridge Playing Pitch Strategy 2015-2031 [See reference 21]: Aims to provide accessible community sport and leisure facilities for swimming, fitness and sports hall sports/activities for all residents. This includes both formal and informal spaces. An updated Playing Pitch Strategy is being prepared for the New Local Plan.

B.25 Greater Cambridge Indoor Sports Facility Strategy 2015-2031 [See reference 22]: The vision for future provision of sport and leisure facilities is: 'to enable opportunities for increased and more regular physical activity, particularly from those in areas of deprivation, and in new settlements, to improve community health and well-being, by facilitating provision of, and access to, a range of quality, accessible and sustainable facilities in Cambridge and South Cambridgeshire District'. An updated Indoor Sports Facility Strategy is being prepared for the New Local Plan.

B.26 South Cambridgeshire Services and Facilities Study (2014) [See reference 23]: Aims to collate services and facilities data for all settlements within the district to provide and document an evidence base for the review of the settlement hierarchy and for future community/neighbourhood planning.

B.27 Air Quality Action Plan for the Cambridgeshire Growth Areas (2009) [See reference 24]: Reviewed all existing air quality information across the regions, identified the key causes in each management area and assessed the necessary actions needed to improve pollutant levels in those areas.

B.28 Cambridge City Council Air Quality Action Plan 2018-2023 (2019 update) [See reference 25]: Sets out Cambridge City Council's priority actions for improving areas of poor air quality in the city and maintaining a good level of air quality in a growing city.

B.29 Cambridge City Council Contaminated Land Strategy (2009) [See reference 26]: Builds on the City Council's Medium Term Objectives which include:

- To promote Cambridge as a sustainable city, in particular by reducing carbon dioxide emissions and the amount of waste going into landfill in the City and sub-region.
- Ensure that residents and other service users have an entirely positive experience of dealing with the Council.
- Maintain a healthy, safe and enjoyable city for all, with thriving and viable neighbourhood.
- Lead the growth of Cambridge to achieve attractive, sustainable new neighbourhoods, including affordable housing, close to a good range of facilities, and supported by transport networks so that people can opt not to use the car.

B.30 South Cambridgeshire Contaminated Land Strategy (2001) [See reference 27]: Sets out South Cambridgeshire District Council's strategy on how it proposes to identify contaminated land within its boundaries. It supports the following objectives:

- Maintaining, improving and developing sympathetically the character, environment, economy and social fabric of our villages.
- Promoting a healthier environment to enable our communities to lead healthier lives, by its own actions and active partnership with others.
- Working towards a more sustainable future for everyone living and working in South Cambridgeshire, balancing the needs of the present and future generations.

B.31 Cambridge & South Cambridgeshire Sustainable Development Strategy (2012) [See reference 28]: Reviews what sustainable development means in the context of Cambridge and South Cambridgeshire and to ensure that the sustainability of different broad spatial options for locating new developments are assessed.

B.32 Cambridge & South Cambridgeshire Infrastructure Delivery Study (2015) [See reference 29]: aims to assess the infrastructure requirements, costs and known funding relating to planned growth, particularly the strategic sites, and identify any phasing issues that might affect the proposed growth and advice on the future delivery of infrastructure needed to support the planned growth. An updated Infrastructure Delivery Plan is being prepared for the New Local Plan.

Baseline Information

B.33 Greater Cambridge consists of Cambridge City and South Cambridgeshire District. Cambridge covers an area of approximately 4,070 hectares and is located on the River Cam about 60 miles north-east of London. Cambridge has a population density of 30.4 persons per hectare, significantly higher than that of the rest of the County which has an average density of 2 persons per hectare. Cambridge is the main settlement within a rapidly growing sub-region [See reference 30]. South Cambridgeshire covers an area of 90,163 hectares and has a population density of 1.6 persons per hectare, below the County's average [See reference 31]. South Cambridgeshire is located centrally in the East of England region at the junction of the M11/A14 roads and with direct rail access to London and to Stansted Airport. South Cambridgeshire is a largely rural district which surrounds the city of Cambridge and comprises over 100 villages, none currently larger than 8,000 persons. It is surrounded by a ring of market towns just beyond its borders, which are generally 10-15 miles from Cambridge [See reference 32].

B.34 The 2011 Census demonstrates that ethnic minorities constituted around 17.5% of the total population of Cambridge. People of Asian ethnicity were the largest group in the city (7.4%) next to those of white ethnicity, followed by Chinese (3.6%), those of mixed ethnicity (3.2%) and those of black ethnicity (1.7%) [See reference 33].

B.35 The latest population estimates put the population of Cambridge at 125,100 [See reference 34] and South Cambridgeshire at 160,900 for 2020

[See reference 35]. The demographic profile is also changing, with the proportion of those aged over 65 significantly increasing, especially within South Cambridgeshire. At the other end of the spectrum, Cambridge has one of the 'youngest' populations in the country. People aged 24 and under, including students, make up around 37% of the City's population **[See reference 36]**. In 2016/17 (most recent figures available), 19,529 people studied at the University of Cambridge in comparison to 19,320 in 2015/16. Anglia Ruskin University has however seen a decline in its student population, from 11,397 in 2016/17 to 9,425 in 2017/18.

B.36 Residents of Cambridge city have a notably younger average age than more rural parts of the plan area **[See reference 37]**. The average age of people in South Cambridgeshire is 40, compared to Cambridge where the average age is 36 **[See reference 38]**. However, as the population of the County increases, so will the number of older people. Countywide, the number of people aged 65+ is expected to increase by 54% by 2021 although again there are variations across the districts with the greatest increase being seen in South Cambridgeshire with 80% **[See reference 39]**.

Housing

B.37 Sustained population and employment growth has led to a housing shortage within Cambridge, with high house prices and low levels of housing affordability. Cambridge is frequently ranked as one of the most unaffordable places to live within the UK.

B.38 House prices in Cambridge and South Cambridgeshire have risen since April 2020. The average house price in Cambridge is £498,370, representing an increase of 13.2% from April 2020. Similarly, house prices in South Cambridgeshire have increased by 8% since April with the average price being £400,439 **[See reference 40]**. Cambridge and South Cambridgeshire average prices of 'real' sales is well above the other districts, and significantly higher than the regional and national averages **[See reference 41]**. The highest values in Cambridge are on the fringes of the city centre, particularly towards

Appendix B Review of Plans, Policies and Programmes and Baseline Information

the south and west. For South Cambridgeshire, the values are higher in the south of the authority and lower to the north.

B.39 Cambridge and South Cambridgeshire are some of the least affordable areas in the country outside of London. They stand out in the East of England as areas with particularly constrained affordability. In Cambridge the median house price is now 12.2 times the median income of those working in the area, compared with 9.3 in South Cambridgeshire and 7.5 nationally. Although the level of new market supply is high it is not well aligned with local incomes, with most homes only affordable for those with incomes of £45,000 or more [\[See reference 42\]](#). The net affordable housing need for Cambridge is 10,402 homes and 5,573 homes for South Cambridgeshire, a total of 15,975 homes over the plan period (2011-2031). Of the 51,240 dwellings in Cambridge only 7,040 are social housing (general housing, sheltered housing, supported housing, temporary housing, and miscellaneous leases) [\[See reference 43\]](#). Within South Cambridgeshire, in the last six years there has been a fall in the proportion of social rented affordable housing completed. Some of this shortfall has been made up by the provision of 'affordable rent' housing [\[See reference 44\]](#).

B.40 In total, South Cambridgeshire delivered 379 affordable dwellings in 2019-2020. At 37% of all completions this was above the plan period average for the district (27%). A total of 1,158 dwellings were permitted in Cambridge during the same period. This included 895 dwellings within schemes eligible to provide affordable dwellings. Of these, 37% are to be affordable dwellings. This is slightly below the policy requirement of 40% for schemes of 15 or more dwellings [\[See reference 45\]](#).

B.41 The housing trajectory for both Cambridge and South Cambridgeshire was considered in the preparation of the new Local Plans and is shown below:

Table B.1: Distribution of housing across the development sequence in the Local Plan [See reference 46] [See reference 47]

	Existing Completions and Commitments (both areas)	New Sites Cambridge	New Sites South Cambridgeshire	Total	%
Cambridge Urban Area	5,358	1,470	0	6,282	19
Edge of Cambridge	11,370	890	410	12,670	35
New settlements and Cambourne West	3,445	0	4,610	8,055	23
Rural Area (including windfalls)	7,284	0	936	8,220	23
Total	27,457	2,360	5,956	35,773	100

B.42 The development strategy identified in the Local Plans includes development at all stages in the sequence across both areas. The strategy has 35% of all new development planned on the edge of Cambridge and 23% of new settlements within South Cambridgeshire.

B.43 Oxford and Cambridge colleges collectively own more land than the Church of England and have a portfolio of properties across the UK worth £3.5 billion and amount to 51,000 hectares – an area more than four times the size of Manchester. The two major Cambridge landowners are St. John’s and Trinity Colleges, which have 10,500 hectares worth £1.1 billion and make up more than half of the 17,000 hectares owned by Cambridge colleges [See reference 48]. A significant proportion of land within the city centre, including residential

Appendix B Review of Plans, Policies and Programmes and Baseline Information

properties, is owned and operated by the University colleges, much of it as student accommodation.

B.44 There are an estimated 46,132 students in Cambridge with a need for some form of accommodation. Of these, 22,410 are housed in purpose built student accommodation (PBSA), an estimated 9,157 are in shared housing, 12,129 are in existing family housing and there is no information for 2,436 students. 91% of undergraduates and 55% of postgraduates at the University of Cambridge are in University or College maintained accommodation, compared to 11% of undergraduates and 15% of postgraduates at Anglia Ruskin University. Anglia Ruskin University is therefore currently dependent upon housing 4,285 undergraduates and 785 postgraduates in shared housing, a total of 5,070 students, occupying at least 1,000 shared houses, assuming an average of 5 students to each shared house. The University of Cambridge's current planning framework envisages an expansion in undergraduate numbers of 0.5% per year for the next ten years, and in postgraduate numbers of 2% per year. A total of 8,959 student rooms would need to be built in PBSA, for both universities, by 2026 if both the current and the future potential levels of student accommodation were to be met. If PBSA is not available to meet future growth, then by 2026, between 656 (based on 5 students per shared house) and 821 (based on 3.5 students per shared house) additional existing houses would need to be converted into shared student accommodation in order to meet demand [\[See reference 49\]](#).

B.45 In Cambridge, the number of homelessness decisions was recorded as 67 and the number of people accepted as homeless and in priority need was 38 between April 2017 and March 2018. There were 158 unique individuals counted rough sleeping in Cambridge between 2018-2019 [\[See reference 50\]](#). Of those verified to be rough sleeping in the two years 2017-18 and 2018-19 in Cambridge, 35 percent were reported to have 'severe' mental illness. Of the same cohort, more than a half reported drug use in the previous month, 36 per cent using Class A substances [\[See reference 51\]](#).

B.46 In South Cambridgeshire, levels of homelessness are rising with an increase of 62% in homeless approaches between 2012/13 and 2017/18 and a 55% increase in acceptances between 2012/13 and 2017/18. The highest age

category of homeless acceptances is those aged between 25 to 44, who make up around 50% of all homeless applications. Based on current trends, homeless acceptances are expected to rise significantly with a potential worst case scenario of a 7-fold increase in case load [\[See reference 52\]](#).

Gypsy and Travelling Showpeople

B.47 There are only two Gypsy or Traveller households identified in Cambridge, both living on a mobile home park not conditioned for occupancy by Gypsies and Travellers. Neither household has any current or future accommodation needs [\[See reference 53\]](#).

B.48 According to MHCLG data, South Cambridgeshire had a total of 598 traveller caravans in 2020. Compared to 2016, with a total of 433, this is an increase of 38% [\[See reference 54\]](#). Gypsies and Travellers were identified separately for the first time in the 2011 Census. The 2011 census identified 0.3% of the population of South Cambridgeshire as Gypsies and Travellers. However, this may not give a true reflection of the actual Gypsy and Traveller community in the district, which was previously estimated to be 1.0% by the Cambridge Sub-Region Traveller Needs Assessment. According to the 2016 Cambridge Sub-Region Traveller Needs Assessment, there were 11 Gypsy or Traveller households identified in South Cambridgeshire that meet the new definition [\[See reference 55\]](#), 194 'unknown' households that may meet the new definition and 81 households that do not meet the new definition. The 2016 assessment concluded that there was a need for 20 additional pitches, however there were 29 vacant pitches, resulting in an estimated excess of 9 pitches to accommodate Gypsy or Traveller households in South Cambridgeshire [\[See reference 56\]](#).

Education

B.49 The City of Cambridge is home to the University of Cambridge (which is made up of 31 colleges), Anglia Ruskin University, and host to a branch of the

Appendix B Review of Plans, Policies and Programmes and Baseline Information

Open University. Language schools also make an important contribution to the city's economy. There are 22 accredited schools in the Cambridge area employing over 300 staff. Fees and accommodation generate around £50 million per annum and spend in the local area is thought to exceed £78 million per annum [See reference 57]. Figure B.2 shows the location of education facilities in Greater Cambridge.

B.50 With respect to the local population, of the 96,800 people aged 16-64 in the District of South Cambridgeshire in 2020, 96.6% have NVQ1 qualifications, 88% have NVQ2 qualifications, 73.4% have NVQ3 qualifications and 56.2% have NVQ4 qualifications and above. For NVQ4 qualifications and above, this figure is higher than the regional average (39.2%) and the national average (43.1%) [See reference 58]. Of the 86-300 residents aged 16-64 over in the City of Cambridge in 2020, 89.3% have NVQ1 qualifications and, 83.3% have NVQ2 qualifications, 73.7% have NVQ3 qualifications and 60% have NVQ4 qualifications and above. Like South Cambridgeshire, the percentage of people with NVQ4 qualifications is above the regional average (39.2%) and the national average (43.1%) [See reference 59]. Overall within the County, 71% of children are achieving a good level of development at early years [See reference 60].

B.51 Cambridge City is expected to see increases in both primary and secondary school pupils over the next five and ten years. It also experienced net gains in pupil numbers in 2015/16 for primary and secondary. However in South Cambridgeshire, primary schools may expect decreases in pupil numbers over the next five years but an overall increase over the next ten years. In contrast secondary schools may expect increases over the next five and ten years. The District experienced a net cohort gain in primary numbers but a net cohort loss in secondary number in 2015/16 [See reference 61].

Deprivation

B.52 Figure B.1 shows how the Index of Multiple Deprivation (IMD) varies across the plan area. According to the Index of Multiple Deprivation 2019 (IMD 2019) [See reference 62], Cambridge City is ranked as the third most deprived

Appendix B Review of Plans, Policies and Programmes and Baseline Information

district of the five districts across Cambridgeshire for overall Indices of Multiple Deprivation (IMD Score). In general, the north-east of the district is the most deprived. LSOAs Cambridge 006D and 006F (Abbey), and Cambridge 001C (King's Hedges) have the most deprivation present in the district on the local IMD deciles (1 & 2). In comparison, Cambridge 005A (Castle), Cambridge 0011A & 011F (Cherry Hinton), and Cambridge 013D & 013E (Queen Edith's) rank the highest on the local IMD deciles (10). Cambridgeshire as a whole has more LSOAs in the less deprived deciles (6-10) than in 2015, however one LSOA in Cambridge City has become more deprived over this time period, 001C, Kings Hedges. Cambridge City is ranked 210/317 of all local authorities nationally, meaning that Cambridge City is the 107th deprived of the 317 English Local Authorities.

B.53 South Cambridgeshire is ranked as the least deprived of the five districts across Cambridgeshire and Peterborough for the overall Indices of Multiple Deprivation (IMD Score) [\[See reference 63\]](#). In general, the north-east and south-west of the district is the most deprived. LSOAs 091A (Melbourn) and 007B (Milton & Waterbeach) are scored as having the most overall levels of relative deprivation in the district on the local IMD deciles 2 & 3). In comparison, South Cambridgeshire has 33 LSOAs in the 10th decile (the least deprived). Three LSOAs in South Cambridgeshire have become more relatively deprived by two decile ranks since 2015, whereas 2 LSOAs have become relatively less deprived by two decile ranks since 2015.

B.54 In 2018, it was estimated that 11.1% (5,522) of households in Cambridge were classed as being fuel poor [\[See reference 64\]](#). In contrast, 8% (5,324) were classed as being fuel poor in 2018 within South Cambridgeshire. These figures are reflective of household income, household energy requirements and fuel prices in a given area.

Health

B.55 Health is a cross-cutting topic and as such many topic areas explored in this Sustainability Appraisal influence health either directly or indirectly. Whilst this section focuses on direct indicators of health, the main report sets out the

Appendix B Review of Plans, Policies and Programmes and Baseline Information

links between other topics and health. shows the location of health facilities across Greater Cambridge.

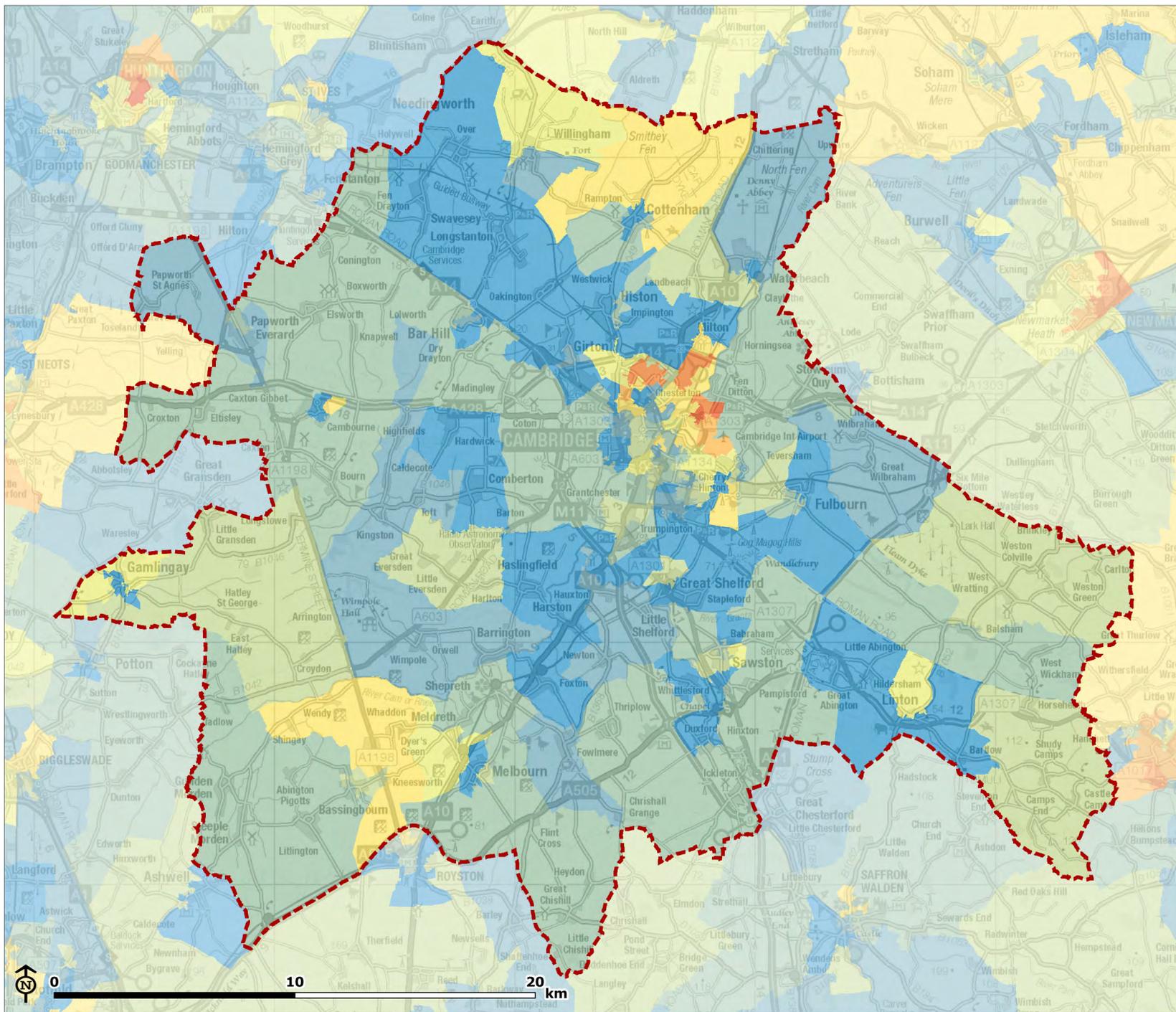
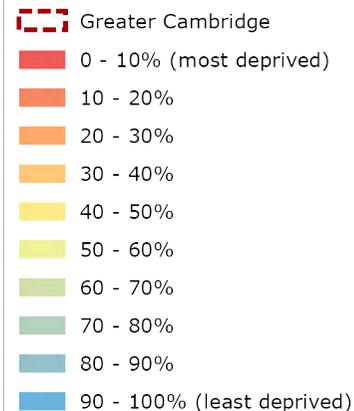
The 2011 Census statistics suggest that health in Cambridge is generally good with 86.7% of the population reporting themselves to be in very good or good health. Some 9.7% state they are in fair health, with only 2.9% and 0.8% in bad or very bad health respectively. Furthermore, 87% of the population state that their day to day activities are not limited by their health, 7.5% state that they are limited a little and 5.5% limited a lot. Estimated levels of adult excess weight and physical activity are better than the England average. With regard to South Cambridgeshire, the statistics suggest that health is generally good as well with 86.2% of the population reporting themselves to be in very good or good health. Some 10.6% state they are in fair health, with only 2.5% and 0.7% in bad or very bad health respectively. Furthermore, 86.1% of the population state that their day to day activities are not limited by their health, 8.4% state that they are limited a little and 5.6% limited a lot. Estimated levels of adult excess weight and physical activity are better than the England average. Figure B.3 shows how levels of health deprivation vary spatially across Greater Cambridge.

B.56 Average life expectancy within Cambridge is slightly above the national average, being 81.0 for males and 83.6 for females. Life expectancy is 10.1 years lower for men and 9.9 years lower for women in the most deprived areas of Cambridge than in the least deprived areas [\[See reference 65\]](#).

B.57 Average life expectancy within South Cambridgeshire is slightly above the national average, 82.8 for males and 85.7 for females. Life expectancy is 4.2 years lower for men and 0.5 years lower for women in the most deprived areas of South Cambridgeshire than in the least deprived areas [\[See reference 66\]](#).

Greater Cambridge SA

Figure B.1: Indices of Multiple Deprivation



Source: CCC, SCDC, ONS

Map Scale @ A4: 1:225,000



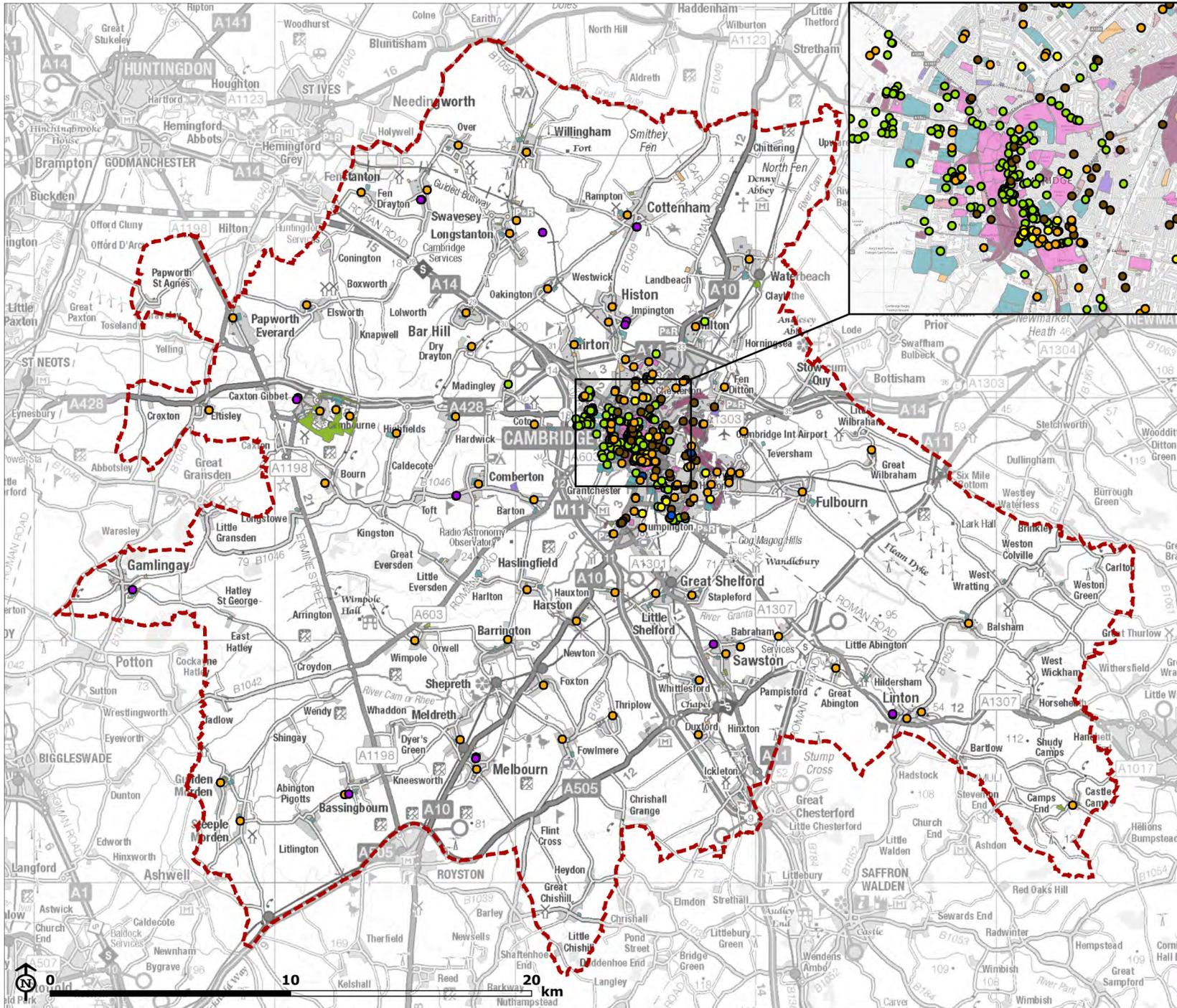
Greater Cambridge SA

Figure B2: Education Facilities, Health Facilities and Open Space in Greater Cambridge

- Greater Cambridge
 - Hospital
 - GP Surgery and Health Centre
 - Primary School
 - Secondary School
 - College and University
- Open Space**
- Allotment
 - Amenity Green Space
 - Cemetery and Churchyard
 - Children and Young People's Playspace
 - Civic Place
 - Civic Space
 - Community Orchard
 - Informal Open Space
 - Informal Playspace
 - Outdoor Sports Facility
 - Parks and Gardens
 - Semi Natural Green Space

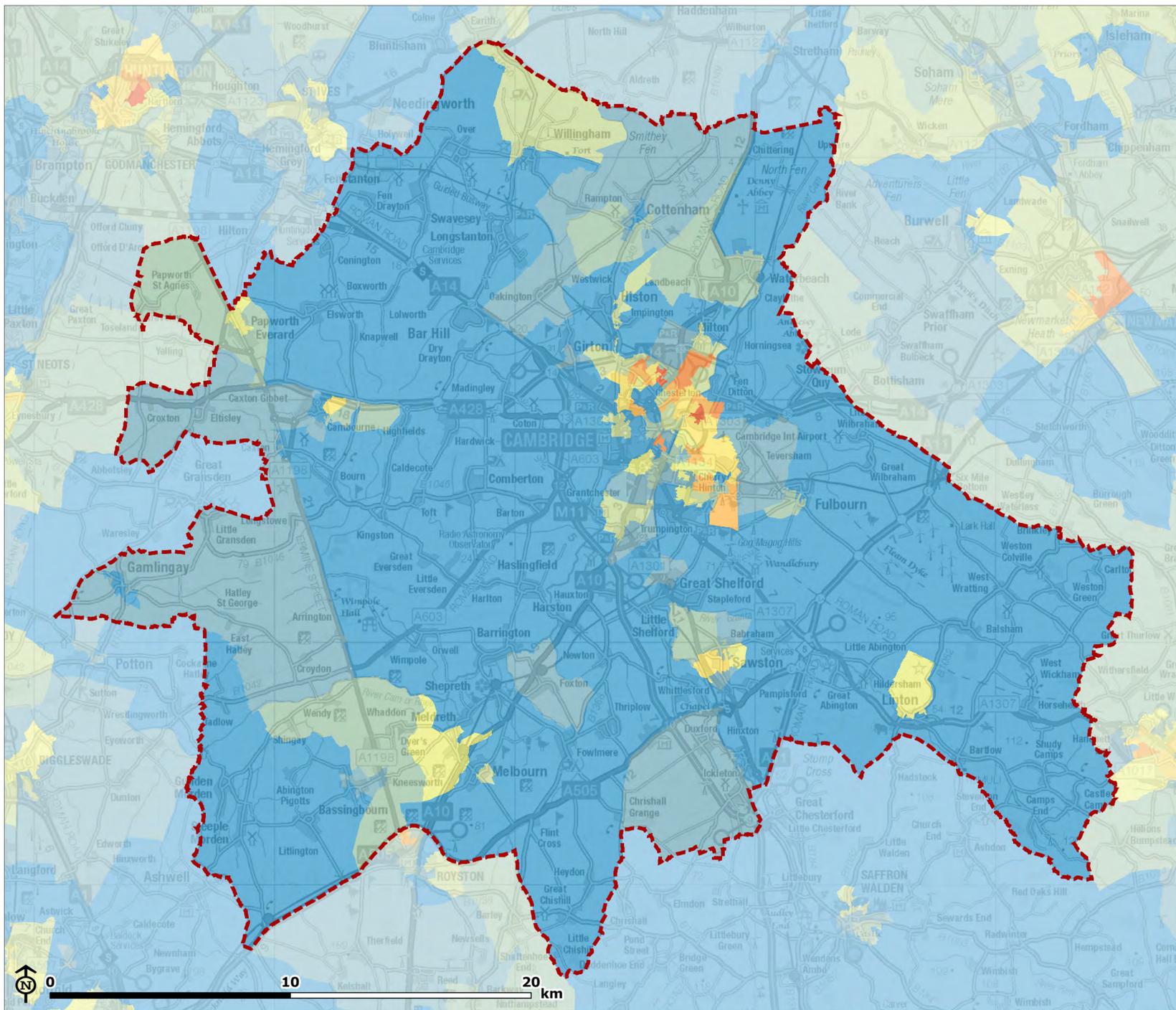
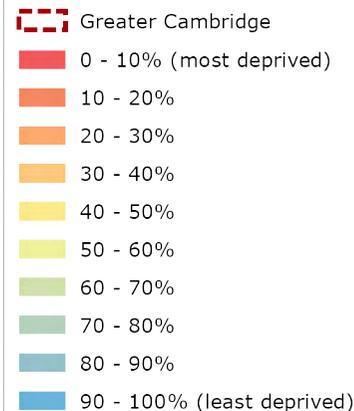
Source: Cambridgeshire City Council, South Cambridgeshire Council

Map Scale @ A4: 1:225,000



Greater Cambridge SA

Figure B.3: Indices of Health Deprivation



Source: DCLG

Map Scale @ A4: 1:225,000



Open spaces, sports and recreation

B.58 There is a total of 217.6 hectares of informal open space across the South Cambridgeshire District. However, the availability of informal play space in housing areas varies greatly across the District. Some 50 villages lack any kind of informal play space provision, and the majority of villages fall short of meeting the existing standard of 0.4 hectares per 1,000 population. Figure B.2 shows the extent of publicly accessible open space across Greater Cambridge.

B.59 The current standard for outdoor sport is 1.6 hectares per 1,000 population. Some 53% of the villages within South Cambridgeshire fail to meet this standard. Some 28 villages have no formal outdoor sport provision at all. The 2013 study shows that new developments such as Cambourne and Highfields Caldecote have significantly increased provision. The total number of additional hectares has increased from 198 hectares in 2005 to 225 hectares in 2013, a total of 27 additional hectares. The overall ratio per 1,000 population has remained relatively constant at 1.52 hectares, due to increases in population. An assessment of the quality of outdoor sports was carried out and the average score for quality was 65%. These included individual scores for bowls greens, grass pitches, all weather pitches and formal multi use games and tennis court areas.

B.60 The majority of the playing pitches in South Cambridgeshire are provided and maintained by Parish Councils, and many sites have the dual role of providing invaluable green space within the villages in the District.

B.61 Overall, Cambridge City and South Cambridgeshire District have a good range of existing sport and leisure facilities across the area; however, some are now ageing i.e. Melbourn, Impington, Frank Lee, along with Abbey & Parkside Pools and Kelsey Kerridge, and will require large scale investment and/or replacement in future years **[See reference 67]**.

B.62 Based on local context and the supply and demand analysis undertaken by the Indoor Sports Facilities Strategy (2016), there is a need to consider additional provision of sports halls, swimming pools and fitness suites across

Appendix B Review of Plans, Policies and Programmes and Baseline Information

Cambridge and South Cambridgeshire District, as well provision of some other facilities, to meet future demand as a result of population growth. Also, there are some existing facilities in Cambridge to which community access cannot be gained, due to planning conditions [See reference 68].

B.63 The standards set by the National Society of Allotment and Leisure Gardeners recommend that there should be 20 allotment plots per 1,000 households and the 1969 Thorpe report recommends provision of 0.2 hectares per 1,000 population or a minimum of 15 plots per 1,000 households. This would equate to a total provision of 28.68 hectares for South Cambridgeshire. The 2013 study shows that 85.41 hectares are available, which is 56.33 hectares in excess of the area based on recommended provision [See reference 69].

B.64 Across Cambridge City, there are some 743.59 hectares of Protected Open Space on 305 sites, of which 348.35 hectares on 163 sites are publicly accessible. Overall, this equates to approximately 6.2 hectares of Protected Open Space per 1,000 people based on mid-2009 population estimates, of which 2.9 hectares per 1,000 people is publicly accessible. Open spaces are not evenly distributed, with many suburbs experiencing a relative scarcity of open space in comparison with the City Centre and the west of the City.

B.65 Within the City, Protected Open Spaces have been sub-divided into categories, given their main purpose. Table B.2 indicates the amounts of each typology of open space [See reference 70].

Table B.2: Primary Function of open spaces in Cambridge City

Typology	Sites	Total Hectares
Allotments	22	35.87
Amenity Green Space	79	37.81
Cemeteries and Churchyards	13	17.84

Appendix B Review of Plans, Policies and Programmes and Baseline Information

Typology	Sites	Total Hectares
Civic Spaces	4	1.07
Provision for children and young people	28	5.24
Natural and semi-natural green spaces	39	170.29
Parks and gardens	57	257.95
Outdoor Sports Facilities	63	217.52
Total	305	743.59
Total	305	743.59

Crime

B.66 In both Cambridge [See reference 71] and South Cambridgeshire [See reference 72], anti-social behaviour and violent crime are two principal contributors of crime together accounting for just below half of all crimes committed.

Nationally, average crime rates are lower in rural areas than urban areas. For example, in May 2021 there were 1,258 total crimes in Cambridge compared to 615 in South Cambridgeshire. This would suggest that the rural areas of South Cambridgeshire have a lower rate of violence than the more built up areas of Cambridge.

Air and Noise pollution

B.67 Air and noise pollution are issues for the health of residents, workers and students in Cambridge and South Cambridgeshire. There is one Air Quality Management Area (AQMA) within South Cambridgeshire, along the A14 between Bar Hill and Milton, where levels of NO₂ and PM₁₀ exceed the UK and EU air quality standards. The City of Cambridge declared an AQMA in 2004 where levels of (NO₂) exceed the UK air quality standards **[See reference 73]**. High concentrations of NO₂ can act as an irritant causing inflammation of the airways and, by affecting the immune cells in the lungs, can increase susceptibility to respiratory infections. Additionally, high concentrations of PM₁₀ have a close relationship with increased mortality. Noise is a common problem arising from transport, and studies have shown it can have major negative direct and indirect effects on health and well-being, on quality of life and on wildlife. Exposure to noise can increase stress levels, disrupt communications and disturb sleep. There is scope for transport's noise emissions to be reduced, by cutting the number of cars on the road, low-noise road surfacing, noise barriers, and many other measures.

B.68 The Government implemented the Environmental Noise (England) Regulations in 2006. These regulations deem highway authorities (including Cambridgeshire County Council) to be "noisemaking authorities" in agglomerations of more than 100,000 people (such as Cambridge) or on roads which carry more than six million journeys per year (such as the A1, A1(M), A11 and A14, all managed by the Highways Agency **[See reference 74]**). The Councils have commissioned a Noise Assessment which is currently being undertaken.

Key sustainability issues for Greater Cambridge and likely evolution without the Local Plan

- Key issue: The population structure of South Cambridgeshire reflects an ageing population. This has the potential to result in pressure on the capacity of local services and facilities including healthcare and ensuring

Appendix B Review of Plans, Policies and Programmes and Baseline Information

the right type of homes are provided. However, Cambridge has one of the 'youngest' populations in the country which needs different housing and social needs. To accommodate future provision of student accommodation more student rooms will need to be built by 2026.

- Likely evolution: Without the Local Plan it is likely that services and facilities will still be delivered. Population growth and demographic change is accounted for through many policies within the Cambridge Local Plan, including Policies 56 and 73 which support the creation of accessible, high quality, inclusive and safe developments and the provision of new or improved community, sports and leisure facilities. Similarly, within the South Cambridgeshire Local Plan, Policies SC/3 and SC/4 aim to meet community needs and protect village services and facilities. However, it is less likely that provision supported through these policies will be in appropriate locations, or of sufficient quality and quantity to keep pace with demands of particular groups. The Local Plan offers an opportunity to deliver the required services and facilities in a coherent, sustainable manner alongside new development.
- Relevant SA objectives: SA objective 2
- Key issue: Cambridge and South Cambridgeshire are some of the least affordable areas in the country outside of London. House prices in Cambridge are high comparable to the regional and national average and sustained population and employment growth has led to a housing shortage within Cambridge, with high house prices and low levels of housing affordability.
- Likely evolution: Without the Local Plan it is likely that house prices will continue to be an issue across Greater Cambridge. Policy 45 in the Cambridge Local Plan seeks to address the amount of affordable housing for each residential development. Policy H/10 of the South Cambridgeshire Local Plan aims to do the same. However, the Local Plan offers the opportunity to facilitate and expedite the delivery of affordable housing and private market accommodation which will also help to meet the needs of more specialist groups including older people. The new Local Plan presents the opportunity to consider

Appendix B Review of Plans, Policies and Programmes and Baseline Information

supporting the provision of a more appropriate mix of new homes to meet the requirements of local families.

- Relevant SA objectives: SA objective 1
- Key issue: Overall, Greater Cambridge is not a deprived area. However, there are disparities between the least and the most deprived areas in Greater Cambridge. Two wards within Cambridge are within 20% of the most deprived in the UK.
- Likely evolution: Without the Local Plan there is potential for issues of disparity to become more apparent in Greater Cambridge. Policies 45, 46 and 51 of the Cambridge Local Plan and Policy H/10 of the South Cambridgeshire Local Plan seek to address the issue of access to housing, including student housing, within Greater Cambridge, while Policies 72 and 73 of the Cambridge Local Plan and Policies HQ/1, SC/3 and SC/4 of the South Cambridgeshire Local Plan seek to support the provision of services and facilities, through high quality design, which are likely to help address improve living standards in Greater Cambridge. These policies would continue to apply in the absence of the Local Plan. However, the new Local Plan presents the opportunity to build on these policies to ensure that indicators of disparity such as access to housing, income deprivation, health deprivation, employment deprivation, living environment deprivation and education skills deprivation are appropriately addressed. This approach will also allow for changing circumstances in Greater Cambridge to be more appropriately addressed.
- Relevant SA objectives: SA objective 1
- Key issue: Health in Greater Cambridge is generally recorded as being at reasonably good level or higher. However, there are inequalities displayed between the most and least deprived areas of Greater Cambridge in terms of health.
- Likely evolution: The topic of health is intertwined with many policies throughout the current Local Plans of Cambridge and South Cambridgeshire. This includes Policies 5, 56 and 73 from the Cambridge Local Plan and Policies TI/2, HQ/1, SC/3 and SC/4 which seek to encourage active modes of transport, create socially inclusive

Appendix B Review of Plans, Policies and Programmes and Baseline Information

and adaptable environments and provide new or improved community facilities or services. However, without the Local Plan, policies will be less suitable to help prevent the continued inequalities between the most and least deprived areas of Greater Cambridge. The Local Plan presents an opportunity to address health deprivation in Greater Cambridge by supporting the provision of healthcare facilities and other relevant improvements at areas of most need.

- Relevant SA objectives: SA objective 2
- Key issue: The provision of green space varies throughout Greater Cambridge. For example, open spaces are not evenly distributed, with many suburbs experiencing a relative paucity of open space in comparison with the City Centre and the west of the City. A deficiency in recreational or open space provision has been identified in a number of specific areas including provision for informal play space and outdoor sports. There is also potential for new development to result in loss of access to open spaces and elements of green infrastructure as well as impacts upon their quality.
 - Likely evolution: Policies 59 and 67 of the Cambridge Local Plan ensure external spaces are designed as an integral part of new developments and that open space will not be lost or harmed by new development. Within the South Cambridgeshire Local Plan, Policy SC/1 outlines sites which are to be allocated to meet local need for open space. However, without the Local Plan there is potential that the quality of open spaces will deteriorate and access to these types of provisions in certain areas will remain limited. The Local Plan offers the opportunity to better address the changing circumstances in the plan area by ensuring the protection and enhancement of access to and quality of open space and services and facilities. The process will also allow for new local green spaces to be planned and incorporated alongside new development.
- Relevant SA objectives: SA objective 3
- Key issue: In general, Greater Cambridge is a relatively safe sub-region in which to live. In recent years however certain types of crime such as

Appendix B Review of Plans, Policies and Programmes and Baseline Information

violent crime, anti-social behaviour and illegal drug use have increased in Greater Cambridge.

- Likely evolution: Policy 56 of the Cambridge Local Plan and Policy HQ/1 of South Cambridgeshire's Local Plan set out design principles for new development in Greater Cambridge and these include the incorporation of measures to reduce opportunities for crime. The Local Plan presents an opportunity to build on the requirement of these policies to encourage aims to make the local environment and streets safer, for example through relevant approaches to 'designing out' crime. Any new policy would make a contribution to achieving this aim alongside other local and national measures.
- Relevant SA objectives: SA objective 4
- Key issue: Greater Cambridge has two AQMAs, one within South Cambridgeshire alongside the A14 and the other covering the entire city centre area of Cambridge. Residents of existing and any new nearby development could experience adverse health effects associated with air pollution, and also noise, which may be worsened by increasing levels of traffic.
- Likely evolution: Policy 36 in the Cambridge Local Plan and Policy SC/12 in the South Cambridgeshire Local Plan seek to minimise air pollution, especially within the AQMA, and protect air quality as well as promoting sustainable transport in the District. Without the Local Plan, development may be located in less sustainable locations that increase reliance on car use, which is likely to increase air pollution. Recent national policies and the emergence of new technologies are likely to improve air quality, for example, through cleaner fuels/energy sources. Nonetheless, the Local Plan provides an opportunity to contribute to improved air quality in Greater Cambridge through the sustainable siting of development to avoid the adverse impacts of air pollution, and the promotion of alternative travel modes to the motorised vehicle, in line with national policy aspirations.
- Relevant SA objectives: SA objective 13

Economy

Policy Context

International

B.1 There are no specific international or European economic policy agreements relevant to the preparation of the Local Plan and the SA, although there are a large number of trading agreements, regulations and standards that set down the basis of trade within the European Union and with other nations.

National

B.2 National Planning Policy Framework (NPPF) [See reference 75] sets out the following:

- The economic role of the planning system is to contribute towards building a “strong, responsive and competitive economy” by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation. There is also a requirement for the planning system to identify and coordinate the provision of infrastructure.
- Planning policies should address the specific locational requirements of different sectors.
- Local planning authorities should incorporate planning policies which “support the role that town centres play at the heart of local communities, by taking a positive approach to their growth, management and adaptation”.
- When considering edge of centre and out of centre proposals, preference should be given to accessible sites which are well connected to the town centre. Sustainable growth and expansion of all types of business and

Appendix B Review of Plans, Policies and Programmes and Baseline Information

enterprise in rural areas should be supported, both through conversion of existing buildings and well-designed new buildings.

- The NPPF requires Local Plans to “set out a clear economic vision and strategy which positively and proactively encourages sustainable economic growth, having regard to Local Industrial Strategies and other local policies for economic development and regeneration.”

B.3 National Planning Practice Guidance (PPG) [See reference 76]:

Reiterates the importance for Local Plans to include a positive strategy for town centres to enable sustainable economic growth and provide a wide range of social and environmental benefits.

B.4 The Local Growth White Paper (2010) [See reference 77]: Highlights the importance of economic policy that focusses on the delivery of strong, sustainable and balanced growth of income and employment over the long-term, growth which is broad-based industrially and geographically to provide equality of access and opportunity and build businesses that are competitive internationally.

B.5 Rural White Paper (2000) (Our Countryside: the future – A fair deal for rural England) [See reference 78]: Sets out the Government’s Rural Policy Objectives:

- To facilitate the development of dynamic, competitive and sustainable economies in the countryside, tackling poverty in rural areas.
- To maintain and stimulate communities, and secure access to services which is equitable in all the circumstances, for those who live or work in the countryside.
- To conserve and enhance rural landscapes and the diversity and abundance of wildlife (including the habitats on which it depends).
- To promote government responsiveness to rural communities through better working together between central departments, local government, and government agencies and better co-operation with non-government bodies.

B.6 LEP Network Response to the Industrial Strategy Green Paper

Consultation (2017) [See reference 79]: The aim of the document is to ensure that all relevant local action and investment is used in a way that maximises the impact it has across the Government's strategy. Consultation responses set out how the 38 Local Enterprise Partnerships (LEPs) will work with Government using existing and additional resources to develop and implement a long term Industrial Strategy.

Sub-national

B.7 Cambridgeshire and Peterborough Local Industrial Strategy (2019):

Sets out a summary of the wider economic context and identifies priorities that work across the three other local industrial strategies, including the Oxford-Cambridge Arc ('the Arc'). These include:

- Working together collaboratively across all of the foundations of productivity to ensure that the implementation of the four Local Industrial Strategies maximises the economic potential of the wider Arc region.
- Harnessing the collective strength of the Arc's research base – driving greater collaboration on science and research; developing a network of 'living labs' to trial and commercialise new technologies; and growing the role of the Arc as a global research and innovation hub.
- Bringing employers and skills providers together to understand the current and future skills needs, and planning provision to meet them.
- Maximising the economic benefits of new transport, energy and digital infrastructure within the Arc.
- Developing an improved business support and finance programme for high growth companies, a shared approach to commercial premises and an Internationalisation Delivery Plan to encourage greater trade and inward investment in the Arc.

B.8 Combined Authority Business Plan 2019-2020 [See reference 80]: Aims to create a clear, deliverable and fundable set of priorities and schemes which feeds the growth strategy for the combined authority.

B.9 Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc (2017) [See reference 81]: Provides Government with proposals and options to maximise the potential of the Cambridge-Milton Keynes-Oxford Arc as a connected, knowledge-intensive cluster that competes on a global stage, protecting the area's high quality environment, and securing the homes and jobs that the area needs.

B.10 Cambridge Norwich Tech Corridor: Vision and Spatial Strategy Report (2020) [See reference 82]: sets out a vision for the Corridor 'to be internationally recognised as a top-tier destination for technology firms looking to establish, grow and cluster, for highly skilled workers looking for a rewarding career with a strong purpose and rich quality of life, and for businesses and investors seeking the next high-value sustainable opportunity'. The document also includes a spatial strategy, identifying key locations for growth and development in the corridor. The Tech corridor is a partnership between the New Anglia LEP as well as a range of public sector partners, district and county councils, and numerous other stakeholders to include businesses and research institutions.

B.11 Findings and recommendations of the London Stanstead Cambridge Corridor Growth Commission (2016) [See reference 83]: set out a 20 year ambition to become a competitive global tech and life sciences region and five priorities to support this, including supporting infrastructure, housing and place-making, building talent and building on existing assets.

B.12 Cambridge Cluster at 50, The Cambridge economy retrospect and prospect (2011) [See reference 84]: Aims to:

- Better understand the performance of the Cambridge economy currently (including the impacts of recession), and the factors that underpin and explain this.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Understand long term opportunities and threats for the economy of Cambridge, taking into account changes in government policy and also the different aspirations of new generations of Cambridge-based businesses and residents.
- Understand the potential synergies and conflicts that exist in relation to Cambridge's different economic roles, both now and looking forward.
- Examine the constraints to economic growth – infrastructural, workforce-related, spatial, attitudinal, and institutional – and to distil what might be done to address these.
- Understand – in broad terms – the spatial implications of the above.

B.13 Cambridgeshire & Peterborough Independent Economic Review

(2018) [See reference 85]: Provides an overview of the Cambridgeshire and Peterborough Combined Authority area and includes 14 key recommendations and another 13 subsidiary recommendations for how the combined authority can sustain its own economy and support the UK economy.

B.14 Cambridge Retail and Leisure Study Update (2013) [See reference

86]: Reviews the quality of existing provision and the need for additional retail floor space and leisure uses in Cambridge.

B.15 Cambridge City Centre Capacity Study (2013) [See reference 87]:

Examines the capacity of Cambridge city centre to meet the needs of the district and the wider sub-region in the period to 2031. The study will form part of the evidence base for the emerging Local Plan. The objectives of the study are:

- To review the current uses in and functionality of the city centre.
- To explore the existing and future proposed growth of the city and the surrounding sub-region.
- To consider how the city can accommodate the growth without compromising the environment.
- To identify physical opportunities to increase the capacity of the city centre, in terms of development sites.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- To review the boundary of the city centre, as defined in the adopted Local Plan, to assess whether there is a need for revision.
- To define the primary and secondary retail frontages and primary shopping area.
- To assess the potential for alternative management of uses to free up potential capacity.
- To identify potential transport schemes and public realm improvements, which may increase the capacity of the city centre.

Current Baseline

B.16 The city of Cambridge is an acknowledged world leader in higher education, research and knowledge based industries. Biotechnology, health services and other specialist services also play a major role within the local economy, known as the ‘Cambridge Phenomenon’. In 2010, the City had 18,771 jobs within 528 high technology firms. By 2012, employment levels had increased to 19,705 but the numbers of firms had reduced to 465. The economy of the South Cambridgeshire District is also driven by the ‘Cambridge Phenomenon’ due to its proximity to Cambridge University and Addenbrooke’s Hospital. In 2010, South Cambridgeshire had 21,088 jobs within 592 high technology firms, although by 2012 this had decreased slightly to 20,825 jobs in 534 firms [See reference 88]. More recent data using a different methodology and definitions suggests that since 2012, business and employment in the ‘Knowledge Intensive’ sectors in Greater Cambridge has increased at a fast rate [See reference 89].

B.17 Cambridge’s skilled workforce and culture of innovation attract both talent and investment from around the world. AstraZeneca, the pharmaceutical company, opened its global R&D and HQ at the Cambridge Biomedical Campus in 2018, creating up to 2,000 new jobs. Combining biomedical research, patient care and education on a single site, the Campus hosts an emerging cluster of biotech and life sciences firms [See reference 90].

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.18 South Cambridgeshire has a range of business and research parks including Cambridge Science Park, Granta Park, and the Babraham Institute. There are a significantly higher proportion of micro businesses than regionally or nationally with 86% of businesses employing fewer than 10 people. In addition, there is a significant agricultural sector with many farms diversifying into other sectors, particularly tourism [\[See reference 91\]](#). Figure B.4 shows the location of key employment areas within Greater Cambridge.

B.19 Currently, education makes up the largest industry within the city of Cambridge with 22.7% of the working population employed in this sector. The next largest industries are human health and social work activities with 16.4% and professional, scientific and technical activities also at 16.4% [\[See reference 92\]](#). However, in South Cambridgeshire professional, scientific and technical activities make up the largest industry with 26.4% of the working population employed in this sector. The next largest industries are manufacturing with 12.6% and human health and social work activities with 8% [\[See reference 93\]](#).

B.20 In terms of occupation, professional occupation workers are the largest employment group for South Cambridgeshire (37.3%) followed by managers, directors and senior officials (11.6%). In the city of Cambridge 45.0% of workers are within professional occupations followed by associate professional & technical (17.8%) [\[See reference 94\]](#).

B.21 Cambridge provides approximately 110,300 employee jobs, of which approximately 76,000 (69.1%) are full-time and 34,000 are part-time (30.9%). The source of full-time employment is split between the public sector providing 14,300 jobs (20%) of the total and the private sector providing 56,000 jobs (80%). The other 33,000 part-time jobs are split between the public sector providing 5,200 jobs (16%) of the total and the private sector providing 27,800 jobs (84%). Employee jobs exclude self-employed, Government-supported trainees and HM Forces. South Cambridgeshire provides 87,000 employee jobs, of which approximately 65,000 (74.7%) are full-time and 22,000 are part-time (25.3%). The ongoing economic impacts from the Covid-19 pandemic will likely impact the number of jobs within the District [\[See reference 95\]](#).

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.22 Of the 10 local authorities surrounding Cambridge, there are a higher proportion of persons commuting into (51,299 persons) Cambridge than persons commuting out (16,388 persons). Overall, commuting results in a workday population increase of 34,911 in Cambridge compared to the resident population. South Cambridgeshire has the highest proportion of workers commuting into (23,367 persons) Cambridge and the highest proportion of workers from Cambridge commute to South Cambridgeshire (8,272 persons) compared to the other areas persons commute to, such as the City of London (1,018 persons). With regard to South Cambridgeshire, 4,718 more people commute out of the district to work than commute in, with 23,367 persons commuting to Cambridge, as stated above, and with 1,112 persons who commute to the City of London [\[See reference 96\]](#). These figures are likely to have reduced drastically since the onset of the Covid-19 pandemic, where those who were able to work from home were encouraged to do so, but may increase again in the longer term.

B.23 The proportion of commuting trips originating from outside the city is significantly greater for the 'fringe' employment sites, such as the Science Park and Biomedical Campus, where future growth is expected to be focused. 59% of trips to the Science Park originate from outside of Cambridge City, with 29% from outside Cambridge and South Cambridgeshire; similarly, 46% and 17% of trips to south east Cambridge (including the Biomedical Campus) originate from outside Cambridge City and South Cambridgeshire respectively [\[See reference 97\]](#).

B.24 Prior to the Covid-19 pandemic, Cambridge city had a low unemployment rate of 2.9% (compared to the national average of 3.4%). This has increased since March 2020, with unemployment standing at 4.1% (compared to the national average of 4.6%) [\[See reference 98\]](#). In comparison, South Cambridgeshire has a higher unemployment rate of 3.4%, however as with Cambridge city, this is lower than the national average of 4.6% [\[See reference 99\]](#).

B.25 The Oxford-Cambridge Arc (the Arc) is home to 3.7 million people and currently supports over 2 million jobs, contributing £111 billion of annual Gross Value Added (GVA) to the UK economy per year. The area between Oxford and

Appendix B Review of Plans, Policies and Programmes and Baseline Information

Cambridge, incorporating the ceremonial county areas of Oxfordshire, Buckinghamshire, Bedfordshire, Northamptonshire and Cambridgeshire forms a core spine that the Government has labelled the Oxford-Cambridge Arc. There are also vital links beyond the Arc. For example, there are important connections with the Midlands, with the M4 corridor and Heathrow Airport, with London and the Greater South East, and with the rest of East Anglia.

B.26 In 2019 the Ministry of Housing, Communities and Local Government published a report on the Government's ambitions and joint declaration between Government and local partners for the Oxford-Cambridge Arc. The report illustrates that productivity in the Arc as a whole is around 2.55% higher than the UK average. In addition, the Arc's economy appears to be more resilient than the national average, with 2.5 percentage point growth in GVA per head between 2009 and 2010, compared to 1.7 percentage points in England and Wales as whole [\[See reference 100\]](#).

B.27 The Cambridge Norwich Tech Corridor is a partnership between the New Anglia LEP as well as a range of public sector partners, district and county councils, and numerous other stakeholders, including businesses and research institutions. It seeks to bring together these stakeholders to grow technology businesses in the area and promote the area as a world-class destination for technology businesses and investment. Cambridge is identified as a key cluster within the corridor, and the corridor's spatial strategy focuses on improving affordability of housing to support sustainable growth here [\[See reference 101\]](#).

B.28 The London Stanstead Cambridge Corridor is driven by the London Stanstead Cambridge Growth Commission. The Commission was established as an independent initiative by the London Stanstead Cambridge Consortium, a partnership of public and private organisations covering the area north of Tech City, the City Fringe, Kings Cross, and the Olympic Park, up through the Lee Valley and M11/A10, and West Anglia Rail corridors to Harlow and Stansted, and through to Cambridge. The partnership was formed to organise and promote what is a clear economic area, with strong inter-connections; commuting to work and learn patterns, clusters of industries and supply chains. The area is home to strong business clusters, ranging from high-tech digital and bio-medical to logistical, resource recovery and food manufacturing. The

Appendix B Review of Plans, Policies and Programmes and Baseline Information

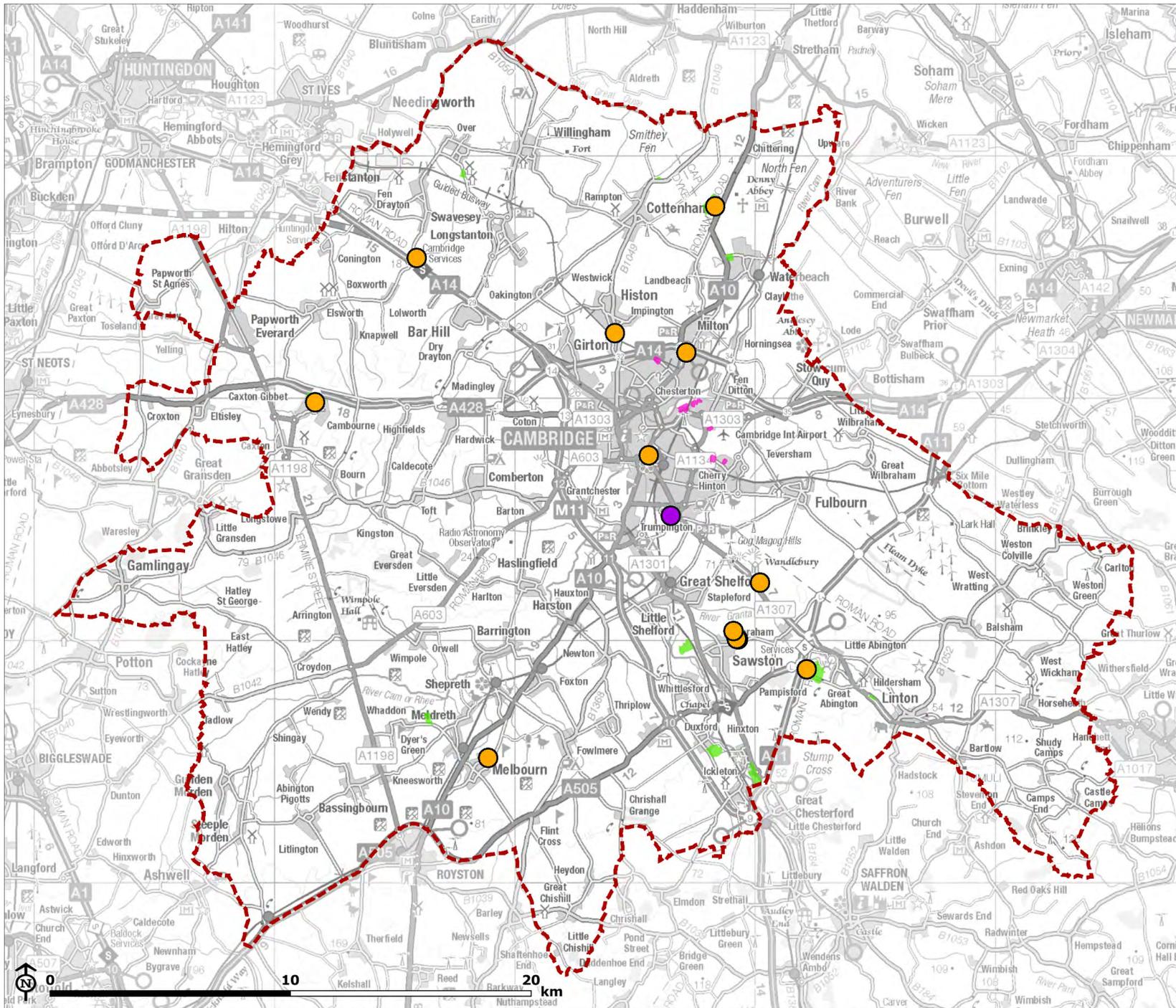
consortium's focus is to promote the economic development of the area, unlocking the potential of this successful but under developed area, without compromising the existing quality of life [See reference 102]. The final report of the Growth Commission highlighted that the area is already a strong leader in the UK for ideas, innovation and entrepreneurship and will continue to grow, with a focus on technology and life sciences. However, the corridor is currently falling behind in terms of quality of place, infrastructure, scaling up businesses and workforce skills. In light of this, the report sets out a vision and delivery plan to become a competitive global tech and life sciences region by 2036 [See reference 103].

B.29 The UK left the European Union on the 31st January 2020. It is still uncertain what effect this will have on the Greater Cambridge economy, particularly given its world-renowned status within the education, research and knowledge based industries.

Greater Cambridge SA

Figure B.4: Key Employment Areas within Greater Cambridge

-  Greater Cambridge
-  Addenbrooke's Hospital
-  Business/Science Park
-  Established Employment Area
-  Protected Industrial Site



Source: CCC, SCDC

Map Scale @ A4: 1:225,000



Key sustainability issues for Greater Cambridge and likely evolution without the Local Plan

- Key issues: Cambridge needs to ensure that it is able to continue its vital role as a world class centre for higher education, research and knowledge based industries as the regional, national and global economies rely on it.
- Likely evolution: It is uncertain how the knowledge based industries will change without the implementation of the Local Plan and some degree of change is inevitable, particularly given the uncertainties posed by Brexit. However, the Local Plan offers the opportunity to create and safeguard jobs through the allocation and promotion of employment generating uses including office and industrial spaces. Policy 43 of the Cambridge Local Plan aims to support the development or redevelopment of faculty, research and administrative sites for the University of Cambridge and Anglia Ruskin University.
- Relevant SA objectives: SA objective 14
- Key issues: Greater Cambridge needs to ensure a future supply of jobs and continued investment to ensure identified employment development opportunities are taken forward and deprivation issues tackled. Although the main focus of employment is in Cambridge, there is a need to ensure a diverse range of employment opportunities are available across Greater Cambridge, for example, in the smaller settlements. Within Cambridge, despite the focus on higher education, research and knowledge based industries, there is a need for a variety of employment opportunities, both skilled and lower-skilled across a range of economic sectors.
- Likely evolution: It is uncertain how the job market will change without the implementation of the Local Plan and some degree of change is inevitable, particularly given the uncertainties posed by Brexit. However, the Local Plan offers the opportunity to create and safeguard jobs through the allocation and promotion of employment generating uses including office and industrial spaces and the promotion of the rural economy, as well as promoting access and opportunity for all. Policies 40, 41 and 42 of Cambridge Local Plan sets out how the Council will support and improve the economy of the city. Policy 77

supports the development of new visitor accommodation and will help retain the economic benefits of the visitor/tourism sector within the local economy by providing service related jobs. The South Cambridgeshire Local Plan also contains Policies E/18, E/19 which aim to support the agricultural and tourism sectors.

- Relevant SA objectives: SA objective 15
- Key issues: Significant development is planned within the realm of the Oxford-Cambridge Arc with the role of Cambridge acting as a key component. However, this development must be done sustainably to ensure the long term success of the area.
- Likely evolution: As Cambridge is amongst the UK's most productive, successful and fast growing cities, it is likely the Arc will affect the local economy without the implementation of the Local Plan, however there is some degree of uncertainty, particularly given the uncertainties posed by Brexit. However, the Local Plan offers the opportunity to help shape the Arc to create the necessary infrastructure, from public transport to housing, in the most sustainable way.
- Relevant SA objectives: SA objective 14

Transport and Air Quality

Policy Context

International

B.1 The Trans-European Networks (TEN): Created by the European Union by Articles 154-156 of the Treaty of Rome (1957), with the stated goals of the creation of an internal market and the reinforcement of economic and social cohesion. These include the Trans-European Transport Networks (TEN-T),

Appendix B Review of Plans, Policies and Programmes and Baseline Information

which includes High Speed 1, and the Trans-European Telecommunications Networks (eTEN).

National

B.2 National Planning Policy Framework (NPPF) [See reference 104]:

Encourages local planning authorities to consider transport issues from the earliest stages of plan making so that: opportunities to promote sustainable transport are identified and pursued; the environmental impacts of traffic and transport infrastructure can be identified and assessed; and opportunities from existing or proposed transport infrastructure and changing transport technology and usage are realised. The framework also states that the planning system should actively manage growth patterns in support of these objectives.

B.3 National Planning Practice Guidance (PPG) [See reference 105]:

Reiterates the requirement for local planning authorities to undertake an assessment of the transport implications of reviewing their Local Plan.

B.4 The Air Quality Strategy for England, Scotland, Wales and Northern

Ireland (2011) [See reference 106]: Sets out a way forward for work and planning on air quality issues by setting out the air quality standards and objectives to be achieved. It introduces a new policy framework for tackling fine particles, and identifies potential new national policy measures which modelling indicates could give further health benefits and move closer towards meeting the Strategy's objectives. The objectives of the Strategy are to:

- Further improve air quality in the UK from today and long term.
- Provide benefits to health quality of life and the environment.

B.5 Department for Transport, The Road to Zero (2018): [See reference

107]: Sets out new measures towards cleaner road transport, aiming to put the UK at the forefront of the design and manufacturing of zero emission vehicles. It explains how cleaner air, a better environment, zero emission vehicles and a

Appendix B Review of Plans, Policies and Programmes and Baseline Information

strong, clean economy will be achieved. One of the main aims of the document is for all new cars and vans to be effectively zero emission by 2040.

B.6 A Green Future: Our 25 Year Plan to Improve the Environment (2018)

[See reference 108]: Sets out goals for improving the environment within the next 25 years. It details how the Government will work with communities and businesses to leave the environment in a better state than it is presently. Identifies six key areas around which action will be focused. The area of relevance to this chapter is: increasing resource efficiency, and reducing pollution and waste. Actions that will be taken as part of this key areas are as follows:

- Increasing resource efficiency and reducing pollution and waste:
 - f) Reduce pollution by tackling air pollution in our Clean Air Strategy and reduce the impact of chemicals.

B.7 UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations

(2017) [See reference 109]: Sets out the Government's ambition and actions for delivering a better environment and cleaner air, including £1 billion investment in ultra-low emission vehicles (ULEVs), a £290 million National Productivity Investment Fund, a £11 million Air Quality Grant Fund and £255 million Implementation Fund to help local authorities to prepare Air Quality Action Plans and improve air quality, an £89 million Green Bus Fund, £1.2 billion Cycling and Walking Investment Strategy and £100 million to help improve air quality on the National road network.

B.8 Clean Air Strategy (2019) [See reference 110]: Sets out the comprehensive action that is required from across all parts of government and society to meet these goals. This will be underpinned by new England-wide powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to take action in areas with an air pollution problem. These will support the creation of Clean Air Zones to lower emissions from all sources of air pollution, backed up with clear enforcement mechanisms. The UK has set stringent targets to cut emissions by 2020 and 2030.

Sub-national

B.9 Local Transport Plan (2020) [See reference 111]: The Local Transport Plan sets out the vision, goals and objectives that define how transport will support the Cambridgeshire & Peterborough Combined Authority's Growth Ambition. The Plan seeks to:

- Support new housing and development to accommodate a growing population and workforce, and address housing affordability issues.
- Connect all new and existing communities sustainably so all residents can easily access a good job within 30 minutes by public transport, spreading the region's prosperity.
- Ensure all of the region's businesses and tourist attractions are connected sustainably to our main transport hubs, ports and airports.
- Build a transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability.
- Embed a safe systems approach into all planning and transport operations to achieve Vision Zero— zero fatalities or serious injuries.
- Promote social inclusion through the provision of a sustainable transport network that is affordable and accessible for all.
- Provide 'healthy streets' and high quality public realm that puts people first and promotes active lifestyles.
- Ensure transport initiatives improve air quality across the region to exceed good practice standards.
- Deliver a transport network that protects and enhances the natural, historic and built environments.
- Reduce emissions to 'net zero' by 2050 to minimise the impact of transport and travel on climate change.

B.10 Cambridgeshire Transport Investment Plan (2021) [See reference 112]: Sets out the transport infrastructure, services and initiatives that are required to support the growth of Cambridgeshire.

B.11 Cambridge City Council and South Cambridgeshire District Council Infrastructure Delivery Study (2015) [See reference 113]: Assessed the infrastructure requirements, costs and known funding related to planned growth, particularly the strategic sites, and identified any phasing issues that might have affected the proposed growth and advise on the future delivery of infrastructure needed to support the planned growth. An updated Infrastructure Delivery Plan is being prepared for the emerging Greater Cambridge Local Plan.

B.12 Air Quality Action Plan for the Cambridgeshire Growth Areas (2009) [See reference 114]: Reviewed all of the existing air quality information across the regions, identified the key causes in each management area and assessed the necessary actions needed to improve pollutant levels in those areas.

B.13 Cambridge City Council Air Quality Action Plan 2018-2023 (2019 update) [See reference 115]: Sets out Cambridge City Council's priority actions for improving areas of poor air quality in the city and maintaining a good level of air quality in a growing city.

B.14 Air Quality Action Plan for the Cambridgeshire Growth Areas (2009) [See reference 116]: Reviewed all of the existing air quality information across the regions, identified the key causes in each management area and assessed the necessary actions needed to improve pollutant levels in those areas.

B.15 Cambridge City Council 'Greening Your Home' [See reference 117]: Provides information on how individuals can change their lifestyles to become more environmentally sustainable including saving energy and water, using sustainable transport, eating sustainable food and greening gardens.

Current Baseline

Connections and Infrastructure

B.16 Cambridge has direct infrastructure links to the A14 and M11, providing easy access to London and the Eastern port of Felixstowe. A short distance along the A14 leads to the A1, one of the major road networks linking the north and south of the country. Access to London by rail takes approximately 50 minutes from Cambridge. As shown in Figure B.5, Cambridge has two railway stations, including the Cambridge North station, which opened in 2017 and is on the Fen Line running from Cambridge to King's Lynn. It connects to the Cambridgeshire Guided Busway, and provides an interchange with Park & Ride and local bus services. Cambridge is also within an hour drive of the international airports of Stansted and Luton and less than two hours from Gatwick, East Midlands and Birmingham Airports. Cambridge also houses its own International Airport which is privately owned. The nearest major ports to Cambridge are Felixstowe (which is directly linked to Cambridge via the A14 road network), Great Yarmouth, Lowestoft, Ipswich and Harwich in Essex. Smaller ports such as Wisbech and King's Lynn are about 40 miles away.

B.17 As a small city, Cambridge suffers from a number of serious local transport problems, particularly in relation to traffic congestion on radial routes and in respect of public transport capacity in the city centre. Both the highway and bus networks suffer from limited capacity, which is unlikely to be able to cater for significant increases in traffic volumes without worsening congestion or lengthening journey times. Chronic congestion is already commonplace within the city, with common journeys – such as the City Centre to Cambridge Station – often faster on foot than by car or bus. Traffic congestion is expected to worsen in future without investment, which limits accessibility, worsens air quality and fundamentally undermines quality of life **[See reference 118]**.

B.18 In order to support the planned growth in Greater Cambridge, the Greater Cambridge Partnership (GCP) was established. It is the local delivery body for a City Deal agreed with central Government, bringing powers and investment (up

Appendix B Review of Plans, Policies and Programmes and Baseline Information

to £1 billion over 15 years) for vital improvements to social and transport infrastructure [See reference 119]. This includes investment in major strategic transport infrastructure including the North Cambridge train station (Cambridge Science Park), the A14 Cambridge to Huntingdon improvement by 2019 and a number of other high profile schemes [See reference 120]. Within Cambridgeshire, several new mass transit links are currently under development by the Greater Cambridge Partnership including, but not limited to, rural travel hubs (bespoke rural transport interchanges) currently being piloted in South Cambridgeshire, to better connect residents with public transport and cycling/walking routes with the aim of reducing private car journeys into Cambridge from rural villages [See reference 121].

B.19 The Transport Strategy for Cambridge and South Cambridgeshire [See reference 122] includes major investment in demand management and bus priority measures, aimed at giving the bus a competitive advantage on all major corridors into the city, and when making orbital movements around Cambridge. The opening of The Busway has improved the quality of the public transport network between Huntingdon, St. Ives and Cambridge and decreased traffic congestion on the A14. Bus patronage in Cambridgeshire increased by 61% between 2001 and 2008, with a 100% increase in Cambridge. Between 2011/12 and 2012/2013 an additional 209,113 passenger journeys were made across Busway and Park & Ride services. Additionally, a dedicated cycle route has been built alongside The Busway between St Ives and north Cambridge, and is part of the National Cycle Network Route 51. This route provides a high quality direct link from St Ives and the villages along the route into Cambridge and vice versa [See reference 123]. Some of the key aspects of the Cambridgeshire and Peterborough Combined Authority Local Transport Plan (2020) include the Cambridgeshire Autonomous Metro (CAM) a new 'metro-style' system connecting the city of Cambridge with the surrounding region with high-frequency services unaffected by traffic congestion [See reference 124], a comprehensive, high quality Dutch-standard walking and cycling infrastructure, better bus services, improvements to the rail network, including a new Cambridge South railway station, and highway demand management [See reference 125].

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.20 When considering carbon emissions, transport is responsible for 27.3% of emissions in the UK, but only 13.8% of emissions in Cambridge. This could be in part due to relatively high usage of sustainable modes of transport amongst Cambridge residents. For example, a significant proportion of the City's population already cycle regularly, with the 2011 Census data confirming that 31.9% of residents in the city cycle to work, the highest proportion in the UK. In South Cambridgeshire, the percentage of people cycling to work is 7.6% which is the highest level of cycling in any rural district in England [\[See reference 126\]](#). Nevertheless, travel to work by sustainable modes of transport (public transport, walking and cycling) is much higher within Cambridge city (at around 58% of those in employment), than within South Cambridgeshire (at around 26% of those in employment) [\[See reference 127\]](#).

B.21 There are currently 12 Greenways routes within Greater Cambridge which are important corridors for both wildlife and people. In 2016, a report was produced containing recommendations for Greenways which, when implemented, should increase levels of cycling and walking and be of benefit to as many as possible. The Greenways project is aiming to establish a high quality network of the 12 separate routes. There is particular emphasis on commuting into Cambridge, from within Greater Cambridge in order to reduce traffic congestion as the city grows, and to improve the health of the population. A successful Greenways Network around Cambridge is likely to be a key part of the future success of the Greater Cambridge area [\[See reference 128\]](#).

B.22 Rural areas often see lower cycle and pedestrian trip rates than Cambridge and the market towns, due to the larger distances that typically need to be covered, although South Cambridgeshire has the highest levels of out commuting of any rural district in the County. Roads in rural areas are often less suitable for cycling because traffic speeds are high and space on the carriageway is limited. Large vehicles and poor visibility at bends can also create an environment which is not safe for cyclists, making it very difficult to travel sustainably to villages or towns that may actually be very close and often well within the acceptable distance for cycle trips or walking. It is therefore acknowledged that the potential to induce modal shift towards foot and bicycle is not as high as in urban areas, however, if suitable facilities and continuous routes are provided there are a large number of short trips that could be

Appendix B Review of Plans, Policies and Programmes and Baseline Information

transferred. To help encourage more people to cycle in rural areas the LTP3 for Cambridgeshire aims to investigate cycle and pedestrian links between villages, places of employment, schools and other local services. Using Cycle City Ambition Funding the County Council has started to make improvements in cycle / footway links in South Cambridgeshire, linking villages with rail stations, schools and employment sites. New high quality off road cycle/pedestrian paths have recently been constructed alongside the A10 at Shepreth, linking several villages, schools and places of work, and from Sawston alongside the A505 to Granta Park. This cycleway also links to Whittlesford train station via existing cycle routes. Another example is the extension of the cycleway alongside the A1307 from Wandlebury to the Babraham Research Campus. This route now provides a high quality path from the Babraham Road Park and Ride site to Babraham [\[See reference 129\]](#).

B.23 Limited connectivity across the region also limits opportunities for less prosperous neighbourhoods within Greater Cambridge, and the surrounding region. While Greater Cambridge is one of the UK's most productive and successful regions, it retains pockets of deprivation, with limited labour market opportunities and higher levels of unemployment.

Air Quality

B.24 Poor air quality can lead to a number of health issues. The annual cost of particulate matter alone in the UK is thought to be around £16 billion in terms of health.

B.25 Two main factors cause excessive transport-related pollution within the sub-region: the employment, education and tourist centre of Cambridge; and the prevalence of long-distance freight on the A14 east-west corridor. These factors lead to high numbers of longer than average commutes to and from Cambridge and a very high proportion of heavy goods vehicles on the trunk roads. The resulting congestion on trunk routes and the centres of Cambridge and the surrounding market towns also exacerbates the problems associated with high traffic flows.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.26 As shown in Figure B.6 there are two Air Quality Management Areas (AQMA) within the Greater Cambridge area. One is in South Cambridgeshire, along the A14 between Bar Hill and Milton, where levels of NO₂ and PM₁₀ exceed the UK air quality standards. The other is in the City of Cambridge, which declared an AQMA in 2004 where levels of (NO₂) exceed the UK air quality standards [See reference 130]. High concentrations of NO₂ can act as an irritant causing inflammation of the airways and, by affecting the immune cells in the lungs, can increase susceptibility to respiratory infections. Additionally, high concentrations of PM₁₀ have a close relationship with increased mortality [See reference 131].

B.27 Despite technological improvements in recent years and traffic levels in the County remaining broadly similar over the past decade, PM₁₀ particulate matter and nitrogen dioxide levels have remained high. NO₂ is the main air pollutant of concern in the majority of Cambridgeshire AQMAs, with PM₁₀ a key concern in South Cambridgeshire [See reference 132].

B.28 The Cambridgeshire Health and Wellbeing Board reviewed a Transport and Health Joint Strategic Needs Assessment report in 2014 in which air pollution was considered. Through the Joint Strategic Needs Assessment process, stakeholders identified several options for addressing air pollution in Cambridgeshire such as:

- Lower emission transport fleet (buses and taxis).
- Modal shift from cars to walking and cycling.
- Review and promote the use of means to reduce person exposure in the short term such as Text Alerts to vulnerable people, monitoring indoor air quality.

B.29 The Cambridgeshire and Peterborough Local Transport Plan includes ambitious plans to improve the transport network over the coming 30 years, which are likely to help relieve these issues.

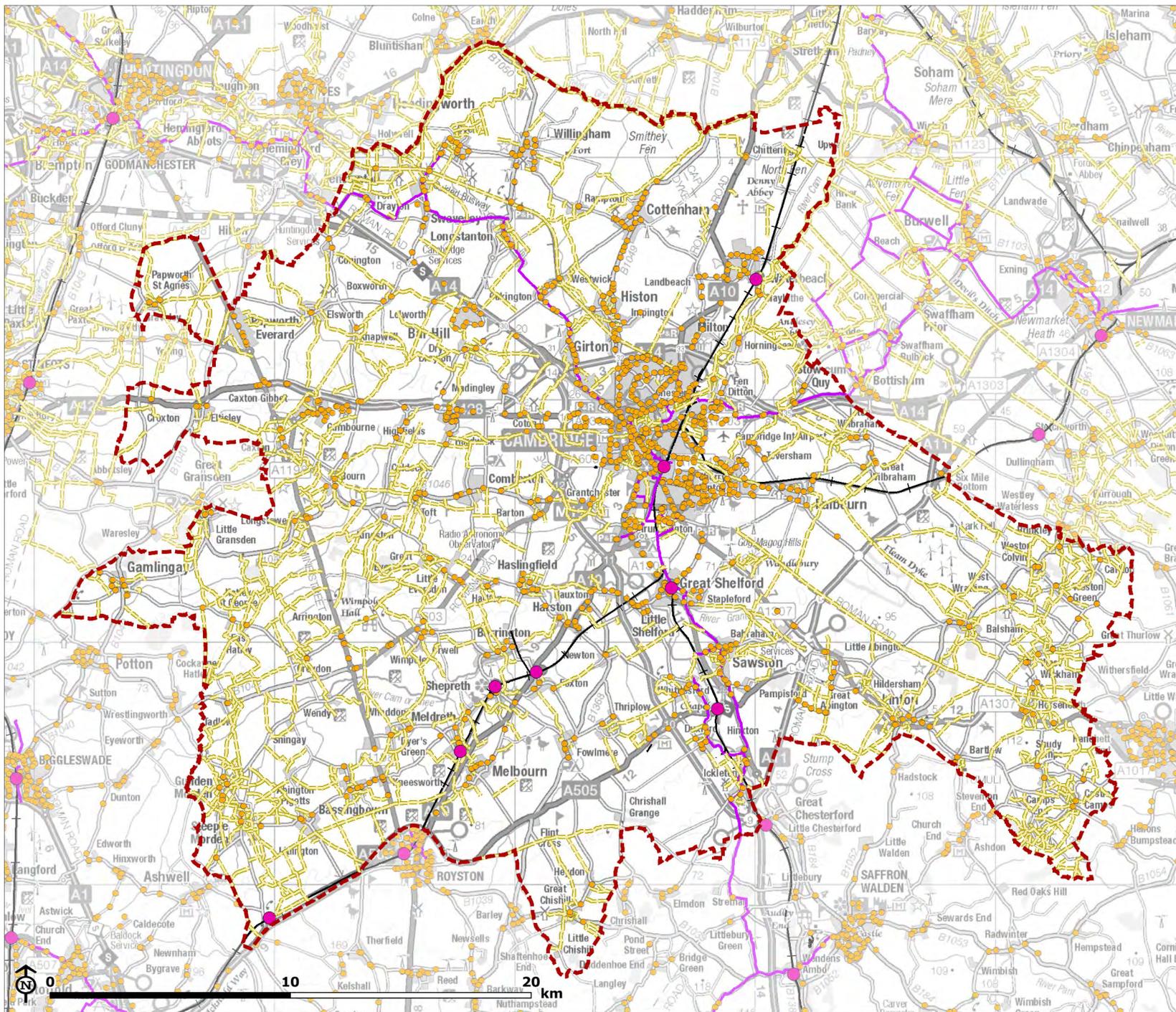
B.30 In addition, the Greater Cambridge Greenways Project involves a high quality network of routes from South Cambridgeshire into Cambridge from some

Appendix B Review of Plans, Policies and Programmes and Baseline Information

of the surrounding towns and villages aiming to increase levels of cycling and walking, in order to reduce traffic congestion as the city grows, as well as to improve the health of its population. The Greater Cambridge Partnership has also launched a study on improving air quality in Cambridge through the creation of a Clean Air Zone. A Clean Air Zone is an area where targeted action is taken to improve air quality, which delivers improved health benefits and supports economic growth. Clean Air Zones are also being considered in a number of UK cities, including Oxford, Nottingham and Leeds [**See reference 133**].

Figure B.5: Sustainable Transport Links in Greater Cambridge

-  Greater Cambridge
-  Railway Station
-  Railway Line
-  Bus Stop
-  National Cycle Route
-  Public Rights of Way



Source: Sustrans, OS, Cambridgeshire County Council, NaPTAN

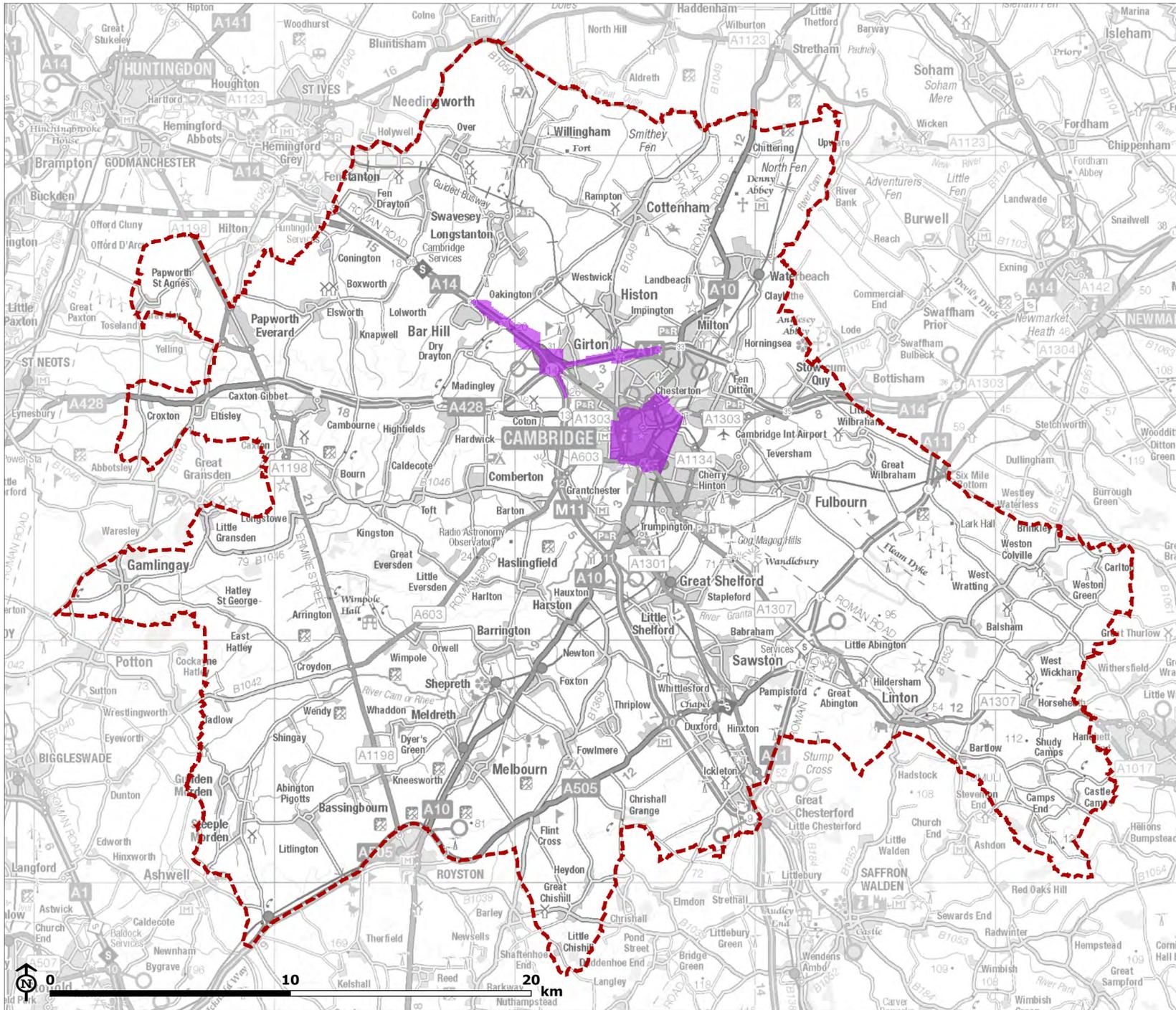
Map Scale @ A4: 1:225,000



Greater Cambridge SA

Figure B.6: Air Quality in Greater Cambridge

- Greater Cambridge
- Air Quality Management Area



Source: CCC, SCDC

Map Scale @ A4: 1:225,000



Key Sustainability Issues for Greater Cambridge and likely evolution without the Local Plan

- Key issues: Both highway and bus networks suffer from limited capacity, which is unlikely to be able to cater for significant increases in traffic volumes without worsening congestion and lengthening journey times.
- Likely evolution: Policy 5 of the Cambridge Local Plan and Policy TI/2 of the South Cambridgeshire Local Plan address the provision of new infrastructure to meet new needs of development and support the aim of achieving an integrated community connected by a sustainable transport system in Greater Cambridge. The emerging Cambridgeshire and Peterborough Local Transport Plan sets out ambitious proposals to improve the public transport network over the coming 30 years, which are likely to help relieve these issues. However, without the Local Plan there is still potential for congestion to continue to be an issue in Greater Cambridge, particularly given that the growing population is likely to exacerbate this issue. The Local Plan presents the opportunity to address this by providing clarity for infrastructure providers and also to strengthen policy to promote the use of alternative modes of transport. It also has the potential to direct new development to the most sustainable locations as to minimise the need to travel by private vehicle on the local network. This approach can be used to complement measures taken by highways authorities to combat congestion on the strategic road network.
- Relevant SA objectives: SA objective 12, SA objective 13
- Key issues: Given the rural character of much of the South Cambridgeshire District a large proportion of the District's residents drive to work and some have limited access to bus services and other public transport links.
- Likely evolution: Policy 5 of the Cambridge Local Plan and Policy TI/2 of the South Cambridgeshire Local Plan supports the aim of achieving an integrated community connected by a sustainable transport system

Appendix B Review of Plans, Policies and Programmes and Baseline Information

in Greater Cambridge. However, the Local Plan presents the opportunity to further address the issue of car dependency especially within South Cambridgeshire. This can be achieved by promoting sustainable and active transport (based on sufficient population densities), sustainable development locations, and integrating new and more sustainable technologies, as new development is to be provided in Greater Cambridge.

- Relevant SA objectives: SA objective 12, SA objective 13
- Key issues: Greater Cambridge has two AQMAs, one within South Cambridgeshire alongside the A14 and the other covering the entire city centre area of Cambridge. Additional development within Greater Cambridge has the potential to exacerbate air quality issues at AQMAs within Greater Cambridge and could have impacts on AQMAs in neighbouring authorities. Similarly, there is potential for a cumulative impact of development in neighbouring authorities alongside development in Greater Cambridge in terms of air quality at AQMAs in Greater Cambridge.
- Likely evolution: Policy 36 in the Cambridge Local Plan and Policy SC/12 in the South Cambridgeshire Local Plan seek to minimise air pollution, especially within the AQMA, and protect air quality as well as promoting sustainable transport in the District. Without the Local Plan, development may be located in less sustainable locations that increase reliance on car use, which is likely to increase air pollution. Recent national policies and the emergence of new technologies are likely to improve air quality, for example, through cleaner fuels/energy sources. Nonetheless, the Local Plan provides an opportunity to contribute to improved air quality in Greater Cambridge through the sustainable siting of development and the promotion of alternative travel modes to the motorised vehicle, in line with national policy aspirations.
- Relevant SA objectives: SA objective 13

Land and Water Resources

Policy Context

National

B.1 National Planning Policy Framework (NPPF) [See reference 134] sets out the following:

- The planning system should protect and enhance soils in a manner commensurate with their statutory status or quality identified in the development plan.
- New and existing development should be prevented from contributing to, being put at an unacceptable risk from, or being adversely affected by, soil, air, water or noise pollution or land instability.
- Despoiled, degraded, derelict, contaminated and unstable land should be remediated and mitigated where appropriate.
- The effective use of land, by reusing previously developed land is encouraged where suitable opportunities exist.
- Plans should take a proactive approach to mitigating and adapting to climate change and ensuring resilience to climate change impacts, and new development should avoid increased vulnerability to the impacts of climate change.

B.2 National Planning Practice Guidance (PPG) [See reference 135]:

Requires local planning authorities to demonstrate every effort has been made to prioritise the use of poorer quality agricultural land for development where it has been demonstrated that significant development is required on agricultural land. It also requires that plan making considers, among other issues: identifying suitable sites for new or enhanced water infrastructure; assessing whether new development is appropriate near to sites used for water

Appendix B Review of Plans, Policies and Programmes and Baseline Information

infrastructure; and the phasing of new development so that such infrastructure will be in place when and where needed. The impact of water infrastructure on sites designated for biodiversity should also be considered.

B.3 Waste Management Plan for England (2021) [See reference 136]:

Provides an analysis on the current waste management situation in England, and evaluates how it will support implementation of the objectives and provisions of the revised Water Framework Directive.

B.4 National Planning Policy for Waste (NPPW) [See reference 137]:

Identifies key planning objectives, requiring planning authorities to:

- Help deliver sustainable development through driving waste management up the waste hierarchy.
- Ensure waste management is considered alongside other spatial planning concerns
- Provide a framework in which communities take more responsibility for their own waste
- Help secure the recovery or disposal of waste without endangering human health and without harming the environment.
- Ensure the design and layout of new development supports sustainable waste management.

B.5 The Nitrate Pollution Prevention Regulations (2015) [See reference

138]: provide for the designation of land as nitrate vulnerable zones and imposes annual limits on the amount of nitrogen from organic manure that may be applied or spread in a holding in a nitrate vulnerable zone. The Regulations also specify the amount of nitrogen to be spread on a crop and how, where and when to spread nitrogen fertiliser, and how it should be stored. It also establishes closed periods during which the spreading of nitrogen fertiliser is prohibited.

B.6 Safeguarding our Soils – A Strategy for England (2011) [See reference 139]: Sets out how England's soils will be managed sustainably. It highlights

Appendix B Review of Plans, Policies and Programmes and Baseline Information

those areas which Defra will prioritise and focus attention in tackling degradation threats, including: better protection for agricultural soils; protecting and enhancing stores of soil carbon; building the resilience of soils to a changing climate; preventing soil pollution; effective soil protection during construction and; dealing with contaminated land.

B.7 Water White Paper (2012-13) [See reference 140]: Sets out the Government's vision for the water sector including proposals on protecting water resources and reforming the water supply industry. It states outlines the measures that will be taken to tackle issues such as poorly performing ecosystem, and the combined impacts of climate change and population growth on stressed water resources.

B.8 Water for Life White Paper (2011) [See reference 141]: Sets out how to build resilience in the water sector. Objectives of the White Paper are to:

- Paint a clear vision of the future and create the conditions which enable the water sector and water users to prepare for it.
- Deliver benefits across society through an ambitious agenda for improving water quality, working with local communities to make early improvements in the health of our rivers by reducing pollution and tackling unsustainable abstraction.
- Keep short and longer term affordability for customers at the centre of decision making in the water sector.
- Protect the interest of taxpayers in the policy decisions that we take.
- Ensure a stable framework for the water sector which remains attractive to investors.
- Stimulate cultural change in the water sector by removing barriers to competition, fostering innovation and efficiency, and encouraging new entrants to the market to help improve the range and quality of services offered to customers and cut business costs.
- Work with water companies, regulators and other stakeholders to build understanding of the impact personal choices have on the water environment, water resources and costs.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Set out roles and responsibilities – including where Government will take a stronger role in strategic direction setting and assessing resilience to future challenges, as well as clear expectations on the regulators.

B.9 Future Water: The Government’s Water Strategy for England (2011)

[See reference 142]: Sets out how the Government wants the water sector to look by 2030, providing an outline of steps which need to be taken to get there. These steps include: improving the supply of water; agreeing on important new infrastructure such as reservoirs; proposals to time limit abstraction licences; and reducing leakage. The document also states that pollution to rivers will be tackled, whilst discharge from sewers will be reduced.

Sub-national

B.10 Cambridge City Council and South Cambridgeshire District Council Infrastructure Delivery Study (2015) [See reference 143]: Assessed the infrastructure requirements, costs and known funding related to planned growth, particularly the strategic sites, and identified any phasing issues that might have affected the proposed growth and advise on the future delivery of infrastructure needed to support the planned growth. A new infrastructure delivery plan is being prepared for the emerging Greater Cambridge Local Plan.

B.11 South Cambridgeshire Contaminated Land Strategy (2001) [See reference 144]: Sets out South Cambridgeshire District Council’s strategy on how it proposes to identify contaminated land within its boundaries. It supports the following objectives:

- Maintaining, improving and developing sympathetically the character, environment, economy and social fabric of our villages.
- Promoting a healthier environment to enable our communities to lead healthier lives, by its own actions and active partnership with others.
- Working towards a more sustainable future for everyone living and working in South Cambridgeshire, balancing the needs of the present and future generations.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.12 Cambridge City Council Contaminated Land Strategy (2009) [See reference 145]: Builds upon the City Council's Medium Term Objectives which include:

- To promote Cambridge as a sustainable city, in particular by reducing carbon dioxide emissions and the amount of waste going into landfill in the City and sub-region.
- Ensure that residents and other service users have an entirely positive experience of dealing with the Council.
- Maintain a healthy, safe and enjoyable city for all, with thriving and viable neighbourhood.
- Lead the growth of Cambridge to achieve attractive, sustainable new neighbourhoods, including affordable housing, close to a good range of facilities, and supported by transport networks so that people can opt not to use the car.

B.13 Cambridgeshire Green Infrastructure Strategy (2011) [See reference 146]: Highlights the issue of air quality in particular and how this can be addressed through Green Infrastructure (GI) provision. It also notes that water is an important element of GI and that management of GI assets can be conducive to improving or maintaining good water quality. A new GI Strategy is being prepared for the new Greater Cambridge Local Plan.

B.14 South Cambridgeshire Recreation and Open Space Study (2013) [See reference 147]: Aims to provide an audit of the quantity and quality of existing provision in the district, assess the need for future provision. An updated open space study is currently being prepared.

B.15 Cambridge Open Space and Recreation Strategy (2011) [See reference 148] : Discusses the findings of the Open Space and Recreation Assessment. It breaks the information down by ward and provides data on the deficits in each ward and the ward's strengths and weaknesses in terms of open space provision. It also discusses the level of provision proposed in the urban extensions to the City, which have not been assessed in this Strategy as they

Appendix B Review of Plans, Policies and Programmes and Baseline Information

have not yet been delivered on site. An updated open space strategy is currently being prepared.

B.16 Cambridgeshire and Peterborough Minerals and Waste Local Plan (2021) [See reference 149]: Sets out key areas which will help shape the future of minerals activities. The plan includes a vision, aims and objectives for both sustainable minerals and waste development; core policies related to sustainable development and climate change, as well as providing for mineral and waste needs; policies setting out Mineral Safeguarding Areas and allocations; policies on sustainable use of minerals; allocation of waste management areas and waste recycling areas; and policies relating to transport infrastructure, design, amenity, restoration and aftercare, as well as conservation and enhancement of the natural and historic environment.

B.17 Anglian River Basin District Flood Risk Management Plan (2016) [See reference 150]: Explains the risk of flooding from various sources and how risk management authorities will work with communities to manage it over a period of 6 years.

B.18 Anglian River Basin Management Plan (2015) [See reference 151] : Provides a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, it also informs decisions on land-use planning.

B.19 Cambridge Area Water Cycle Strategy - Phase 1 (2008) and Phase 2 (2011) [See reference 152]: Provides an evidence base concerning the required water services infrastructure for planned development in the Cambridge Sub-Region (CSR). The Phase 1 study identified no insurmountable technical constraints to the proposed level of growth, but identified a number of important issues including the need for a Surface Water Management Plan, a detailed analysis of increased flood risk at the Swavesy Drain, and the need to investigate the viability of achieving 'water neutrality' . Phase 2 goes further and supports a more aspirational vision for water management, including aspirations to water neutrality, improving biodiversity and sustainable surface water management. In addition, a further dedicated Water Cycle Strategy (WCS) was

Appendix B Review of Plans, Policies and Programmes and Baseline Information

developed in 2014 for the allocated strategic development site at Denny St Francis, north of the existing town of Waterbeach. An updated Water Cycle Study is being prepared by both Councils for the emerging Greater Cambridge Local Plan.

B.20 Cambridge Water, Water Resources Management Plan (WRMP)

(2019) [See reference 153]: describes how Cambridge Water aims to meet the demand for water in the Cambridge region, including consideration of climate change, population growth and the need to protect the environment. The WRMP recognises the increased demand for water due to a growing population, the potential for adverse environmental impacts of extraction and the need to reduce water wastage.

B.21 Affinity Water and Anglian Water WRMPs (2020) [See reference 154]:

To be taken into consideration as neighbouring suppliers, given that WRMPs do not operate in isolation and abstraction by one can significantly affect the environment of another.

B.22 Citywide Tree Strategy 2016-2026 [See reference 155]:

Aims to sustainably manage the Council's own trees and those it manages by agreement, to foster a resilient tree population that responds to the impacts of climate change and urban expansion, to raise awareness of trees being a vital community asset, through promoting continued research, through education via the provision of advice and through partnership working and to make efficient and strategic use of the Council's regulatory powers for the protection of trees of current and future value.

B.23 Anglian Water's Long Term Water Recycling Plan (WRLTP) (2019)

[See reference 156]: A plan to prioritise investment across the wider region to help balance supply and demand for water recycling services, considering risks from growth, climate change, severe drought, and customer behaviours.

B.24 Catchment Abstraction Management Plans [See reference 157]:

Used by the Environment Agency to manage water resources in England, which test

Appendix B Review of Plans, Policies and Programmes and Baseline Information

the availability of water at four different levels of 'flow'. The most relevant strategies for the plan area are:

- Cam and Ely Ouse Catchment: This strategy covers the largest part of the plan area, particularly in the east and including Cambridge. It highlights that at the three lowest 'flows', water is largely 'not available', and at the highest flow level water is 'restricted'.
- Upper and Bedford Ouse Catchment: This strategy covers a small part of the west of the plan area. At the two lower 'flows' tested, water was 'not available' and was restricted at the third lowest 'flow'.
- Essex Catchment: the strategy highlights that water is 'not available' across large parts of the catchment area, however this only affects a small part of the south of the plan area for Greater Cambridge.

Baseline

B.25 Rather than addressing issues such as soil, geology and water as isolated topics, it is important that an integrated view is adopted based on the 'natural capital' concept – often defined as the world's stock of natural assets (including geology, soil, air water and all living things), from which humans derive a wide range of 'ecosystem services'. It is important that the approach to the issues below in any development plan is done in a holistic, integrated way.

Geology and minerals

A variety of mineral resources are found in the Greater Cambridge Local Plan area: sand, gravel, limestone, chalk, chalk marl and clay. There are extensive deposits often occurring under high quality agricultural land or in areas valued for their biodiversity and landscapes, e.g. river valleys **[See reference 158]**. As shown in Figure B.7, much of Greater Cambridge is covered by Mineral Safeguarding Areas, particularly the central, southern and eastern areas. There are also seven Mineral Consultation Areas (MCAs) within Greater Cambridge. There are also a small number of minerals site allocations, which are

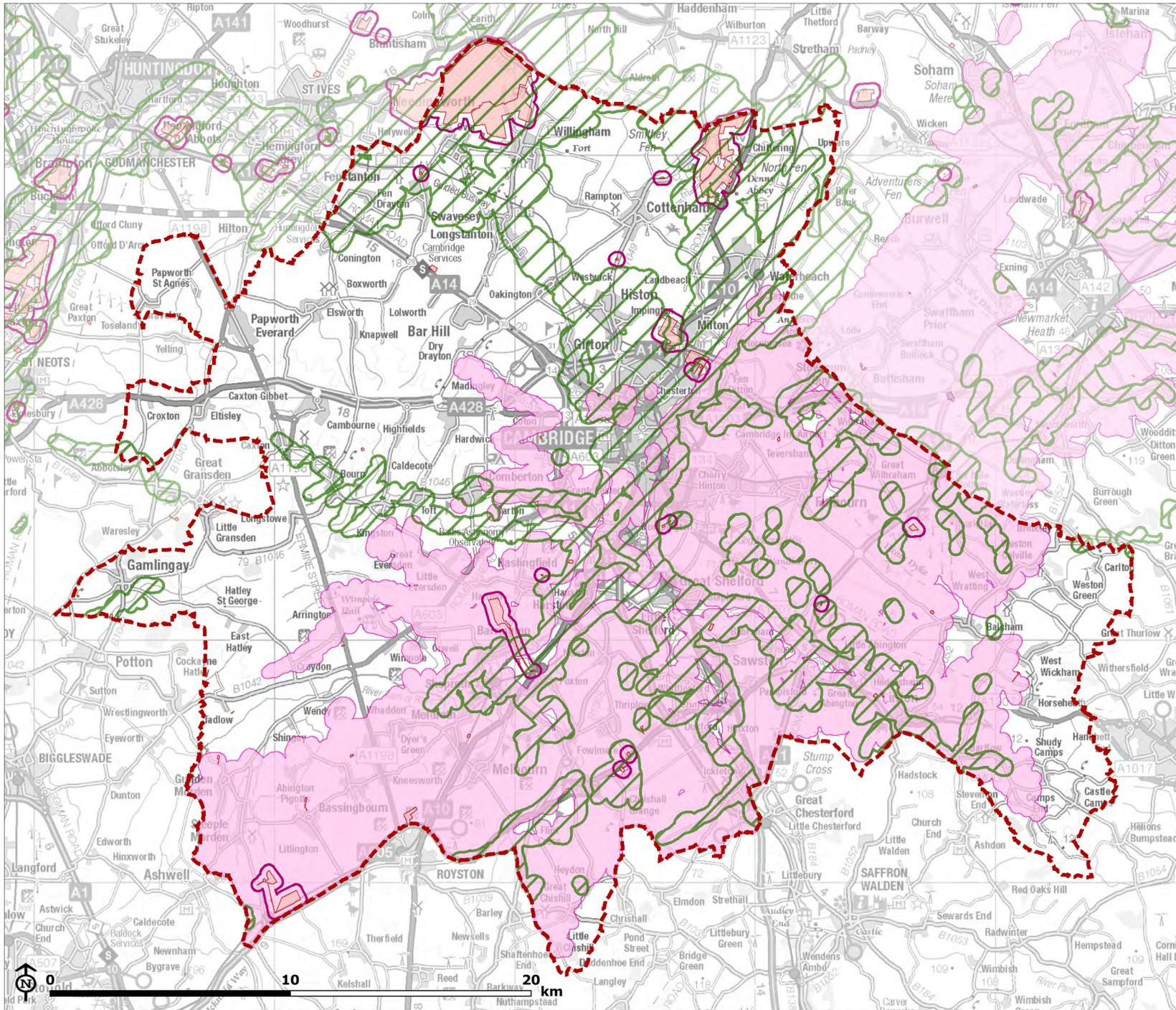
Appendix B Review of Plans, Policies and Programmes and Baseline Information

extensions to existing minerals sites. The mineral resource of primary interest for Cambridgeshire & Peterborough is sand and gravel and crushed rock aggregate (limestone). Sand and gravel resources occur mainly within superficial or 'drift' deposits, subdivided into river sand and gravel, glacial deposits, head deposits and bedrock sand. There are sand and gravel deposits around Cambridge City, particularly to the north but also stretching out into the southern part of the plan area. There are also deposits of chalk in the southern and eastern parts Greater Cambridge [\[See reference 159\]](#).

B.26 Cambridgeshire and Peterborough has limited resources of rock suitable for crushed rock aggregate. The Lincolnshire Limestone Formation (inferior oolite) crops out in the north-west of the Plan area, west and north-west of Peterborough. None of the limestone is worked for building stone within the Plan area. Owing to its relatively low strength and its poor resistance to frost it is generally used as constructional fill or as sub-base roadstone material. To the south of the Plan area closer to Cambridge the Upware Limestone is quarried on a small scale for use as an agricultural lime and asphalt filler [\[See reference 160\]](#).

Figure B.7: Mineral Sites within Greater Cambridge

-  Greater Cambridge
-  Minerals and waste consultation areas
-  Minerals and waste sites
- Mineral Safeguarding Area**
-  Chalk
-  Sand and Gravel



Source: CCC, SCDC

Map Scale @ A4: 1:225,000



Soils

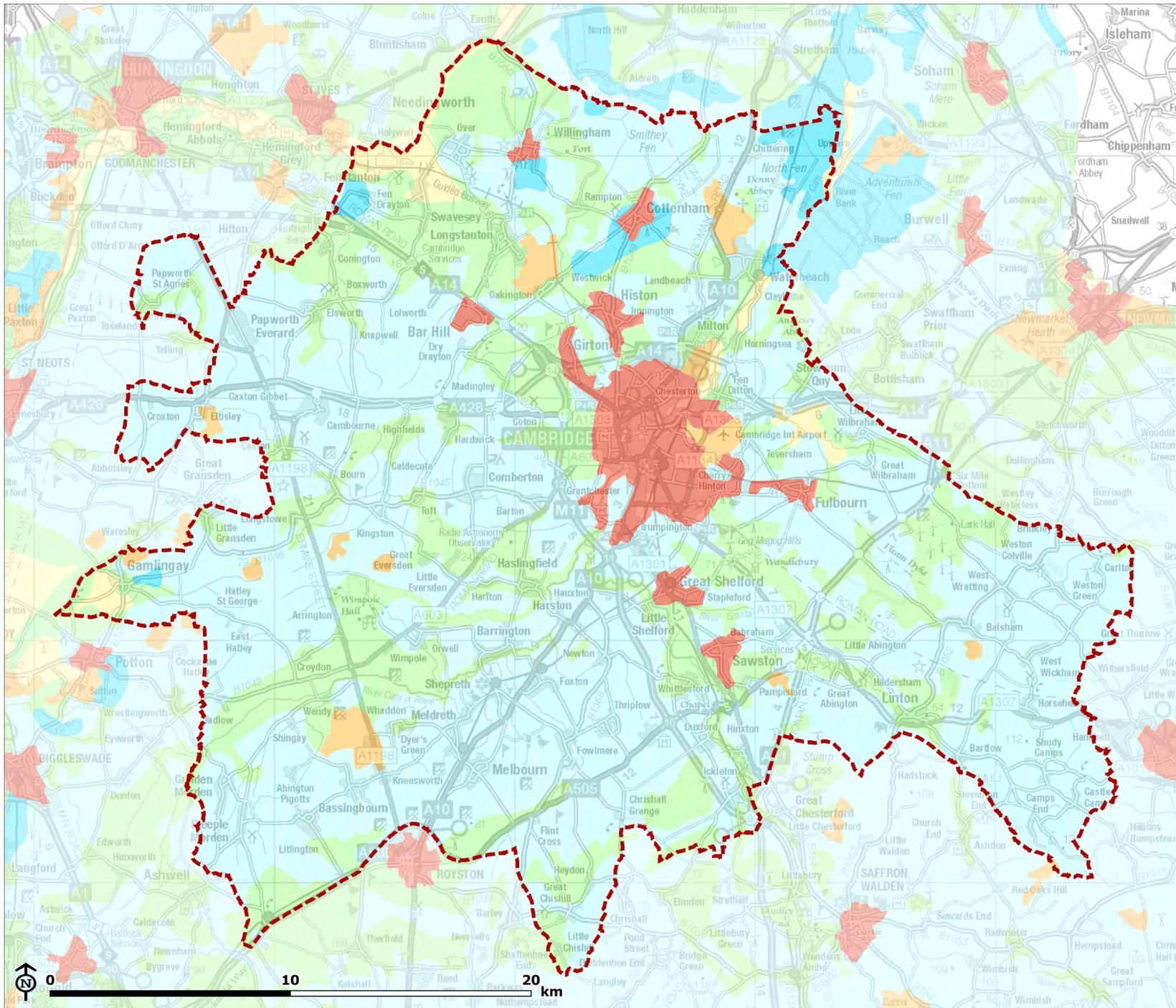
Cambridgeshire has one of the largest areas of high-grade agricultural land in the UK, as shown in Figure B.8. The majority of land in Greater Cambridge is Grades 1, 2 and 3, with small areas designated as urban and non-agricultural, almost entirely the City of Cambridge. Grade 1 and Grade 2 agricultural land represent the best and most versatile land for farming, along with Grade 3a agricultural land (the national maps of agricultural land classification do not distinguish between Grade 3a and Grade 3b agricultural land).

B.27 Within DEFRA's 25 Year Environment Plan, a strategy for the restoration of peatland areas in England was outlined as a priority action. Pilot projects will be undertaken including the East Anglian Fens Peat Pilot which will work with internal drainage boards to look at water flows on and around the fens. It will also bring in long-term sustainability of peat management opportunities which will assist with the creation of the Lowland Agricultural Peat Taskforce. The Cambridgeshire Fens include a significant proportion of the East Anglian Fen peat and the pilot project will work with internal drainage boards to look at water flows on and around the fens. England's remaining lowland peat provides a crucial tool in helping to mitigate climate change and achievement of the government's aim to reach net zero emissions by 2050 [\[See reference 161\]](#).

Greater Cambridge SA

Figure B.8: Agricultural Land Classification

-  Greater Cambridge
-  Grade 1
-  Grade 2
-  Grade 3
-  Grade 4
-  Grade 5
-  Non agricultural
-  Urban



Source: NE

Map Scale @ A4: 1:225,000



Contaminated Land

B.28 For a site to meet the definition of contaminated land, a pollutant linkage must be established. A pollutant linkage consists of three parts: a source of contamination in, on or under the ground, a pathway by which the contaminant is causing significant harm or harm, (or which presents a significant possibility of such harm being caused) and a receptor of a type specified in the regulations [See reference 162]. Two entries were added to the South Cambridgeshire District Council's Contaminated Land Register in 2003 and 2010. However, both have now been remediated [See reference 163].

Water

B.29 Figure B.9 shows the location of water courses and Source Protections Zones (SPZs) within Greater Cambridge. The River Cam runs through the City of Cambridge through to South Cambridgeshire from the south west to the north east. The two principal tributaries of the Cam, the Granta and the Rhee, flow through South Cambridgeshire. Greater Cambridge lies within the River Basin Management Plan for the Anglian River Basin District. Land within the plan area falls across the Broadland Rivers catchment, Cam and Ely Ouse catchment, Combined Essex catchment, East Suffolk catchment, Nene catchment, North Norfolk catchment, North West Norfolk catchment, Old Bedford including the Middle Level catchment, Upper and Bedford Ouse catchment, Welland catchment and the Witham catchment. These areas extend beyond the boundaries of the plan area to include land to the north, east and west [See reference 164].

B.30 Priority issues for the Cam and Ely Ouse, Upper and Bedford Ouse and Old Bedford catchment areas include diffuse pollution, biological impacts of low flow rates and over abstraction and nutrient loading, the physical modification of water courses, invasive non-native plant and animal species, and pollution. Some of the water bodies in these catchments have been identified by the Environment Agency as having 'bad' or 'poor' ecological status, but none have been identified as having 'bad' chemical status [See reference 165]. There are

Appendix B Review of Plans, Policies and Programmes and Baseline Information

also Source Protection Zones scattered throughout Greater Cambridge. Over-abstraction of water is a key issue, and Cambridge Water Company's WRMP shows that beyond 2035, without additional resources or greater efficiency, the need for water to serve development will be greater than the current available supply. However, the WRMP sets out measures to ensure that Cambridge Water will be able to balance supply and demand in the region up to and beyond 2045. In August 2019 the Chair of Natural England raised concerns over the levels of stress on the River Cam in particular, which is said to be under threat from low rainfall and abstraction of groundwater for public supply. Given the prospect of increased demand from development locally, the Chair of Natural England suggested that major new reservoirs may be required in future to counter the stress [See reference 166]. It is recognised that water abstraction and conveyance issues operate at a regional scale and do not follow either local authority or water company boundaries, raising the need to enact the 'duty to cooperate' across these boundaries.

B.31 It should be recognised that there is a close relationship between the availability of water resources and water quality in a region like Greater Cambridge, given that lower dilution in the watercourses can lead to the need to treat wastewater to a higher standard. There are existing proposals for a new and relocated wastewater treatment works for Cambridge, however plans must take into account any potential short or long-term shortfalls in capacity, given projected growth in the area.

B.32 Given the scarcity of water in the catchments serving Greater Cambridge, protecting water resources from pollution and contamination will be important. In some cases, development can be part of the solution to remediating both land and water affected. Given the scarcity of water in the catchments serving Greater Cambridge, protecting water resources from pollution and contamination will be important. In some cases, development can be part of the solution to remediating both land and water affected by a legacy of pollution. However, in some cases the contamination will be particularly acute and may require proactive planning solutions.

B.33 The Cambridge Water Cycle Study Phase 2 analysed the potential impacts posed by development on European designated sites. The European

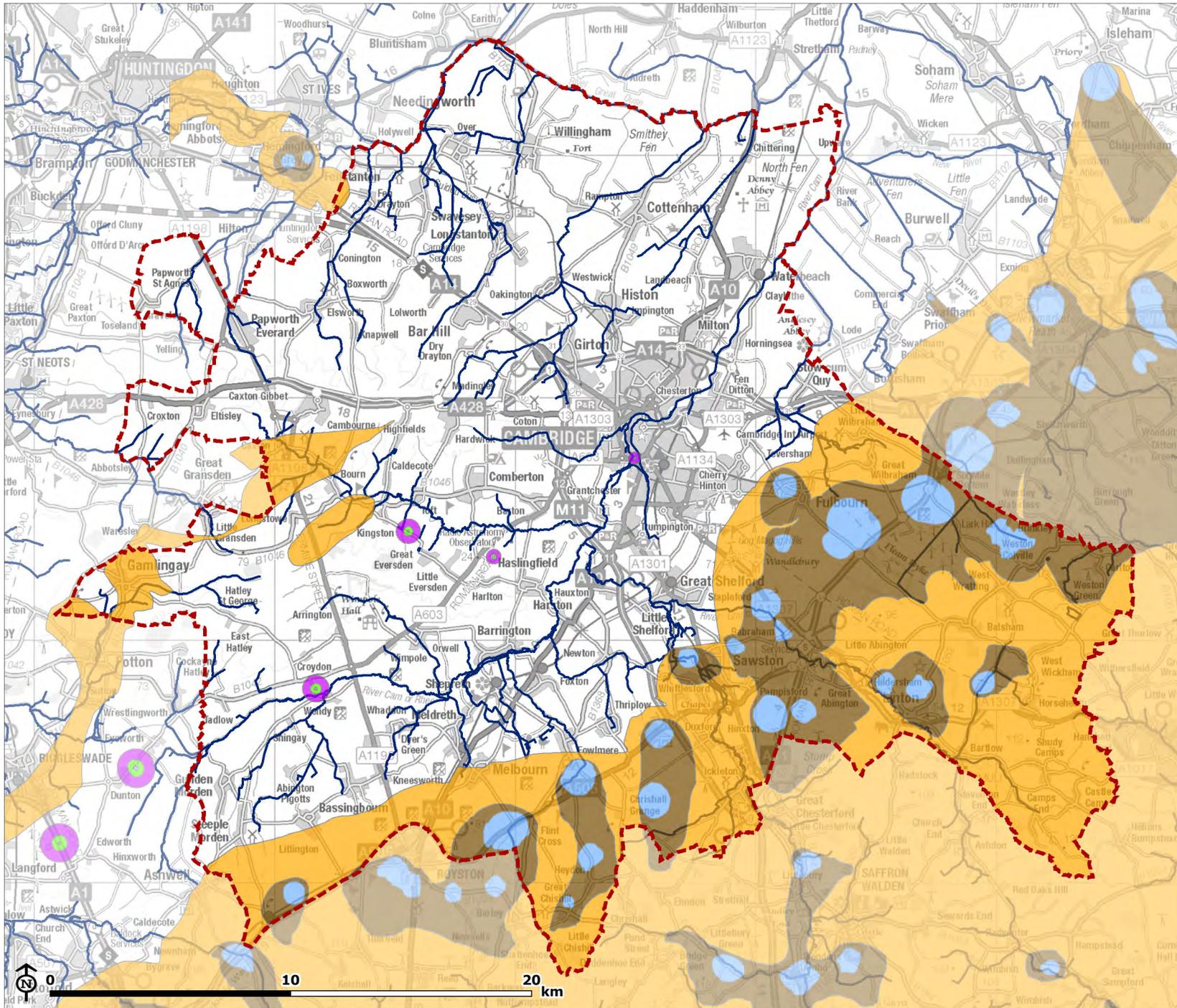
Appendix B Review of Plans, Policies and Programmes and Baseline Information

sites identified as potentially relevant are Breckland Special Area of Conservation (SAC) and Special Protection Area (SPA), Ouse Washes SAC, SPA and Ramsar site and Wicked Fen SAC and Ramsar site as they are potentially vulnerable to local changes in runoff, drainage and changes in water quality and quantity. Each of these sites were screened out of further assessment. However, it is noted in relation to Ouse Washes SAC and Ramsar site that implementation of the Northstowe development as planned is subject to approval of the proposed consent revision at Uttons Drove sewage treatment works and therefore an HRA may be required dependent upon the outcome of consenting process / details and appropriate implementation and management of SuDS [See reference 167].

B.34 A further breakdown of the number of water courses which have achieved various ecological and chemical classifications is provided in Table B.3. For Greater Cambridge, the reasons for not achieving good status and reasons for deterioration in water quality were mainly agriculture and rural land management or related to the water industry [See reference 168].

Table B.3: Ecological and Chemical Classification for surface waters in the Anglian River Basin District

	Chemical status or potential					Chemical status	
	Bad	Poor	Moderate	Good	High	Fail	Good
Number of water bodies							
603	15	114	421	53	0	5	598



Greater Cambridge SA

Figure B.9: Watercourses and Source Protection Zone within Greater Cambridge

- Greater Cambridge
 - Watercourse
- Source Protection Zone**
- 1
 - 1c
 - 2
 - 2c
 - 3

Source: EA, OS

Map Scale @ A4: 1:225,000



Key Sustainability issues for Greater Cambridge and likely evolution without the Local Plan

- Key issues: The majority of Greater Cambridge contains best and most versatile agricultural land with a mix of classified agricultural land, Grades 1, 2 and 3. New development should, where possible, be delivered as to avoid the loss of higher grades of agricultural land.
- Likely evolution: The Cambridge Local Plan seeks to safeguard the best and most versatile agricultural land within and on the edge of the City through Policy 8 and Policy NH/3 of the South Cambridgeshire Local Plan ensures no development will be granted if it leads to the irreversible loss of Grade 1, 2 and 3a agricultural land. Furthermore the NPPF supports the re-use of brownfield land and states that planning policies and decisions should contribute to and enhance the natural and local environment by “recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land”. The Local Plan provides an opportunity to strengthen the approach and ensure these natural assets are not lost or compromised. This may involve the prioritisation of use of brownfield sites and lower quality agricultural land for development.
- Relevant SA objectives: SA objective 8
- Key issues: The Greater Cambridge contains safeguarded mineral resources which, where possible, should not be lost or compromised by future growth.
- Likely evolution: Without the Local Plan it is possible that development could result in unnecessary sterilisation of mineral resources which would mean they are not available for future generations to use. Policy 5 of the Cambridgeshire and Peterborough Minerals and Waste Local Plan addresses proposals for non-mineral development within the Minerals Safeguarded Areas.
- Relevant SA objectives: SA objective 9

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Key issues: Some of the water bodies which flow through Greater Cambridge have been identified by the Environment Agency as having 'bad' or 'poor' ecological status. There are also areas in Greater Cambridge which are covered by a Source Protection Zone.
- Likely evolution: Without the Local Plan it is possible that un-planned development could be located in areas that will exacerbate existing water quality issues, although existing safeguards, such as the EU Water Framework Directive, would provide some protection. Development which occurs within Source Protection Zones presents the risk of contamination from any activities that might cause pollution in the area. Policy 7 of the Cambridge Local Plan aims to raise the water quality and enhance the natural resources of the River Cam. Policy CC/7 of the South Cambridgeshire Local Plan aims to ensure that sufficient capacity in the existing local infrastructure is provided to meet the additional requirements arising from new development, that the quality of water bodies will not be harmed and the delivery of mitigation which would help to prevent water quality issues emerging. The Local Plan will provide the opportunity to ensure that development is located and designed to take into account the sensitivity of the water environment. It will also provide further certainty in terms of planning for adequate wastewater infrastructure to address development requirements over the plan period.
- Relevant SA objectives: SA objective 10
- Key issues: Over-abstraction of water in this region is a key issue and action is required now to ensure the availability of water for future uses, including potable water supply and food production, without having a detrimental impact on the environment, as low rainfall and over abstraction in rivers is causing serious concern. This is likely to be exacerbated by the effects of climate change, and it should be noted that there is significant cross-over between water resource availability and water quality.
- Likely evolution: Without the Local Plan it is possible that un-planned development could be located in areas that will exacerbate the water stress issue within the sub-region, although Cambridge Water's WRMP sets out measure to ensure that supply and demand in the region can be balanced over the next 25 years and beyond. Policy 28 of the

Cambridge Local Plan requires all new development to meet the minimum standards of water efficiency to address the severe water stress within the area and has set a target for water consumption of 110 litres per person per day. Policy CC/4 of the South Cambridgeshire Local Plan requires all new residential development to achieve a minimum water efficiency equal to 110 litres per person per day. The Local Plan has the potential to secure long term sustainable development, which will be essential in ensuring that all new development implement water efficiency standards, and that the phasing of new development is in line with any implementation timescales for any new strategic schemes that water companies might require. It will also be better placed to take an up-to-date approach to climate change adaptation, based on up to date evidence.

- Relevant SA objectives: SA objective 10

Climate Change Adaptation and Mitigation

Policy Context

International

B.35 United Nations Paris Climate Change Agreement (2015): International agreement to keep global temperature rise this century well below 2 degrees Celsius above pre-industrial levels.

National

B.36 National Planning Policy Framework (NPPF) [See reference 169]: Contains the following:

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- One of the core planning principles is to “support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure”.
- Inappropriate development in areas at risk of flooding should be avoided. Where development is necessary, it should be made safe for its lifetime without increasing flood risk elsewhere.
- Local planning authorities should adopt a proactive approach to mitigate and adapt to climate change, taking full account of flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures.

B.37 National Planning Practice Guidance (PPG) [See reference 170]:

Supports the content of the NPPF by promoting low carbon and renewable energy generation, including decentralised energy, the energy efficiency of existing and new buildings and sustainable transport.

B.38 Planning Act (2008) [See reference 171]: Section 182 places a legal duty on local planning authorities to ensure that their development plan documents include policies to ensure that development and use of land in their area contributes to the mitigation of, and adaptation to, climate change.

B.39 Planning and Energy Act (2008) [See reference 172]: enables local planning authorities to set requirements for carbon reduction and renewable energy provision. It should be noted that while the Housing Standards Review proposed to repeal some of these provisions, at the time of writing there have been no amendments to the Planning and Energy Act.

B.40 Climate Change Act (2008) [See reference 173]: Sets targets for UK greenhouse gas emission reductions of at least 100% by 2050 and CO₂ emission reductions of at least 26% by 2015, against a 1990 baseline (in 2008

Appendix B Review of Plans, Policies and Programmes and Baseline Information

the target was set at 80%, however the target has recently been amended in 2019 by Statutory Instrument No.1056 to 100%).

B.41 Flood and Water Management Act (2010) [See reference 174]: Sets out measures to ensure that risk from all sources of flooding is managed more effectively. This includes: incorporating greater resilience measures into the design of new buildings; utilising the environment in order to reduce flooding; identifying areas suitable for inundation and water storage to reduce the risk of flooding elsewhere; rolling back development in coastal areas to avoid damage from flooding or coastal erosion; and creating sustainable drainage systems (SuDS).

B.42 The UK Renewable Energy Strategy (2009) [See reference 175]: Sets out the ways in which we will tackle climate change by reducing our CO2 emissions through the generation of a renewable electricity, heat and transport technologies.

B.43 The Energy Efficiency Strategy (2012) [See reference 176]: The Energy Efficiency Opportunity in the UK : Aims to realise the wider energy efficiency potential that is available in the UK economy by maximising the potential of existing dwellings by implementing 21st century energy management initiatives on 19th century homes.

B.44 The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting: Making the country resilient to a changing climate (2018) [See reference 177]: Sets out visions for the following sectors:

- People and the Built Environment – “to promote the development of a healthy, equitable and resilient population, well placed to reduce the harmful health impacts of climate change...buildings and places (including built heritage) and the people who live and work in them are resilient and organisations in the built environment sector have an increased capacity to address the risks and make the most of the opportunities of a changing climate.”

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Infrastructure – “an infrastructure network that is resilient to today’s natural hazards and prepared for the future changing climate”.
- Natural Environment – “the natural environment, with diverse and healthy ecosystems, is resilient to climate change, able to accommodate change and valued for the adaptation services it provides.”
- Business and Industry – “UK businesses are resilient to extreme weather and prepared for future risks and opportunities from climate change.”
- Local Government – “Local government plays a central role in leading and supporting local places to become more resilient to a range of future risks and to be prepared for the opportunities from a changing climate.”

B.45 UK Climate Change Risk Assessment (2017) [See reference 178]:

Sets out six priority areas needing urgent further action over the next five years in order to minimise risk from the effects of climate change. These priority areas include: flooding and coastal change risk to communities, businesses and infrastructure; risks to health, wellbeing and productivity from high temperatures; risk of shortages in the public water supply and for agriculture, energy generation and industry; risks to natural capital; risks to domestic and international food production and trade; and new and emerging pests and diseases and invasive species.

B.46 Understanding the risks, empowering communities, building resilience:

The national flood and coastal erosion risk management strategy for England (2010) [See reference 179]: This Strategy sets out the national framework for managing the risk of flooding and coastal erosion. It sets out the roles for risk management authorities and communities to help them understand their responsibilities. The strategic aims and objectives of the Strategy are to:

- Manage the risk to people and their property.
- Facilitate decision-making and action at the appropriate level – individual, community or local authority, river catchment, coastal cell or national.
- Achieve environmental, social and economic benefits, consistent with the principles of sustainable development.

B.47 A Green Future: Our 25 Year Plan to Improve the Environment [See reference 180]: Sets out goals for improving the environment within the next 25 years. It details how the Government will work with communities and businesses to leave the environment in a better state than it is presently. Identifies six key areas around which action will be focused. Those of relevance to this chapter are: using and managing land sustainably; and protecting and improving our global environment. Actions that will be taken as part of these two key areas are as follows:

- Using and managing land sustainably:
 - a) Take action to reduce the risk of harm from flooding and coastal erosion including greater use of natural flood management solutions.
- Protecting and improving our global environment:
 - b) Provide international leadership and lead by example in tackling climate change and protecting and improving international biodiversity.

Sub-national

B.48 Cambridgeshire Green Infrastructure Strategy (2011) [See reference 181]: Mitigating and adapting to climate change is one of the four objectives of the Strategy. It notes the low-lying nature of the county and subsequent flood risk, as well as the prospect that growth and development will further exacerbate the human and economic impacts. The Green Infrastructure Strategy is currently being updated.

B.49 Cambridgeshire Renewables Infrastructure Framework (2012) [See reference 182]: Identifies a wide range of renewable technologies available, creating opportunities for Cambridgeshire to be a leading county for clean energy projects, goods and services, recognising that the Cambridge area has an excellent research base for renewable energy technologies and is an ideal location in the UK for growth in the sector. The Framework identifies that 9% of the opportunity is in Cambridge City and 26% in South Cambridgeshire. A separate report setting out the baseline data notes that South Cambridgeshire

Appendix B Review of Plans, Policies and Programmes and Baseline Information

(along with Huntingdonshire) has both the greatest renewable energy potential and the greatest energy demand.

Greater Cambridge Sustainable Design and Construction SPD (2020)

[See reference 183]: Produced to provide guidance on the policies within the adopted 2018 Cambridge and South Cambridgeshire Local Plans that relate to sustainability. **Scoping Report: Feasibility of a Carbon Offset Mechanism for Cambridgeshire (2010) [See reference 184]:** Explores the role that a Carbon Offset Fund (COF) could play in delivering low carbon growth within Cambridgeshire, as an alternative to developer meeting their whole carbon reduction obligations through on-site measures, with a focus on large-scale projects.

B.50 Cambridgeshire Community Energy Fund Final Report (2012) [See reference 185]: Presents a study of the role that a community energy fund (CEF) – one that levies a charge on developers for the emissions resulting from new development and pool these into a fund for carbon saving projects - might play in delivering carbon emissions reduction in Cambridgeshire.

B.51 Cambridge City Council Climate Change Strategy 2021-26 [See reference 186]: Sets out a vision for Cambridge to be net zero carbon by 2030, including six key objectives for how Cambridge City will address the causes and consequences of climate change. These objectives are:

- Reducing carbon emissions from City Council buildings, land, vehicles and services.
- Reducing energy consumption and carbon emissions from homes and buildings in Cambridge.
- Reducing carbon emissions from transport in Cambridge.
- Reducing consumption of resources, reducing waste, and increasing recycling in Cambridge.
- Promoting sustainable food.
- Supporting Council services, residents and businesses to adapt to the impacts of climate change.

B.52 Cambridge Climate Change Adaptation Plan (2018) [See reference 187]: This plan was developed as part of one of the actions identified in the Council's 2016-2021 Climate Change Strategy. It aims to improve the resilience of the Council and city to extreme weather events through multiple actions outlined in the plan.

B.53 Decarbonising Cambridge Study (2010) : Provides the evidence base for setting targets for the CO2 performance of new developments in Cambridge. Assesses the potential for low carbon and renewable energy systems and provides advice on the development of planning policy and identifying supportive measures to achieve policy goals. An update to this work looking at the role of planning in delivering net zero is to be commissioned.

B.54 Zero Carbon Study (2020) [See reference 188]: outlines how South Cambridgeshire Council are supporting the district to halve carbon emissions by 2030 and reduce them to net zero by 2050.

B.55 Cambridgeshire Flood and Water SPD (2016) [See reference 189]: Provides guidance for developers on how to manage flood risk and the water environment as part of new development proposals. This includes how to incorporate sustainable drainage systems and how to take account of climate change.

B.56 Cambridge & South Cambridgeshire Level 1 SFRA (2010) [See reference 190]: Assesses the extent and nature of the risk of flooding in the area and its implications for land use planning. It finds that most of the internal drainage boards within the study area is found in the north of South Cambridgeshire, and that fluvial flooding is the dominant source of flood risk, with surface water also likely to be a key issue. An updated SFRA is currently being prepared.

B.57 Cambridgeshire Surface Water Management Plan (2014) [See reference 191]: Recognises that surface water flooding can put more properties at risk than fluvial flooding and can be more difficult to predict that

Appendix B Review of Plans, Policies and Programmes and Baseline Information

river or coastal flooding. It collates and reviews flood incident records and produces a revised list of 'wetspot' prioritisation to assist in allocating resources.

B.58 Histon and Impington Surface Water Management Plan (2014) [See reference 192]: Investigates surface water flooding issues and the feasibility of potential mitigation solutions in Histon & Impington villages, located to the north of Cambridge. It focuses on three earlier identified 'wetspots' based on historic flooding evidence and mapping.

B.59 Cambridge Area Water Cycle Strategy - Phase 1 (2008) and Phase 2 (2011) [See reference 193]: Provides an evidence base concerning the required water services infrastructure for planned development in the Cambridge Sub-Region (CSR). The Phase 1 study identified no insurmountable technical constraints to the proposed level of growth, but identified a number of important issues including the need for a Surface Water Management Plan, a detailed analysis of increased flood risk at the Swavesy Drain, and the need to investigate the viability of achieving 'water neutrality'. Phase 2 goes further and supports a more aspirational vision for water management, including aspirations to water neutrality, improving biodiversity and sustainable surface water management. In addition, a further dedicated Water Cycle Strategy (WCS) was developed in 2014 for the allocated strategic development site at Denny St Francis, north of the existing town of Waterbeach. An update to this strategy is being commissioned by the Councils, which will form part of an Integrated Water Management Study.

B.60 Cambridge and Milton Surface Water Management Plan (2011) [See reference 194]: Aims to produce a long term surface water management Action Plan for Cambridge and Milton, to be reviewed every 6 years at a minimum. The study notes increasing flood risk associated with climate change as a critical factor.

B.61 Great Ouse Catchment Flood Management Plan (2011) [See reference 195]: Sets out the scale and extent of flooding now and in the future, and policies for managing flood risk within the catchment.

B.62 Citywide Tree Strategy (2016-2026) [See reference 196]: Aims to sustainably manage the Council's own trees and those it manages by agreement, to foster a resilient tree population that responds to the impacts of climate change and urban expansion, to raise awareness of trees being a vital community asset, through promoting continued research, through education via the provision of advice and through partnership working and to make efficient and strategic use of the Council's regulatory powers for the protection of trees of current and future value.

Current Baseline

B.63 Following a Council meeting on 29 November 2018, South Cambridgeshire District Council pledged to support a target of cutting local carbon emissions to zero by 2050, which was before the Government adopted net zero by 2050 as a national target in 2019 [See reference 197].

B.64 On 21 February 2019 Cambridge City Council declared a 'climate emergency', following the submission of a petition signed by over 2,000 local residents. The Council also agreed on the same date to establish a Cambridge Climate Charter, which will call on all organisations, businesses and individuals in the city to each establish their own carbon reduction plans to work toward achieving the city's net carbon-zero aspiration [See reference 198].

Climate change mitigation

B.65 Between 2005 and 2019 in South Cambridgeshire, per capita carbon emissions have decreased from 13.7 tonnes to 8. In Cambridge City per capita emissions are lower and fell from 6.7 to 3.9 tonnes over the same period. As of 2019, the average for Cambridgeshire County was 7.2 tonnes per capita, and the national average was 9.3, suggesting that Cambridge City is outperforming the national and regional averages, while the carbon emissions of South Cambridgeshire lie between the county and national averages [See reference 199].

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.66 As illustrated in Table B.4, both South Cambridgeshire and Cambridge City achieved similar overall reductions in carbon emissions between 2005 and 2016 (31% and 29% respectively). In both cases, but particularly for South Cambridgeshire, these reductions were due mostly to progress in reducing emissions from industrial and commercial sectors, with minimal progress on transport emissions. Transport now makes the largest contribution to carbon

B.67 Protection and enhancement of the lowland peat resource is critical to mitigating and adapting to climate change given its significant role in carbon sequestration, flood storage/management and maintaining water quality. The Cambridgeshire Fens include a significant proportion of the East Anglian Fen peat and pilot projects by Defra, including the East Anglian Fens Peat Pilot, will work with internal drainage boards to look at water flows on and around the fens. It will also bring in long-term sustainability of peat management opportunities and creation of the Lowland Agricultural Peat Taskforce.

Table B.4: Reduction in Carbon Emissions between 2006-2019

Year	Industrial and Commercial	Domestic	Transport	Total
South Cambridgeshire				
2005	823.4	355.7	630.8	1,821.0
2019	285.5	236.7	601.0	1,123.2
% of total (2019)	25%	21%	53%	69%
Change 2005-2019	-65%	-33%	-5%	-7%
Cambridge City				
2005	423.1	242.7	116.4	781.8
2019	146.6	157.6	96.6	400.8

Appendix B Review of Plans, Policies and Programmes and Baseline Information

Year	Industrial and Commercial	Domestic	Transport	Total
% of total (2019)	37%	39%	24%	100%
Change 2005-2019	-65%	-35%	-17%	-117%

B.68 The Cambridgeshire Renewables Infrastructure Framework (CRIF) [See reference 200] notes that in order to meet carbon reduction objectives across the county, both energy efficiency and renewable energy are needed. The Cambridge Local Plan and associated Greater Cambridge Sustainable Design and Construction SPD [See reference 201] outlines the standards required to meet the visions, objectives and policies of the Cambridge and South Cambridgeshire Local Plans in a sustainable manner. In particular, the SPD sets out guidance that seeks to ensure developments are built to high sustainability standards and are adaptable to future climate change. In terms of carbon emissions, the SPD requires all new residential development to reduce emissions by 44% compared to a Building Regulations 2006 baseline. It sets a standard of a 19% improvement in the Dwelling Emission Rate/Target Emission Rate over Part L 2013, presented through a carbon reduction report. In South Cambridgeshire, planning policy requires new developments to use on-site renewable and/or low carbon energy to reduce carbon emissions associated with Regulated Energy use by 10%.

B.69 As far as energy generation is concerned, the CRIF notes that the county already has the greatest installed renewable energy capacity in the East of England and one of the highest outputs of any county in England, however there is room for greater deployment to meet the full demand and using a range of technologies. This would require a substantial amount of new infrastructure. The Framework highlights that South Cambridgeshire has high potential for renewable energy technology, and that Cambridge lacks wind resources but has substantial potential for air source heat pumps and PV, although the high density and number of conservation areas limits the potential for building integrated technologies [See reference 202]

Climate change adaptation

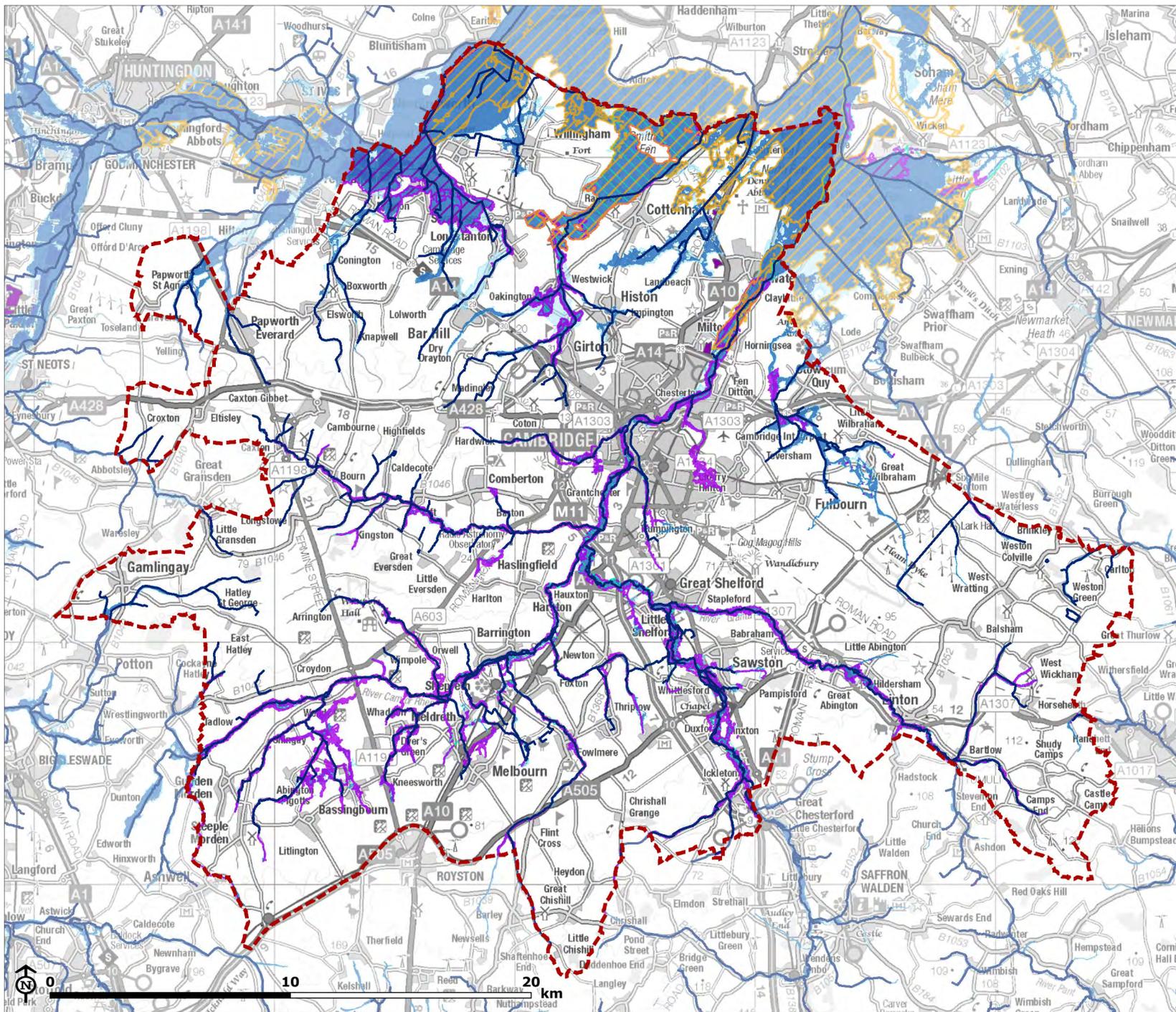
B.70 The Met Office UK Climate Projections 2018 study (UKCP18) provide information on how the climate of the UK is expected to change in the period up to the end of the 21st Century. In the highest emissions scenario, which may come to pass based on current emissions reduction trends, summer temperatures in the UK could be 5.4°C warmer by 2070 than the average summer between 1981 and 2000. Average summer rainfall would fall by 47% in this scenario. Winters could be up to 4.2C warmer, with up to 35% more rainfall by 2070.

B.71 Changes to the climate will bring new challenges to Greater Cambridge's built and natural environments. Hotter, drier summers may have adverse health impacts and may exacerbate the adverse environmental effects of air and water pollution. A changing climate may place pressure on some native species and create conditions suitable for new species, including invasive non-native species. 'Urban heat island' effects are also raised as an issue across the county by the Cambridgeshire Green Infrastructure Strategy, which can be managed through the management and planting of green space, tree planting and the creation of wetlands, especially in densely built up areas such as Cambridge and larger market towns [\[See reference 203\]](#).

B.72 Areas at risk of fluvial flooding are shown in Figure B.10. The low-lying nature of the county of Cambridgeshire also makes the wider area susceptible to both fluvial and (potentially) coastal flooding, which are susceptible to flooding regardless of climate change impacts, but which are expected to increase as a result of climate change. Due to its low lying nature (particularly in the fenland lying north of Cambridge), the plan area acts as a floodplain for two main drainage catchments – the Cam and the Great Ouse (the Cam is a tributary of the Great Ouse). Much of Cambridgeshire's land, on a county level, is actively drained by pumping, which has a significant carbon footprint [\[See reference 204\]](#).

Figure B.10: Flood Risk in Greater Cambridge

-  Greater Cambridge
-  Flood Zone 2
-  Flood Zone 3
-  Flood Zone 3a
-  Flood Zone 3b
-  Areas Benefiting from Flood Defence
-  Watercourse
-  Lake



Source: EA, OS

Map Scale @ A4: 1:225,000



Key sustainability issues for Greater Cambridge and likely evolution without the Local Plan

- **Key issues:** While carbon emissions from all sectors have fallen in both districts since 2005, given the rural nature of South Cambridgeshire there has been little progress on transport emissions, which still accounted for 53% of the total as of 2019. Both Councils have committed to meet net zero by 2050 at the latest, and to meet this will need to make significant shifts in energy efficiency of new and existing buildings, transport trends, and the further deployment of a range of renewables infrastructure.
- **Likely evolution:** Several policies in the South Cambridgeshire Local Plan seek to reduce per capital emissions, including CC1, CC2 CC/3 and CC/5, which require mitigation principles to be embedded in new development, encourage renewable energy generation and on-site generation, and measures to encourage home buyers to select sustainable options. Similarly, Policies 28, 29 and 30 of the existing Cambridge City Local Plan prioritise renewable energy generation, sustainable design and energy efficiency measures in existing dwellings. However since these plans were adopted the Councils have adopted more ambitious carbon reduction targets that will require more ambitious requirements of development to meet. The new Local Plan provides an opportunity to strengthen policies which act positively in terms of climate change, especially those that limit the need to travel through the appropriate siting and design of new development.
- **Relevant SA objectives:** SA objective 12
- **Key issues:** The effects of climate change in Greater Cambridge are likely to result in extreme weather events (e.g. intense rainfall, prolonged high temperatures and drought) becoming more common and more intense.
- **Likely evolution:** Policy CC/1 of the South Cambridgeshire Local Plan require development to embed climate adaptation measures, including conservation of water, flood risk management, SuDs, a layout that combats overheating, and better linked habitat networks. Similarly, Policies 28, 31 and 32 of the Cambridge City Local Plan requires new development to adapt through sustainable design, water management

Appendix B Review of Plans, Policies and Programmes and Baseline Information

and flood risk adaptation measures. While the new Local Plan will not influence extreme weather events, it can build upon the approach of current policy to better respond to current circumstances as evidence and techniques develop.

- Relevant SA objectives: SA objective 4, SA objective 11
- Key issues: Greater Cambridge will need to become more resilient to the increased risk of flooding in particular. Given the low-lying nature of the plan area, it is at significant risk of fluvial and surface water flooding, especially in the north, which is likely to be exacerbated by climate change.
- Likely evolution: Policy CC/8 and CC/9 of the South Cambridgeshire Local Plan require developments to be appropriately sited to take flood risk into account and to incorporate SuDS to manage surface water. Similarly, Policies 31 and 32 of the Cambridge City Local Plan require surface water to be managed close to its source where possible, including through SuDS, and to manage flood risk through siting. However, the new Local Plan presents the opportunity, alongside national measures, to mitigate the effects of potential future flooding through appropriate siting of development and flood resilient design. It will also allow policy to respond to the update evidence based regarding flood risk in the plan area.
- Relevant SA objectives: SA objective 4, SA objective 11

Biodiversity

Policy Context

International

B.1 International Convention on Wetlands (Ramsar Convention) (1976):

International agreement with the aim of conserving and managing the use of wetlands and their resources.

B.2 European Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) (1979):

Aims to ensure conservation and protection of wild plant and animal species and their natural habitats, to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species).

B.3 International Convention on Biological Diversity (1992): International commitment to biodiversity conservation through national strategies and action plans.

B.4 United Nations Declaration on Forests (New York Declaration) (2014):

international commitment to cut natural forest loss by 2020 and end loss by 2030.

National

B.5 National Planning Policy Framework (NPPF) [See reference 205]:

Encourages plans to “identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by

Appendix B Review of Plans, Policies and Programmes and Baseline Information

national and local partnerships for habitat management, enhancement, restoration or creation". Plans should also promote conservation, restoration and enhancement of priority habitats and species, ecological networks and measurable net gains for biodiversity.

B.6 The NPPF states that a strategic approach to maintaining and enhancing networks of habitats and green infrastructure is also to be supported through planning policies and that there should also be support for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

B.7 National Planning Practice Guidance (PPG) [See reference 206]:

Supports the NPPF by requiring Local Plans to include strategic policies that conserve and enhance the natural environment through sustainable development.

B.8 Natural Environment and Rural Communities Act (2006): [See reference 207]: Places a duty on public bodies to conserve biodiversity.

B.9 A Green Future: Our 25 Year Plan to Improve the Environment (2018)

[See reference 208]: Sets out goals for improving the environment within the next 25 years. It details how the Government will work with communities and businesses to leave the environment in a better state than it is presently. Identifies six key areas around which action will be focused. Those of relevance to this chapter are: recovering nature and enhancing the beauty of landscapes; securing clean, productive and biologically diverse seas and oceans; and protecting and improving our global environment. Actions that will be taken as part of these three key areas are as follows:

- Recovering nature and enhancing the beauty of landscapes:
 - Develop a Nature Recovery Network to protect and restore wildlife, and provide opportunities to re-introduce species that have been lost from the countryside.
- Securing clean, healthy, productive and biologically diverse seas and oceans:

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Achieve a good environmental status of the UK's seas while allowing marine industries to thrive, and complete our economically coherent network of well-managed marine protected areas.
- Protecting and improving our global environment:
- Provide international leadership and lead by example in tackling climate change and protecting and improving international biodiversity.
- Support and protect international forests and sustainable agriculture.

Sub-national

B.10 Cambridgeshire Green Infrastructure Strategy (2011): One of the four overarching objectives of the county-level GI strategy is to reverse the decline in biodiversity. The strategy outlines a series of issues, opportunities and constraints for biodiversity in Cambridgeshire. A new Green Infrastructure study is being prepared by both Councils for Greater Cambridge's emerging Local Plan.

B.11 Cambridgeshire and Peterborough Habitat Action Plans [See reference 209]: The Cambridgeshire and Peterborough Biodiversity Group have produced a series of Habitat Action Plans for various habitat types, detailing their current status, the factors affecting them, objectives and long term targets, and proposed actions.

B.12 Anglian River Basin Management Plan (2015) [See reference 210]: Provides a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, it also informs decisions on land-use planning.

B.13 South Cambridgeshire Biodiversity SPD (2009) [See reference 211]: Expands on district-wide policies to ensure that biodiversity is adequately protected and enhanced through the development process. It notes that biodiversity will not be peripheral to the planning process but fully integrated, and is designed to assist applicants in understanding biodiversity requirements.

B.14 Cambridge City Conservation Strategy ‘Enhancing Biodiversity’ (2006) [See reference 212]: Prepared for Cambridge City Council by the local Wildlife Trust and designed to guide nature conservation activities across the city. It sets out a vision of achieving biodiversity ‘net gain’ over a 20-year period. As a technical document, it was produced to support the Cambridge Local Plan.

B.15 Mapping natural capital and opportunities for habitat creation in Cambridgeshire (2019) [See reference 213]: Report on a project to produce a detailed habitat base map for the whole of Cambridgeshire (including Peterborough) in order to identify opportunities to enhance biodiversity.

B.16 Doubling Nature – A Vision for the Natural Future of Cambridgeshire and Peterborough in 2050 (2019) [See reference 214]: Sets out the vision of Natural Cambridgeshire, the local nature partnership, of doubling nature across Cambridgeshire and Peterborough. The vision is to double the area of rich wildlife habitats and green-space from 8.5% to 17%.

B.17 Citywide Tree Strategy 2016-2026 [See reference 215]: Aims to sustainably manage the Council’s own trees and those it manages by agreement, to foster a resilient tree population that responds to the impacts of climate change and urban expansion, to raise awareness of trees being a vital community asset, through promoting continued research, through education via the provision of advice and through partnership working and to make efficient and strategic use of the Council’s regulatory powers for the protection of trees of current and future value.

Baseline

B.18 Cambridge City Council and South Cambridgeshire District Council have declared biodiversity emergencies and support the Local Nature Partnership’s vision to double the area of rich wildlife habitats and natural greenspace within Cambridgeshire and Peterborough. The Councils are also part of the Natural Cambridgeshire Local Nature Partnership, which is a group of Councils and organisations seeking a future rich in wildlife and connecting people with nature.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.19 The plan area hosts a range of habitats important for biodiversity, many of which consist of aquatic and wetland habitats and draw on the region's water resources. These sites include statutorily protected Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSIs), as well as non-statutorily protected Local Nature Reserves (LNR) and County Wildlife Sites. In the past the largely rural nature of the plan area meant that wildlife could easily find refuge and support a variety of species. However, changing farming practices and pressure for development has put pressure on a wide range of species.

Mapping on behalf of the Cambridgeshire Biodiversity Partnership shows that since the 1930s in Cambridgeshire, semi-natural grassland cover has fallen from around 27% to 4.5% in 2018, while built up area and gardens increased from 5.8% to 10.7% of land cover. This was part of a biodiversity opportunity mapping project which identified existing high quality habitats and opportunities for habitat creation, as shown in Figure B.11. This shows two layers of habitat opportunity that were created during the project. The first of these is buffer opportunities, which are habitat opportunity areas that are immediately adjacent to existing habitat patches and fall within the previously identified ecological network, therefore providing an opportunity to expand the current area of habitat. The second type of opportunity is stepping-stone opportunities, which are potential sites that fall outside of the ecological network, but are immediately adjacent to it. These areas, including woodland areas and water bodies, could potentially be used to create stepping-stone habitats that could link up more distant habitat patches [See reference 216], and can be taken account of in proposed developments. Natural England's national nature recovery network mapping project provides further evidence on how this habitat connectivity extends beyond the boundaries of Cambridgeshire. The impacts of climate change are likely to have a significant effect on habitat connectivity and biodiversity in Greater Cambridge, as elsewhere, and there is a need to plan for climate change adaptation.

B.20 There is only one internationally important wildlife site within Greater Cambridge – the Everseden and Wimpole Woods SAC, which is noted as of particular importance for its breeding colonies of the rare Barbastelle bat. However there are over 30 nationally designated SSSIs within South

Appendix B Review of Plans, Policies and Programmes and Baseline Information

Cambridgeshire, including the linear features of the Roman Road south of Cambridge and Fleam Dyke and the Cam Washes SSSI, which consists of seasonally flooded pastures along the Cam in the north of the plan area used by wildfowl and waders. Three of the sites are designated for the geological interest (Barrington Pit SSSI, Barrington Chalk Pit SSSI and Histon Road SSSI), while the remainder are designated for their biological interest. The Nine Wells local nature reserve on the southern edge of Cambridge was previously designated as a SSSI for its population of rare freshwater invertebrates, however these were lost in the drought of 1976 – there are plans to create the conditions to reintroduce these species.

B.21 Within Cambridge City there are a number of further nationally recognised nature conservation sites, including two SSSIs – the Cherry Hinton Chalk Pits and Traveller’s Rest Pit. A third site, Histon Road SSSI, borders the city. A number of additional SSSIs lie immediately on the borders of Greater Cambridge, including Therfield Heath SSSI (Royston), Potton Wood SSSI (Potton), Wicken Fen SSSI (near Soham), and Weaveley and Sand Woods SSSI (Gamlingay). In addition, in South Cambridgeshire there are currently 28 designated Local Nature Reserves (LNRs), of which 8 are owned by the Council, and are distributed relatively evenly across the District. In Cambridge City, there are 12 designated LNRs, 15 County Wildlife Sites, and 51 City Wildlife Sites. Finally, there are two adjacent RSPB Reserves at Fen Drayton Lakes and Ouse Fen on the northern border with Huntingdonshire, and a further (smaller) RSPB Reserve at Fowlmere in the south.

B.22 In addition, Cambridgeshire County Council have designated a list of Protected Road Verges (PRVs), recognising their status as the largest area of unimproved grassland in the county and their role as important habitat **[See reference 217]**.

B.23 Figure B.12 shows the various biodiversity designations within the plan area.

B.24 The national government has identified habitats and species of principal importance for conservation based on Biodiversity Action Plan (BAP) priorities.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

UK Priority habitats identified by the South Cambridgeshire Biodiversity Supplementary Planning Document (SPD) are:

- Rivers and streams, including chalk rivers.
- Woodland.
- Scrub (threatened by changes in farming practices but important for birds).
- Old orchards (particularly in the Fen edge villages).
- Hedgerows (threatened by changes in farming practices but species rich).
- Arable farmland.
- Ponds (farm and village ponds are being lost, with negative impact on biodiversity).
- Churchyards and cemeteries.
- Lowland calcareous grassland (once extensive within South Cambridgeshire).
- Meadows and pastures (once common within villages).

1. Similar Priority Habitats were identified within Cambridge City.

B.25 Within South Cambridgeshire, Priority Species identified by the Biodiversity SPD are:

- Otters (widespread along the Upper Cam and its tributaries).
- Water voles (widespread in some parishes).
- Skylarks.
- Great crested newts (found at smaller development sites within villages).
- House sparrows (rapidly in decline since the 1970s).
- Barn owls (numbers now increasing but threatened by intensive farming practices).
- White-clawed crayfish (formerly widespread in the River Rhee but in decline due to disease).

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Native black poplar trees (formerly of floodplains).

B.26 Additional Priority Species identified in Cambridge City are the song thrush and the brown hare [\[See reference 218\]](#).

B.27 It is also noted that invasive non-native species, such as signal crayfish, Himalayan balsam and Japanese knotweed are considered one of the top five threats to the natural environment in the UK.

B.28 On the eastern borders of the plan area, the National Trust 'Wicken Fen Vision' project plans to extend the wetland landscape to 53 square kilometres by 2099 and restore natural processes to allow the mosaic of habitats to recover. The territory this plan extends into South Cambridgeshire District and includes land lying east of the River Cam and between the settlements of Waterbeach and Lode [\[See reference 219\]](#). The Cambridgeshire Fens (lying between Peterborough and Cambridge) also provides a valuable fenland habitat context to the wider area. The Wicken Fen Vision includes an aspiration for increased public access in the southern part of the vision area, which could help provide additional open green space, particularly for residents of Cambridge city.

B.29 South Cambridgeshire is relatively sparsely wooded, [\[See reference 220\]](#) with small pockets of ancient woodland concentrated mainly in the west of the plan area (on the border with Huntingdonshire) and in the south east (on the border with the relatively well wooded Uttlesford and St Edmundsbury). The 'West Cambridgeshire Hundreds' project is an effort to reverse the damage and fragmentation of woodlands in the broader area, helping to support habitat connectivity. Three sites that form part of this initiative lie in the west of the plan area (Hardwick Wood, Cambourne Nature Reserve and Hayley Wood) and the remaining two lie across the border in Huntingdonshire. The Councils are also commissioning green infrastructure work to inform the emerging Local Plan.

B.30 The condition of the plan area's designated sites is mixed – the Cherry Hinton Pit SSSI has been assessed as in 'mostly unfavourable' condition, while the Traveller's Rest Pit SSSI is in 'favourable' condition. The Therfield Heath

Appendix B Review of Plans, Policies and Programmes and Baseline Information

SSSI on the southern border of Greater Cambridge (within North Hertfordshire) was classified as mostly 'unfavourable recovering' and is under stress from recreational pressure, particularly due to level of public use, including from new and proposed development nearby, recreational facilities and access rights as Common Ground. North Hertfordshire District Council are preparing a mitigation plan for the site and the Councils will need to consider any cross-border implication of development on this site. In addition, the Eversden and Wimpole Woods SSSI was assessed as being in mostly 'unfavourable – recovering' condition, with some areas in 'favourable' condition.

B.31 The Cambridgeshire SSSI Recreational Pressure Impact Risk Zones (IRZs) produced by Natural England can be used to gauge the extent of recreational pressure on designated sites due to recreational pressure. Natural England's Monitoring Engagement in the Natural Environment (MENE) data, in addition to other visitor surveys by the National Trust at Wicken Fen and elsewhere, provide more in-depth understanding of these zones of influence and the effects of recreational pressure. Given the importance of aquatic habitats within the plan area, threats to the water environment from over-abstraction and unsustainable water use also present a threat to designated sites.

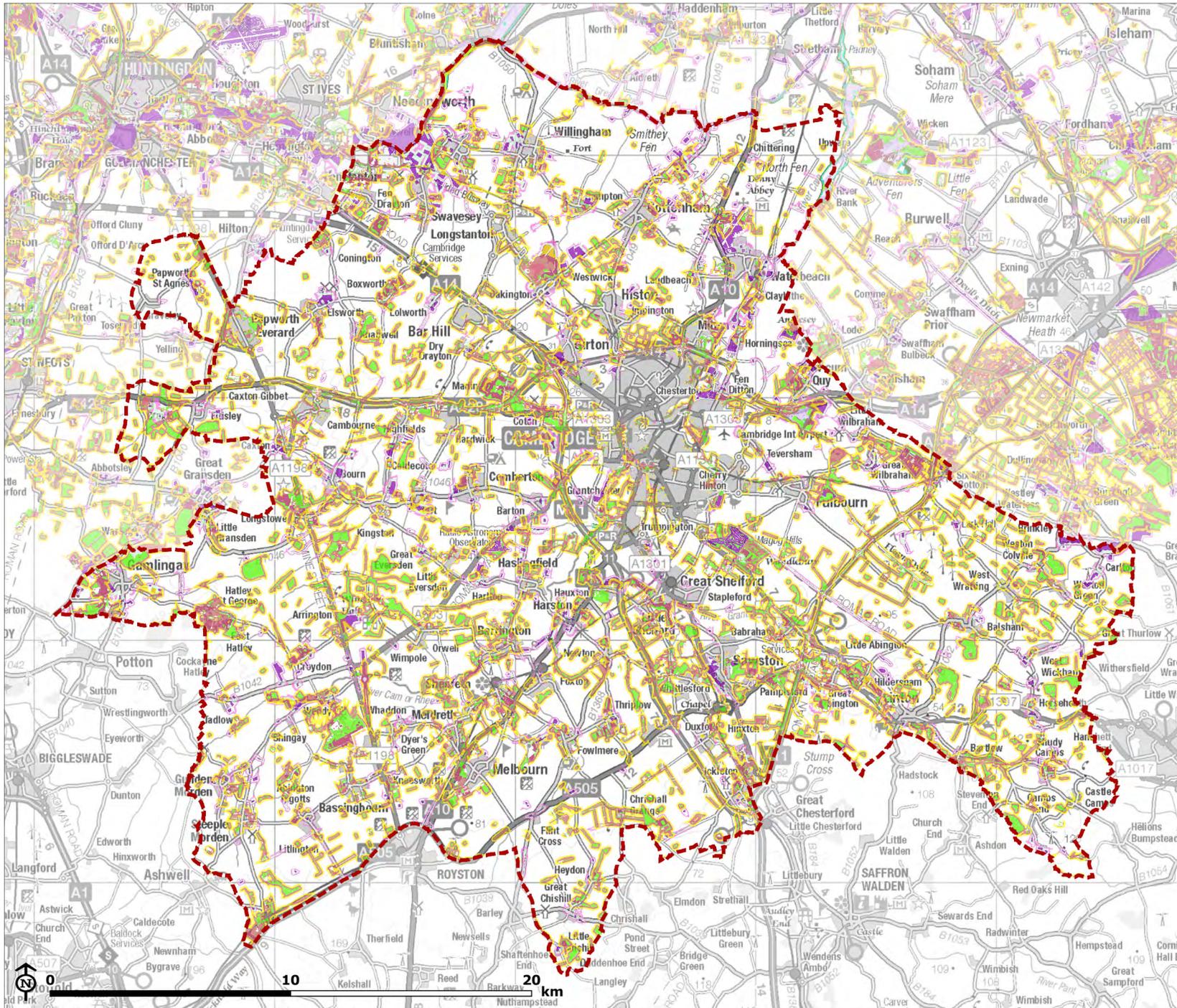
B.32 The 2011 Cambridgeshire Green Infrastructure Strategy notes that habitat loss and fragmentation is a key concern in the broader region, which is influenced by threats from climate change and development. In particular, patches of woodland in Cambridgeshire remain ecologically isolated and there are no large patches of continuous habitat – opportunities for field-scale habitat creation exist to connect these isolated woodland fragments **[See reference 221]**. The water environment too has an important role to play in habitat connectivity in Greater Cambridge. The Green Infrastructure Strategy notes that biodiversity is not always recognised as having the same value as economic activity and other areas. A new biodiversity/green infrastructure study is currently being commissioned by the Councils to serve as an updated evidence base. Biodiversity and wider environmental net gain will be an important consideration.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.33 Cambridge and the north eastern part of South Cambridgeshire lie within the proposed 'The Fens' Biosphere reserve. The Fens Biosphere is a multi-sector partnership, co-ordinated by Cambridgeshire ACRE and drawn from all sectors of life is working together to achieve UNESCO Biosphere status for the Fens. To be recognised by UNESCO as a Biosphere, the area of land must have a strong identity, excellent resources management and a focus on learning and innovation. In particular, The Fens Biosphere aims to bring people, nature and science together to provide a great quality of life in the fens without exhausting or damaging the resources in the area. These resources include an exceptional environment and wildlife; the natural resources of land, soil and water and the people who live and work in its communities. The area of The Fens that lies within Greater Cambridge is identified as part of the 'transition zone', where the focus will be on ensuring that resident needs (housing, jobs, recreation and so on) are sustainable and if possible benefit wildlife and the environment [\[See reference 222\]](#). The Local Plan can help to achieve this.

**Figure B.11:
Biodiversity
Opportunity Mapping**

-  Greater Cambridge
-  Existing Woodland
-  Woodland Stepping Stone Opportunity
-  Woodland Buffer Opportunity
-  Existing Wetland
-  Wetland Stepping Stone Opportunity
-  Wetland Buffer Opportunity
-  Existing Grassland
-  Grassland Stepping Stone Opportunity
-  Grassland Buffer Opportunity



Source: CCC, SCDC, OS, CPBG

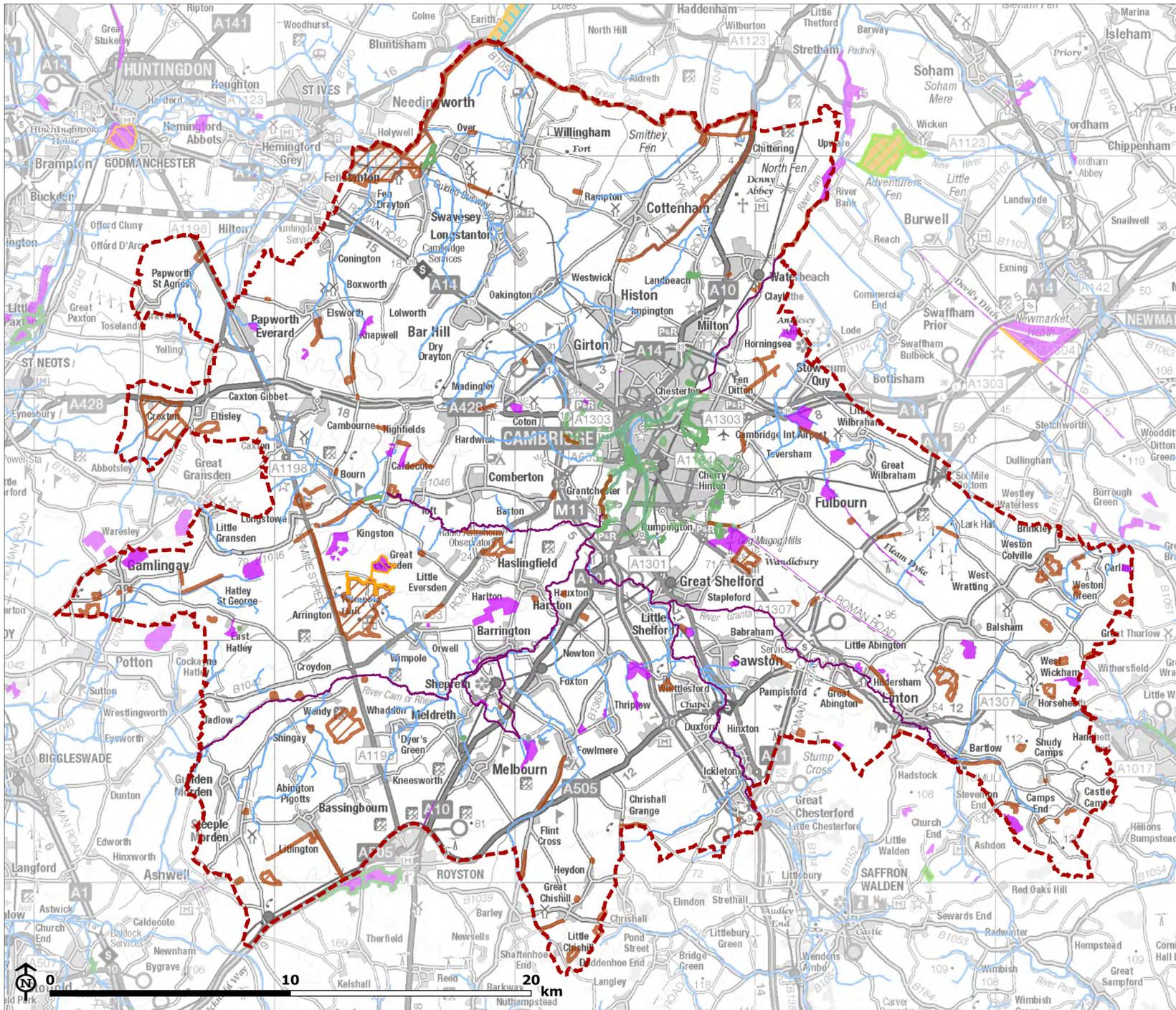
Map Scale @ A4: 1:225,000



Greater Cambridge SA

**Figure B.12:
Designated
Biodiversity Sites in
Greater Cambridge**

-  Greater Cambridge
-  Sites of Special Scientific Interest
-  Special Area of Conservation
-  National Nature Reserve
-  Ramsar Site
-  Special Protection Area
-  Local Nature Reserve
-  Local Wildlife Site
-  Watercourse



Source: CCC, SCDC, NE, OS

Map Scale @ A4: 1:225,000



Key sustainability issues for Greater Cambridge and likely evolution without the new Local Plan

- Key issues: Greater Cambridge contains and is in close proximity to a number of both designated and non-designated natural habitats and biodiversity. This includes those designated for their national and international importance. Not all SSSIs are in favourable condition.
- Likely evolution: While the designation of the biodiversity sites described above provide a level of protection (particularly those that are nationally and internationally designated), pressures are likely to continue due to ongoing pressure for further development and growth projections. Policy NH/5 of the South Cambridgeshire Local Plan prevents development having adverse effects on designated sites unless in exceptional circumstances. Policy 69 of the Cambridge Local Plan contains similar requirements. The new Local Plan presents the opportunity for new development to come forward at the most appropriate locations in order to avoid detrimental impacts on biodiversity assets, as well as to update planning policy in relation to future policy direction such as biodiversity net gain. The findings of the HRA will be incorporated into the SA and will provide further insight into biodiversity impacts specifically at designated sites, presenting the opportunity to limit adverse impacts at these locations.
- Relevant SA objectives: SA objective 5
- Key issues: Although designated sites represent the most valued habitats in the plan area, the overall ecological network is also important for biodiversity as a whole and helps to support the health of designated sites, allowing species to migrate in response to climate change. The fragmentation and erosion of habitats and the wider ecological network in Greater Cambridge, including the identified sparse woodland cover and condition of water bodies, is an ongoing threat to biodiversity.
- Likely evolution: Erosion and fragmentation of habitats and ecological networks could take place through poorly located and designed development. The NPPF requires Local Plans to include policies to safeguard, restore and create ecological networks at a landscape

scale. In addition, Policy NH/4 of the South Cambridgeshire Local Plan prevents development that results in the deterioration or fragmentation of habitats, and requires new development to maintain, enhance and restore biodiversity. Similarly, Policy 70 of the Cambridge City Local Plan requires development to protect and enhance habitats and species. The new Local Plan provides the opportunity to further promote biodiversity gain and to improve the overall ecological network. Improvements to GI can have a wider range of benefits beyond biodiversity, such as adapting to climate change, acting as a carbon sink and improving mental and physical health and wellbeing.

- Relevant SA objectives: SA objective 5, SA objective 11

Historic Environment

Policy Context

International

B.1 United Nations (UNESCO) World Heritage Convention (1972): promotes co-operation among nations to protect heritage around the world that is of such outstanding universal value that its conservation is important for current and future generations.

B.2 European Convention for the Protection of the Architectural Heritage of Europe (1985): Defines ‘architectural heritage’ and requires that the signatories maintain an inventory of it and take statutory measures to ensure its protection. Conservation policies are also required to be integrated into planning systems and other spheres of government influence as per the text of the convention.

B.3 Valletta Treaty (1992) formerly the European Convention on the Protection of the Archaeological Heritage (Revisited) [See reference 223]: Aims to protect the European archaeological heritage “as a source of European collective memory and as an instrument for historical and scientific study”.

National

B.4 Ancient Monuments & Archaeological Areas Act 1979: a law passed by the UK government to protect the archaeological heritage of England & Wales and Scotland. Under this Act, the Secretary of State has a duty to compile and maintain a schedule of ancient monuments of national importance, in order to help preserve them. It also creates criminal offences for unauthorised works to, or damage of, these monuments.

B.5 Planning (Listed Buildings & Conservation Areas) Act 1990: An Act of Parliament that changed the laws for granting of planning permission for building works, with a particular focus on listed buildings and conservation areas.

B.6 National Planning Policy Framework (NPPF) [See reference 224]: Plans should “set out a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. This strategy should take into account:

- the desirability of sustaining and enhancing the significance of heritage assets, and putting them to viable uses consistent with their conservation;
- the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;
- the desirability of new development making a positive contribution to local character and distinctiveness; and
- opportunities to draw on the contribution made by the historic environment to the character of a place.”

Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.7 National Planning Practice Guidance (PPG) [See reference 225]:

Supports the NPPF by requiring that Local Plans include strategic policies for the conservation and enhancement of the historic environment, including a positive strategy for the conservation and enjoyment of the historic environment. It also states that local planning authorities should identify specific opportunities for conservation and enhancement of heritage assets.

B.8 The Government's Statement on the Historic Environment for England (2010) [See reference 226]:

Sets out the Government's vision for the historic environment. It calls for those who have the power to shape the historic environment to recognise its value and to manage it in an intelligent manner in light of the contribution that it can make to social, economic and cultural life. Includes reference to promoting the role of the historic environment within the Government's response to climate change and the wider sustainable development agenda.

B.9 The Heritage Statement (2017) [See reference 227]: Sets out how the Government will support the heritage sector and help it to protect and care for our heritage and historic environment, in order to maximise the economic and social impact of heritage and to ensure that everyone can enjoy and benefit from it.

B.10 Sustainability Appraisal and Strategic Environmental Assessment, Historic England Advice Note 8 [See reference 228]:

Sets out Historic England's guidance and expectations for the consideration and appraisal of effects on the historic environment as part of the Sustainability Appraisal/Strategic Environmental Assessment process.

Sub national

B.11 South Cambridgeshire Listed Buildings SPD (2009) [See reference 229]: This document forms part of the Local Development Framework (LDF) to ensure that Listed Building issues are adequately addressed throughout the

Appendix B Review of Plans, Policies and Programmes and Baseline Information

development process. This expands on the broad policies set out in the Development Control Policies.

B.12 South Cambridgeshire Development Affecting Conservation Areas SPD (2009) [See reference 230]: expands on district-wide policies to provide additional guidance on developments affecting designated Conservation Areas, and to assist applicants' understanding of the local historic context to ensure that development preserves and, where possible, enhances their character.

B.13 South Cambridgeshire Village Design Guides (since 2018) [See reference 231]: Since 2018 the Council has been working with eight villages to produce Design Guides, funded by central government, with the goal of raising the quality of new planned development. Once adopted, they will become supplementary planning documents (SPDs). Each guide describes the distinctive character of the village and sets out guidelines for how it should be enhanced.

B.14 Cambridge Historic Core Appraisal (2006) [See reference 232]: The 'historic core' is part of the large Central Conservation Area No.1, which is one of a number within Cambridge but deemed to be of particularly historic interest. The Appraisal recognises that large parts of the floodplain and the setting of the River Cam are highly significant to the historic environment, as well as Jesus Green and Midsummer Common. In 2018 the large Central Conservation area was split into six smaller separate areas.

B.15 Cambridgeshire Green Infrastructure Strategy (2011) [See reference 233]: Outlines how the broader historic environment makes an important contribution to sense of places, sense of time and local identity and distinctiveness. The challenges highlighted including the impact of farming, the impact of climate change and development, lack of visibility of some assets, and conflicts between conservation and public access. An updated Green Infrastructure Strategy is currently being prepared.

B.16 Conservation Area Appraisals and Management Plans [See reference 234]: These appraisals describe the character and significance of Conservation Areas and give recommendations for their conservation and enhancement.

Baseline

B.17 Greater Cambridge has a rich and varied historic environment and hosts a number of heritage assets. The city of Cambridge is renowned worldwide for its historic environment, which defines the character of the city and makes it a popular tourist destination [See reference 235]. The historic environment can also make a significant contribution to the success of development and there may be opportunities in the plan area for the enhancement of the historic The historic environment can also make a significant contribution to the success of development and there may be opportunities in the plan area for the enhancement of the historic environment, including its role in creating a sense of place, promoting tourism and promoting innovative reuse of building stock.

B.18 The historical development of South Cambridgeshire has been closely associated with Cambridge and the communication network (river crossings and road junctions), the avoidance of flooding, and developments in agriculture. South Cambridgeshire was a key location on east-west trading routes, with the Icknield Way in the south east a particularly notable historic routeway. The markets towns and historic villages are mostly linear in form, despite modern infilling in some villages, particularly in villages close to Cambridge [See reference 236].

B.19 South Cambridgeshire District contains 2,692 listed buildings, 86 Conservation Areas and 107 scheduled monuments [See reference 237]. The District also includes 12 registered parks and gardens. At the time of writing, South Cambridgeshire District Council listed 15 Conservation Areas which had completed a Conservation Area Appraisal.

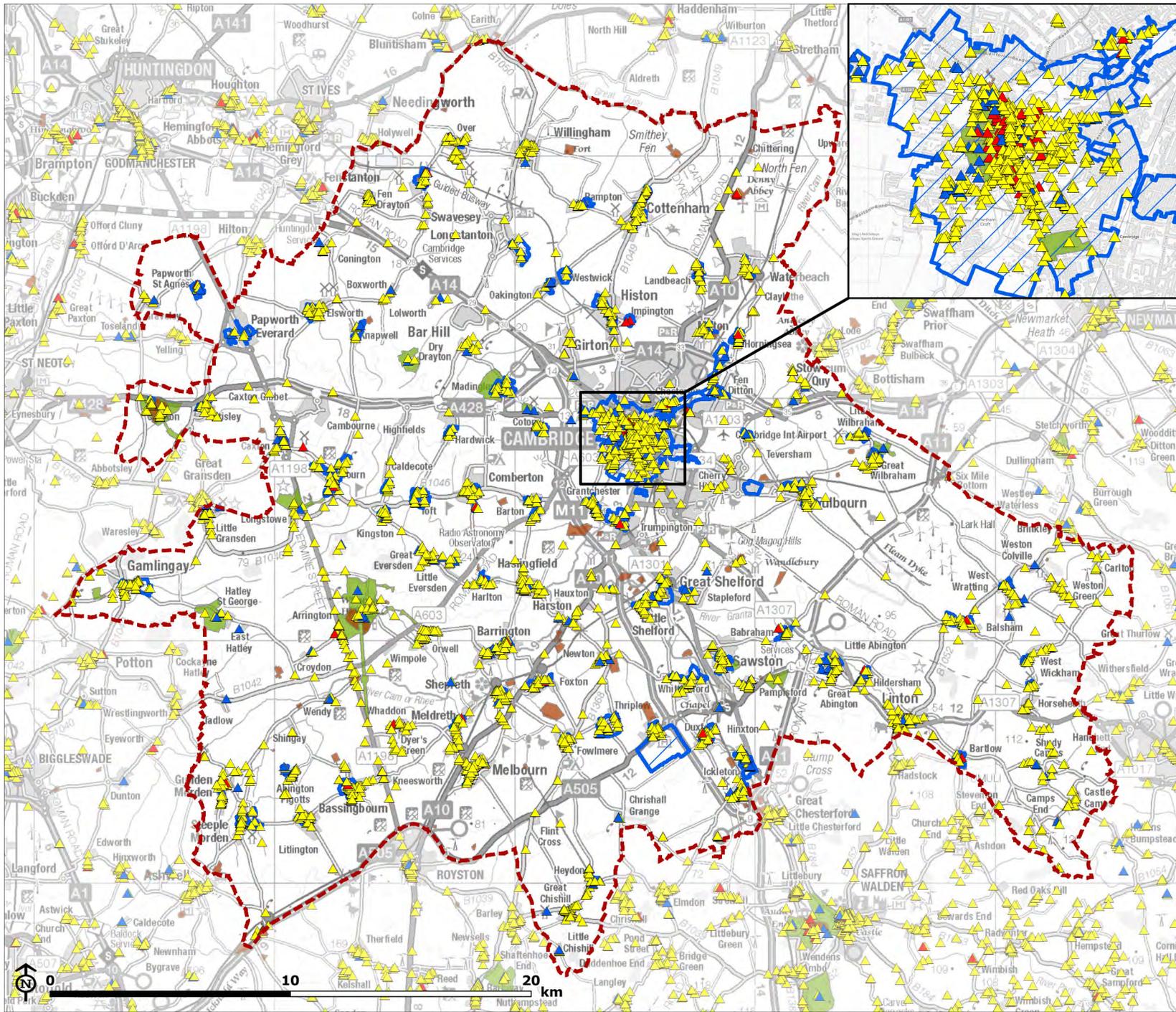
B.20 There are a high number of listed buildings (over 1,500) within Cambridge City, with a particularly high concentration of collegiate buildings around the arc

Appendix B Review of Plans, Policies and Programmes and Baseline Information

of the River Cam. The 'historic core' of the city alone contains over 1,000 nationally listed buildings. It is not clear whether any of the listed buildings in South Cambridgeshire or Cambridge City are subject to Listed Building Heritage Partnership Agreements. There are a total of 17 conservation areas within the city, 6 scheduled monuments and 12 registered parks and gardens of special historic interest, including a number of university colleges, cemeteries and the city's Botanic Garden. In addition, Cambridge City Council has designated over 1,000 buildings which, although they do not meet the criteria for statutory listing, are identified as of local interest for their architectural merit or historical associations **[See reference 238]**. There may be further non-designated and unknown heritage assets across the plan area.

B.21 Existing heritage designations and the nature of their distribution across the plan area are illustrated in Figure B.13.

B.22 Within South Cambridgeshire, five Conservation Areas have been included on Historic England's 'Heritage at Risk' register (Duxford Airfield, Duxford/Whittlesforth, Papworth Everard, Sawston, Fulbourn Hospital, Waterbeach) as well as five listed buildings (Church of All Saints and St Andrew, Church of St Peter, Church of All Saints, Church of St Andrew, Church of St Mary the Virgin) **[See reference 239]**. Within Cambridge City, a further one listed building (Church of St Andrews), and one scheduled monument (Old Cheddar's Lane Pumping Station) **[See reference 240]** are included on the register as illustrated in Figure B.14.



Greater Cambridge SA

Figure B.13: Heritage Assets in Greater Cambridge

- Greater Cambridge
- Conservation Area
- Scheduled Monument
- Registered Parks and Gardens

Listed Buildings

Grade

- ▲ I
- ▲ II
- ▲ II*

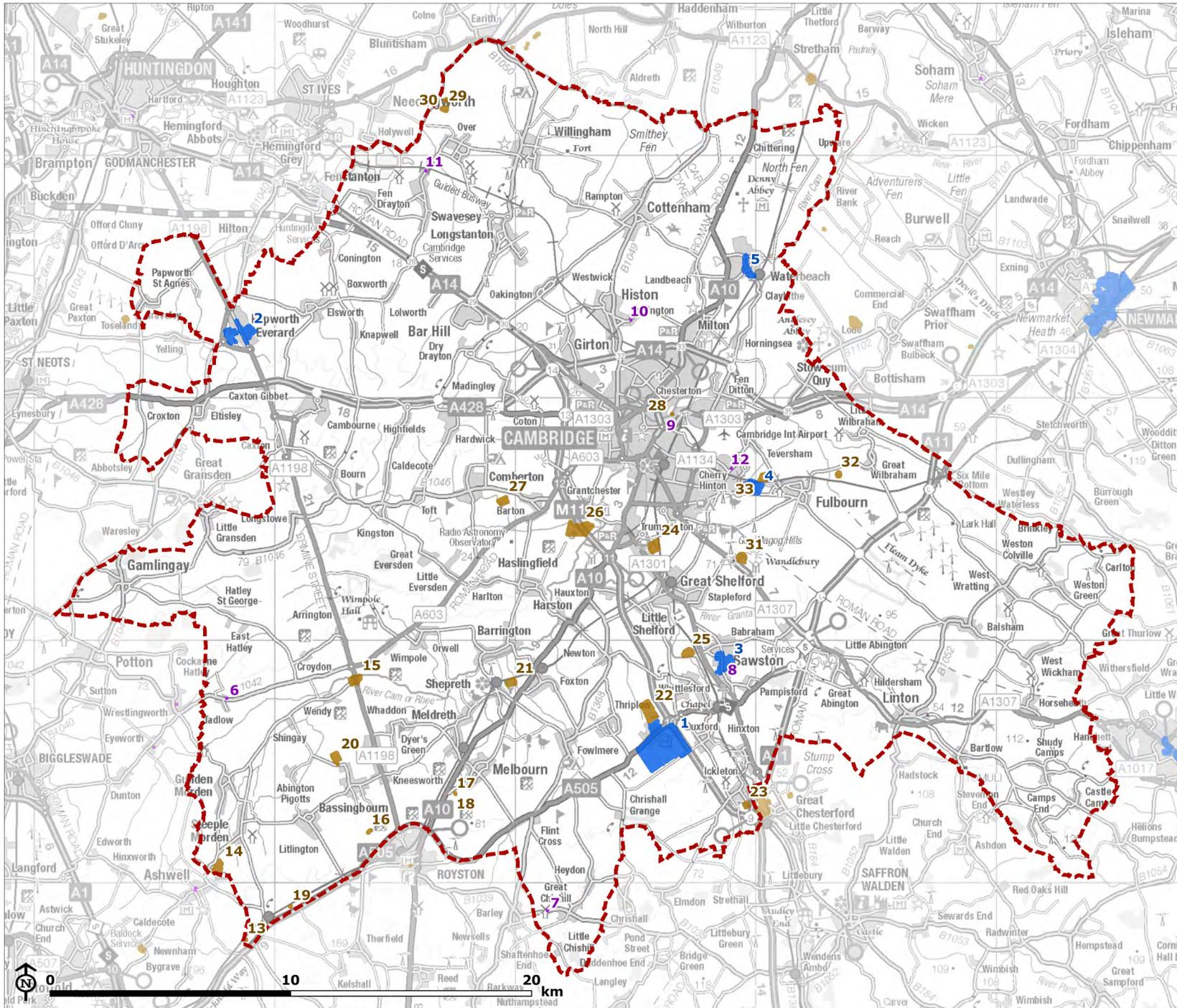
Source: CCC, SDC, HE

Map Scale @ A4: 1:225,000



Figure B.14: Heritage Assets At Risk in Greater Cambridge

-  Greater Cambridge
-  Conservation Area
-  Listed Building
-  Scheduled Monument



Source: HE

Map Scale @ A4: 1:225,000



Key sustainability issues for Greater Cambridge and likely evolution without the new Local Plan

- **Key issues:** There are many sites, features and areas of historical and cultural interest in the plan area, both designated and non-designated, a number of which are at risk and identified on the Heritage at Risk register. In the context of significant ongoing pressures for development locally, these assets, and their landscape setting, may be at risk of adverse effects from poorly located or designed development, particularly in areas where there is likely to be a significant loss or erosion of landscape or townscape quality due to development.
- **Likely evolution:** A number of the heritage assets in the plan area, for example listed buildings and scheduled monuments, will be protected by statutory designations, and existing Local Plan policies provide further protection - Policy NH/14 of the adopted South Cambridgeshire Local Plan sets out to ensure that development sustains and enhances the character of the historic environment and creates high quality new environments with a strong sense of place by responding to local heritage character. In addition, locally-specific policies outline specific heritage assets to be protected. Policies 61 and 62 of the adopted Cambridge Local Plan seek to protect and enhance the city's historic environment, and are supported by Policies 55-59 which safeguard local character. However, without the new Local Plan it is possible that these assets will be adversely affected by inappropriate development. This is because the new plan will be developed on the basis of a different baseline of expected growth, which may put these assets (including their setting) under increased pressure.
- **Relevant SA objectives:** SA objective 6, SA objective 7
- **Key issues:** Heritage assets in the plan area which are at risk from decay and neglect may also be affected by traffic-related impacts, including air quality and noise pollution.
- **Likely evolution:** Policies SC/12 of the South Cambridgeshire Local Plan requires applicants to ensure no adverse impacts on air quality of new development, and Policy SC/10 requires that development does

not have an unacceptable adverse impact on countryside areas of tranquillity important for countryside recreation. Policy 36 of the Cambridge Local Plan requires developers to ensure they have no adverse effects on air quality, and Policy 35 requires that development does not have an adverse effect on amenity from noise and vibration. However, without a new Local Plan, developed on the basis of updated evidence and development trajectories, historic assets and their settings may be put at further risk. The new Local Plan presents an opportunity to address potential harm to the historic environment from these indirect effects in a more holistic way.

- Relevant SA objectives: SA objective 6, SA objective 7, SA objective 13

Landscape

Policy Context

International

B.1 European Landscape Convention (2002): Promotes landscape protection, management and planning. The Convention is aimed at the protection, management and planning of all landscapes and raising awareness of the value of a living landscape.

National

B.2 National Planning Policy Framework (NPPF) [See reference 241]: Planning principles include:

- Recognising the intrinsic beauty and character of the countryside.

Appendix B Review of Plans, Policies and Programmes and Baseline Information

- Protecting and enhancing valued landscapes. Development should be sympathetic to local character and history, including the surrounding built environment and landscape setting.
- Conserve and enhance landscape and scenic beauty in National Parks, The Broads and Areas of Outstanding Natural Beauty.

B.3 A Green Future: Our 25 Year Plan to Improve the Environment [See reference 242]: Sets out goals for improving the environment within the next 25 years. It details how the Government will work with communities and businesses to leave the environment in a better state than it is presently. Identifies six key areas around which action will be focused. Those of relevance to this chapter are: recovering nature and enhancing the beauty of landscapes. Actions that will be taken as part of this key area are as follows:

- Working with AONB authorities to deliver environmental enhancements.
- Identifying opportunities for environmental enhancement of all England's Natural Character Areas, and monitoring indicators of landscape character and quality.

Sub-national

B.4 East of England Landscape Typology [See reference 243]: The East of England Landscape Character Typology draws on a range of data, including Landscape Character Assessment, Historic Landscape Characterisation, biodiversity and rural settlement data sets, as well as data generated through consultation. It provides a finer grain of detail on landscape character than the national-level Character Areas.

B.5 Cambridge Landscape Character Assessment (2003) [See reference 244]: Carried out to create a 'baseline' statement of qualities and character in the city in order to ensure the character of the city is maintained. It sought to indicate areas or features which are important to the setting of Cambridge and should remain undeveloped, and to describe the essential character of the townscape and its rural hinterland, to guide judgements on new development. A

Appendix B Review of Plans, Policies and Programmes and Baseline Information

new Landscape Character Assessment is being prepared by both Councils for the new Local Plan.

B.6 Cambridgeshire Green Infrastructure Strategy (2011) [See reference 245]: The Strategy was designed to assist in shaping and co-ordinating the delivery of Green Infrastructure across the county of Cambridgeshire, in order to provide the social, environmental and economic benefits associated with GI. It covers the period up to 2031. The Project Group consisted of the County Council, the individual District Councils, as well as a number of external bodies including Natural England and the local Wildlife Trust. The Strategy notes that enhancing landscape is one of the key functions of Green Infrastructure and the diversity of the landscape, giving an overview of the existing range of landscapes and habitats, including prominent ones such as the Ouse and Nene Washes. A new Green Infrastructure Strategy is being prepared for the new Greater Cambridge Local Plan.

B.7 South Cambridgeshire Landscape in New Developments SPD (2007) [See reference 246]: expands on district-wide policies to provide additional guidance for planning applicants on how landscape should be integrated into new developments.

Current Baseline

B.8 Cambridgeshire as a whole is largely rural and is predominantly a farmed landscape, with three-quarters of the county devoted to the production of food, fuel and fibre. The landscape is characterised by smooth, rolling chalkland hills and is predominantly open, allowing for long views.

B.9 Greater Cambridge is generally relatively sparsely populated, with settlements generally located along river valleys and more recently along road and rail corridors. However, the city of Cambridge is an historic, urban hub within the wider landscape. Major transport corridors (notably the M11, A14 and rail corridors) run through the plan area. Along with historical and ongoing

Appendix B Review of Plans, Policies and Programmes and Baseline Information

pressure for development, landscape assessments highlight that this is likely to further reduce the tranquillity of the area as a whole [See reference 247].

B.10 There are no designated landscape areas (Areas of Outstanding Natural Beauty) within or immediately adjacent to the plan area. The Chilterns AONB lies around 15 km from the area's westernmost point, and as such it is unlikely that development in this area will have an effect on the landscape of the AONB. The 2011 Green Infrastructure Strategy noted that key challenges for the county include the need for long-term investment and the erosion of landscape quality from changing land use and development.

B.11 No dedicated landscape character assessment has been carried out for South Cambridgeshire, nor at the county level, however the Councils plan to commission a Green Belt and Landscape Character Assessment as part of an updated evidence base. Nevertheless, parts of five different National Character Areas (NCAs) lie within the plan area, as illustrated in Figure B.15:

- The majority of the western half (washing over the city of Cambridge) is characterised by NCA 88 Bedfordshire and Cambridgeshire Claylands, a broad and gently undulating landscape dominated by large-scale arable farmland and rich in historical features. It is dissected by shallow river valleys, including the Great Ouse on the northern boundary of Greater Cambridge, which gradually widen as they approach the Fens NCA in the east [See reference 248].
- Most of the eastern and southern parts of the area are identified as NCA 87 East Anglian Chalk. While historically this area was grazed by sheep, today large-scale cereal production (mainly wheat) now dominates the agricultural landscape. The porous chalk that underlies the landscape results in limited surface water.
- Three further NCAs cover smaller areas of the plan area. These include NCA 86 South Suffolk and North Essex Claylands in the far east of the area (an undulating ancient landscape of wooded arable countryside with numerous river valleys); [See reference 249] NCA 46 The Fens on the north eastern border (a distinctive wetland with a large, flat and open landscape, resulting in a strong sense of place, tranquillity and inspiration); and NCA 90 Bedfordshire and Greensand Ridge on the western boundary

Appendix B Review of Plans, Policies and Programmes and Baseline Information

around Gamlingay (a narrow ridge surrounded by NCA 88, characterised by historic landscapes and a patchwork of semi-natural habitats). [\[See reference 250\]](#)

B.12 The East of England Landscape Typology provides further, more granular assessment of the landscape types in the region, both urban and rural [\[See reference 251\]](#).

B.13 In the south of Greater Cambridge, near the border with Uttlesford, the major prehistoric routeway of the Icknield Way (a long-distance footpath) traverses the south west corner of South Cambridgeshire and is a distinctive landscape feature as well as having value for the historic environment.

B.14 Skylines of cities evolve and change over time in response to increasing urban expansion and renewal. The Cambridge skyline has also undergone this process incrementally. Within the historic core, there is a great variety of rooflines, articulated by spires, cupolas, chimneys and towers [\[See reference 252\]](#). Trees also form an important element in the modern Cambridge skyline, within both the historic core and the suburbs. Many of the elevated views of the city from the rural hinterland and from Castle Mound show a city of trees with scattered spires and towers emerging above an established tree line. The character of the more urbanised environment within Cambridge City is described in the 2003 Cambridge Landscape Assessment, which identifies 7 landscape character types within the city [\[See reference 253\]](#). It describes the uniqueness of the city landscape, as a mosaic of built areas interspersed with a network of open spaces. It is a compact city with a strong sense of identity, while the setting is largely 'unexceptional arable lowland' but with some attractive aspects. 'Green fingers' such as The Backs are identified as an important feature, linking the hinterland with the historic core. Water is also identified as a key landscape feature in the city. In general the character areas describe a historic city centre and 'borrowed landscapes' of college gardens and cemeteries, surrounded by a mixed residential landscape and some ancient villages, followed by a 'rural lowland mosaic', all dissected by the corridor of the River Cam and rail and road corridors. Some of the outer parts of the city are characterised by poorer quality suburban housing developments, and former industrial and utilities land [\[See reference 254\]](#).

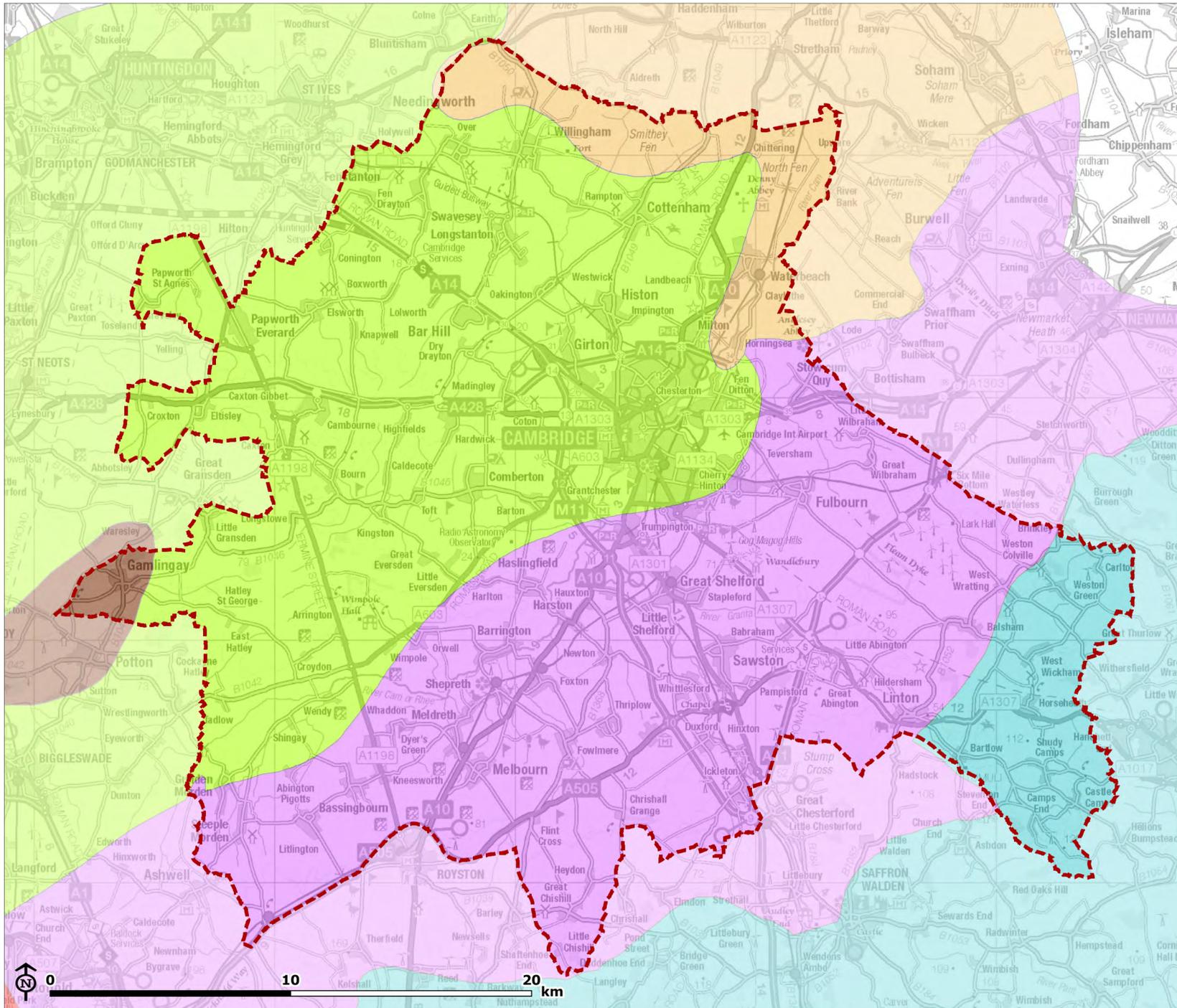
Appendix B Review of Plans, Policies and Programmes and Baseline Information

B.15 The Ouse Washes Landscape Character Assessment helps to describe in more detail the character of the distinctive landscape on the northern boundary of South Cambridgeshire. The area overlapping with Greater Cambridge is identified as the 'Ouse Valley Wetlands' – a broad flat floodplain of the River Great Ouse and its surrounding clay margins. The Great Ouse is now channelled between embankments and gravel extraction on its floodplain has transformed the former waterlogged fen into a cluster of lakes. Higher land on the margins of the fen hosts a string of villages with a hinterland of paddocks, orchards and farmsteads. The study finds that this part of the Ouse Washes landscape can accommodate change provided new development is not extensive and that protects sensitive features including historic tracks, other historic features, and land uses on the fringe of villages.

B.16 Cambridge city is surrounded by Green Belt, most of which lies within South Cambridgeshire district. Green Belt is a policy designation, rather than a sustainability designation, which has its own defined purposes and is considered separately to the SA.

Figure B.15: National Character Areas in Greater Cambridge

-  Greater Cambridge
- National Character Area**
-  Bedfordshire Greensand Ridge
-  Bedfordshire and Cambridgeshire Claylands
-  East Anglian Chalk
-  South Suffolk and North Essex Clayland
-  The Fens
-  Chilterns



Source: NE

Map Scale @ A4: 1:225,000



Key sustainability issues for Greater Cambridge and likely evolution without the Local Plan

- Key issues: While the plan area is not in close proximity to nationally designated or highly sensitive landscape areas, it contains a diverse range of nationally recognised landscape character areas that could be harmed by inappropriate development. For example, the fenlands on the northern boundary of Greater Cambridge are particularly sensitive to development. If development was to be allocated there it could threaten losses to a distinctive wetland landscape.
- Likely evolution: While the plan area is not in close proximity to nationally designated or highly sensitive landscape areas, it contains a diverse range of nationally recognised landscape character areas that could be harmed by inappropriate development. For example, the fenlands on the northern boundary of Greater Cambridge are particularly sensitive to development. If development was to be allocated there it could threaten losses to a distinctive wetland landscape.
- Relevant SA objective: SA objective 6
- Key issues: The distinct historic character of the South Cambridgeshire villages, and in particular the sensitive historic landscape setting of Cambridge requires protection as development comes forward, particularly in maintaining key views into Cambridge.
- Likely evolution: Policy NH/13 of the South Cambridgeshire Local Plan requires definition along important countryside frontages where land has a strong landscape character, while Policy 59 of the Cambridge City Plan requires that landscape and boundary treatment are designed as an integral part of new development proposals. Further, Policy 60 sets out criteria for assessing buildings breaking with the existing skyline, which should fit within the existing landscape and townscape. The new Local Plan provides an opportunity to ensure that, in the context of ongoing development pressures, development coming forward does not adversely affect the setting of sensitive heritage

Appendix B Review of Plans, Policies and Programmes and Baseline Information

assets and lies sympathetically within the existing landscape and townscape.

- Relevant SA objectives: SA objective 6

Appendix C

Appraisal of Strategic Spatial Options

C.1 This Appendix sets out the SA findings for the eight Strategic Spatial Options that were assessed in 2020. This is a record of the assessments published in November 2020.

SA objective 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home

C.2 Sustainability effects for this SA objective are summarised in Table C.1 and Table C.2 and described in the text below the tables.

Table C.1: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal - new settlements	5. Dispersal - villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-?	++?	++?	+	++?	++?	++?	++?
Medium Growth	++?	++?	++	+	++?	++?	++?	++
Maximum Growth	++?	++?	++?	+	++?	++?	++?	++?

Table C.2: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal - new settlements	5. Dispersal - villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-?	++?		++?		++?	++?	++?
Medium Growth	++	++		++		++	++	++
Maximum Growth	++	++		++		++	++	++

C.3 It is noted that the options have been compiled to ensure that sufficient housing would be provided under each of the minimum, medium and maximum growth scenarios.

1. Densification of existing urban areas

C.4 Option 1 would result in an increase in the density of development, particularly within Cambridge, where demand is high – especially from young professionals, and North East Cambridge. This could involve the development of taller buildings, as well as the development of underused land or possibly open space. However, this may result in a high proportion of flats and therefore may not provide as large a range of housing types. The Housing Delivery Study – Interim Findings and Spatial Options Commentary also notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. This is particularly true for the minimum scenario. As the medium and maximum scenarios would provide housing from Cambridge Airport, and for the medium scenario one edge of Cambridge Green Belt site, they could include larger developments with a greater range of housing types. However, those additional sources of supply, such as edge of Cambridge sites and committed new settlements, could result in a lower level of affordable housing provision due to greater costs to deliver additional infrastructure. The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests the maximum growth scenario may not be deliverable within the plan period, resulting in uncertainty for this scenario.

C.5 Overall, mixed significant positive and minor negative effects are expected for the minimum growth scenario, whereas significant positive uncertain effects are expected for the medium and maximum growth scenarios.

C.6 When fully built out, scores are expected to remain the same, although any uncertainty is removed because the full housing requirement will be delivered. Uncertainty is recorded for the minimum growth scenario as it does not reflect the outcome of economic forecasting in the Employment Land Review.

2. Edge of Cambridge – outside the Green Belt

C.7 The focus of this option is Cambridge Airport, which could provide a substantial number of homes (although additional sources of supply are needed to meet housing needs) but is unlikely to be delivered until after 2030.

Nevertheless, the additional sources of supply, such as North East Cambridge, a village site for the minimum growth scenario and rural centres and minor rural centres for the medium growth scenario, could come forward earlier in the plan period. As such, significant positive effects are expected under the minimum growth scenario.

C.8 For the medium and maximum growth scenarios, additional sources of supply include new settlements (along with growth in North East Cambridge and in the rural centres and minor rural centres for medium growth). This could result in a lower level of affordable housing provision due to greater costs to deliver additional infrastructure and would likely have a substantial lead in time.

The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests the maximum growth scenario may not be deliverable within the plan period, resulting in uncertainty for this scenario.

C.9 The Housing Delivery Study – Interim Findings and Spatial Options Commentary also notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. As such, significant positive uncertain effects are recorded against these two scenarios. Uncertainty is recorded for the minimum growth scenario as it does not reflect the outcome of economic forecasting in the Employment Land Review.

C.10 When fully built out, scores are expected to remain the same, although uncertainty is removed for the medium and maximum growth scenarios, because the full housing requirement will be delivered.

3. Edge of Cambridge – Green Belt

C.11 Option 3 would provide sufficient housing and may lead to a more diverse range of housing types than Option 1, due to the larger area available for development at edge of Cambridge sites in the Green Belt. However, this option could result in a lower level of affordable housing provision due to the costs required to deliver upfront infrastructure (although this would not apply to growth in the Cambridge urban area, which is included in the medium growth scenario). As such, significant positive effects are expected for all scenarios. Uncertainty is recorded for the minimum growth scenario as, if the Councils' plans for minimum growth but the economy grows faster than accounted for, there may be a shortfall in housing provision. Uncertainty is also recorded for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period.

C.12 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

C.13 Option 4 could result in a lower level of affordable housing provision due to the costs required to deliver upfront infrastructure. In addition, the development of new settlements is likely to have a long lead-in time, meaning the full housing requirement may not be delivered until later in the plan period. Relying solely on new settlements to provide housing could risk shortfalls in housing coming forward over the plan period. The minimum growth scenario has additional uncertainty as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period.

C.14 As such, minor positive uncertain effects are expected for all options for 2020-2041.

C.15 When fully built out, all options are expected to have significant positive effects as it is expected housing needs would be met at this point.

5. Dispersal – villages

C.16 Option 5 may be less likely to deliver affordable housing or a range of housing types because of the smaller scale of the schemes involved affecting viability, although this depends on the size of any developments coming forward under this option, as mid-sized schemes are often more able to provide affordable housing. Development may come forward more quickly than other options, due to the shorter lead in times associated with smaller scale development. Additional uncertainty is identified for the minimum growth scenario as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period. As such, significant positive uncertain effects are expected for all growth scenarios.

C.17 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.18 All growth scenarios include growth at North East Cambridge, a new settlement on a public transport corridor and growth at additional villages. New settlements may provide less affordable housing, due to upfront infrastructure costs, and will have a longer lead in time, leading to some uncertainty earlier in the plan period. However, as the options also include growth at North East Cambridge and villages, this is likely to be somewhat balanced out by the other

sources of supply. The Housing Delivery Study – Interim Findings and Spatial Options Commentary also notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. Additional uncertainty is identified for the minimum growth scenario as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period.

C.19 As such, significant positive effects with uncertainty are expected for all options.

C.20 When fully built out, scores are expected to remain the same, although uncertainty is removed for the medium and maximum options because the full housing requirement will be delivered.

7. Supporting a high-tech corridor by integrating homes and jobs

C.21 All growth scenarios include a new settlement along with development at a number of villages. New settlements may provide less affordable housing, due to upfront infrastructure costs, and will have a longer lead in time, leading to some uncertainty earlier in the plan period. However, providing the balance of development at southern villages (and partly at North East Cambridge and Cambridge Airport, for the high growth scenario) may somewhat balance this. The Housing Delivery Study – Interim Findings and Spatial Options Commentary notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. The minimum growth scenario has additional uncertainty as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study

– Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period.

C.22 All scenarios are expected to have significant positive effects, with uncertainty.

C.23 When fully built out, scores are expected to remain the same, although any uncertainty is removed for the medium and maximum scenarios because the full housing requirement will be delivered.

8. Expanding a growth area around transport nodes

C.24 This option is expected to result in large-scale growth at Cambourne, along with some smaller development. For the minimum growth scenario, development is expected to be focused primarily at a large-scale development, which may provide less affordable housing, due to upfront infrastructure costs, and will have a longer lead in time, leading to some uncertainty earlier in the plan period. All scenarios also include some growth at more rural settlements, which may help ensure some growth comes forward earlier in the plan period. The medium and maximum growth scenarios also include large-scale growth at Cambourne, but also include North East Cambridge, which adds another source of growth and may therefore be more likely to provide sufficient housing earlier in the plan period. The Housing Delivery Study – Interim Findings and Spatial Options Commentary also notes that there is a risk to rely on delivery from North East Cambridge during the middle part of the plan period, given uncertainties surrounding the relocation of the wastewater treatment works. However, the maximum scenario also includes Cambridge Airport, which is not likely to come forward until after 2030.

C.25 The minimum growth scenario has additional uncertainty as it does not reflect the outcome of economic forecasting in the Employment Land Review. Additional uncertainty is also identified for the maximum growth scenario as The Housing Delivery Study – Interim Findings and Spatial Options Commentary suggests this scenario may not be deliverable within the plan period. Overall,

significant positive effects are expected for all growth scenarios, with uncertainty related to the minimum and maximum growth scenarios.

C.26 When fully built out, scores are expected to remain the same, although uncertainty is removed for the maximum growth scenario, because the full housing requirement will be delivered.

Best performing option

C.27 As all growth scenarios are expected to deliver the full housing need within the plan period, it is not possible to distinguish a best performing option.

Options that include a more diverse range of housing supply are associated with more certainty, as it is less likely that housing delivery will be skewed towards the end of the plan period. The minimum growth scenario for Option 1 'Densification of existing urban areas' and all growth scenarios for Option 4 'Dispersal – new settlements' perform least well, as they may not result in the necessary range of housing types or sufficient housing coming forward until later in the plan period. This is particularly the case for Option 4, given its reliance solely on new settlements to deliver housing supply.

C.28 The Housing Delivery Study – Interim Findings and Spatial Options Commentary raises particular uncertainty around the maximum growth scenario, as it suggests this scenario may not be deliverable within the plan period. The minimum growth scenario has additional uncertainty as, it does not reflect the outcome of economic forecasting in the Employment Land Review.

SA objective 2: To maintain and improve access to centres of services and facilities including health centres and education

C.29 Sustainability effects for this SA objective are summarised in Table C.3 and Table C.4 and described in the text below the tables.

Table C.3: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+	+	+	+/-?	--/+	+/-	+/-?	+
Medium Growth	+/-	+/-?	+/-?	+/-?	--/+	+/-	+/-?	+/-?
Maximum Growth	++/-	+/-?	++/-?	++/-?	--/+?	++/-	++/-?	++/-?

Table C.4: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	++		++		++/-	++/-?	++?
Medium Growth	++/-	++/-?		++		++/-	++/-?	++/-?
Maximum Growth	++/-	++/-?		++		++/-	++/-	++/-?

1: Densification of existing urban areas

C.30 Option 1 would result in an increase in the density of development, particularly within Cambridge. There are already a number of services and facilities in Cambridge; therefore new development is more likely to be in close proximity to these. However, an increase in the density of the city could place increased strain and pressure on these services and facilities, as they may not have capacity to accommodate the additional growth, reducing people's overall accessibility to them. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity.

C.31 The minimum growth scenario includes North East Cambridge, which will provide new services and facilities, as well as low growth in the urban area. As such, this scenario will put less pressure on existing services and facilities. The medium and maximum growth scenarios also include North East Cambridge but may put more pressure on local services and facilities, due to the increased density of development in the Cambridge urban area. In addition, growth on the edge of Cambridge (including Cambridge Airport for both the medium and maximum scenarios and an edge of Cambridge Green Belt site for the medium scenario) would be well-located for (although potentially put pressure on) accessing services and facilities within the city. Whilst both are also likely to include larger developments that may provide new services and facilities, these would be located outside of Cambridge and therefore would not be able to fully mitigate the effects of higher densities in the urban area.

C.32 The Infrastructure Study suggests that large sites such as North East Cambridge and Cambridge Airport will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

C.33 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at

North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport.

C.34 For 2020-2041, the minimum growth scenario is expected to result in minor positive effects and the medium growth scenario is expected to result in mixed minor positive and minor negative effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

C.35 The maximum growth scenario is expected to have mixed significant positive and minor negative effects for both the plan period and when fully built out.

2: Edge of Cambridge – outside the Green Belt

C.36 Option 2 focuses on development of Cambridge Airport, which is expected to be of sufficient scale to provide a mixed development incorporating a good range of services and facilities. It also has good accessibility to the city and nearby suburbs (e.g. Cherry Hinton), where additional services and facilities are located, although the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. All growth scenarios also include North East Cambridge, which is also expected to provide new services and facilities.

C.37 The medium and maximum growth scenarios include development of new settlements, which are expected to provide new services and facilities, particularly larger settlements. However, all new settlements are expected to be of a size where they are largely self-sufficient for meeting people's day to day needs. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability. The minimum growth scenario includes a village site and the medium growth scenario includes development at rural centres and minor rural centres, which

may help ensure the continued vitality and viability of these centres, although there is a risk that a larger amount of development at any one rural settlement could lead to increased pressure on services and facilities.

C.38 The Infrastructure Study suggests that large sites such as new settlements, North East Cambridge and Cambridge Airport will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

C.39 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at new settlements North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport or the new settlements.

C.40 For 2020-2041, the minimum growth scenario is expected to result in minor positive effects and the medium and maximum growth scenarios are expected to result in mixed minor positive and minor negative uncertain effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

3. Edge of Cambridge – Green Belt

C.41 Option 3 would see the creation of new homes and jobs in extensions on the edge of Cambridge, which is likely to result in provision of new services and facilities, although the range of services and facilities provided at particular development locations will likely depend on the size of the extension. Smaller extensions, which are more likely to come forward under the minimum and medium growth options, due to the lower level of overall growth, may provide a more limited range of services and would place greater reliance on existing services and facilities in the city, but, as with Option 1, could lead to existing facilities becoming over-capacity, or may not be well located to existing services

and facilities. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. This is likely to be a lower risk in the minimum growth scenario (depending on the services and facilities provided at urban extensions), due to the lower level of growth on the edge of Cambridge. The medium scenario includes a small level of growth in the Cambridge urban area, which would be well located for accessing services and facilities and, due to the low level of growth may not put much additional pressure on these. However, both medium and maximum growth scenarios are more likely to put pressure on existing facilities due to utilising all estimated capacity on the edge of Cambridge. In addition, phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability.

C.42 For 2020-2041, the minimum growth scenario is expected to have minor positive uncertain effects, the medium growth scenario is expected to have mixed minor positive and minor negative uncertain effects and the maximum growth scenario is expected to have a mixed significant positive and minor negative effect with uncertainty.

C.43 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

C.44 The creation of new settlements as set out in Option 4 provides an opportunity for significant new infrastructure to be delivered, such as schools, health facilities, local centres and green spaces, but it would be starting from scratch. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability.

C.45 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

C.46 The Infrastructure Study suggests that large sites such as new settlements will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

C.47 For 2020-2041, the minimum and medium growth scenarios are expected to result in mixed minor positive and minor negative uncertain effects and the maximum growth scenario is expected to result in mixed significant positive and minor negative uncertain effects. Significant positive effects are expected for all scenarios when fully built out, as they are expected to provide services and facilities to meet day-to-day needs of residents.

5. Dispersal – villages

C.48 Option 5 would result in an increase in development at villages across Greater Cambridge. This increase would support existing services and facilities at these villages, but could also place increased pressure on them, as they may not have capacity to accommodate the additional growth, reducing people's overall accessibility to them in the long-run. Indeed, villages are likely to have a more limited range of facilities than the city centre or new settlements.

C.49 Therefore, Option 5 is expected to have a mixed minor positive and significant negative effect against this objective for all growth scenarios. There is uncertainty associated with the maximum scenario, as development, particularly in the rural centres, may reach a critical mass at which it will result in provision of some new services and facilities.

C.50 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.51 Option 6 would result in development along key public transport corridors. This development could have good access to services and facilities elsewhere, due to their proximity to public transport hubs.

C.52 All growth scenarios include development at North East Cambridge, which will provide new services and facilities, as well as being in close proximity to existing facilities within Cambridge city. In addition, provision of a small amount of additional housing at 18 villages may help ensure the viability of existing services and facilities in those villages. However, development at villages could also place increased pressure on them, as they may not have capacity to accommodate the additional growth, reducing people's overall accessibility to them in the long-run. The creation of new settlements would also likely require supporting transport infrastructure that connected it to Cambridge, which would require large-scale investment and time to implement. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability.

C.53 The Infrastructure Study suggests that large sites such as new settlements and North East Cambridge will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

C.54 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at these locations is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

C.55 For 2020-2041, the minimum and medium growth scenarios are expected to result in mixed minor positive and minor negative effects and the maximum growth scenario is expected to result in mixed significant positive and minor negative effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities..

7. Supporting a high-tech corridor by integrating homes and jobs

C.56 This option will help to ensure housing is well-located with regard to existing centres of employment. In addition, all scenarios include some growth at the Southern Cluster villages, which have some services and facilities, including schools and doctors surgeries, particularly in Great Shelford, Sawston and Linton, although it is uncertain what capacity these have to accommodate growth.

C.57 All growth options include a new settlement (the minimum and medium growth scenarios in particular would deliver a high proportion of growth through a new settlement). New settlements provide an opportunity for significant new infrastructure to be delivered. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, which could lead to challenges in terms of deliverability or services and facilities not coming forward until later in the plan period. It is noted that these new settlements and growth at villages is to be focused along public transport corridors, which is likely to help residents access a greater range of services and facilities within Cambridge. The medium and maximum growth scenarios also include North East Cambridge and the maximum growth scenario includes Cambridge Airport, which are also expected to provide new facilities.

C.58 The Infrastructure Study suggests that large sites such as new settlements, North East Cambridge and Cambridge Airport will be better able to

provide new social infrastructure on-site, resulting in more certainty about their delivery.

C.59 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at new settlements is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs, although there is a less certainty on this with regards to Cambridge Airport.

C.60 For 2020-2041, the minimum and medium growth scenarios are expected to result in mixed minor positive and minor negative effects and the maximum growth scenario is expected to result in mixed significant positive and minor negative uncertain effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

8. Expanding a growth area around transport nodes

C.61 This option focuses on expanding Cambourne in anticipation of a new railway station and the Cambridgeshire Autonomous Metro. However, it is uncertain whether these will come forward within the plan period, particularly the railway link. Cambourne already includes a number of services and facilities to meet day to day needs, and further large-scale development is likely to support provision of additional services and facilities. Delivery of a new rail station and public transport improvements at Cambourne would provide good access to Cambridge and also likely other large settlements outside Greater Cambridge, therefore giving access to a wider range of services and facilities. However, there is some uncertainty regarding when these will come forward, which could leave residents with less access to services and facilities further afield, at least early in the plan period.

Appendix C Appraisal of Strategic Spatial Options

C.62 The medium and maximum growth scenarios both North East Cambridge and the maximum scenario includes growth at Cambridge Airport, which will themselves provide new services and facilities and are in relatively close proximity of existing facilities within Cambridge. However, all options also include some development distributed between villages along the A428 and, for the medium and maximum scenarios, minor rural centres/group villages, which are likely to have a lower level of access to services and facilities.

C.63 The Infrastructure Study suggests that large sites such including large-scale growth at Cambourne, North East Cambridge and Cambridge Airport will be better able to provide new social infrastructure on-site, resulting in more certainty about their delivery.

C.64 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of the large expansion of Cambourne (and, for the medium scenario, at North East Cambridge) between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, large-scale growth at Cambourne and North East Cambridge is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport.

C.65 For 2020-2041, the minimum growth scenario is expected to have minor positive uncertain effects. The medium growth scenario is expected to result in mixed minor positive and minor negative uncertain effects and the maximum growth scenario is expected to result in mixed significant positive and minor negative uncertain effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

Best performing option

C.66 Those options that are expected to result in larger developments, such as new settlements (included in Options 2 'Edge of Cambridge – Green Belt', 4 'Dispersal – new settlements', 6 'Public transport corridors' and 7 'Supporting a high-tech corridor by integrating homes and jobs') perform well, particularly when fully built out, as they are expected to provide new services and facilities to meet development needs. Option 8 'Expanding a growth area around transport nodes' also performs well when fully built out, as it includes extensions to Cambourne of an equivalent size to a new settlement, which will likely provide new services and facilities as well as having access to existing infrastructure in Cambourne. Options including development in and around Cambridge, including Options 1 'Densification of existing urban areas', 2 'Edge of Cambridge – Green Belt' and 3 'Edge of Cambridge – Green Belt') are expected to have good accessibility to existing services and facilities within Cambridge, although they could also put pressure on these beyond their capacity. The minimum growth scenario and maximum growth scenario generally perform better than the medium scenario, as the minimum scenario will put less pressure on existing facilities whereas the maximum scenario is more likely to result in the critical mass of development required to provide new services and facilities.

C.67 Option 5 'Dispersal – villages' performs least well as this option is most likely to put pressure on existing services and facilities and result in development that is less likely to provide new services and facilities, whilst being more distant from larger centres.

Appendix C Appraisal of Strategic Spatial Options

SA objective 3: To encourage social inclusion, strengthen community cohesion, and advance equality between those who share a protected characteristic (Equality Act 2010) and those who do not.

C.68 Sustainability effects for this SA objective are summarised in Table C.5 and Table C.6 and described in the text below the tables.

Table C.5: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-	+/-	+/-	+/-	+/-?	+?	+	+?
Medium Growth	+/-	+/-	+/-	+/-	+/-?	+?	+	+?
Maximum Growth	+/-	++/-	++/-	++/-?	+/-?	+++?	+++?	+?

Table C.6: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-	++		++/-		++?	++	++?
Medium Growth	++/-	++		++/-		++?	++	++?
Maximum Growth	++/-	++/-		++/-		++?	++	++?

1. Densification of existing urban areas

C.69 Option 1 would result in an increase in the density of development in Cambridge, and therefore an increase in population. Residents would have good access to services and facilities, which would improve equalities by benefitting those with protected characteristics (Equality Act 2010), particularly those who are less mobile, such as the elderly or disabled, and could strengthen inclusivity and community cohesion. However, the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. Development in the urban area is also likely to mean housing is closer to facilities such as nurseries, schools and places of worship. However, concentrating development in urban areas could benefit younger people, who tend to live in the urban area, rather than older people, who tend to live in more rural parts of the plan area, as there would be limited investment in services and facilities in more rural areas. The EqIA states that growth in and around urban areas may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes.

C.70 All growth scenarios include North East Cambridge, which includes one of the most deprived areas in Greater Cambridge. Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there. Large scale development at North East Cambridge also provides an opportunity to design buildings and streetscapes suitable for all.

C.71 The minimum growth scenario includes development at a lower density within Cambridge and the development of North East Cambridge, which is expected to provide some new services and facilities. As such, the minimum growth scenario is expected to maximise access to services and facilities, resulting in mixed significant positive and minor negative effects both within the plan period and beyond.

C.72 The medium and maximum growth scenarios may put more pressure on local services and facilities, due to the increased density of development in the Cambridge urban area, therefore limiting their accessibility to local people. Both the medium and maximum scenarios also include larger developments (namely Cambridge Airport and, for the medium scenario, an edge of Cambridge Green Belt site) that may provide new services and facilities, which could help to ensure easy access to services and facilities for the less mobile, without having to travel into the city centre. In addition, facilities provided may include community meeting space and/or places of worship, which could help ensure the needs of specific groups are met, through providing space for faith groups, pre-/ante-natal groups etc. and helping to foster a sense of community.

C.73 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period, therefore the needs of some groups may not be met within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport.

C.74 As such, mixed minor positive and minor negative effects are expected for the medium and maximum growth scenarios within the plan period, whilst mixed significant positive and minor negative effects are expected when fully built out.

2. Edge of Cambridge – outside the Green Belt

C.75 Development at Cambridge Airport, the focus source of supply for this option, is likely to be of sufficient scale to create a new cohesive community with its own identity, as well as deliver a range of homes, jobs, services and facilities to meet different needs. It is also well located to the existing urban area, and therefore creates opportunities to be integrated with, and also serve, existing communities, although there could be disruption whilst it is developed. All options will contribute positively to equalities by taking this land out of use as an airport, which is likely to be used by a limited number of people, and release

it to provide housing and benefit a wider number and range of people. The EqIA states that growth in and around urban areas may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes.

C.76 All growth scenarios also include North East Cambridge, which is also expected to provide new services and facilities, and therefore contribute positively to addressing equalities. North East Cambridge includes one of the most deprived areas in Greater Cambridge, Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there.

C.77 The medium and maximum growth scenarios include development of new settlements, which are expected to provide new services and facilities, particularly larger settlements. Phasing of the delivery of services and facilities would require significant up-front investment if they are to meet the needs of residents in the early years of development, or there may be a delay to provision of these services. As such, this may limit the ability of some, particularly those less mobile, to access services and facilities as they would have to travel to other centres, such as Cambridge city and therefore these groups may be disadvantaged in the earlier years of the plan.

C.78 Large scale development at new settlements, North East Cambridge and Cambridge Airport also provides an opportunity to design buildings and streetscapes suitable for all.

C.79 The minimum growth scenario includes development of a village site and the medium growth scenario includes development at rural centres and minor rural centres, which may help ensure the continued vitality and viability of these centres, therefore helping to continue service provision for the older generation more likely to be living at these locations.

C.80 Whilst the minimum and medium growth scenarios are more likely to help support more rural communities, they are unlikely to provide the full range of services and facilities at new, settlements North East Cambridge and

Appendix C Appraisal of Strategic Spatial Options

Cambridge Airport between 2020 and 2041, which may disadvantage the less mobile in terms of their access to services, facilities and jobs. As such, mixed minor positive and minor negative effects are expected for these scenarios within the plan period. The minor positive effects are expected to become significant when fully built out, as a wider range of services and facilities will be accessible to the whole community in the longer term. This also reflects that a sense of community is more likely to develop in the longer term.

C.81 Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport or the new settlements.

C.82 As such, the minimum and medium growth scenarios are expected to have mixed minor positive and minor negative uncertain effects from 2020-2041, whilst the maximum growth scenario is expected to have mixed significant positive and minor negative effects. When fully built out, all growth scenarios are expected to have significant positive effects, but for the maximum scenario this is still mixed with minor negative effects, due to giving less support to those in more rural areas.

3. Edge of Cambridge – Green Belt

C.83 This option could see the creation of new infrastructure, such as schools, local centres and green spaces, which could act as a focal point of community life. The range of services and facilities provided at particular development locations will likely depend on the size of the extension and may be more limited in the minimum and medium scenarios, although development at the edge of Cambridge is also likely to have good access to existing services and facilities in the city, and public transport links into the city centre, therefore benefitting the less mobile, such as the elderly and disabled. However, the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity.

C.84 The EqIA states that growth in and around urban areas may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes. Large scale development at urban extensions also provides an opportunity to design buildings and streetscapes suitable for all.

C.85 Whilst an urban extension can achieve its own sense of place, integration with the existing urban areas and communities will be important if negative effects on existing communities are to be avoided. None of the examples include development to support existing rural communities, which generally have an older population, and therefore could disadvantage older people (and possibly also the less mobile) due to a lack of investment in rural services and facilities. The medium growth scenario also includes development in the Cambridge urban area, which may help promote equalities, as services, facilities and public transport are more likely to be readily accessible in the urban area, which could be beneficial for less mobile groups, such as older and disabled people. The minimum and medium growth scenarios are expected to have mixed minor positive and minor negative effects, whereas the maximum scenario is expected to have mixed significant positive and minor negative effects.

C.86 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

C.87 This option would see the creation of new infrastructure, such as schools, local centres and green spaces, which could act as a focal point of community life at new settlements. It can take many years for the delivery of new settlements and to achieve a scale and critical mass that generate a strong sense of community. They involve building new communities from scratch which can prove challenging and cohesiveness can depend upon both the quality and design of development, and its delivery to schedule. In addition, it may be more difficult, or take time, to establish a good level of local services and facilities, which could make it challenging for less mobile people, such as the elderly and

disabled, to access services and facilities as they would have to travel to larger centres, particularly in the early years of the plan. It is noted that these new settlements and growth at villages is to be focused along public transport corridors, which is likely to help residents access a greater range of services and facilities within Cambridge. The EqIA states that growth at new settlements and along transport corridors may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes, at least in the long term. However, reliance on public transport may not be an affordable choice for those on low incomes or those not of working age. Large scale development at new settlements also provides an opportunity to design buildings and streetscapes suitable for all.

C.88 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, and possibly a greater sense of community, due to the higher build out rates under this option.

C.89 In addition, this option does not include growth at rural centres. The lack of investment in existing rural centres could make it difficult for older people, who generally live in the more rural parts of Greater Cambridge, to access services and facilities.

C.90 As such, the minimum and medium growth scenarios are likely to have mixed minor positive and minor negative effects for between 2020 and 2041, but mixed significant positive and minor negative effects when fully built out. The maximum growth scenario is expected to have mixed significant positive effects for both the 2020-2041 period and when fully built out, although the positive effects will be more certain when fully built out. The minor negative effects relate to a lack of growth at existing settlements.

5. Dispersal – villages

C.91 Option 5 would result in an increase in development at villages across Greater Cambridge, which could help support the vitality and viability of these villages and help to support community cohesion. However, more dispersed development could place increasing pressure on existing services and facilities within these villages if sufficient investment to maintain and improve them is not forthcoming. In addition, the EqlA recognises that it may be difficult for residents to access employment, services and facilities elsewhere, particularly if good public transport links do not exist, which could disadvantage the less mobile or those who cannot drive, such as young people, or those who cannot afford a car. Car-dependent development could also disadvantage pregnant women and others who need to regularly access healthcare services. As such, mixed minor positive and minor negative uncertain effects are expected for all growth scenarios.

C.92 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.93 An increase in development along key public transport corridors with good access to Cambridge may benefit those who are less mobile, with a positive effect on inclusivity. This option is also likely to lead to growth at rural communities, and may therefore help ensure the vitality and viability of local services and facilities at those locations, which will benefit the less mobile and older population who are likely to live there. However, it may be more challenging for development along public transport corridors to achieve a coherent sense of community and place, depending upon where particular developments come forward under this option and their relationship to existing communities.

C.94 Development at North East Cambridge (all growth scenarios) is expected to provide new services and facilities, as well as having good access to facilities

Appendix C Appraisal of Strategic Spatial Options

within Cambridge itself, although integration with the existing urban areas and communities will be important if negative effects on existing communities are to be avoided. North East Cambridge includes one of the most deprived areas in Greater Cambridge, Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there.

C.95 Whilst new settlements (all growth scenarios) would provide new services and facilities and can form new communities, this will require large-scale investment. It is noted that these new settlements and growth at villages (all growth scenarios) are to be focused along public transport corridors, which is likely to help residents access a greater range of services and facilities within Cambridge.

C.96 The EqIA states that growth at new settlements and along transport corridors may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes, at least in the long term. However, reliance on public transport may not be an affordable choice for those on low incomes or those not of working age and may not be an option for some people with disabilities. Furthermore, large scale development at new settlements and North East Cambridge also provides an opportunity to design buildings and streetscapes suitable for all.

C.97 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at these locations is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

C.98 For 2020-2041, the minimum and medium growth scenarios are expected to result in minor positive effects with uncertainty, whereas the maximum scenario is expected to have significant positive effects with uncertainty. When fully built out, all scenarios are expected to have significant positive effects with

uncertainty, as at this point a wider range of services and facilities are likely to be accessible at North East Cambridge and new settlements, and propose transport schemes are more likely to have come forward (although some uncertainty remains regarding this).

7. Supporting a high-tech corridor by integrating homes and jobs

C.99 This option will help to ensure housing is well-located with regard to existing centres of employment. In addition, the Southern Cluster villages (all growth scenarios) have some services and facilities, including schools and doctors surgeries, particularly in Great Shelford, Sawston and Linton. Development at these villages may help to boost the vitality and viability of village services and facilities, which is particularly likely to benefit older people and the less mobile, although growth may also put pressure on the capacity of existing services. This option would concentrate development to the south of Cambridge. It is not known if the demographics of this area differ substantially from other areas, but this should be considered further if this option is pursued.

C.100 All growth options include a new settlement. It is noted that these new settlements and growth at villages are to be focused along public transport corridors, which is likely to help residents access a greater range of services and facilities within Cambridge. New settlements may not be able to provide a full range of services and facilities, particularly in the earlier years of the plan period, which could disadvantage the less mobile, such as the elderly or disabled. The EqIA states that growth at new settlements may be more inclusive to all age groups and abilities, given the greater accessibility to services and facilities by non-car modes, at least in the long term. However, reliance on public transport may not be an affordable choice for those on low incomes or those not of working age.

C.101 The maximum growth scenario also includes Cambridge Airport and North East Cambridge, which are also expected to provide new facilities and would be well located to access existing services and facilities and/or public

transport within Cambridge. North East Cambridge includes one of the most deprived areas in Greater Cambridge, Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there. Development at Cambridge Airport will contribute positively to equalities by taking this land out of use as an airport, which is likely to be used by a limited number of people, and release it to provide housing and benefit a wider number and range of people.

C.102 Large scale development at new settlements, North East Cambridge and Cambridge Airport also provides an opportunity to design buildings and streetscapes suitable for all.

C.103 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at new settlements is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs, although there is a less certainty on this with regards to Cambridge Airport.

C.104 For 2020-2041, the minimum and medium growth scenarios are expected to result in minor positive effects, whereas the maximum growth scenario is expected to have significant positive uncertain effects. When fully built out, all scenarios are expected to have significant positive effects, as at this point a wider range of services and facilities are likely to be accessible at North East Cambridge and new settlements.

8. Expanding a growth area around transport nodes

C.105 This option focuses on expanding Cambourne in anticipation of a new railway station and the Cambridgeshire Autonomous Metro. However, it is

Appendix C Appraisal of Strategic Spatial Options

uncertain whether these will come forward within the plan period, particularly the railway link. Cambourne already includes a number of services and facilities to meet day to day needs, and further large-scale development is likely to support provision of additional services and facilities, which may help benefit the less mobile, such as elderly and disabled people.

C.106 Delivery of a new rail station and public transport improvements at Cambourne would provide good access to Cambridge and also likely other large settlements outside Greater Cambridge, therefore giving access to a wider range of services and facilities. However, there is some uncertainty regarding when these will come forward, which could leave residents with less access to services and facilities further afield, particularly those unable or unwilling to drive, at least early in the plan period. In addition, reliance on public transport may not be an affordable choice for those on low incomes or those not of working age.

C.107 All options also include some growth situated across more rural settlements, which may help to ensure the vitality and viability of services at those settlements, thus benefitting the, likely older, people who live in rural areas who rely more heavily on local services.

C.108 The medium and maximum growth scenarios both include growth at North East Cambridge and the maximum growth scenario includes growth at Cambridge Airport, which will themselves provide new services and facilities and are in relatively close proximity of existing facilities within Cambridge. North East Cambridge includes one of the most deprived areas in Greater Cambridge, Development at this location would invest in this area and may help improve access to employment, facilities and services for those living there. Development at Cambridge Airport will contribute positively to equalities by taking this land out of use as an airport, which is likely to be used by a limited number of people, and release it to provide housing and benefit a wider number and range of people.

Appendix C Appraisal of Strategic Spatial Options

C.109 Large scale development around Cambourne and at North East Cambridge and Cambridge Airport also provides an opportunity to design buildings and streetscapes suitable for all.

C.110 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of the large expansion of Cambourne (and, for the medium scenario, at North East Cambridge) between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, large-scale growth at Cambourne and North East Cambridge is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport..

C.111 For 2020-2041, all scenarios are expected to have minor positive uncertain effects. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities and greater likelihood that strategic new transport links will have been delivered, although there is still some uncertainty in that regard.

Best performing option

C.112 Overall, Options 6 'Public transport corridors', 7 'Supporting a high-tech corridor by integrating homes and jobs' and 8 'Expanding a growth area around transport nodes' arguably perform best, as development at new settlements, Cambourne extensions and North East Cambridge will provide new services to meet the day to day needs of residents, whilst also being within easy access to Cambridge (and Cambourne) and supporting villages and rural centres, therefore likely benefitting less mobile residents, such as the elderly and disabled. Options 1 'Densification of existing urban areas', 2 'Edge of Cambridge – outside Green Belt' and 4 'Dispersal – new settlements' also perform well when fully built out.

Appendix C Appraisal of Strategic Spatial Options

C.113 All options include a mix of development in and around Cambridge, which provides good access to services, facilities and employment opportunities, and many also include some growth in more rural locations, which is likely to help support services and facilities in those locations, and may even help provide new facilities or build a business case for improved public transport.

Appendix C Appraisal of Strategic Spatial Options

SA objective 4: To improve public health, safety and wellbeing and reduce health inequalities

C.114 Sustainability effects for this SA objective are summarised in Table C.7 and Table C.8 and described in the text below the tables.

Table C.7: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-	+/-?	+/-	+	-	+/-	+/-	+/-
Medium Growth	--/+?	+/-?	+/-	+	+/-?	+/-	+/-	+/-
Maximum Growth	--/+?	+/-?	++/-?	+	--/+?	+/-?	+/-?	+/-?

Table C.8: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/-	++/-?		++?		++/-	++/-	++/-
Medium Growth	++/--	++/-?		++?		++/-	++/-	++/-
Maximum Growth	++/--?	++/-?		++?		++/-?	++/-?	++/-?

1. Densification of existing urban areas

C.115 Option 1 would result in an increase in the density of development in Cambridge, and therefore an increase in population, particularly in North East Cambridge, where there is the last major brownfield site that is going to be brought forward via the AAP.

C.116 A large number of people would be living within close proximity to their workplace, as well as a range of local amenities. This would encourage active travel such as walking and cycling. Under the minimum growth scenario, the demand for walking and cycling could be met. However, under the medium or maximum growth scenarios there may not be sufficient end of journey facilities for cyclists (e.g. bike storage). Furthermore, large parts of Cambridge City Centre are an AQMA and therefore poor air quality could have an adverse effect on people's health.

C.117 Greater density of development within the city, under the medium and maximum growth scenarios, may result in a loss of open space which may have a negative effect on residents' physical and mental health. The Green Infrastructure Study recognised that development in the urban area could result in piecemeal development of GI and difficulties in delivering GI due to space constraints. Alternatively, this option may present an opportunity to deliver GI where there are existing deficiencies, resulting in positive effects of physical and mental health.

C.118 It is also likely that a greater number of people would be located within close proximity of primary health care facilities. These facilities may be able to meet the demand of a minimum growth scenario. However, with a medium or maximum growth scenario it is possible that these services could be over-capacity and would therefore require further investment. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity.

Appendix C Appraisal of Strategic Spatial Options

C.119 Development coming forward at Cambridge Airport in the medium and maximum growth scenarios and, for the medium scenario, an edge of Cambridge Green Belt site, are likely to be of such a scale as to provide new services and facilities to serve new development, although these are unlikely to relieve the additional pressure on services within the city itself. Healthcare facilities are also only likely to be provided if developments reach a certain size. This large-scale development on the edge of the city could be built to accommodate more walking and cycling.

C.120 The medium and maximum growth scenarios include larger scale development at Cambridge Airport, which is likely to include open space, recreational and sporting facilities. These spaces and facilities are important for people's physical and mental wellbeing.

C.121 However, the minimum and medium growth scenarios are unlikely to provide the full range of health and recreation services and facilities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new health and recreation services and facilities, although this is not the case for Cambridge Airport.

C.122 The Green Infrastructure Study recognised that development at North East Cambridge and Cambridge Airport provides greater opportunities for integrating GI, although they may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites. Overall, there is increased risk of pressure on existing GI assets under the medium and maximum scenarios.

C.123 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

C.124 Therefore, for 2020-2041 the minimum growth scenario is expected to have a mixed minor positive and minor negative effect against this objective,

whereas the medium and maximum scenarios are expected to have a mixed minor positive and significant negative uncertain effect. The minor positive effects are expected to become significant positive effects when fully built out, due to additional provision of services and facilities.

2. Edge of Cambridge – outside the Green Belt

C.125 Option 2 includes urban development at Cambridge Airport for all growth scenarios, which may be of sufficient scale to incorporate a GP surgery, plus a range of open space, recreational and sporting facilities. Furthermore, walking and cycling can be designed in from the outset.

C.126 The additional sources of supply for all growth scenarios includes development at North East Cambridge, a brownfield site, which is already within close proximity to amenities, services and facilities and may also provide new open space, recreation and health facilities. The maximum growth scenario includes a higher delivery rate which will lead to a more densely populated area. Although the site is close to existing healthcare facilities, a significant increase in population could mean these services are unable to meet the demand. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity.

C.127 The Green Infrastructure Study recognised that development at North East Cambridge and Cambridge Airport provides greater opportunities for integrating GI, although they may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites. Overall, there is increased risk of pressure on existing GI assets under the medium and maximum scenarios.

C.128 Both the medium and maximum growth scenarios include development of new settlements on public transport corridors. New settlements offer the opportunity to incorporate healthcare facilities, amenities, open space, green infrastructure and active travel from the outset. The minimum growth scenario includes a village site and the medium growth scenario includes development at

larger villages. Residents at these locations may have more limited access to healthcare services, amenities and recreational and sporting facilities.

C.129 The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors.

C.130 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

C.131 The minimum and medium growth scenarios are unlikely to provide the full range of health and recreation services and facilities at new, settlements North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new health and recreation services and facilities, although this is not the case for Cambridge Airport or the new settlements.

C.132 3.134 For 2020-2041, all growth scenarios are expected to have a mixed minor positive and minor negative effect on this objective with uncertainty, with the minor positive effects becoming significant when fully built out. This is because large urban extensions and new settlements are likely to provide new health and recreation facilities, particularly in the long-term, but more rural developments are likely to place pressure on existing healthcare and recreation facilities. The effects are uncertain as the exact location of the village site and new settlements are unknown.

3. Edge of Cambridge – Green Belt

C.133 Option 3 includes the development of new sites in the Green Belt, on the edge of the city with three sites for the minimum growth scenario and five sites

Appendix C Appraisal of Strategic Spatial Options

for the medium and maximum growth scenarios across a broad range of locations. New urban extensions have more scope to be designed in a way that encourages walking and cycling which is likely to have a positive impact on people's health. However, under the medium or maximum growth scenarios there may not be sufficient end of journey facilities for cyclists (e.g. bike storage). Development would also be well located for residents to access existing services and facilities within Cambridge, although the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity

C.134 This option could see the creation of new on-site infrastructure, such as open space and a GP surgery, with positive effects on public health, although, the range of services and facilities provided will likely depend on the size of developments. This option provides an opportunity for urban extensions to cater for GI deficits in neighbouring urban areas, as well as connecting to and/or expanding key GI assets, such as the parkland and country park network. However, provision of new social and green infrastructure is likely to be more limited in the minimum and medium scenarios, due to the lower level of growth and likely smaller size of urban extensions.

C.135 For all scenarios, there is a possibility that development will take place in proximity to the A14 corridor AQMA, where poor air quality could have a negative impact on the health of residents.

C.136 Development will also come forward in the Cambridge urban area for the medium growth scenario. It is likely that residents at these dwellings will have access to healthcare facilities and amenities. Development is to be kept at a minimal balance so facilities should not be over-capacity. However, a large part of the city centre is an AQMA, therefore residents could be affected by poor air quality in the centre. The Green Infrastructure Study recognised that development in the urban area could result in piecemeal development of GI and difficulties in delivering GI due to space constraints. Alternatively, this option may present an opportunity to deliver GI where there are existing deficiencies, resulting in positive effects of physical and mental health.

C.137 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

C.138 The 2020-2041 growth scenarios are expected to have a mixed minor positive and minor negative effect in relation to this objective, whereas the maximum growth scenario is expected to have mixed significant positive and minor negative effects. For the minimum growth scenario this is uncertain, as there will likely be more scope to avoid development at areas of poorer air quality.

C.139 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

C.140 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure.

C.141 New settlements have more scope to be designed in a way that encourages walking and cycling, which will likely have a positive impact on people's health. Furthermore, the new developments in the medium and maximum growth scenarios are more likely to be of scale to provide more extensive healthcare services, open space, GI, recreational and sporting facilities which will benefit public health. Large-scale development has potential to increase pressure on existing GI assets, although the Green Infrastructure Study suggests this is more of a risk to biodiversity than health.

C.142 The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors.

C.143 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

C.144 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

C.145 Option 4, for all growth scenarios, is expected to have a minor positive effect with uncertainty from 2020-2041 and a significant positive effect with uncertainty when fully built out, as all scenarios will include new open space, healthcare and recreation facilities but this provision may be more limited in the shorter term.

5. Dispersal – villages

C.146 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge, which could place increasing pressure on existing services, such as primary healthcare, recreational and sporting facilities and amenities. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. There are fewer Rural Centres so the absolute growth in each village is significantly greater for each Rural Centre than Minor Rural Centre. Rural Centres are likely to have more amenities, services and facilities than Minor Rural Centres however, they could become overwhelmed and reach capacity.

C.147 Furthermore, it is likely that residents would need to drive to access jobs, facilities and amenities, resulting in less active travel and an increase in poor air

quality across Greater Cambridge which could have an adverse effect on people's health.

C.148 The Green Infrastructure Study identified that this option would likely result in piecemeal GI interventions, therefore reducing the likelihood of a connected GI network or strategic interventions. However, higher concentrations of development within individual villages, under the medium and maximum scenarios, may present opportunities to deliver GI that can address existing deficiencies in access to open space, and offer opportunities to add to the active travel network connecting villages and connecting to urban areas.

C.149 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

C.150 Option 5, minimum scenario is expected to have a minor negative effect and the medium growth scenario is expected to have a mixed minor positive and minor negative uncertain effect in relation to this objective. The maximum growth scenario is expected to have a mixed minor positive and significant negative uncertain effect against this objective, due to the additional pressure on existing services and facilities likely as a result of higher levels of growth.

C.151 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.152 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, across eighteen villages with existing or proposed public transport corridors and a new settlement on a public transport corridor. It is therefore likely that people would have good access to primary health care facilities, at least via public transport. In addition, larger developments, such as North East Cambridge and the new settlements are likely to be of a scale that

Appendix C Appraisal of Strategic Spatial Options

would require new healthcare services, open space, GI, recreational and sporting facilities and amenities. As such, these facilities are likely to have a positive impact on public health.

C.153 However, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario however, growth at these locations is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

C.154 The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors.

C.155 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

C.156 Depending on the scale of development, it may be more challenging to design in healthy behaviours, for example through provision of integrated open space and green infrastructure may come forward on a more piecemeal basis, such as the smaller developments across the eighteen villages. Existing rural healthcare facilities in these locations may be overwhelmed and reach capacity. Growth at North East Cambridge may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites, particularly when fully built out. All growth scenarios for option 6, are likely to have a mixed minor positive and minor negative effects for 2020-2041 and mixed significant positive and minor negative effect in relation to this objective when fully built out.

7. Supporting a high-tech corridor by integrating homes and jobs

C.157 Option 7 includes development to the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement. These settlements are expected to require new healthcare services, open space, recreational and sporting facilities and amenities. Furthermore, new settlements have the opportunity to encourage and accommodate walking and cycling from the outset through design, along with green infrastructure. This could have a positive impact on people's health.

C.158 The Green Infrastructure Study states that this option could enable expansion of the parkland and country park network.

C.159 The maximum growth scenario includes development at Cambridge Airport and North East Cambridge which will both likely provide new healthcare services, recreational and sporting facilities and amenities. These sites could be built to encourage more walking and cycling which would have a positive effect on public health. The Green Infrastructure Study recognised that development at North East Cambridge and Cambridge Airport provides greater opportunities for integrating GI, although they may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites. Overall, there is increased risk of pressure on existing GI assets under the medium and maximum scenarios.

C.160 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

C.161 However, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is

expected at these locations within the plan period. Under the maximum growth scenario however, growth at new settlements is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs, although there is a less certainty on this with regards to Cambridge Airport.

C.162 All growth scenarios also include development across five villages all with existing or proposed public transport nodes. However, development spread of across villages is likely to place a strain on existing healthcare services, recreational and sporting facilities and amenities. As such, these services and facilities could become overwhelmed and reach capacity. Development distributed among the villages could lead to piecemeal delivery of GI.

C.163 For both 2020-2041, all growth scenarios are expected to have mixed minor positive and negative effects in relation to this objective. When fully built out, all growth scenarios are expected to have a mixed significant positive and minor negative effect in relation to this objective.

8. Expanding a growth area around transport nodes

C.164 Option 8 would focus development at Cambourne and along the A428 public transport corridor, which are due to be served by a new railway station and public transport improvements. However, it is uncertain whether these will come forward within the plan period, particularly the railway link. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes development equivalent to a larger new settlement. These developments are likely to be of a scale to require new healthcare services, recreational and sporting facilities and amenities. Furthermore, large new developments have the opportunity to encourage and accommodate walking and cycling, along with open space and green infrastructure from the outset through design. This could have a positive impact on people's health.

C.165 The Green Infrastructure Study identifies that this option has potential to extend or exacerbate north-south severance of GI, but also to introduce GI connectivity across the A428 corridor and develop active transport connections. However, development distributed among villages may result in piecemeal delivery of GI.

C.166 The Infrastructure Study states that it will be very challenging to deliver full open space and sports provision requirements generated by the maximum growth scenario, resulting in uncertainty associated with these effects.

C.167 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of the large expansion of Cambourne (and, for the medium scenario, at North East Cambridge) between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, large-scale growth at Cambourne and North East Cambridge is likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport.

C.168 All growth scenarios include development distributed across three village sites along the A428 public transport corridor. The medium and maximum growth scenario would see 40% of this development at Minor Rural Centres/ Group Village within 5km of Cambourne. Healthcare service, amenities, recreational and sporting facilities are less likely to be within close proximity of these villages and development may not be of scale to require new facilities and services to be built. Additional sources of supply for the medium and maximum scenarios include development at North East Cambridge and, for the maximum growth scenario, Cambridge Airport. These sites will require the development of healthcare services, amenities, recreational and sporting facilities. Furthermore, these developments could be built to encourage more walking and cycling which would have a positive effect on public health. Development at these sites presents more opportunities for integrating GI, but may also put pressure on the existing GI network.

C.169 For Option 8, all growth scenarios are expected to have a mixed minor positive and minor negative effect from 2020-2041, but a mixed significant positive and minor negative effect when fully built out.

Best performing option

C.170 Option 4 'Dispersal – new settlements' performs well, as new settlements are likely to be of scale that requires the development of new healthcare services and amenities, along with being large enough to design space for active travel, green infrastructure and open space. All options except Option 5 'Dispersal – villages' perform relatively well when fully built out, although those that include locations within or near the urban area of Cambridge have potential to be affected by poor air quality. For all options, effects depend on the location, design and size of development.

C.171 Option 5 'Dispersal – villages' performs least well, as development under this scenario, as it is likely to result in development that would not be of scale that requires new facilities, amenities and open space, and may increase demand on existing services and facilities that cannot be met. It is also more likely to result in piecemeal delivery of GI, failing to support strategic interventions or the wider GI network.

Appendix C Appraisal of Strategic Spatial Options

SA objective 5: To conserve, enhance, restore and connect wildlife habitats, species and/or sites of biodiversity or geological interest

C.172 Sustainability effects for this SA objective are summarised in Table C.9 and Table C.10 and described in the text below the tables.

Table C.9: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-?	+/-?	+/-?	+/-?	-?	+/-?	+/-?	+/-?
Medium Growth	--/+?	--/+?	--/+?	--/+?	--?	--/+?	--/+?	--/+?
Maximum Growth	--/+?	--/+?	--/+?	--/+?	--?	--/+?	--/+?	--/+?

Table C.10: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-?	+/-?		+/-?		--/+?	+/-?	+/-?
Medium Growth	--/+?	--/+?		--/+?		--/+?	--/+?	--/+?
Maximum Growth	--/+?	--/+?		--/+?		--/+?	--/+?	--/+?

C.173 Note that the HRA Study identified a range of potential impacts on European sites for each option, but notes that the level of risk and severity of each impact will be assessed in more detail as part of the full HRA. In order to reflect that further work is required to enable firm conclusions on potential risks to European sites, all effects for this SA objective are recorded as uncertain.

1. Densification of existing urban areas

C.174 Option 1 would result in an increase in the density of development in Cambridge, a large proportion of which would be located within the urban area and at North East Cambridge on brownfield land or redevelopment of existing built-up sites. As such, development less likely to take place at greenfield sites where there is increased biodiversity and wildlife habitats.

C.175 Cambridge contains a number of designated biodiversity sites, and whilst it is unlikely that development would be permitted on these sites, focusing development in the city could affect the network of green spaces important for wildlife, habitats and species, particularly if multiple sites come forward in proximity to areas of biodiversity value. In addition, brownfield land can sometimes contain ecological interest. In addition, the Review of Strategic Spatial Option in Relation to Green Infrastructure (GI) noted that, whilst this option could increase pressure on existing nature conservation sites, there may be opportunities to use GI to support delivery of nearby Natural England's Habitat Network opportunity zones and support pollinator corridors – particularly in the south of Cambridge.

C.176 Both the medium and maximum growth scenarios include development at Cambridge Airport, another brownfield site. Much of this site is in the form of open grass areas, which is mown regularly, but habitats along the boundary, such as wooded areas and drainage ditches, can act as foraging habitat for protected species. The site itself does not contain any designated biodiversity habitats, but the western boundary of the airport abuts Barnwell East Local Nature Reserve, and the airport could be considered to form part of the wider ecological network. The Review of Strategic Spatial Option in Relation to Green Infrastructure highlighted that development at North East Cambridge and Cambridge Airport could increase pressure on wetland assets to the east and north east. There are Biodiversity Opportunity Areas present around the edge of the site, which could be used as a way to enhance the ecological networks present in the area, whilst also providing an opportunity to design in green infrastructure.

C.177 The medium growth scenario includes development at the edge of Cambridge on Green Belt land. Losing this land could have a negative effect on biodiversity including the loss of local species, wildlife and their habitats. Higher densities in the medium and maximum growth scenarios are likely to lead to the loss of more urban green space, which could be valuable wildlife refuges.

C.178 The Review of Strategic Spatial Option in Relation to Green Infrastructure noted that the minimum and maximum scenarios present an increased risk of pressure on existing GI assets, including designated biodiversity sites, and, when fully built out, potential for loss of land within Natural England's Habitat Network opportunity zones.

C.179 Option 1, minimum growth scenario is expected to have a minor positive and negative but uncertain effect against this objective. Both the medium and maximum growth scenarios are likely to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The proposed effects are uncertain as specific details of the developments and exact locations are unknown. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

2. Edge of Cambridge – outside the Green Belt

C.180 Option 2 would result in development at Cambridge Airport site for all growth scenarios, which comprises largely brownfield land, although much of this is in the form of open grass areas, which is mown regularly, but habitats along the boundary, such as wooded areas and drainage ditches, can act as foraging habitat for protected species. The site itself does not contain any designated biodiversity habitats, but the western boundary of the airport abuts Barnwell East Local Nature Reserve, and the airport could be considered to form part of the wider ecological network. There are Biodiversity Opportunity Areas present around the edge of the site, which could be used as a way to enhance the ecological networks present in the area, whilst also providing an opportunity to design in green infrastructure.

Appendix C Appraisal of Strategic Spatial Options

C.181 Additional sources of supply for all growth scenarios includes development in North East Cambridge, which is a brownfield site. Although this site is developed and does not contain any designated or protected ecological areas, development could result in the loss of brownfield mosaic habitats. Furthermore, both the medium and maximum growth scenarios include development at new settlements on a public transport corridor which is likely to be situated out of the centre. The minimum growth scenario includes growth at one village and the medium growth scenario includes development across a range of villages. It is therefore likely development will take place on greenfield land where there may be protected species, wildlife and habitats. Despite potentially losing green space, networks and corridors, developing new settlements or sites offers the opportunity to integrate green open spaces and networks into their design from the outset.

C.182 The Green Infrastructure Study recognised that development at North East Cambridge and Cambridge Airport provides greater opportunities for integrating GI, including supporting Natural England's Habitat Network opportunity zones. However, development at these locations may present greater risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites, including wetland assets to the east and north east. Overall, there is increased risk of pressure on existing GI assets under the medium and maximum scenarios.

C.183 The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors. Depending on the location of new settlements and supporting infrastructure, there is the potential risk of impacts on international designations and/or functionally linked habitat.

C.184 Option 2 is expected to have a mixed minor positive and minor negative uncertain effect for the minimum growth scenario in relation to this objective. A mixed minor positive and significant negative uncertain effect is expected for the medium and maximum growth scenarios, due to the greater land take and therefore greater likely habitat loss under these scenarios. The effects are all uncertain as it will depend on the location of the sites and design details, such

as whether developments include green infrastructure and open green spaces. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

3. Edge of Cambridge – Green Belt

C.185 Option 3 would result in development around the edge of Cambridge. The minimum growth scenario includes development at three sites and the medium and maximum growth scenarios include development at five sites all across broad locations. Cambridge city and the surrounding area contains a number of Sites of Special Scientific Interest, Wildlife Sites and Local Nature Reserves, as well as many Priority Habitats. The Green Belt fringe supports significant habitat opportunity zones (as identified by Natural England Habitat Network mapping) in the south east and south west in particular, and to a lesser extent to the west around Coton. There is some sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance. Green Belt Fringe areas of particular sensitivity include the Cam corridor through Trumpington, Fen Ditton and Grantchester which are vulnerable to hydrological change and recreational pressure. It is therefore possible that individual developments would take place at or within close proximity to these biodiversity assets. However, there may be opportunities to design in green infrastructure, incorporating ecological networks, particularly at larger extensions.

C.186 There is also a potential risk of impacts on international designations – those in closest proximity include the south east fenland complex and north east fen complex and peatlands.

C.187 The medium growth scenario includes some development within the Cambridge urban area. Cambridge contains a large number of designated biodiversity sites, and whilst it is unlikely that development would be permitted on these sites, focusing development in the city could affect the network of green spaces important for wildlife, habitats and species, particularly if multiple

sites come forward in proximity to areas of biodiversity value. In addition, brownfield land can sometimes contain ecological interest.

C.188 The minimum growth scenario is expected to have a mixed minor positive and minor negative effect for this objective, as having fewer urban extensions gives more scope to avoid the most sensitive areas. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative but uncertain effects against this objective, as the higher deliver numbers incur greater potential for loss of habitat (e.g. within Natural England Habitat Network mapping opportunity areas), and greater pressure on existing resources. The proposed effects are uncertain as exact locations and specific details of the developments are unknown.

C.189 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

C.190 Option 4 includes the development of new settlements that are large enough to provide an opportunity for their own infrastructure. The minimum growth scenario includes two new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios also include a new settlement on a road network. The location of any new settlements that could come through Option 4 is uncertain. However, it is very likely that this option will lead to development on large areas of greenfield land, which could have biodiversity value (depending on the habitats present) and form part of the rural ecological network of habitats. The Green Infrastructure Study states that development of new settlements along public transport corridors could risk increasing severance of the GI network, although there is an opportunity to use GI to mitigate this by creating connectivity across and along these corridors

C.191 Greater Cambridge contains a large number of designated and non-designated habitats and it is therefore possible that a new settlement could take

place at or within close proximity to these biodiversity assets. Depending on the location of new settlements and supporting infrastructure, there is an increased risk of impact on international designation and/or (particularly when fully built out) functionally linked habitat. However, greenfield sites are not always of particular ecological value, and the more sensitive ecological locations could be avoided. Nevertheless, designing a new settlement from scratch means that the most sensitive sites could be avoided, and green infrastructure and ecological networks can be designed into the development from the outset.

C.192 Option 4, minimum growth scenario, is expected to have a mixed minor positive and negative uncertain effect. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective, due to the greater land take and therefore greater likely habitat loss under these scenarios. The effects are all uncertain as it will depend on the location of sites and design details, such as whether developments include green infrastructure and open green spaces. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

5. Dispersal – villages

C.193 Option 5 would result in an increase in development at villages across Greater Cambridge. As many of the villages across Greater Cambridge contain or are located within close proximity to designated and non-designated biodiversity assets, and development is likely to come forward on greenfield land, particular developments coming forward under this option could lead to loss of biodiversity, depending on their location. Depending on the detailed distribution of development, potential impacts on international sites may occur via hydrological connectivity or quality, recreational impact, air quality impact, or through habitat loss or damage (of designated or functionally linked land). It may also be more challenging to deliver integrated ecological networks as part of individual development proposals, due to their likely smaller scale.

C.194 The minimum growth scenario is expected to have a minor negative uncertain effect in relation to this objective, whereas the medium and maximum scenarios are expected to have significant negative uncertain effects, due to the greater scale of development. The exact locations of development across the villages and the new settlement are unknown, along with specific design details, so the effects are uncertain.

C.195 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.196 Option 6 focuses development at North East Cambridge, a new settlement and 18 villages along key public transport corridors and hubs. Under this option, development may take place on greenfield land, which may support protected species and habitats. Greater Cambridge contains a large number of designated and non-designated habitats and it is therefore possible that a new settlement could take place at or within close proximity to these biodiversity assets. However, the exact locations of these developments are unknown, so the effects are uncertain.

C.197 All growth scenarios include development at North East Cambridge, which includes areas of green space and brownfield mosaic habitat that may act as habitats for a variety of species. The Green Infrastructure Study states that growth at North East Cambridge may present risks to the existing GI network, e.g. due to increased recreational pressure on nearby sites, particularly when fully built out. Whilst it does not intersect with any ecological designations, the Green Infrastructure Study highlights potential for effects on the wetland assets to the east and north. There is a risk of potential impacts on international fenland and washes sites via hydrological connectivity or through habitat loss or damage (of designated or functionally linked land). Depending on the location of the new settlement and supporting infrastructure, there is increased risk of impact on international designation and/or (particularly at 'all time' rates) functionally linked habitat.

C.198 Larger developments, such growth at North East Cambridge and new settlements, may offer the opportunity to design in strategic green infrastructure and spaces from the outset.

C.199 The effects of development at villages depends on the locations of these. Where villages are located in close proximity to designated or non-designated sites, there is potential for impacts on these and the wider ecological network.

C.200 For 2020-2041, the minimum growth scenario is expected to have mixed minor positive and minor negative effects on this objective. The medium and maximum scenarios are likely to result in an increased magnitude of change, therefore these growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The effects are all uncertain as it will depend on the location of sites and design details, such as whether developments include green infrastructure and open green spaces. When fully built out all options are expected to have mixed minor positive and significant negative effects.

7. Supporting a high-tech corridor by integrating homes and jobs

C.201 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios would have a smaller new settlement and maximum growth scenario would have a settlement twice the size. All options also include growth at five villages, which is also likely to take place on greenfield land. The area south of Cambridge contains Sites of Special Scientific Importance, Local Wildlife Sites and Local Nature Reserves, so it is therefore possible that development could be built at or within close proximity to these biodiversity assets. However, greenfield sites are not always of particular ecological value, and it may be possible to avoid the more sensitive ecological locations. In addition, designing a new settlement from scratch means that green infrastructure and ecological networks can be designed into the development from the outset.

C.202 The Green Infrastructure Study states that focusing housing delivery in this area provides opportunities for habitat enhancement relating to woodland (optimising connectivity to both existing and proposed as part of forthcoming development) and the wetland-grassland mosaic.

C.203 The maximum growth scenario also includes development at Cambridge Airport and North East Cambridge. Although both sites are brownfield land, the sites do have areas of open green grassland which can act as foraging habitat for protected species or wildlife, as well as habitat mosaics on brownfield land at North East Cambridge. Both sites do not contain any designated biodiversity habitats, but the western boundary of the airport abuts Barnwell East Local Nature Reserve, so the site could form part of the wider ecological network. There are Biodiversity Opportunity Areas present around the edge of the airport, which could be used as a way to enhance the ecological networks present in the area and provide an opportunity to design in green infrastructure. Furthermore, when developing a new settlement there will be the opportunity to design in green infrastructure from the outset.

C.204 Option 7, for the minimum growth scenario is expected to have a mixed minor positive and minor negative uncertain effect in relation to this objective. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective due to greater loss of land, and therefore greater likely habitat loss under this scenario. As the exact locations of the developments are unknown, an uncertain effect is expected. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

8. Expanding a growth area around transport nodes

C.205 Option 8 focuses homes at Cambourne and surrounding villages along the A428 public transport corridor. These areas are to be served by a new railway station and Cambridgeshire Autonomous Metro.

C.206 The minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one smaller new settlement and development across three new villages. The maximum scenario includes a greater level of growth at Cambourne and development across three villages. Both the medium and maximum also include development at minor rural centres/ group villages within 5km of Cambourne. As such, the majority of development will be in rural locations. Development in the villages could affect designated or non-designated assets, and the wider ecological network, depending on their design and location.

C.207 The area contains a number of designated and non-designated habitats. For example, north west of Cambourne is Elsworth Wood, which is designated as ancient woodland and a Site of Special Scientific Interest (SSSI). North east of Cambourne is Knapwell Woods and east is Bucket Hill Plantation Grassland both of which are Local Wildlife Sites. It is therefore possible that development could take place within close proximity to these biodiversity assets, even if the sites themselves remain protected from development. It is noted that greenfield sites themselves are not always of particular ecological value, but they can provide supporting habitat or nearby more sensitive locations. All growth scenarios include designing a large new development from scratch, which means green infrastructure and ecological networks could be incorporated into designs. The exact locations of the developments are unknown, leading to uncertainty

C.208 The Green Infrastructure Study states that this option has potential to affect the Eversden and Wimpole SAC and woodland SSSIs, as the SAC supports barbastelle bats, who rely on habitats in the wider area for foraging.

C.209 The maximum growth scenario includes development at Cambridge Airport which contains open grassland, which is mown regularly, but habitats along the boundary, such as wooded areas and drainage ditches, can act as foraging habitat for protected species. Both the medium and maximum growth scenarios include development at North East Cambridge where there are also areas of green space and brownfield mosaic habitat that could be of biodiversity importance. Both sites do not contain any designated biodiversity habitats, but the western boundary of the airport abuts Barnwell East Local Nature Reserve,

so the site could form part of the wider ecological network. There are Biodiversity Opportunity Areas present around the edge of the airport, which could be used as a way to enhance the ecological networks present in the area and provide an opportunity to design in green infrastructure. Development at these sites presents more opportunities for integrating GI, but may also put pressure on the existing GI network.

C.210 The Green Infrastructure Study identifies that this option has potential to extend or exacerbate north-south severance of GI, but also to introduce GI connectivity across the A428 corridor.

C.211 The minimum growth scenario is expected to have a mixed minor positive and minor negative uncertain effect against this objective. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective, due to the greater land take and therefore greater likely habitat loss under these scenarios. The effects are uncertain as the exact location of much of the development proposed is not yet known, along with the layouts of developments which could avoid designations and designs could include green infrastructure. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

Best performing option

C.212 There is no one option which outperforms the other options. However, development that is focused in urban areas or on brownfield land is less likely to have a negative effect on Objective 5. Furthermore, development at new settlements or larger sites offers the opportunity to design in green infrastructure, networks and corridors from the outset (which could include protecting existing features, such as hedgerows and waterbodies), which will have a positive effect on SA objective 5. Option 5 'Dispersal – villages' performs least well as this option includes development at a broad range of locations, so it is likely that development would take place on greenfield land and may

Appendix C Appraisal of Strategic Spatial Options

intersect with or be adjacent to an ecological designation and mitigation and enhancement measures will be more difficult to achieve.

Appendix C Appraisal of Strategic Spatial Options

SA objective 6: To conserve and enhance the character and distinctiveness of Greater Cambridge’s landscapes and townscapes, maintaining and strengthening local distinctiveness and sense of place

C.213 Sustainability effects for this SA objective are summarised in Table C.11 and Table C.12 and described in the text below the tables.

Table C.11: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-	+/-	-	+/-?	-?	+/-?	--/+?	--/+?
Medium Growth	--/+	--/+	--/+?	--/+?	-?	--/+?	--/+?	--/+?
Maximum Growth	--/+	--/+	--?	--/+?	--?	--/+?	--/+?	--/+?

Table C.12: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-	+/-		+/-?		--/+?	--/+?	--/+
Medium Growth	--/+	--/+		--/+?		--/+?	--/+?	--/+
Maximum Growth	--/+	--/+		--/+?		--/+?	--/+?	--/+

1. Densification of existing urban areas

C.214 Option 1 would result in an increase in the density of development in Cambridge, which could have an adverse effect on the townscape.

C.215 It is unlikely that development would take place on landscape features present within the city (e.g. valued parks and green spaces), at least for the minimum growth scenario. Option 1 could involve the development of taller buildings within Cambridge, which could be out of character with the historic core of the city and affect views and vistas within the urban area, although it is recognised that not all individual developments within Cambridge would necessarily have a negative impact.

C.216 The medium and maximum growth scenarios are more likely to result in development out of keeping with the townscape in the city due to the higher density of development they require. The renewal of some locations, away from the city centre itself, may lead to townscape improvements. For example, all growth scenarios include development at a brownfield site, North East Cambridge, which could improve the townscape and landscape if development is considerate to existing surroundings.

C.217 Focusing development within Cambridge could protect sensitive landscapes located on its outskirts. The medium growth scenario includes development at the edge of Cambridge on Green Belt land which could potentially have an adverse effect on the landscape, by increasing urbanisation of this area and disrupting views towards the city and reducing the countryside gaps separating Cambridge from surrounding villages.

C.218 The medium and maximum scenarios include growth at Cambridge Airport, a site that is predominantly grassland. It includes airport buildings and structures, some of which are quite prominent. Although the airport and its associated buildings have formed part of the character and distinctiveness of this location for many years, they do not reflect the wider character of

Cambridge. It also currently has aircraft movements. Between 2020 and 2041, these effects are likely to be more pronounced for the maximum growth scenario due to the greater level of growth. The medium growth scenario also includes growth at one site on the edge of Cambridge in the Green Belt, which could affect the setting of Cambridge to some extent, but this will be somewhat limited by the smaller amount of growth coming through this additional source of supply.

C.219 Option 1, minimum growth scenario is expected to have a mixed minor positive and minor negative effect against this objective. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative effect in relation to this objective due to the higher density of development and development on the edge of Cambridge. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

2. Edge of Cambridge – outside the Green Belt

C.220 Option 2 would result in a significant amount of development on the edge of the city, at Cambridge Airport, a site that is predominantly open grassland. It includes airport buildings and structures, some of which are quite prominent. Although the airport and its associated buildings have formed part of the character and distinctiveness of this location for many years, they do not reflect the wider character of Cambridge. It also currently has aircraft movements. The Landscape Study suggests the 'new urban edge' of development at the airport would be a prominent feature in the landscape.

C.221 The additional source of supply for all growth options includes development at a brownfield site in North East Cambridge. If the development is designed well it could enhance the character and distinctiveness of the area. It is on the edge of the city, so development could affect the views in and out of the city.

C.222 Both the medium and maximum growth scenarios include the development of new settlements on public transport corridors. Designing and developing a whole new settlement offers the opportunity to build homes and a public realm that are well-designed and sensitive to the surrounding character and distinctiveness. However, larger settlements are likely to have a greater impact on the landscape, due to the scale of new development.

C.223 The minimum growth scenario includes development at a village site and the medium scenario includes growth at rural centres and minor rural centres. The Landscape Study suggests that this growth may cause some harm to distinctive local landscape and townscape features. Nevertheless, this development is likely to be distributed so that any one settlement receives a relatively small level of growth, therefore the effect on the landscape/townscape is likely to be fairly minor.

C.224 The minimum growth scenario is expected to have a mixed minor positive and minor negative effect in relation to this objective. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative effect against this objective, as these scenarios include greater land-take and the development of new settlements, which will inevitably result in large-scale landscape change. The effects are uncertain as the exact location, design and scale of the proposed developments are unknown. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

3. Edge of Cambridge – Green Belt

C.225 Option 3 would result in development around the edge of Cambridge in Green Belt land for all growth options, which could have an adverse effect on views into and out of the city. Whilst such development would extend an already established urban area rather than introducing new urban development into a predominantly rural location, urban extensions could have significant impacts on the setting of Cambridge. The Landscape Study identifies that all landscape

Appendix C Appraisal of Strategic Spatial Options

character types surrounding Cambridge have features that are vulnerable to change. However, may help to minimise changes to distinctive townscape features by avoiding growth within urban areas.

C.226 Both the medium and maximum growth scenarios estimate that five locations would be used compared with three in the minimum growth scenario. Furthermore, the maximum growth scenario would use higher delivery rates. As such, the higher the growth scenario the greater the likely impact (although this depends on whether any particularly sensitive features are present at or near specific development sites).

C.227 The medium growth scenario includes development within the Cambridge urban area. This could involve the development of taller buildings within Cambridge, which could be out of character with the historic core of the city and affect views and vistas within the urban area, although such impacts may be limited as the amount of development coming forward in the urban area is expected to be minimal. Alternatively, it could help regenerate degraded or underused land in the city.

C.228 The minimum scenario is expected to have a minor negative effect as it would expand Cambridge in fewer locations around the city, and therefore may be able to avoid the most sensitive areas. The medium and maximum growth scenarios are expected to have a significant negative uncertain effect in relation to this objective, except for the medium scenario which is expected to have a minor positive and significant negative uncertain effect. The effect is recorded as uncertain because the actual effect will depend on the final location, design, scale and layout of the proposed developments.

C.229 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

C.230 Option 4 includes the development of new settlements that are large enough to provide an opportunity for their own infrastructure. The minimum growth scenario includes two smaller new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios include a new settlement on a road network.

C.231 A new settlement has the potential to have a major impact on Greater Cambridge's landscape, as it would be introducing a large urban development into a predominantly rural location. However, the effect on the surroundings will depend upon where it is located and how sensitively the new settlement is designed. Developing a whole new settlement offers the opportunity to design it sensitively from the outset. Furthermore, development is not within the centre of Cambridge so will not affect the townscape and setting of the city.

C.232 The minimum growth scenario is expected to have a mixed minor positive and minor negative uncertain effect for this objective and the medium and maximum growth scenario is expected to have a mixed significant negative and minor positive uncertain effect. The effects are uncertain as the final location, design, scale and layout of the proposed developments are unknown. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

5. Dispersal – villages

C.233 Option 5 would result in an increase in development at villages across Greater Cambridge. The expansion of these villages could have an adverse effect on the open countryside and landscape surrounding these villages, as well as village character, particularly if a large amount of dispersed development is required. As such, dispersed development is likely to affect

more areas, although perhaps to a lesser degree. The Landscape Study states that effects will vary from village to village, depending on their existing character, therefore all effects are uncertain.

C.234 Option 5 is expected to a minor negative uncertain effect for the minimum and medium growth scenario and a significant negative uncertain effect for the maximum scenario in relation to this objective. The actual effect will depend on exact locations of developments across the villages, along with the final design, scale and layout of the proposed development but these are unknown.

C.235 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.236 Option 6 focuses development along key public transport corridors and hubs through redevelopment of North East Cambridge, the expansion or intensification of existing villages and a new settlement. A new settlement has the potential to have a major impact on Greater Cambridge's landscape, as it would introduce a relatively large urban development into a predominantly rural location. However, the effect on the surroundings will depend upon where it is located and how sensitively the new settlement is designed. If this option led to a string of development along key public transport corridors, which was not done in a sensitive way, it could significantly extend a sense of urbanisation into the more rural parts of Greater Cambridge and coalescence between settlements, as these routes are the ones that people would travel through most often.

C.237 All growth scenarios include development at North East Cambridge, which is on the edge of city. Development at North East Cambridge could potentially affect the character and distinctiveness of the city. It is on the edge of Cambridge, so it could affect views in and out of the city. However, if development of this brownfield site is sensitive to its surroundings, it could have a positive impact on the townscape and landscape.

C.238 For 2020-2041, the minimum growth scenario is expected to have mixed minor positive and minor negative effects, as it would result in more limited impacts on distinctive local landscape characteristics/features. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The effects are uncertain as the actual effect will depend on the final location, design, scale and layout of the proposed development. When fully built out, all scenarios are expected to have a mixed minor positive and significant negative uncertain effect. Note that it is expected that construction for elements coming forward beyond 2041 is likely to commence within the plan period.

7. Supporting a high-tech corridor by integrating homes and jobs

C.239 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios would have a smaller new settlement and maximum growth scenario would have a settlement twice the size. These developments have the potential to have a major impact on the landscape, as it would be introducing urban development into a predominantly rural location. In addition, this could lead to settlement coalescence and greater harm to the local landscape than other options. However, this option would concentrate such urbanisation in one area, therefore reducing such effects in other parts of Greater Cambridge. The exact location of these developments is not yet known and if designed sensitively considering the existing landscape it could have a positive impact on its surroundings. Developing a whole new settlement offers the opportunity to consider the character and distinctiveness of the area and to design sensitively from the outset.

C.240 The maximum growth scenario also includes development at two brownfield sites, Cambridge Airport and North East Cambridge. Although the airport and its associated buildings have formed part of the character and distinctiveness of this location for many years, they do not reflect the wider character of Cambridge. Development at North East Cambridge is on the edge

of Cambridge, so it could affect views in and out of the city. However, if development at these sites is sensitive to their surroundings it could have positive impact on the townscape and landscape.

C.241 For 2020-2041, all growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The effects are uncertain as the actual effect will depend on the final location, design, scale and layout of the proposed development. When fully built out, all scenarios are expected to have a mixed minor positive and significant negative uncertain effect. Note that it is expected that construction for elements coming forward beyond 2041 is likely to commence within the plan period.

8. Expanding a growth area around transport nodes

C.242 Option 8 focuses homes at Cambourne and surrounding villages, along the A428 public transport corridor. These areas are to be served by a new railway station and Cambridgeshire Autonomous Metro.

C.243 The minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one smaller new settlement and the maximum growth scenario includes expansion by equivalent of a larger development. All growth options include development at three villages. Whilst this would increase urbanisation, this would be largely restricted to one location within Greater Cambridge. Expansion of Cambourne and villages along the A428 could result in coalescence of settlements along this corridor.

C.244 Both the medium and maximum also include development at a minor rural centres/ group villages within 5km of Cambourne. As such, the majority of development will be in rural locations and development may affect the surrounding landscape if it is not designed sensitively. Building a large new development in a rural location will have a major impact on the surrounding landscape. However, large new developments provide an opportunity to consider the character and distinctiveness of the area and it design sensitively

from the outset. The final location, design, scale and layout of the proposed development is not yet known so the effects are uncertain.

C.245 An additional source of supply for the medium and maximum growth scenarios includes development at North East Cambridge and, for the maximum growth scenario, Cambridge Airport. Although the airport and its associated buildings have formed part of the character and distinctiveness of this location for many years, they do not reflect the wider character of Cambridge. Development at North East Cambridge is on the edge of Cambridge and could therefore, potentially affect the character and distinctiveness of the city, along with views in and out of Cambridge. Again, if development at these sites is sensitive to their surroundings it could have positive impact on the townscape and landscape. The effects of development at these sites is therefore uncertain as the design, scale and layout of the proposed development is not yet known.

C.246 For 2020-2041, the minimum growth scenario is expected to have mixed minor positive and minor negative effects, as it would result in more limited impacts on distinctive local landscape characteristics/features. The medium and maximum growth scenarios are expected to have a mixed minor positive and significant negative uncertain effect in relation to this objective. The effects are uncertain as the actual effect will depend on the final location, design, scale and layout of the proposed development. When fully built out, all scenarios are expected to have a mixed minor positive and significant negative uncertain effect. Note that it is expected that construction for elements coming forward beyond 2041 is likely to commence within the plan period. However, there is more certainty that effects will occur in the longer term, therefore uncertainty is removed when sites are fully built out.

Best performing option

C.247 There is no one option which outperforms the other options. Option 5 'Dispersal – villages' performs relatively well, as more dispersed development is less likely to lead to significant landscape change (although significant negative effects are expected for the maximum growth scenario). Option 4 'Dispersal –

Appendix C Appraisal of Strategic Spatial Options

new settlements' also performs relatively well, as new settlements have an opportunity to be designed sensitively to their surroundings and will not affect the historic townscape of Cambridge itself as development would not be focused within the city. However, new settlements would result in substantial change to the local landscape, which would change from rural to urban.

C.248 The maximum scenario under Option 3 'Edge of Cambridge – Green Belt' performs least well as it includes development on the edge of city at five different locations, which could affect the views in and out of the city as well as increasing urbanisation out of Cambridge.

Appendix C Appraisal of Strategic Spatial Options

SA objective 7: To conserve and/or enhance the qualities, fabric, setting and accessibility of Greater Cambridge's historic environment.

C.249 Sustainability effects for this SA objective are summarised in Table C.13 and Table C.14 and described in the text below the tables.

Table C.13: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	-	-	-?	-?	--?	-?	-?	-?
Medium Growth	--	--?	--?	--?	--?	--?	--?	-?
Maximum Growth	--	--?	--?	--?	--?	--?	--?	-?

Table C.14: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	-	-		-?		-?	--?	-?
Medium Growth	--	--?		--?		--?	--?	-?
Maximum Growth	--	--?		--?		--?	--?	-?

1. **Densification of existing urban areas**

C.250 Option 1 would result in an increase in the density of development in Cambridge, which could have an adverse effect on the historic environment. Cambridge contains a high number of heritage assets, including listed buildings, as well as a number of scheduled monuments and registered parks and gardens, particularly associated with the University. There are a large number of conservation areas in the city. The minimum growth scenario focuses development within Cambridge urban area and at North East Cambridge, a brownfield site on the edge of the city. The latter involves the regeneration of a site on the edge of Cambridge, which would be unlikely to adversely affect the setting of heritage assets, if well-designed. The Strategic Heritage Impact Assessment (2021) states that risks to the historic environment are limited under the minimum growth scenario.

C.251 The medium growth scenario includes development at the edge of Cambridge on Green Belt land, which could affect views in and out of the city. Due to the uncertainty of the location of these developments, there is also the possibility that development could take place in or near to areas of historic interest.

C.252 Both the medium and maximum growth scenarios include development at Cambridge Airport, where there is an airport control tower that is Grade 2 listed. Development of the airport could remove the historic context of this feature. However, less air traffic may have a positive effect on the setting of the historic city.

C.253 The medium and maximum growth scenarios contain more development within Cambridge's urban area, which could affect the historic environment and character within the city, with the maximum growth scenario most likely to result in some unavoidable impacts on the historic environment.

C.254 Option 1, minimum growth scenarios is expected to have a minor negative effect and the medium and maximum growth scenarios are expected to have a significant negative effect in relation to this objective. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

2. Edge of Cambridge – outside the Green Belt

C.255 Option 2 includes development at Cambridge Airport for all growth options. The airport has a control tower that is Grade 2 listed, so development of the airport could remove the historic context of this feature. However, less air traffic may have a positive effect on the historic city.

C.256 This option for all growth scenarios includes development at a brownfield site in North East Cambridge which is on the edge of the city, which would be unlikely to adversely affect the setting of heritage assets, if well-designed.

C.257 Both the medium and maximum growth scenarios include the development of new settlements on public transport corridors. The minimum growth scenario includes a village site and the medium growth scenario includes development across rural and minor rural centres however, the exact locations are uncertain. Therefore, it is difficult to say whether these developments will affect Greater Cambridge's historic environment.

C.258 The Strategic Heritage Impact Assessment (2021) states there is some, but limited risk that the minimum growth scenario would adversely affect the historic environment. Whilst the medium and maximum growth options would not add risk of impacts to Cambridge city, the larger size of individual developments under these options have potential to affect heritage assets in the area, but this depends on the exact location of development.

C.259 The minimum growth scenario is expected to have a minor negative effect in relation to this objective, whereas the medium and maximum growth scenarios are expected to have significant negative uncertain effects. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

3. Edge of Cambridge – Green Belt

C.260 Option 3 would result in development around the edge of Cambridge for all growth scenarios. Many of Cambridge's designated historic assets are located within the city centre, although development on the edge of the city could affect views in and out of the city and would also be likely to affect the setting of the historic city. Both the medium and maximum growth scenarios estimate that five locations would be used compared with three in the minimum growth scenario. The medium scenario also includes some growth within the Cambridge urban area, which could negatively affect the setting of some of the many historic assets within the city, depending on the location and design of development.

C.261 The Strategic Heritage Impact Assessment (2021) states that all options pose a risk to the historic environment of Greater Cambridge, although the greater the scale of growth, the greater the scale of growth, the less likely impacts can be avoided or mitigated.

C.262 Overall, a minor negative uncertain effect is expected for the minimum growth scenario and a significant negative uncertain effect is expected for the medium and maximum growth scenarios in relation to this objective. The effects are uncertain because the exact locations of the developments are unknown.

C.263 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

C.264 Option 4 includes the development of new settlements. The minimum growth scenario includes two smaller new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios include a new settlement on a road network.

C.265 While this option would minimise risks to Cambridge city and its setting, there are a number of listed buildings, scheduled monuments, registered parks and gardens and conservation areas across Greater Cambridge, which could be affected by development under this option. Development in more rural locations may contain or be in proximity to historic assets with more extensive settings.

C.266 The Strategic Heritage Impact Assessment (2021) states that all options pose a risk to the historic environment of Greater Cambridge, although the greater the scale of growth, the greater the scale of growth, the less likely impacts can be avoided or mitigated. In particular, it notes that the risk is significantly higher for the medium and maximum growth scenarios, than for the minimum growth scenario.

C.267 The minimum growth scenario is expected to have a minor negative uncertain effect. The medium and maximum growth scenarios are expected to have significant negative effects as larger development is less likely to be able to avoid historic assets and/or their settings. The effects are uncertain because the actual effect will depend on the location of development, as well as its final design, scale and layout, which may provide opportunities to avoid significant impacts. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

5. Dispersal – villages

C.268 Option 5 would result in an increase in development at villages across Greater Cambridge, many of which include conservation areas, contain listed buildings or are located within close proximity to listed buildings, scheduled monuments and registered parks and gardens. If development is dispersed across a range of villages and rural centres, it is more likely to affect a wider range of areas. The Strategic Heritage Impact Assessment (2021) notes that this option would lead to limited risk of harm to Cambridge city and its setting, particularly if areas to the west and southwest are avoided.

C.269 The Strategic Heritage Impact Assessment (2021) notes that the scale of potential harm increases as the scale of development increases.

C.270 Option 5 is therefore expected to have a significant negative uncertain effect for all growth scenarios. Whilst lower levels of development may be able to avoid the most sensitive areas to some extent, all options have potential to result in significant negative effects. The actual effect will depend on exact locations of development across the villages and rural centres, along with the final design, scale and layout of the proposed development which are unknown.

C.271 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.272 Option 6 focuses development along key public transport corridors and hubs through the expansion or intensification of existing villages or through more new settlements. While this option would lead to limited risk to the historic environment of Cambridge city, due to the fact there are a number of listed buildings, scheduled monuments and registered parks and gardens across Greater Cambridge it is possible that development could be located within close proximity to one or more such assets. In particular, the public transport corridors

to the west and south west have a number of listed buildings, conservation areas and registered parks and gardens within close proximity that may be affected by development. However, the exact location of development is unknown so effects are uncertain. All growth scenarios also include development at North East Cambridge, which is on the edge of city.

C.273 The Strategic Heritage Impact Assessment (2021) states that the medium and maximum growth scenarios have an increased risk, compared with the minimum growth scenario, given the need to accommodate a significantly larger quantum of development both in terms of scale of the new settlement and the need to disperse further development.

C.274 Option 6 is therefore expected to have a minor positive uncertain effect for the minimum growth scenario and a significant negative uncertain effect for the medium and maximum growth scenarios. The effect is uncertain as the actual effect will depend on the location of development, as well as its final design, scale and layout in relation to historic assets. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

7. Supporting a high-tech corridor by integrating homes and jobs

C.275 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios would have a smaller new settlement and maximum growth scenario would have a settlement twice the size. There are a number of listed buildings, scheduled monuments and conservation areas in the area south of Cambridge, so it is likely that development would be within close proximity to a heritage asset. However, the exact location of these settlements and village expansions (included in all growth scenarios) are unknown, so effects are uncertain.

C.276 The maximum growth scenario also includes development at two brownfield sites, Cambridge Airport and North East Cambridge. The airport includes a Grade 2 listed control tower, so development of the airfield could affect the historic context of the asset.

C.277 The Strategic Heritage Impact Assessment (2021) notes that, whilst all options present a risk to the historic environment, this increases with the amount of growth to be provided. It concludes that the minimum scenario would post low/moderate risk, the medium scenario would pose a moderate risk and the maximum scenario would post a moderate/high risk.

C.278 All growth scenarios are expected to have a significant negative uncertain affect in relation to this objective. The effects of the development under this option are uncertain as it will depend on developments location, design, scale and layout. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

8. Expanding a growth area around transport nodes

C.279 Option 8 focuses homes at Cambourne and surrounding villages, along the A428 public transport corridor. These areas are to be served by a new railway station and public transport improvements.

C.280 The minimum and medium growth scenario include the expansion of Cambourne by the equivalent of one smaller new settlement and the maximum scenario includes the equivalent of a larger settlement. All growth scenarios include development across three villages. Both the medium and maximum growth scenarios also include development at a minor rural centres/ group villages within 5km of Cambourne. Cambourne has a few listed buildings. However, it does not contain any conservation areas, scheduled monuments or registered parks and gardens. To the south and north east of Cambourne there are registered parks and gardens. To the south and west there are scheduled

monuments. Although development close to Cambourne is unlikely to affect much in the way of historic assets or features, development in surrounding villages or rural locations could have a greater affect.

C.281 Whilst the minimum and medium scenarios would not affect the setting of Cambridge city, an additional source of supply for the maximum growth scenario is Cambridge Airport. The airport includes a Grade 2 listed control tower, so development of the airfield may affect the context of the historic asset. The medium and maximum growth scenarios include development at North East Cambridge which is on the edge of Cambridge.

C.282 The Strategic Heritage Impact Assessment (2021) notes that, whilst all options present a risk to the historic environment, this increases with the amount of growth to be provided.

C.283 All growth scenarios are expected to have a minor negative uncertain effect in relation to this objective. The effects are uncertain as the exact location, design, scale and layout of the proposed development is unknown. These effects are expected to be the same both within the plan period and when fully built out, particularly as construction for elements coming forward beyond 2041 is likely to commence within the plan period, and therefore effects are expected to arise from that point.

Best performing option

C.284 Option 8 'Expanding a growth area around transport nodes' performs best because it has more potential to locate development in less sensitive areas in terms of the historic environment, although the maximum growth scenario would also result in the loss of the context for the listed control tower at Cambridge Airport.

C.285 All other options have the potential to result in significant harm to the historic environment, particularly under the medium and maximum growth

Appendix C Appraisal of Strategic Spatial Options

scenarios as Greater Cambridge has a number of historic assets in both urban and rural locations, as well as within the city of Cambridge itself.

Appendix C Appraisal of Strategic Spatial Options

SA objective 8: To make efficient use of Greater Cambridge's land resources through the re-use of previously developed land and conserve its soils.

C.286 Sustainability effects for this SA objective are summarised in Table C.15 and Table C.16 and described in the text below the tables.

Table C.15: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	++/-?	--?	--?	--?	--/+?	--?	--?
Medium Growth	++	++/--?	--/+?	++/--?	--?	--/+?	--?	--/+?
Maximum Growth	++/-	++/--?	--?	--?	--?	--/+?	++/--?	++/--?

Table C.16: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	++/-?		--?		--/+?	--?	--?
Medium Growth	++	++/--?		++/--?		--/+?	--?	--/+?
Maximum Growth	++/-	++/--?		--?		--/+?	++/--?	++/--?

1. Densification of existing urban areas

C.287 Option 1 includes an increase in the density of development in Cambridge located on brownfield land at North East Cambridge and the redevelopment of existing urban uses under all growth scenarios. As such, development at these sites will not result in the loss of high-quality agricultural land. Furthermore, both the medium and maximum growth scenarios include development at Cambridge Airport which is previously developed land. However, the site does contain open grassland. The medium growth scenario also includes development at the edge of Cambridge on Green Belt land.

C.288 The minimum and medium growth scenarios are expected to have a significant positive effect against this objective, whereas the maximum growth scenario is expected to have mixed significant positive and minor negative effects. These effects are expected to be the same both within the plan period and when fully built out.

2. Edge of Cambridge – outside the Green Belt

C.289 Option 2 includes development on previously developed land at Cambridge Airport, however, it does contain open grassland and associated soil resources (although unlikely to be used for commercial farming). An additional source of supply includes development at North East Cambridge and development here would reduce the need to develop best and most versatile agricultural land.

C.290 Both the medium and maximum growth scenarios include the development of new settlements on public transport corridors. The minimum growth scenario includes a village site and the medium growth scenario includes development across rural and minor rural centres, but the exact locations are uncertain. Therefore, there is a possibility that development could occur on high-quality agricultural land.

C.291 A significant positive and minor negative uncertain effect is expected for the minimum growth scenario. A significant positive and significant negative uncertain effect is expected for the medium and maximum growth scenarios. The effects are uncertain because the location of the developments is not yet known. These effects are expected to be the same both within the plan period and when fully built out.

3. Edge of Cambridge – Green Belt

C.292 Option 3 would be likely to result in substantial development of greenfield land as all scenarios include development on Green Belt at different locations. Both the medium and maximum growth scenarios include five locations compared with three in the minimum growth scenario. The areas around the city of Cambridge consist of Grades 1, 2 and 3 agricultural land, therefore it is possible or even probable that high-quality agricultural land could be lost. The medium scenario also includes some development within the Cambridge urban area, which would help reduce the amount of agricultural land required for development.

C.293 All growth scenarios are expected to have significant negative uncertain effect against this objective. For the medium growth scenario, this is mixed with a minor positive effect. The effects are uncertain as the exact location of the developments is unknown.

C.294 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

C.295 Option 4 includes the development of new settlements. The minimum growth scenario includes two smaller new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios also include a

new settlement on a road network. It is noted that a new settlement could be on, or partly on, brownfield land, although there is very limited brownfield land in the Cambridge urban area, therefore development of new settlements is likely to be on greenfield land, which could be high-quality agricultural land. However, the exact location of these new settlements is unknown, so the actual effect is uncertain.

C.296 The medium growth scenario includes development at a brownfield site in North East Cambridge on the edge of the city, which would help reduce the need for development on best and most versatile agricultural land.

C.297 A significant negative uncertain effect is expected for all growth scenarios except for the medium growth scenario where a mixed significant positive and significant negative uncertain effect is expected in relation to this objective, as the medium scenario includes development on previously developed land. The effects are uncertain as the exact location of the developments are unknown. These effects are expected to be the same both within the plan period and when fully built out.

5. Dispersal – villages

C.298 Option 5 would result in an increase in development at villages across Greater Cambridge. The expansion of these villages is likely to be on greenfield land, which could be high-quality agricultural land, as a large part of South Cambridgeshire consists of Grades 1, 2 and 3 agricultural land. However, the exact location of the development is unknown, so the effect is uncertain.

C.299 Option 5, for all growth scenarios, is expected to have a significant negative uncertain effect. The actual effect will depend on exact locations of development across the villages and rural centres.

C.300 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.301 Option 6 focuses development along key public transport corridors and hubs through the expansion or intensification of existing villages or through more new settlements. As such, development is likely to be in rural locations and therefore could be on high-quality agricultural land. However, the exact location of this development is unknown, so the effect is uncertain.

C.302 All growth scenarios also include development at North East Cambridge, which is brownfield land on the edge of the city. As such, this could help minimise the need for development of best and most versatile agricultural land, although it does not make use of other brownfield sites, such as Cambridge Airport.

C.303 A minor positive and significant negative uncertain effect is expected for all growth scenarios against this objective. The effects are uncertain as the exact location of the development is unknown. These effects are expected to be the same both within the plan period and when fully built out.

7. Supporting a high-tech corridor by integrating homes and jobs

C.304 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios would include a smaller new settlement and maximum growth scenario would include a settlement twice the size. Due to the size of the new settlements, along with the expansion of villages (included in all growth scenarios), it is likely the development would be located within rural locations across the south of Cambridge. As such, much of the development is likely to be located on Grades 2 and 3 agricultural land. However, the exact location of development is unknown, so the effect is uncertain.

C.305 The maximum growth scenario also includes development at two brownfield sites, Cambridge Airport and North East Cambridge. Development of these sites would help minimise the amount of development required on best and most versatile agricultural land.

C.306 A significant negative uncertain effect is expected for all growth scenarios, except the maximum growth scenario where a significant positive and significant negative uncertain effect is expected in relation to this objective. The latter includes development on previously developed land. The effects are uncertain as the exact location of development is unknown. These effects are expected to be the same both within the plan period and when fully built out.

8. Expanding a growth area around transport nodes

C.307 Option 8 focuses homes at Cambourne and surrounding villages, along the A428 public transport corridor. These areas are to be served by a new railway station and Cambridgeshire Autonomous Metro.

C.308 The minimum and medium growth scenario includes the expansion of Cambourne by equivalent of one smaller new settlement and the maximum scenario includes the equivalent of two larger settlements. All growth scenarios include development across three villages. Both the medium and maximum also include development at a minor rural centre and group villages within 5km of Cambourne. Cambourne and the surrounding area has a large amount of Grade 1, 2 and 3 agricultural land, which could be lost to development. However, the exact location of the development is not yet known, so the effect is uncertain.

C.309 An additional source of supply for the medium and maximum growth scenario includes development at North East Cambridge. The maximum growth scenario also includes development at Cambridge Airport. Development at these sites could help minimise the amount of development required on best and most versatile agricultural land, although the medium option does not make use of other brownfield sites, such as Cambridge Airport.

C.310 The minimum growth scenario is expected to have a significant negative uncertain effect, the medium scenario is expected to have a mixed minor positive and significant negative effect and the and maximum growth scenario is expected to have a mixed significant positive and significant negative uncertain effect in relation to this objective. The effects are uncertain as the exact location, design, scale and layout of the proposed development is unknown. These effects are expected to be the same both within the plan period and when fully built out.

Best performing option

C.311 Option 1 'Densification of existing urban areas' performs best, as development under this option is likely to be focused on brownfield sites and therefore less to affect the wider rural areas of Greater Cambridge where there is the best and versatile agricultural land (although there will be some loss of greenfield land in the maximum growth scenario). The focus source of supply for Option 2 'Edge of Cambridge – outside Green Belt' is at Cambridge Airport, a large brownfield site, albeit with existing soil resources in the large, grassy areas. However, in order to provide sufficient housing this option also includes potential greenfield sites, including at new settlements for the medium and maximum growth scenarios. All options except Option 3 'Edge of Cambridge – Green Belt', 4 'Dispersal – new settlements' and 5 'Dispersal – villages' also include North East Cambridge, a large brownfield site on the outskirts of Cambridge. However, all options also include other sources of supply.

C.312 Option 5 'Dispersal – villages' performs least well as this options includes development at a broad range of rural locations, so it is likely that development will take place on greenfield land, which has greater potential to be Grade 1, 2 or 3 agricultural land.

Appendix C Appraisal of Strategic Spatial Options

SA objective 9: To conserve mineral resources in Greater Cambridge

C.313 Sustainability effects for this SA objective are summarised in Table C.17 and Table C.18 and described in the text below the tables.

Table C.17: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	-?	--?	-?	-?	-?	-?	-?	-?
Medium Growth	--?	--?	--?	--?	--?	--?	--?	-?
Maximum Growth	--?	--?	--?	--?	--?	--?	--?	-?

Table C.18: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	-?	--?		-?		-?	-?	--?
Medium Growth	--?	--?		--?		--?	--?	--?
Maximum Growth	--?	--?		--?		--?	--?	--?

1. Densification of existing urban areas

C.314 Cambridge coincides with Mineral Safeguarding Areas and Consultation Areas, including for Chalk and for Sand and Gravel, designated in the Cambridgeshire and Peterborough Minerals and Waste Local Plan (2021). It is therefore possible that developments coming forward under Option 1 could take place within these Mineral Safeguarding Areas, albeit minerals extraction is unlikely to take place in the urban area. The medium growth scenario also includes development on the edge of Cambridge on Green Belt land, which could coincide with a Mineral Safeguarding Area. However, exact locations of these developments are uncertain.

C.315 All growth scenarios include development in North East Cambridge, which is located within a Consultation Area and Mineral Safeguarding Area for Sand and Gravel. Both the medium and maximum growth scenarios include development at Cambridge Airport, which also contains a Minerals Safeguarding Area for Chalk.

C.316 Minor negative uncertain effects are therefore identified in relation to the minimum growth scenario and significant negative effects are expected for the medium and maximum growth scenarios. The effect is uncertain as the exact location of development within the Green Belt is unknown and there is uncertainty from the Minerals and Waste Plan Policies Map as to whether the Consultation Areas are in relation to minerals and/or waste sites. These effects are expected to be the same both within the plan period and when fully built out.

2. Edge of Cambridge – outside the Green Belt

C.317 The Cambridge Airport (included in all growth options) site is located within a Minerals Safeguarding Area for Chalk. The additional source of supply for all growth scenarios includes development at North East Cambridge which is within a Consultation Area and Mineral Safeguarding Area for Sand and Gravel.

The additional source of supply for both the medium and maximum growth scenarios includes the development of new settlements on public transport corridors, which could be within a Minerals Consultation or Safeguarding Area. The minimum growth scenario includes a village site and the medium growth scenario includes development across rural centres and minor rural centres, but the exact locations are uncertain. Therefore, development under all growth scenarios could be located within a Minerals Consultation Area or Safeguarding Area.

C.318 The minimum, medium and maximum growth scenarios are expected to have a significant negative but uncertain effect in relation to this objective. The latter two options would result in higher levels of development so development is more likely to cover a greater area within a Mineral Consultation or Safeguarding Area. The effects are uncertain as the exact location of the new settlements, development at rural centres and the village site are unknown and there is uncertainty as to whether the Consultation Areas are in relation to minerals or waste sites. These effects are expected to be the same both within the plan period and when fully built out.

3. Edge of Cambridge – Green Belt

C.319 Option 3 includes development at the edge of Cambridge on substantial areas of greenfield land for all growth scenarios. There are a number of Minerals sites, Safeguarding and Consultation Areas around Cambridge. It is therefore possible that particular development locations coming forward through Option 3 could take place within these Mineral Safeguarding or Consultation Areas.

C.320 The medium growth scenario includes development at urban areas across Cambridge, which includes Mineral Safeguarding and Consultation Areas. However, it is unlikely minerals development would come forward within the urban area.

C.321 Therefore, the minimum growth scenario is expected to have a minor negative uncertain effect in relation to this objective. The medium and maximum growth scenarios are expected to have a significant negative but uncertain effect in relation to this objective. The latter two options would result in higher levels of development so development is more likely to cover a greater area within a Minerals Consultation or Safeguarding Area. The effect is uncertain as the exact location of development is unknown.

C.322 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal – new settlements

C.323 Option 4 includes the development of new settlements. The minimum growth scenario includes two smaller new settlements and the medium and maximum growth scenarios include three new settlements all on public transport corridors. The medium and maximum growth scenarios also include a new settlement on a road network.

C.324 A number of Mineral Safeguarding Areas and Consultation Areas are located outside of Cambridge. Due to the large proportion of the plan area that is designated as a Mineral Safeguarding Area or Consultation Area, it is likely that a new settlement would coincide with these, although this depends on the location of any particular developments that come forward. Given that the minimum growth scenario includes a smaller number of new settlements and of a smaller scale, development may be able to avoid Mineral Safeguarding Areas and Consultation Areas.

C.325 Therefore, a minor negative uncertain effect is expected for the minimum growth scenario, and a significant negative effect is expected for both the medium and maximum growth scenarios. These effects are expected to be the same both within the plan period and when fully built out.

5. Dispersal – villages

C.326 Option 5 proposes an increase in development at villages, rural and minor rural centres across Greater Cambridge. Therefore, development under this option would take place at rural locations in Greater Cambridge where there are Mineral Safeguarding and Consultation Areas. However, this depends on the specific location of any particular development that come forward.

C.327 Therefore, the minimum growth scenario is expected to have a minor negative uncertain effect in relation to this objective. The medium and maximum growth scenarios are expected to have a significant negative but uncertain effect in relation to this objective. The latter two options would result in higher levels of development so there is greater chance development could be within Mineral Consultation or Safeguarding Areas. The actual effect will depend on exact locations of development across the villages, rural and minor rural centres.

C.328 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.329 Option 6 proposes development along or around key public transport corridors and hubs through the expansion or intensification of existing villages or through new settlements. There are a number of Mineral Safeguarding and Consultation Areas located along existing and proposed key transport corridors, which could be affected by development under this option, although this depends on the location of any particular developments that come forward.

C.330 All growth scenarios also include development at a site in North East Cambridge, which is within a Mineral Safeguarding Area, although it is unlikely minerals development would come forward within the urban area.

C.331 A minor negative uncertain effect is likely for the minimum growth scenario and a significant negative uncertain effect is likely for the medium and maximum growth scenarios. The latter two options would result in higher levels of development so there is greater chance development could be within Mineral Consultation or Safeguarding Areas. These effects are expected to be the same both within the plan period and when fully built out.

7. Supporting a high-tech corridor by integrating homes and jobs

C.332 Option 7 focuses development in the south of Cambridge in villages and a new settlement close to the life science cluster area. The minimum and medium growth scenarios include a smaller new settlement and maximum growth scenario includes a settlement twice the size. The south of Cambridge contains some Minerals Consultation and Safeguarding Areas which could intersect with development. However, the exact location of development is unknown, so effects are uncertain.

C.333 The maximum growth scenario also includes development at two brownfield sites, Cambridge Airport and North East Cambridge. Both of these sites are located within Mineral Safeguarding Areas.

C.334 A minor negative uncertain effect is expected for the minimum growth scenario in relation to this objective. A significant negative uncertain effect is expected for the medium and maximum growth scenarios. The effects are uncertain as the exact locations of development are not yet known. These effects are expected to be the same both within the plan period and when fully built out.

8. Expanding a growth area around transport nodes

C.335 Option 8 focuses homes at Cambourne, along the A428 public transport corridor and at villages along the corridor. These areas are to be served by a

new railway station within the plan period, upon which development at Cambourne is dependent on, and public transport improvements.

C.336 The minimum and medium growth scenario include the expansion of Cambourne by the equivalent of one smaller new settlement and the maximum scenario includes expansion by equivalent of a larger new development. All options include development across three village sites. Both the medium and maximum scenarios also include development at minor rural centres/ group villages within 5km of Cambourne. Cambourne itself does not coincide with any Mineral Safeguarding Areas or Consultation Areas, but there are Mineral Safeguarding Areas within 5km of Cambourne, particularly to the south and east.

C.337 An additional source of supply for the medium and maximum growth scenarios includes North East Cambridge and for the maximum growth scenarios it includes development at Cambridge Airport. These sites lie within Mineral Safeguarding Areas.

C.338 All growth scenarios are expected to have a minor negative uncertain effect in relation to this objective. The effects are uncertain as the exact location of the proposed development is unknown. These effects are expected to be the same both within the plan period and when fully built out.

Best performing option

C.339 Option 8 'Expanding a growth area around transport nodes' performs best. Option 8 performs well because although there are Mineral Safeguarding Areas within 5km of Cambourne, a smaller amount of development is likely to coincide with these designations. All other options are more likely to result in development that could be within Mineral Safeguarding Area or a Minerals Consultation Area, particularly for higher growth options.

Appendix C Appraisal of Strategic Spatial Options

SA objective 10: To achieve sustainable water resource management and enhance the quality of Greater Cambridge's waters.

C.340 Sustainability effects for this SA objective are summarised in Table C.19 and Table C.20 and described in the text below the tables.

Table C.19: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	+/-?	+/-?	--/+?	+/-?	--/+?	--/+?	+/-?	--/+?
Medium Growth	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?
Maximum Growth	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?	--/+?

Table C.20: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--?	++/--?		++/--?		++/--?	++/--?	++/--?
Medium Growth	++/--?	++/--?		++/--?		++/--?	++/--?	++/--?
Maximum Growth	++/--?	++/--?		++/--?		++/--?	++/--?	++/--?

1. Densification of existing urban areas

C.341 The minimum growth scenario includes growth in Cambridge urban area and North East Cambridge. Wastewater from these developments could be accommodated in the new Cambridge Water Recycling Centre (WRC) however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the new WRC, but interim mitigation may be necessary before new works are operational. North East Cambridge is not within a SPZ. Cambridge contains two Source Protection Zones (SPZs 1 and 2) by The Leys School. However, since built development is already present at these SPZs; it is unlikely that any development coming forward would take place at these sites. Furthermore, both the medium and maximum growth scenarios include development at Cambridge Airport which is not in a SPZ.

C.342 As well as the development listed above, the medium growth scenario also includes development at Cambridge Airport and on the Edge of Cambridge (Green Belt). Wastewater treatment (and maintaining water quality) for these developments is likely to be the same as stated above. The maximum growth scenario includes growth at Cambridge urban area and North East Cambridge, as well as development at Cambridge Airport.

C.343 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

C.344 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as North East Cambridge and Cambridge Airport, although this is more likely to come forward in the longer term.

C.345 As such, for 2020-2041, a mixed minor positive and minor negative effect with uncertainty is expected for the minimum growth scenario, whereas mixed minor positive and significant negative effects with uncertainty are expected for the medium and maximum scenarios. When fully built out, all scenarios are expected to have mixed significant positive and significant negative effects with uncertainty. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

2. Edge of Cambridge – outside the Green Belt

C.346 All growth options include development at North East Cambridge and Cambridge Airport. Wastewater from these developments could be accommodated in the new Cambridge WRC however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the new WRC, but interim mitigation may be necessary before new works are operational. North East Cambridge and Cambridge Airport are not within a SPZ.

C.347 The minimum growth scenario includes development at a village site and the medium growth scenario includes development at rural centres. Both the medium and maximum growth scenarios include the development of new settlements. Wastewater from new settlements is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. The exact locations of the village site and minor rural centres under the minimum and medium scenarios are uncertain. In addition, the medium and maximum growth scenarios include development at new settlements, for which the locations are also uncertain. As such, it currently is not possible to state whether these developments would be within a SPZ.

C.348 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

C.349 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as North East Cambridge, Cambridge Airport and new settlements, although this is more likely to come forward in the longer term. At rural centres there may be some opportunities to improve water quality and implement water recycling on larger sites however, this is dependent on-site size and feasibility.

C.350 As such, for 2020-2041, a mixed minor positive and minor negative effect with uncertainty is expected for the minimum growth scenario, whereas a mixed minor positive and significant negative effect with uncertainty is expected for the medium and maximum growth scenarios. When fully built out, all scenarios are expected to have mixed significant positive and significant negative effects with uncertainty. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

3. Edge of Cambridge – Green Belt

C.351 All growth options include development on the Edge of Cambridge (Green Belt), with the medium growth scenario also containing development in Cambridge urban areas. Wastewater from these developments could be accommodated in the new Cambridge WRC however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the new WRC, but interim mitigation may be necessary before new

works are operational. The medium growth option includes development in Cambridge where there are two Source Protection Zones (SPZs 1 and 2) by The Leys School. However, since built development is already present at these SPZs; it is unlikely that any development coming forward would take place at these sites. The locations on the Edge of Cambridge are unknown, so it is not possible to state whether these developments would be within a SPZ.

C.352 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

C.353 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, therefore minor positive effects are identified but uncertain, as this depends on the size of individual development sites.

C.354 As such, all scenarios are expected to have mixed minor positive and significant negative effects with uncertainty. The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

4. Dispersal – new settlements

C.355 All growth options include development at new settlements across the greater Cambridge. Wastewater from new settlements is expected to generally be able to be accommodated (although it is noted some WRC catchments lack

capacity), although this is dependent on the specific location and timing of development. Maintaining water quality is likely to be achievable with some mitigation measures at the relevant WRC. Furthermore, as the locations of the new settlements are unknown, so it is not possible to state whether these developments would be within a SPZ.

C.356 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

C.357 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as at larger new settlements, although this is more likely to come forward in the longer term.

C.358 As such, for 2020-2041, a mixed minor positive and minor negative effect with uncertainty is expected for the minimum growth scenario, whereas a mixed minor positive and significant negative effect with uncertainty is expected for the medium and maximum growth scenarios. When fully built out, all scenarios are expected to have mixed significant positive and significant negative effects with uncertainty. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

5. Dispersal – villages

C.359 All growth options include development at rural centres, minor rural centres and villages however, the exact locations of these developments are

unknown. Wastewater from these developments is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. Maintaining water quality is likely to be achievable, with some mitigation measures at the relevant WRC. As the locations of the new developments are unknown, it is not possible to state whether these developments would be within a SPZ.

C.360 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

C.361 There may be some opportunities to improve water quality and implement water recycling on larger sites however, this is dependent on-site size and feasibility.

C.362 As such, all scenarios are expected to have mixed minor positive and significant negative effects with uncertainty. The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

6. Public transport corridors

C.363 All growth options include development at North East Cambridge, a new settlement and across eighteen villages along an existing or proposed public

transport corridor. Wastewater from new settlements is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. Wastewater from Cambridge urban areas could be accommodated in the new Cambridge WRC however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the relevant WRC, but, with regards to the new Cambridge WRC, interim mitigation may be necessary before new works are operational. North East Cambridge is not in a SPZ. The locations of the new settlement and village sites are unknown, so it is not possible to state whether these developments would be within a SPZ.

C.364 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

C.365 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as North East Cambridge and new settlements, although this is more likely to come forward in the longer term. There may be some opportunities to improve water quality and implement water recycling at larger settlements or village sites however, this is dependent on-site size and feasibility.

C.366 As such, for 2020-2041, a mixed minor positive and significant negative effect with uncertainty is expected for all growth scenarios. When fully built out, all scenarios are expected to have mixed minor significant positive and significant negative effects with uncertainty. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

7. Supporting a high-tech corridor by integrating homes and jobs

C.367 All growth scenarios include development at a new settlement along a public transport corridor and villages across greater Cambridge. Wastewater from new settlements is expected to generally be able to be accommodated (although it is noted some WRC catchments lack capacity), although this is dependent on the specific location and timing of development. The maximum scenario also includes development at North East Cambridge and Cambridge Airport. Wastewater from these developments could be accommodated in the new Cambridge WRC however, this is dependent on timing. Maintaining water quality is likely to be achievable with some mitigation measures at the relevant WRC, but, with regards to the new Cambridge WRC, interim mitigation may be necessary before new works are operational. Furthermore, the locations of the new settlement and villages are unknown, so it is not possible to state whether these developments would be within a SPZ. North East Cambridge and Cambridge Airport are not in a SPZ.

C.368 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios.

C.369 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as a new settlement along a public transport corridor, North East Cambridge and Cambridge Airport, although this is more likely to come forward in the longer term. There may be some opportunities to improve water quality and implement water recycling at village sites however, this is dependent on-site size and feasibility.

C.370 As such, for 2020-2041, a mixed minor positive and minor negative effect with uncertainty is expected for the minimum growth scenario, whereas a minor positive and significant negative effect with uncertainty is expected for the medium and maximum growth scenarios. When fully built out, mixed significant positive and significant negative effects with uncertainty are expected for all growth scenarios. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

8. Expanding a growth area around transport nodes

C.371 All growth options include the expansion of Cambourne by the equivalent of one new settlement. The minimum and medium growth scenarios include development at three villages along a public transport corridor. The medium and maximum scenarios also include development at minor rural centres and group villages within 5km of Cambourne. The medium growth scenario includes development at North East Cambridge and the maximum growth scenario includes development at North East Cambridge and Cambridge Airport.

C.372 Any extension to Cambourne or villages sited along the A428 public transport corridor may result in wastewater issues, as both Bourn and Uttons Drove WRC have capacity limitations that would require addressing. Maintaining water quality is likely to be achievable with some mitigation measures at the relevant WRC.

C.373 The Water Study identified that the maximum growth scenario has potential 'deal breaker' constraints due to water supply limitations, and the medium scenario is plausibly achievable, but not without but has significant constraints or uncertainties that will be difficult to overcome, technically challenging and/or costly. For these growth scenarios new regional-scale solutions would have to be implemented, but particularly for the maximum scenario, such solutions cannot currently be implemented in time to prevent detrimental impacts to water resources. As such, significant negative effects are identified for both the medium and maximum scenarios. However, the study

also notes that development in the Cambourne area could have good opportunities for water resources with the potential to be supplied by bulk transfer, which could reduce water supply issues in the short term.

C.374 Water recycling and new blue-green infrastructure may be easier to implement across larger sites, such as strategic extensions to Cambourne, North East Cambridge and Cambridge Airport, although this is more likely to come forward in the longer term. There may be some opportunities to improve water quality and implement water recycling at minor rural centres and village sites however, this is dependent on-site size and feasibility. As such, for 2020-2041, a minor positive and significant negative effect with uncertainty is expected for all growth scenarios. When fully built out, the minimum growth scenario is expected to have a mixed significant positive and significant negative effect with uncertainty for all growth scenarios. Whilst it is likely the significant negative effects can be mitigated, and more easily so for the medium scenario than for the maximum scenario, the scores are based on a precautionary approach, which does not assume mitigation will be in place.

Best performing option

C.375 It is not possible to distinguish a best performing option The Water Study concludes that the most preferable spatial options are Option 2 'Edge of Cambridge – outside Green Belt' and Option 4 'Dispersal – new settlements', whereas the least preferable option is Option 5 'Dispersal – villages'. However, this also takes into account flood risk, which is considered under SA objective 11.

C.376 Availability of water resources is a major issue in Greater Cambridge and the surrounding area. The minimum growth scenario performs best, given that the Water Study states that this level of growth could be accommodated with feasible adjustments to next Water Resource Management Plan to mitigate impacts, whereas the medium growth scenario has significant constraints that would require regional-scale solutions to be operational by the mid-2030s. The maximum growth scenario performs worst against this SA objective, as growth

Appendix C Appraisal of Strategic Spatial Options

cannot be accommodated without detrimental impacts and interim measures are unlikely to be able to mitigate scale of impact.

C.377 The minimum growth scenarios for Options 1 'Densification of existing urban areas', Option 2 'Edge of Cambridge – outside the Green Belt', Option 4 'Dispersal – new settlements and Option 7 'Supporting a high-tech corridor by integrating homes and jobs' perform relatively well, as only minor negative effects are expected.

Appendix C Appraisal of Strategic Spatial Options

SA objective 11: To adapt to climate change, including minimising flood risk

C.378 Sustainability effects for this SA objective are summarised in Table C.21 and Table C.22 and described in the text below the tables.

Table C.21: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	--/+?	+/-?	++/-?	+/-?	-?	+/-?	+/-	-?
Medium Growth	--/+	+/-?	++/--	--/+?	-?	+/-?	+/-	-?
Maximum Growth	--/+	+/-?	++/--	--/+?	-?	+/-?	+/-	-?

Table C.22: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--?	++/-?		++/-?		++/-?	++/-	+/-?
Medium Growth	++/--	++/-?		++/--?		++/-?	++/-	+/-?
Maximum Growth	++/--	++/-?		++/--?		++/-?	++/-	+/-?

1. Densification of existing urban areas

C.379 The city of Cambridge contains several areas that fall within Flood Zones 2 and 3. This is due to the fact the River Cam runs through the city. Therefore, development in Cambridge could fall within Flood Zones 2 or 3, which are at a higher risk of flooding, and Cambridge also has high levels of surface water flood risk. Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site is not within Flood Zones 2 or 3.

C.380 As this option aims to focus the majority of development within the urban area, it reduces the need to use greenfield land to accommodate growth thereby reducing the amount of additional impermeable surfaces. This will help to reduce any additional risk of flooding through new development. This is particularly true for the minimum growth scenario. However, for the medium and maximum growth scenarios, additional sources of supply will be at Cambridge Airport and, for the medium growth scenario, an edge of Cambridge Green Belt site. Whilst Cambridge Airport is a brownfield site and does not fall within Flood Zones 2 or 3, it contains substantial, permeable, grassy areas and development on the edge of Cambridge is likely to be on greenfield land.

C.381 Development on the edge of Cambridge is likely to be on Greenfield land, although the edge of Cambridge does not contain many areas that fall within Flood Zones 2 or 3. There are also areas identified as being at risk of surface water flooding. Development at these sites is likely to increase the amount of impermeable areas that will reduce the infiltration capacity and flood retention provided by greenfield land. However, larger developments at the edge of Cambridge and Cambridge Airport could provide additional green space, which could build climate resilience in the area, especially if the open spaces are naturally designed compared to amenity space. The Water Study suggests that development at North East Cambridge and within the urban area have good opportunities to retrofit SuDS and other flood risk measures, and that

development at Cambridge Airport could use on-site attenuation to reduce flood risk downstream.

C.382 For 2020-2041, significant negative effects with uncertainty are expected for the minimum growth scenario, whereas mixed minor positive and significant negative effects are expected for the medium and maximum growth scenarios. These effects are expected to be the same when fully built out.

2. Edge of Cambridge – outside the Green Belt

C.383 Option 2 includes urban development at Cambridge Airport for all growth scenarios in addition to extensions to the edge of Cambridge, with the opportunity of including a range of green spaces incorporating sustainable drainage systems. Cambridge Airport is within Flood Zone 1.

C.384 Similar to Option 1, this Option would make use of brownfield land, thereby reducing the need to use greenfield land and any additional risk of flooding through the increase of impermeable surfaces. Whilst Cambridge Airport is a brownfield site and does not fall within Flood Zones 2 or 3, it has some surface water flood risk and contains large areas of permeable, grassy areas and development on the edge of Cambridge is likely to be on greenfield land. Additional sources of supply will also be delivered North East Cambridge for all scenarios. The Water Study states that North East Cambridge is in an area at low risk of flooding and has good opportunities to retrofit SuDS and other flood risk measures, and that development at Cambridge Airport could use on-site attenuation to reduce flood risk downstream.

C.385 For the minimum growth scenario one village site is also proposed and the medium scenario includes growth at rural centres and minor rural centres. The medium and maximum growth scenarios also include development at new villages. The locations of these are unknown, therefore it is not known if these will fall within areas at high risk of flooding and similarly opportunities for managing flood risk (e.g. on-site attenuation) are uncertain. However, the medium and maximum scenarios are likely to result in greater loss of greenfield

land, which could increase the risk of surface water flooding, although new settlements are likely to include additional greenspace, which could incorporate sustainable drainage systems and build climate resilience in the area.

C.386 For 2020-2041, mixed minor positive and minor negative effects are expected for all options. These are uncertain, as the locations of new settlements and village sites/rural centres are unknown. When fully built out, the positive effects are expected to be significant.

3. Edge of Cambridge - Green Belt

C.387 Option 3 includes the development of new sites in Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a broad range of locations. The edge of Cambridge does not contain many areas that fall within Flood Zones 2 or 3, although the Water Study notes that existing fluvial flood and surface water flood risk may make individual sites difficult to deliver, depending on location. Development at these sites is also likely to increase the amount of impermeable areas will reduce the infiltration capacity and flood retention provided by greenfield land. However, these developments, particularly larger individual developments, present the opportunity for green spaces to be delivered on-site and to use large scale features in larger sites to reduce flood risk downstream. In addition, provision of green space could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space. Given that this option is expected be fully built out within the plan period, such measures are considered more likely to be delivered within the plan period.

C.388 The medium growth scenario also includes growth within the urban area of Cambridge. The urban area contains several areas that fall within Flood Zones 2 and 3. This is due to the fact the River Cam runs through the city. Therefore, development in Cambridge could fall within Flood Zones 2 or 3, which are at a higher risk of flooding, and Cambridge also has high levels of surface water flood risk.

C.389 Overall, mixed significant positive and minor negative effects with uncertainty are expected for the minimum growth scenario (as development at fewer locations offers more scope to avoid areas at higher risk of flooding), whereas mixed significant positive and significant negative effects are expected for the medium and maximum growth scenarios.

C.390 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

C.391 Option 4 involves the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. Both the medium and maximum growth scenarios include a new settlement on the road network as well.

C.392 New settlements are likely to be developed on greenfield land. Therefore, a settlement would increase the risk of surface run-off and potentially flooding in the area through the increase of impermeable surfaces. Depending on where the new settlements might come forward, there are large amounts of land within Flood Zones 2 and 3 within the northern part of South Cambridgeshire and as such if development is located there it may be at higher risk of flooding. However, the Water Study states that it is expected new settlements will be located on areas of low or medium flood risk, where it is feasible to safely manage risk within development, and that new settlements present good opportunities to use large scale features in new settlements to reduce flood risk downstream. In addition, it is likely that additional green space would be provided which could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space.

C.393 For 2020-2041, mixed minor positive and minor negative effects with uncertainty are expected for the minimum growth scenario, whereas mixed minor positive and significant negative uncertain effects are expected for the

medium and maximum growth scenarios. This is because the medium and maximum scenarios are likely to provide four new settlements thereby substantially reducing the amount of greenfield land available to provide infiltration capacity and flood retention and increasing the likelihood development will coincide with an area at high risk of flooding. When fully built out, mixed significant positive and minor negative effects with uncertainty are expected for the minimum growth scenario, whereas mixed significant positive and significant negative effects are expected for the medium and maximum growth scenarios.

5. Dispersal – villages

C.394 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. It is likely that development within the villages of Greater Cambridge will be on greenfield land which would increase the risk of flooding in the area through the increase of impermeable surfaces. This will reduce the infiltration capacity and flood retention provided by greenfield land. In Greater Cambridge Flood Zones 2 and 3 correspond with the River Cam and its tributaries, therefore there are patches of Flood Zones 2 and 3 throughout the area. As such an increase in flooding would depend on the exact location of the development. Sites coming forward under this option are unlikely to be large enough to offer significant betterment in terms of flood risk.

C.395 Overall, minor negative effects are expected against each scenario with uncertainty.

C.396 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.397 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and development across 18 villages with existing or proposed public transport corridors.

C.398 North East Cambridge lies in an area at low risk of flooding, but could present an opportunity to retrofit SuDS. Flood Zones 2 and 3 correspond with the River Cam and its tributaries, therefore there are patches of Flood Zones 2 and 3 throughout the area. As such the developments could be at risk of flooding. However, the exact locations are uncertain at this time. The Water Study states that it is expected new settlements will be located on areas of low or medium flood risk, where it is feasible to safely manage risk within development, and that new settlements present good opportunities to use large scale features in new settlements to reduce flood risk downstream. It is also likely that additional green space would be provided at the new settlements which could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space.

C.399 For 2020-2041, mixed minor positive and minor negative effects with uncertainty are expected against each scenario. When fully built out, all growth scenarios are expected to have mixed significant positive and minor negative effects.

7. Supporting a high-tech corridor by integrating homes and jobs

C.400 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while

the maximum growth scenario includes a larger settlement. All growth scenarios also include growth at villages to the south of Cambridge.

C.401 As the development will be concentrated in the south of Cambridge it is less likely that development will be located in Flood Zones 2 and 3 as the majority of areas at risk of flooding lie within the north of the plan area. However, development is likely to increase the risk of flooding with the increase of impermeable areas via development on greenfield land. The Water Study states that it is expected new settlements will be located on areas of low or medium flood risk, where it is feasible to safely manage risk within development, and that new settlements present good opportunities to use large scale features in new settlements to reduce flood risk downstream. In particular, the Green Infrastructure Study states that focusing development in this area could provide opportunities for woodland and wetland-grassland habitat, which could support flood management. In addition, it is expected that new settlements would include green space, which could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space.

C.402 The maximum growth scenario includes growth at North East Cambridge and Cambridge Airport. North East Cambridge is not within Flood Zones 2 or 3. Cambridge Airport is within Flood Zone 1, although it has some surface water flood risk and development of this site would result in loss of a large, grassy area, which could increase surface water flooding. The Water Study recognised that North East Cambridge has good opportunities to retrofit SuDS and other flood risk reduction measures to brownfield sites, reducing risk of flooding to site and elsewhere and Cambridge Airport offers good opportunities to use on-site attenuation to reduce flood risk downstream.

C.403 For 2020-2041, mixed minor positive and minor negative effects are expected against each growth scenario. The positive effects are expected to be positive when fully built out.

8. Expanding a growth area around transport nodes

C.404 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and public transport improvements serving the area. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger extension. All options also include development at villages along the A428 and the medium and maximum scenarios include further growth at minor rural centres and group villages within 5km of Cambourne.

C.405 It is likely that development at Cambourne, along the A428 and at the villages/minor rural centres will be on greenfield land, therefore the risk of flooding is likely to rise due to the increase of impermeable areas. There are patches of Flood Zones 2 and 3 within the southern section of Cambourne and the Water Study states that the area has some surface water flood risk, but it should be feasible to safely manage this within development. As such the developments could be at some risk of flooding, however the exact locations are uncertain at this time. The Water Study states there may be some opportunities to use on-site attenuation in new settlements to reduce flood risk downstream. In addition, the large scale of development at Cambourne would be expected to provide new green space, which could incorporate sustainable drainage systems and build climate resilience in the area, especially if the open spaces are naturally designed compared to simple amenity space.

C.406 The Green Infrastructure Study states that this option could provide opportunities to enhance wetland and grassland habitat, which could support flood management.

C.407 The medium and maximum scenarios include growth at North East Cambridge and the maximum growth scenario also includes growth at Cambridge Airport. North East Cambridge is not within Flood Zones 2 or 3. Cambridge Airport is within Flood Zone 1 and Cambridge Airport offers good opportunities to use on-site attenuation to reduce flood risk downstream,

although development of this site would result in loss of a large, grassy area, which could increase surface water flooding.

C.408 For 2020-2041, minor negative effects are expected against each scenario with uncertainty. When fully built out, mixed minor positive and minor negative effects with uncertainty are expected.

Best performing option

C.409 For 2020-2041, the minimum scenario for Option 3 'Edge of Cambridge – Green Belt' performs best, as it is more likely to be able to avoid areas at high risk of flooding and could include flood betterment measures. This is comparable to the following options when fully built out: Options 2 'Edge of Cambridge – outside the Green Belt', 6 'Public transport corridors', 7 'Supporting a high-tech corridor by integrating homes and jobs' and the minimum growth scenario for Option 4 'Dispersal – new settlements', which also perform well.

C.410 The Water Study concludes that the most preferable spatial options are Option 2 'Edge of Cambridge – outside Green Belt' and Option 4 'Dispersal – new settlements', whereas the least preferable option is Option 5 'Dispersal – villages'. However, this also takes into account water resources, water quality and wastewater treatment, which are considered under SA objective 10.

Appendix C Appraisal of Strategic Spatial Options

SA objective 12: To minimise Greater Cambridge's contribution to climate change.

C.411 Sustainability effects for this SA objective are summarised in Table C.23 and Table C.24 and described in the text below the tables.

Table C.23: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	+/-	+/-?	--/+?	--	--/+?	+/-?	++/--?
Medium Growth	++/-	--/+	+/-?	--/+?	--	++/--?	++/-?	++/--?
Maximum Growth	++/-	--/+	++/-?	--/+?	--	++/--?	++/-?	++/--?

Table C.24: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++	++/-		++/--		++/--?	++/-	++/--
Medium Growth	++/-	++/--		++/--		++/--?	++/-?	++/--
Maximum Growth	++/-	++/--		++/--		++/--?	++/-	++/--

C.412 Note that the assessments below have been partly informed by the Transport Study. It is noted that the Transport Study is based on the maximum growth scenario. In the absence of equivalent information for the minimum and medium scenarios, this has also been used as the starting point for assessing the other growth scenarios, although the overall scores in the table above are influenced by a number of factors.

1. Densification of existing urban areas

C.413 Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site will be brought forward through the AAP.

C.414 The medium and maximum growth scenarios also include development at Cambridge Airport, at which a range of services and facilities, employment opportunities, open space and walking and cycling can be designed in from the outset of design. As such, this option is likely to reduce the need to travel as development will be within close proximity to existing services and facilities with the option to also incorporate additional services and facilities from the outset. The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities and employment opportunities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities and employment opportunities, although this is not the case for Cambridge Airport.

C.415 The Cambridge Airport area has been identified as having high levels of estimated soil carbon and carbon in vegetation, which could be disturbed or lost as a result of development.

C.416 As this option aims to focus the majority of development within the urban area, which is the main centre for services and facilities and employment opportunities, the need to travel by car will reduce thereby encouraging more sustainable methods of transport like walking and cycling and minimising the amount of greenhouse gas emissions. This is particularly true for the minimum growth scenario.

C.417 The medium and maximum growth scenarios may put more pressure on local services and facilities, due to the increased density of development in the Cambridge urban area. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. This could lead to residents travelling further afield to access services and facilities, increasing carbon emissions from transport. Whilst the medium and maximum scenarios are also likely to include larger developments that may provide new services and facilities, these would be located outside of Cambridge and therefore would not be able to fully mitigate the effects of higher densities in the urban area. Nevertheless, the Transport Study stated that this option was one of the best performing (for the maximum growth scenario) as it will result in fewer car trips and generate less traffic than other options. This option will result in a higher proportion of trips taken by active modes of transport than any other option. The Zero Carbon Study also found that this option performs best in terms of minimising carbon emissions. Whilst this is primarily related to lower levels of car travel, high density development, such as high-rise flats, have less embodied carbon per dwelling.

C.418 Overall, significant positive effects are expected for the minimum growth scenario, whereas mixed significant positive and minor negative uncertain effects are expected for the medium and maximum growth scenarios, for both 2020- 2041 and when fully built out.

2. Edge of Cambridge – outside the Green Belt

C.419 Option 2 includes development at Cambridge Airport and North East Cambridge for all growth scenarios, which offer the opportunity to incorporate employment opportunities, a GP surgery, a range of open space, recreational and sporting facilities, and walking and cycling can be designed in from the outset of design. As such, this option is likely to reduce the need to travel as development will be within close proximity to existing services and facilities with the option to also incorporate additional services and facilities from the outset.

C.420 The Cambridge Airport area has been identified as having high levels of estimated soil carbon and carbon in vegetation, which could be disturbed or lost as a result of development.

C.421 The medium and maximum growth scenarios propose two new settlements on public transport corridors. It is likely that these settlements will be designed so that residents can access the centre of each settlement by active travel. However, even with public transport options available, many residents are likely to drive for longer journeys, for example to access employment in Cambridge. The minimum growth scenario also includes a village site and the medium scenario includes growth at rural centres and minor rural centres, which would likely rely on private transport to amenities, facilities and services, which may increase the emission of greenhouse gases. New settlements, provided by the medium and maximum scenarios, offer the opportunity to incorporate services and facilities and employment opportunities into the design from the outset. The medium and maximum growth scenarios include development of new settlements, which are expected to provide new services and facilities and employment opportunities, particularly larger settlements. The medium growth scenario includes development at rural centres and minor rural centres, which may help ensure the continued vitality and viability of these centres, although there is a risk that a larger amount of development at any one rural settlement could lead to increased pressure on services and facilities and lead to an increased need to travel by private car to access facilities elsewhere.

C.422 The Transport Study demonstrated that this option is likely to result in a relatively high proportion of trips taken by active transport, but will generate more distance travelled, travel time and delay than options 1 and 7 (for the maximum growth scenario).

C.423 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at new settlements, North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the

case for Cambridge Airport or the new settlements. New settlements could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

C.424 For 2020-2041, mixed minor positive and significant negative effects are expected for medium and maximum scenarios. Mixed minor positive and minor negative effects are recorded for the minimum scenario, given that the majority of development will have good access to services and facilities in Cambridge by sustainable modes of transport. Mixed significant positive and minor negative effects are expected for the minimum scenario and mixed significant positive and significant negative effects are expected for the medium and maximum scenarios when fully built out.

3. Edge of Cambridge – Green Belt

C.425 Option 3 includes the development of new sites in the Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a broad range of locations. The maximum growth scenario includes higher delivery rates at the Green Belt sites. It is likely that additional services and facilities and employment opportunities will also be provided on site, but these may not be provided in the short term and are likely to be more limited under the minimum and medium growth scenarios. Larger developments have more scope to be designed in a way that encourages walking and cycling which is likely to minimise the area's contribution to climate change. In addition, it is likely for these developments to have good access to services and facilities, jobs and public transport options within Cambridge. These are likely to be accessible via public transport from the new developments. Larger urban extensions could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks. Smaller extensions are less likely to have these benefits.

C.426 Areas in the east and south have high estimated levels of soil carbon. Development on land supporting high levels of carbon may cause disturbance or loss thereof.

Appendix C Appraisal of Strategic Spatial Options

C.427 The medium growth scenario also includes growth within the Cambridge urban area, which is likely to help minimise carbon emissions by providing housing close to services, facilities, jobs and public transport links.

C.428 The Transport Study demonstrated that this option is likely to result in a relatively high proportion of trips taken by active transport, but will generate more distance travelled, travel time and delay than options 1 and 7 (for the maximum growth scenario) .

C.429 Overall, the minimum and medium growth scenarios are expected to have a mixed minor positive and minor negative effect with uncertainty and the maximum growth scenario is expected to have a significant positive and minor negative effect with uncertainty.

C.430 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

C.431 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. Under the minimum growth scenario, the two new settlements would be on a public transport corridor, which would reduce the need for private transport and reduce greenhouse gas emissions. However, both the medium and maximum growth scenarios include a new settlement on the road network. As such, residents would be more reliant on private transport which could increase the area's contribution to climate change. Even with public transport options available, many residents are likely to drive for longer journeys, for example to access employment in Cambridge. Nevertheless, larger settlements have more scope to be designed in a way that encourages walking and cycling, which will likely minimise the area's contribution to climate change.

C.432 New settlements would be expected to provide a range of new services and facilities to meet the day to day needs of residents and increase the amount

of employment opportunities within the settlement. However, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities and job opportunities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. New settlements could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

C.433 The Transport Study suggests that this option is ‘medium performing’ overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but not as much as other options and will generate more distance travelled, travel time and delay than options 1 and 7.

C.434 Overall, these growth scenarios are expected to have a mixed minor positive and significant negative effect with uncertainty from 2020-2041 and a mixed significant positive and significant negative effect with uncertainty when built out.

5. Dispersal – villages

C.435 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. There are fewer Rural Centres so the absolute growth in each village is significantly greater for each Rural Centre than Minor Rural Centre. Rural Centres are likely to have more amenities, services and facilities and employment opportunities than Minor Rural Centres however, they could become overwhelmed and reach capacity. As such, an increase in the reliance on private vehicles is likely in order to access services and facilities and employment opportunities elsewhere, thereby leading to an increase in greenhouse gas emissions. This will be more prevalent in villages without good

public transport links, although most are not as well connected via public transport (particularly regarding frequency of services), than larger centres. The Zero Carbon Study found that this option performs worst in terms of increased carbon emissions.

C.436 Overall, each scenario is likely to have negative effects on this objective for all scenarios.

C.437 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.438 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and across 18 villages with existing or proposed public transport corridors. New settlements could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

C.439 Development at North East Cambridge will provide new services and facilities and employment opportunities, as well as be in close proximity to existing facilities within Cambridge city. In addition, this option concentrates development along public transport corridors, it may reduce the use of private vehicles and greenhouse gas emissions. However, an increase in residents could lead to overcapacity if additional services are not provided, leading people to travel to services further afield; this is most likely to occur at the 18 villages. Even with public transport options available, many residents are likely to drive for longer journeys, for example from new settlements and more rural settlements to access employment in Cambridge.

C.440 In addition, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new

settlements will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. This is likely to be more pronounced for the minimum growth scenario, during the plan period, due to the smaller amount of development likely to be completed at a new settlement site. Under the maximum growth scenario however, growth at these locations is likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

C.441 The Transport Study suggests that this option is ‘medium performing’ overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but not as much as other options and will generate more distance travelled, travel time and delay than options 1 and 7. The Zero Carbon Study found that this option performs second best (after option 1) in terms of minimising carbon emissions.

C.442 For 2020-2041, mixed minor positive and significant negative effects are expected for the minimum scenario, whereas mixed significant positive and significant negative effects are expected for the medium and maximum growth scenarios. All scenarios are expected to have mixed significant positive and significant negative effects when fully built out. All effects are considered uncertain.

7. Supporting a high-tech corridor by integrating homes and jobs

C.443 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement however, both are on public transport corridors.

C.444 The Review of Spatial Options in relation to Green Infrastructure suggests that development in this area provides opportunities for enhancement

of woodland and wetland-grassland mosaic, which could serve to support carbon capacity.

C.445 All growth scenarios include development across five villages all with existing or proposed public transport nodes. However, the medium growth scenario could include 25% of development not on public transport corridors. Overall, it is likely that the need to travel by car will be minimised, but the medium growth scenario may also increase the use of private vehicles and greenhouse gas emissions. Whilst there is likely to be some private car use resulting from development, in this area south of Cambridge employees could travel to work using active travel or public transport especially as this option supports the life sciences cluster area around the south of Cambridge.

C.446 The maximum growth scenario also includes growth at North East Cambridge and Cambridge Airport, which will provide new services and facilities and employment opportunities, as well as low growth in the urban area. As such, this scenario will be less likely to put pressure on existing services and facilities, as well as providing new ones to serve new development, thereby reducing the need to travel by private car to access facilities elsewhere, resulting in significant positive effects. The Cambridge Airport area has been identified as having high levels of estimated soil carbon and carbon in vegetation, which could be disturbed or lost as a result of development.

C.447 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period, resulting in a need for residents to travel further to access these. Under the maximum growth scenario however, growth at new settlements is likely be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs, although there is a less certainty on this with regards to Cambridge Airport. New settlements could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

C.448 Nevertheless, the Transport Study stated that this option was one of the best performing as, whilst it will not have the highest non-car mode share, it will reduce overall travel distance, time and delay, leading to reduced impacts on the wider road network and associated carbon emissions (for the maximum growth scenario). Given that the Transport Study is based on the maximum growth scenario, it is expected that positive effects for the minimum scenario, within the plan period, will be minor, rather than significant. However, it is noted that the Zero Carbon Study suggested that this option is more of a medium-performing option, resulting in some uncertainty.

C.449 For 2020-2041, the minimum scenario is expected to have mixed minor positive and minor negative effects with uncertainty, whereas the medium and maximum scenarios are likely to have significant positive and minor negative effects with uncertainty. When fully built out, all scenarios are expected to have significant positive and minor negative effects, although there is uncertainty associated with the medium growth scenario as there is a greater risk of private vehicles being utilised.

8. Expanding a growth area around transport nodes

C.450 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and public transport improvements serving these areas, which are expected to come forward within the plan period. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger development. All of these developments would have access to the railway station, which would help to reduce reliance on travelling by car thereby minimising greenhouse gas emissions. Furthermore, large new development has the opportunity to encourage and accommodate walking and cycling from the initial design stage. However, some residents are still likely to travel by car, particularly to locations not served by the train or good public transport. Larger urban extensions could have greater potential to incorporate low-carbon and energy efficient design, such as district heating networks.

Appendix C Appraisal of Strategic Spatial Options

C.451 This option also includes growth at villages along the A428 public transport corridor, which will be well served by public transport, and therefore contribute to minimising greenhouse gas emissions, in the long term, but may be reliant on private car use to some extent. The medium and maximum options include growth at other villages/settlements within 5km of Cambourne that may not be on public transport corridors. Such growth is likely to result in increases in car use to access employment, services and facilities.

C.452 The medium and maximum growth scenarios include growth at North East Cambridge and, for the maximum growth scenario, growth at Cambridge Airport. These sites are likely to have good access to the services, facilities and public transport links within Cambridge as well as providing new ones, therefore minimising the need to travel and associated greenhouse gas emissions. For the medium scenario, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of growth at North East Cambridge between 2020 and 2041, as a lower level of growth is expected within the plan period. Under the maximum growth scenario, growth at North East Cambridge is more likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport. The Cambridge Airport area has been identified as having high levels of estimated soil carbon and carbon in vegetation, which could be disturbed or lost as a result of development.

C.453 The Transport Study suggests that this option is 'medium performing' overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but will generate more distance travelled, travel time and delay than options 1 and 7.

C.454 For 2020-2041, all scenarios are likely to have significant minor positive and significant negative effects. The effect is uncertain, as it is uncertain whether the full range of supporting services and facilities will come forward within the plan period. This is expected to be the same when fully built out, but without the uncertainty.

Best performing option

C.455 Option 1: 'Densification of existing urban areas' performs best, as it locates development within the existing urban area. As such, proximity to existing services, facilities, employment opportunities and public transport is likely to be better than the other options. In addition, the opportunity to cycle and walk are more prevalent within the urban area, but also could be developed within other sources of supply in the medium and maximum scenarios as active travel could be included from the design stages. Higher density development also tends to have lower embodied carbon. The Transport Study identified that Option 7 'Supporting a high-tech corridor by integrating homes and jobs' also performs well (for the maximum growth scenario), as it will reduce traffic in the wider Cambridge area and reduce journey length/times to work. However, the Zero Carbon Study suggested that Option 6 'Public transport corridors' would likely lead to lower carbon emissions than Option 7. The Transport Study also found that Options 2 'Edge of Cambridge – outside Green Belt' and Option 3 'Edge of Cambridge – Green Belt' would help support active travel (based on the maximum growth scenario). Option 8 'Expanding a growth area around transport nodes' also performed well, due to the expected development of a new railway station at Cambourne.

C.456 Larger urban extensions, such as those that may come forward through options 3 'Edge of Cambridge – Green Belt' and 8 'Expanding a growth area around transport nodes', as well as new settlements, may present greater opportunity to incorporate sustainable energy generation, such as district heating networks. All development could also help to minimise carbon emissions through energy efficient design etc., although the Zero Carbon Study highlights that the main source of carbon emissions for all options is transport.

C.457 Option 5 'Dispersal – villages' performs least well as it is likely to lead to development with high levels of dependency on the private car.

Appendix C Appraisal of Strategic Spatial Options

SA objective 13: To limit air pollution in Greater Cambridge and ensure lasting improvements in air quality.

C.458 Sustainability effects for this SA objective are summarised in Table C.25 and Table C.26 and described in the text below the tables.

Table C.25: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--	--/+	+/-?	--/+?	--	--/+?	+/-	++/--?
Medium Growth	++/--	--/+	--/+?	--/+?	--	--/+?	++/-?	++/--?
Maximum Growth	++/--	--/+	++/--?	--/+?	--	--/+?	++/-	++/--?

Table C.26: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--	++/--		++/--?		++/--?	++/-	++/--
Medium Growth	++/--	++/--		++/--?		++/--?	++/-?	++/--
Maximum Growth	++/--	++/--		++/--?		++/--?	++/--	++/--

1. Densification of existing urban areas

C.459 Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site will be brought forward through the AAP.

C.460 The medium and maximum growth scenarios also include development at Cambridge Airport. A range of services and facilities, employment opportunities, open space and walking and cycling can be designed in from the outset of design. As such, this option is likely to reduce the need to travel as development will be within close proximity to existing services and facilities with the option to also incorporate additional services and facilities from the outset.

C.461 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities and employment opportunities at North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities and employment opportunities, although this is not the case for Cambridge Airport.

C.462 As this option aims to focus the majority of development within the urban area, which is the main centre for services and facilities, the need to travel by car will reduce thereby encouraging more sustainable methods of transport like walking and cycling and minimising the effects of poor air quality. This is particularly true for the minimum growth scenario.

C.463 The medium and maximum growth scenarios may put more pressure on local services and facilities, due to the increased density of development in the Cambridge urban area. Indeed the Infrastructure Study states that it is thought much of Cambridge's infrastructure is at or close to capacity. This could lead to residents travelling further afield to access services and facilities, increasing air

pollution from transport. Whilst the medium and maximum scenarios are also likely to include larger developments that may provide new services and facilities and employment opportunities, these would be located outside of Cambridge and therefore would not be able to fully mitigate the effects of higher densities in the urban area. Nevertheless, the Transport Study stated that this option was one of the best performing as it will result in fewer car trips and generate less traffic than other options (for the maximum growth scenario). This option will result in a higher proportion of trips taken by active modes of transport than any other option.

C.464 In addition, there is an AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Whilst development would have good access to services and facilities by non-car modes, it is likely some residents will travel by car or other motorised vehicle, therefore, it is likely that additional development within the urban area and at North East Cambridge will exacerbate the poor air quality within the area.

C.465 Overall, mixed significant positive and significant negative effects with uncertainty are expected for aa growth scenarios, for both 2020-2041 and when fully built out.

2. Edge of Cambridge – outside the Green Belt

C.466 Option 2 includes development at Cambridge Airport and North East Cambridge for all growth scenarios, which offer the opportunity to incorporate employment opportunities, a GP surgery, a range of open space, recreational and sporting facilities, and walking and cycling can be designed in from the outset of design. As such, this option is likely to reduce the need to travel as development will be within close proximity to existing services and facilities and jobs with the option to also incorporate additional services and facilities and employment opportunities from the outset.

C.467 The medium and maximum growth scenarios propose two new settlements on the public transport corridors. It is likely that these settlements

Appendix C Appraisal of Strategic Spatial Options

will be designed so that residents can access the centre of each settlement by active travel. However, even with public transport options available, many residents are likely to drive for longer journeys, for example to access employment in Cambridge. The minimum growth scenario also includes a village site and the medium scenario includes growth at rural centres and minor rural centres, which would likely rely on private transport to access amenities, facilities and services and employment opportunities and this may worsen air quality. New settlements, provided by the medium and maximum scenarios, offer the opportunity to incorporate services and facilities into the design from the outset. The medium and maximum growth scenarios include development of new settlements, which are expected to provide new services and facilities, particularly larger settlements. The medium growth scenario includes development at rural centres and minor rural centres, which may help ensure the continued vitality and viability of these centres, although there is a risk that a larger amount of development at any one rural settlement could lead to increased pressure on services and facilities. This could lead to residents travelling further afield to access services and facilities, increasing air pollution from transport.

C.468 The minimum and medium growth scenarios are unlikely to provide the full range of services and facilities at new settlements, North East Cambridge and Cambridge Airport between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, growth at North East Cambridge is expected to be of a scale to ensure provision of sufficient new services and facilities, although this is not the case for Cambridge Airport or the new settlements.

C.469 In addition, there is one AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Whilst development in and around Cambridge would have good access to services and facilities by non-car modes, it is likely some residents will travel by car or other motorised vehicle, therefore, it is likely that development will exacerbate the poor air quality within the area.

C.470 The Transport Study demonstrated that this option is likely to result in a relatively high proportion of trips taken by active transport, but will generate

more distance travelled, travel time and delay than options 1 and 7 (for the maximum growth scenario).

C.471 For 2020-2041, mixed minor positive and significant negative effects are expected for all growth scenarios. Mixed significant positive and significant negative effects are expected for all scenarios when fully built out.

3. Edge of Cambridge – Green Belt

C.472 Option 3 includes the development of new sites in the Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a broad range of locations. The maximum growth scenario includes higher delivery rates at the Green Belt sites. It is likely that additional services and facilities and employment opportunities will also be provided on site, but these may not be provided in the short term and are likely to be more limited for the minimum and medium growth scenarios. Larger developments have more scope to be designed in a way that encourages walking and cycling which is likely to minimise impacts on the area's air quality. In addition, it is likely for these developments to have good access to public transport options in Cambridge.

C.473 The medium growth scenario also includes growth within the Cambridge urban area, which is likely to help minimise carbon emissions by providing housing close to services, facilities, jobs and public transport links. Whilst development in and around Cambridge would have good access to services and facilities by non-car modes, it is likely some residents will travel by car or other motorised vehicle, therefore exacerbating poor air quality in this area, including the city centre and A14 AQMAs .

C.474 The Transport Study demonstrated that this option is likely to result in a relatively high proportion of trips taken by active transport, but will generate more distance travelled, travel time and delay than options 1 and 7 (for the maximum growth scenario).

C.475 Overall, the minimum growth scenario is expected to have mixed minor positive and minor negative effects with uncertainty, the medium growth scenario is expected to have mixed minor positive and significant negative effects with uncertainty and the maximum growth scenario is expected to have a mixed significant positive and significant negative effect with uncertainty.

C.476 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

C.477 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. Under the minimum growth scenario, the two new settlements would be on a public transport corridor, which would reduce the need for private transport and help to minimise poor air quality. However, both the medium and maximum growth scenarios include a new settlement on the road network. As such, residents would be more reliant on private transport which could worsen air quality. Even with public transport options available, many residents are likely to drive for longer journeys, for example to access employment in Cambridge. Nevertheless, larger settlements have more scope to be designed in a way that encourages walking and cycling, which will likely minimise adverse effects on the area's air quality.

C.478 New settlements would be expected to provide a range of new services and facilities to meet the day to day needs of residents within the settlement. However, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities and job opportunities at new settlements will be delivered between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. Under the maximum growth scenario, at least some of the new settlements are likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

C.479 The Transport Study suggests that this option is 'medium performing' overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but not as much as other options and will generate more distance travelled, travel time and delay than options 1 and 7.

C.480 Overall, these growth scenarios are expected to have a mixed minor positive and significant negative effect with uncertainty from 2020-2041 and a mixed significant positive and significant negative effect with uncertainty when fully built out.

5. Dispersal – villages

C.481 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. There are fewer Rural Centres so the absolute growth in each village is significantly greater for each Rural Centre than Minor Rural Centre. Rural Centres are likely to have more amenities, services and facilities and employment opportunities than Minor Rural Centres however, they could become overwhelmed and reach capacity. As such, an increase in the reliance on private vehicles is likely in order to access services and facilities and employment opportunities elsewhere, thereby leading to a worsening of air quality. This will be more prevalent in villages without good public transport links, although most are not as well connected via public transport (particularly regarding frequency of services), than larger centres.

C.482 Overall, each scenario is likely to have significant negative effects on this objective.

C.483 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.484 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and across 18 villages with existing or proposed public transport corridors. Development at North East Cambridge will provide new services and facilities and employment opportunities, as well as be in close proximity to existing facilities within Cambridge city. In addition, this option concentrates development along public transport corridors, it may reduce the use of private vehicles and help to minimise poor air quality, however an increase in residents could lead to overcapacity if additional services are not provided, leading people to travel to services further afield; this is most likely to occur at the 18 villages. Even with public transport options available, many residents are likely to drive for longer journeys, for example from new settlements and more rural settlements to access employment in Cambridge.

C.485 In addition, for the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities at new settlements will be delivered at new settlements and at North East Cambridge between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period. This is likely to be more pronounced for the minimum growth scenario, during the plan period, due to the smaller amount of development likely to be completed at a new settlement site. Under the maximum growth scenario however, growth at these locations is likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option.

C.486 The Transport Study suggests that this option is 'medium performing' overall (for the maximum growth scenario). It will increase the proportion of travel by active modes above the baseline, but not as much as other options and will generate more distance travelled, travel time and delay than options 1 and 7.

C.487 In addition, there is one AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Therefore, it is likely that development within North East Cambridge will exacerbate the poor air quality within the area.

C.488 For 2020-2041, mixed minor positive and significant negative effects are expected for all scenarios, with the positive effects becoming significant when fully built out. All effects are considered uncertain.

7. Supporting a high-tech corridor by integrating homes and jobs

C.489 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement however, both are on public transport corridors.

C.490 All growth scenarios include development across five villages all with existing or proposed public transport nodes. However, the medium growth scenario could include 25% of development not on public transport corridors. Overall, it is likely that the need to travel by car will be minimised, but the medium growth scenario may also increase the use of private vehicles and worsen air quality. Whilst there is likely to be some private car use resulting from development, in this area to the south of Cambridge employees could travel to work using active travel or public transport especially as this option supports the life sciences cluster area around the south of Cambridge.

C.491 The maximum growth scenario also includes growth at North East Cambridge and Cambridge Airport, which will provide new services and facilities and jobs, as well as low growth in the urban area. As such, this scenario will be less likely to put pressure on existing services and facilities, as well as providing new ones to serve new development, thereby reducing the distance to essential development for residents and the need to travel by private car to access

facilities elsewhere, resulting in significant positive effects. However, there is one AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Therefore, it is likely that development within North East Cambridge, for the maximum scenario, will exacerbate the poor air quality within the area.

C.492 For the minimum and medium scenarios in particular, it is considered unlikely that the full range of services and facilities will be delivered at new settlements between 2020 and 2041, as a lower level of growth is expected at these locations within the plan period, resulting in a need for residents to travel further to access these. Under the maximum growth scenario however, growth at new settlements is likely be of a scale to ensure more extensive provision of sufficient new services and facilities and employment opportunities, due to the higher build out rates under this option. In addition, growth at North East Cambridge in the maximum scenario is likely to be of a scale to provide services and facilities to meet day to day needs and additional employment opportunities, although there is a less certainty on this with regards to Cambridge Airport. Nevertheless, the Transport Study stated that this option was one of the best performing as, whilst it will not have the highest non-car mode share, it will reduce overall travel distance, time and delay, leading to reduced impacts on the wider road network and associated carbon emissions (for the maximum growth scenario). Given that the Transport Study is based on the maximum growth scenario, it is expected that positive effects for the minimum scenario, within the plan period, will be minor, rather than significant.

C.493 For 2020-2041, the minimum growth scenario is expected to have mixed minor positive and minor negative effects, whereas the medium and maximum scenarios are likely to have mixed significant positive and minor negative effects. When fully built out, the minimum and medium scenarios are expected to have significant positive and minor negative effects, although there is uncertainty associated with the medium growth scenario as there is a greater likelihood of private vehicles being utilised. When fully built out, the maximum scenario is expected to have a mixed significant positive and significant negative effects.

8. Expanding a growth area around transport nodes

C.494 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and public transport improvements serving these areas, which are expected to come forward within the plan period. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger development. All of these developments would have access to the railway station, which would help to reduce reliance on travelling by car thereby improving air quality. Furthermore, new settlements have the opportunity to encourage and accommodate walking and cycling from the initial design stage. However, some residents are still likely to travel by car, particularly to locations not served by the train or good public transport.

C.495 The medium and maximum growth scenarios include growth at North East Cambridge and, for the maximum growth scenario, growth at Cambridge Airport. These sites are likely to have good access to the services, facilities and public transport links within Cambridge as well as providing new ones, therefore minimising the need to travel and associated air pollution. For the medium scenario, it is considered unlikely that the full range of services and facilities will be delivered to meet the needs of growth at North East Cambridge between 2020 and 2041, as a lower level of growth is expected within the plan period. Under the maximum growth scenario, growth at North East Cambridge is more likely to be of a scale to ensure more extensive provision of sufficient new services and facilities, due to the higher build out rates under this option, although this is less certain for Cambridge Airport. In addition, there is one AQMA within the city of Cambridge and another on the A14 which connects to the centre of the city and North East Cambridge. Therefore, it is likely that development within North East Cambridge will exacerbate the poor air quality within the area.

C.496 This option also includes growth at villages along the A428 public transport corridor, which will be well served by public transport, and therefore contribute to minimising greenhouse gas emissions, in the long term, but may be reliant on private car use in the shorter term. The medium and maximum

options include growth at other villages/settlements within 5km of Cambourne that may not be on public transport corridors. Such growth is likely to result in increases in car use to access employment, services and facilities.

C.497 For 2020-2041, all scenarios are likely to have mixed significant positive and significant negative effects. The effect is uncertain, as it is uncertain whether the full range of supporting services and facilities will come forward within the plan period. When fully built out, each scenario is expected to have significant positive and significant negative effects with uncertainty.

Best performing option

C.498 Option 7 'Supporting a high-tech corridor by integrating homes and jobs' performs best, as it is expected to provide additional services and facilities and walking, cycling at the urban extensions/new settlement and are already located near existing public transport links, employment opportunities and Cambridge city, thereby minimising the need to travel far by private car. The Transport Study identified that Option 7 'Supporting a high-tech corridor by integrating homes and jobs' will reduce traffic in the wider Cambridge area and reduce journey length/times to work (for the maximum growth scenario). The Transport Study also found that Option 1 'Densification of existing urban areas' performed best in terms of promoting active travel (for the maximum growth scenario), but growth in and around Cambridge has potential to exacerbate air quality issues in existing AQMAs, as some new residents will travel by car or other private vehicle, increasing traffic in these areas to some extent. Option 8 'Expanding a growth area around transport nodes' also performed well, due to the expected development of a new railway station at Cambourne.

C.499 Option 5 'Dispersal – villages' performs least well as it is likely to lead to development with high levels of dependency on the private car.

Appendix C Appraisal of Strategic Spatial Options

SA objective 14: To facilitate a sustainable and growing economy

C.500 Sustainability effects for this SA objective are summarised in Table C.27 and Table C.28 and described in the text below the tables.

Table C.27: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	--/+	--/+?	+/-?	+/-	+/-	+/-	+/-	--/+
Medium Growth	--/+	--/+?	+/-?	+/-	+/-	+/-	+/-	--/+
Maximum Growth	++/--	--/+?	++/-?	+/-	+/-	++/-	++/-	++/--

Table C.28: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--	--/+?		++/-		++/-	++/-	++/-
Medium Growth	++/--	++/--?		++/-		++/-	++/-	++/-
Maximum Growth	++/--	++/--?		++/-		++/-	++/-	++/-

1. Densification of existing urban areas

C.501 Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site will be brought forward through the AAP. The medium and maximum growth scenarios also include development at Cambridge Airport. Therefore, it is likely this option will support the existing economic hub in Cambridge.

C.502 As growth would be focused within and around Cambridge city, it can continue to support the vitality and viability of the city. Cambridge is also the main employment centre for Greater Cambridge; therefore this option is likely to support existing businesses by locating homes, and therefore workers, close to businesses.

C.503 The medium and maximum scenarios include growth at Cambridge Airport and the medium scenario includes growth at a Green Belt site on the edge of Cambridge. Growth at Cambridge Airport (for the medium and maximum options) and at North East Cambridge (for all options) is likely to help support the local economy by locating workers close to jobs and encouraging spending in the city centre. They are also expected to provide new jobs and new services and facilities, although for the minimum and medium scenarios in particular, these are not likely to be provided fully within the plan period.

C.504 However, this option would direct the economic benefits of development in Cambridge itself and would therefore do less for the wider economy of Greater Cambridge.

C.505 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. It notes that, under all growth scenarios, this option may fail to provide sufficient industrial and warehousing floorspace requirements through intensification of

the urban sites in the city alone. For the maximum growth scenario there may also be a lack of lower density wet lab B1b premises.

C.506 For 2020-2041, mixed minor positive and significant negative effects are expected for the minimum and medium scenarios, whereas mixed significant positive and significant negative effects are expected for the maximum scenario. For all scenarios, the positive effects identified are expected to be significant when fully built out.

2. Edge of Cambridge – outside the Green Belt

C.507 Option 2 includes development at Cambridge Airport and North East Cambridge for all growth scenarios, which lie on the edge of Cambridge. The medium and maximum growth scenarios propose two new settlements on public transport corridors. Therefore, growth would be near Cambridge itself or public transport options, which allow for easy access into Cambridge. Therefore, it is likely this option will support the existing economic hub in Cambridge. Cambridge is also the main employment centre for Greater Cambridge; therefore, this option is likely to support existing businesses by locating homes, and therefore workers, close to businesses. In addition, new settlements are likely to provide new services and facilities and some space for new or expanding businesses and may help support the wider economy of Greater Cambridge. However, new employment space is less likely to come forward within the plan period, particularly for the minimum and medium growth scenarios.

C.508 The minimum growth scenario includes a village site and the medium growth scenario includes growth at rural centres and minor rural centres. These would likely be less well connected to Cambridge but would support the vitality and viability of more rural areas.

C.509 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. It notes that, under all growth scenarios, this option may fail to provide sufficient

industrial and warehousing floorspace requirements through provision at the edge of the city alone. For the higher growth scenario, there is a possible lack of wet lab B1b premises, depending on competition of use of employment floorspace. It is not clear if these unmet needs could be provided through additional sources of supply, e.g. new settlements.

C.510 For 2020-2041, all options are expected to have mixed minor positive and significant negative uncertain effects. When fully built out, mixed minor positive and significant negative uncertain effects are expected for the minimum growth scenario whereas mixed significant positive and significant negative uncertain effects are expected against the medium and maximum scenarios.

3. Edge of Cambridge – Green Belt

C.511 Option 3 includes the development of new sites in Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios across a range of locations. The medium scenario also includes growth within the Cambridge urban area. The maximum growth scenario includes higher delivery rates at the Green Belt sites. Therefore, the growth would be near existing economic centres within the city, which can continue to support their vitality and viability. Cambridge is the main employment centre for Greater Cambridge; therefore, this option is likely to support existing businesses by locating homes, and therefore workers, close to businesses. It is likely that additional services and facilities will also be provided on site, but these may not be provided in the short term and are likely to be more limited for the minimum and medium growth scenarios. As such, this option is likely to have positive effects on the local economy.

C.512 However, this option would direct the economic benefits of development in Cambridge itself and would therefore do less for the wider economy of Greater Cambridge.

C.513 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. It is

anticipated that the full range of employment land needed could be delivered for all growth scenarios and there could be opportunities to attract more inward investment.

C.514 For the minimum and medium scenarios, mixed minor positive and minor negative uncertain effects are expected, whereas for the maximum growth scenario a mixed significant positive and minor negative uncertain effect is expected.

C.515 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

C.516 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. While this option would not provide development near existing settlements or knowledge hubs within Cambridge, it would be creating new towns or villages, providing jobs in a new location. While it is likely that strategic transport infrastructure connecting to Cambridge would be created, this is most likely to occur in the longer term. It may take a while to build the vibrancy and vitality of new settlements themselves, as they will not be fully occupied at first. However, this option would support provision of additional services and facilities and additional employment land and therefore job opportunities and diversification of services and facilities in areas where there are new settlements, although again, this is more likely to come forward in the longer term, particularly for the minimum and medium growth scenarios. Depending on the location of new settlements, it is possible that some residents will be commuting out of Cambridge to surrounding areas or London which may hinder growth of the local Greater Cambridge economy.

C.517 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. New settlements would be well suited to accommodating the full range of land uses

associated with Greater Cambridge's sectors including offices, labs and warehousing / industrial given opportunities for available land, although the document suggests that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. It also states the location of a new settlement may therefore have a bearing on its level of employment success.

C.518 For 2020-2041, mixed minor positive and minor negative effects are expected for each scenario. When fully built out, the minor positive effects identified are expected to become significant.

5. Dispersal – villages

C.519 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. Therefore, this option would help to support and diversify the rural economy through supporting rural services and facilities, although some may have more limited public transport into the economic hub of Cambridge. As such, this option may not provide development of the scale or location required to support the knowledge sectors located in and around Cambridge.

C.520 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. All growth scenarios could provide land for a range of employment types, although the document notes that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. However, dispersal of employment across villages is likely to temper the ability of larger employment development to agglomerate being limited by localised workforce. The document also notes that the location of employment distribution may therefore have a bearing on its level of employment success and that large employment developments could be disproportionate to village size.

C.521 Overall, mixed minor positive and minor negative effects are expected for each growth scenario.

C.522 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.523 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and across 18 villages with existing or proposed public transport corridors.

C.524 Development in North East Cambridge and the villages would be based around existing urban areas and settlements. Therefore, this option could help to support their vitality and viability. In addition, this development would support the expansion of economic benefits outwards from Cambridge. As this option would provide new settlements the provision of additional job opportunities and diversification of services and facilities in more rural areas is likely. It may take a while to build the vibrancy and vitality of new settlements themselves, as they will not be fully occupied at first. Depending on the location of new settlements, it is possible that some residents will be commuting out of Cambridge to surrounding areas or London which may hinder growth of the local Greater Cambridge economy.

C.525 Growth at North East Cambridge and new settlements is likely to include new services and facilities, as well as new employment land. However, these are likely to come forward in the longer term, particularly for the minimum and medium scenarios.

C.526 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. All growth scenarios could provide land for a range of employment types, although

the document notes that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. The provision of industrial and warehousing floorspace depends on the accessibility of these sites, particularly via the strategic road network. It also states the location of a new settlement may therefore have a bearing on its level of employment success.

C.527 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium scenarios, whereas significant positive and minor negative effects are expected for the maximum growth scenario. When fully built out, significant positive and minor negative effects are expected against each scenario.

7. Supporting a high-tech corridor by integrating homes and jobs

C.528 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement however, both are on public transport corridors.

C.529 All growth scenarios include development across five villages all with existing or proposed public transport nodes however, the medium growth scenario could include 25% of development not on public transport corridors.

C.530 This option would focus development close to existing jobs within the life sciences cluster area to the south of Cambridge. Therefore, this option would support the growth of the science sector – a key sector in the Cambridge economy – in particular, but might lead to less diversification of the economy. This potential lack of diversification may be slightly less so for the maximum scenario, which also includes growth at North East Cambridge and Cambridge Airport. Development at North East Cambridge and Cambridge Airport would likely provide new services, facilities and employment space and also support

the local and regional economy by locating workers near to jobs and are located such as to encourage spending in Cambridge city.

C.531 It is expected that the new settlement would provide some new employment space, as well as services and facilities, which would provide some employment and spending opportunities. However, only limited services and employment land may be delivered in the plan period, particularly for the minimum and medium growth scenarios.

C.532 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. All growth scenarios could provide land for a range of employment types, particularly providing sufficient land is provided with good accessibility via the strategic road network for industrial and warehousing floorspace. However, the document highlights that, whilst expansion of other sectors is feasible, the employment focus for this option is within the life sciences.

C.533 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium scenarios, whereas mixed significant positive and minor negative effects are expected for the maximum growth scenario. When fully built out, significant positive and minor negative effects are expected against each scenario.

8. Expanding a growth area around transport nodes

C.534 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and public transport improvements serving these areas. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger development.

C.535 This option would provide development at existing growth areas, adding to the critical mass of population that could generate demand for further

services and employment provision. However, while it is likely that strategic transport infrastructure, such as the new railway station, connecting to Cambridge and services and facilities would be created, this is most likely to occur in the long term. It may take a while to build the vibrancy and vitality of new communities themselves, although the wider settlement of Cambourne is more established. It is possible that some residents will be commuting out of Cambridge to surrounding areas or London which may hinder growth of the local Greater Cambridge economy. These factors combine to result in likely significant negative effects in the shorter term.

C.536 All growth scenarios also include growth at some villages along the A428 and, for the medium and maximum scenarios, growth at settlements within 5km of Cambourne. Whilst these would not be necessarily near existing economic centres (particularly Cambridge), those along the A428 could access these via public transport and all would help support the vitality and viability of more rural areas. The maximum growth scenario also includes growth at North East Cambridge and Cambridge Airport, which would support the local and regional economy by locating workers near to jobs and are located such as to encourage spending in Cambridge city.

C.537 The Employment Study recommend against planning for the minimum scenario, as this could constrain job growth due to lack of labour supply. The document notes that Cambourne has been slow to develop as an employment location, but has gained traction as a secondary office location in recent years for professional services and ICT. All growth scenarios could provide land for a range of employment types, particularly providing sufficient land is provided with good accessibility via the strategic road network for industrial and warehousing floorspace.

C.538 For 2020-2041, the minimum and medium growth scenarios are expected to have mixed minor positive and significant negative effects, whereas the maximum growth scenario is expected to have mixed significant positive and significant negative effects. When fully built out, all options are expected to have mixed significant positive and minor negative effects are expected against each scenario.

Best performing option

C.539 The Employment Study suggests that the greater the level of growth, the greater the positive impacts for the economy. It suggests therefore, that the minimum growth scenario performs least well and may constrain growth, whereas the maximum growth scenario performs best in providing a flexible land supply. The outcome depends on the performance of the economy which has uncertainties, particularly with regard to Covid-19.

C.540 For 2020-2041, the maximum growth scenario for Options 3 'Edge of Cambridge – Green Belt', 6 'Public transport corridors' and 7 'Supporting a high-tech corridor by integrating homes and jobs' perform well.

C.541 When fully built out, Options 4 'Dispersal – new settlements', 6 'Public transport corridors', 7 'Supporting a high-tech corridor by integrating homes and jobs' and 8 'Expanding a growth area around transport nodes' perform best. Whilst Option 8 'Expanding a growth area around transport nodes' performs less well within the plan period, it performs well when fully built out as new strategic transport infrastructure is expected to be implemented in the longer term.

C.542 Options 1 'Densification of existing urban areas' and 2 'Edge of Cambridge – outside the Green Belt' perform least well overall, as they are less likely to be able to meet the full range of employment land needs.

Appendix C Appraisal of Strategic Spatial Options

SA objective 15: To deliver, maintain and enhance access to diverse employment opportunities, to meet both current and future needs in Greater Cambridge

C.543 Sustainability effects for this SA objective are summarised in Table C.29 and Table C.30 and described in the text below the tables.

Table C.29: Housing provision between 2020-2041

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	--/+	--/+?	+/-	+/-	--/+	+/-	+/-	--/+
Medium Growth	--/+	--/+?	+/-	+/-	--/+	+/-	+/-	--/+
Maximum Growth	++/--	--/+?	++/-	++/-?	--/+	++/-?	++/-	++/--

Table C.30: Housing provision when fully built out ('all time')

Strategic Spatial Options / Growth Scenarios	1. Densification of existing urban areas	2. Edge of Cambridge – outside the Green Belt	3. Edge of Cambridge – Green Belt	4. Dispersal – new settlements	5. Dispersal – villages	6. Public transport corridors	7. Supporting a high-tech corridor by integrating homes and jobs	8. Expanding a growth area around transport nodes
Minimum Growth	++/--	--/+?		++/-		++/-	++/-	+/-
Medium Growth	++/--	++/--?		++/-		++/-	++/-	++/-
Maximum Growth	++/--	++/--?		++/-		++/-	++/-	++/-

1. Densification of existing urban areas

C.544 Option 1 would result in an increase in the density of development, particularly within Cambridge. The primary location for development would be within the urban area and at North East Cambridge, the last major brownfield site within the urban area. This site will be brought forward through the AAP. The medium and maximum growth scenarios also include development at Cambridge Airport and the medium scenario includes growth at a Green Belt site on the edge of Cambridge.

C.545 As this option aims to focus the majority of development within the urban area, it is likely that more sustainable methods of transport like walking and cycling would be used, thereby providing easily accessible employment opportunities. In addition, this option is likely to provide additional employment opportunities at North East Cambridge, although these may only come forward in limited amounts during the plan period, particularly for the minimum and medium growth scenarios. For the medium and maximum growth scenarios, additional sources of supply will be located at the Cambridge Airport and, for the medium growth scenario, the edge of Cambridge. Both of which are likely to have good access to job opportunities and public transport options in Cambridge.

C.546 However, this option would focus job growth and accessibility in Cambridge, which is already the main centre for employment and therefore may limit employment opportunities available in the wider Greater Cambridge area. In addition, Employment Study states that, under all growth scenarios this option may fail to provide sufficient industrial and warehousing floorspace requirements through intensification of the urban sites in the city alone, due to lack of floorspace for these uses. For the maximum growth scenario there may also be a lack of lower density wet lab B1b premises. As such, diversity of employment opportunities may be more limited for this option.

C.547 For 2020-2041, mixed minor positive and significant negative effects are expected for the minimum and medium growth scenarios and mixed significant positive and significant negative effects are expected for the maximum growth scenario. Mixed significant positive and significant negative effects are expected each growth scenario when fully built out.

2. Edge of Cambridge – outside the Green Belt

C.548 Option 2 includes urban development at Cambridge Airport and North East Cambridge for all growth scenarios, which lie on the edge of Cambridge. It is anticipated that development at North East Cambridge and Cambridge Airport would provide additional employment opportunities, although these may only come forward in limited amounts during the plan period, particularly for the minimum and medium growth scenarios. These locations are also likely to have good access to job opportunities and public transport options in Cambridge.

C.549 The medium and maximum growth scenarios propose two new settlements on the public transport corridors, which may help make employment opportunities in Cambridge more accessible and are expected to provide some employment opportunities on-site. However, new employment space is less likely to come forward within the plan period, particularly for the minimum and medium growth scenarios.

C.550 The minimum growth scenario includes a village site and the medium growth scenario also includes a number of dwellings spread across rural centres and minor rural centres which, would likely rely on private transport, although they could help to provide jobs in the wider Greater Cambridge economy.

C.551 The Employment Study states that, under all growth scenarios, this option may fail to provide sufficient industrial and warehousing floorspace requirements through provision at the edge of the city alone. For the higher growth scenario, there is a possible lack of wet lab B1b premises, depending on competition of use of employment floorspace. It is not clear if these unmet

needs could be provided through additional sources of supply, e.g. new settlements. As such, diversity of employment opportunities may be more limited for this option.

C.552 For 2020-2041, mixed minor positive and significant negative uncertain effects are expected for all scenarios. When fully built out, the minimum growth scenario is expected to have mixed minor positive and significant negative uncertain effects, whereas mixed significant positive and significant negative uncertain effects are expected for the medium and maximum growth scenarios.

3. Edge of Cambridge – Green Belt

C.553 Option 3 includes the development of new sites in Green Belt on the edge of the city with three sites for the minimum growth scenario and five sites for the medium and maximum growth scenarios. The maximum growth scenario includes higher delivery rates at the Green Belt sites and the medium scenario includes growth in the urban area of Cambridge. It is likely that these developments will have good access to job opportunities in Cambridge. Locations are also likely to have good access to public transport, although this depends on the exact location of development. The Employment Study suggests that all growth scenarios are likely to be able to provide for the full range of employment types needed, providing sufficient land is released. However, this option would focus job growth and accessibility in Cambridge, which is already the main centre for employment and therefore may limit employment opportunities available in the wider Greater Cambridge area.

C.554 Overall, mixed minor positive and minor negative effects are expected for the minimum and medium growth scenarios, whereas mixed significant positive and minor negative effects are expected for the maximum growth scenario.

C.555 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

4. Dispersal - new settlements

C.556 Option 4 includes the development of new settlements that would establish a whole new town or village including homes, jobs and supporting infrastructure. This would be expected to include some employment provision and sustainable transport options at the new settlements themselves, although easy accessibility to existing job opportunities in Cambridge may be more limited. However, these new settlements are likely to be provided on public transport corridors and therefore can provide access to job opportunities within Cambridge.

C.557 New employment opportunities at new settlements will help support job growth in the wider Greater Cambridge area, but the majority of these are likely to come forward after the plan period, particularly for the minimum and medium growth scenarios.

C.558 The Employment Study suggests this option is likely to be able to provide for the full range of employment types needed, although the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city.

C.559 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium growth scenarios, whereas mixed significant positive and minor negative uncertain effects are expected for the maximum growth scenario. When fully built out, the minor positive effects identified are expected to become significant.

5. Dispersal – villages

C.560 Option 5 for all growth scenarios would result in an increase in development at villages across Greater Cambridge. Under all growth scenarios 40% of development would occur in Rural Centres and another 40% in Minor Rural Centres. Whilst this option may help to provide some employment

opportunities in the wider Greater Cambridge area, there are likely to be more limited job opportunities in the villages and some may have more limited public transport into the economic hub of Cambridge. The Employment Study states that all growth scenarios could provide land for a range of employment types, although the document notes that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. Whilst a number of existing employment parks have successfully developed near villages, the location of employment distribution may have a bearing on its level of employment success. In addition, large employment developments could be disproportionate to village size.

C.561 Overall, mixed minor positive and significant negative effects are expected for all growth scenarios.

C.562 The locations in this option are expected to be fully built out within the plan period, therefore no scores are recorded for 'all time' figures.

6. Public transport corridors

C.563 Option 6 would result in an increase in development along and around key public transport corridors and hubs. All growth options include development at North East Cambridge, one new settlement (smaller for the minimum scenario and larger for the other two scenarios) and across 18 villages with existing or proposed public transport corridors. This option would generally enable good labour market accessibility to employment locations, particularly Cambridge.

C.564 This development would support the expansion of economic benefits outwards from Cambridge which would grow and diversify jobs outside of Cambridge. However, while it is likely that strategic transport infrastructure connecting to Cambridge would be created, this is most likely to occur in the long term. Therefore, in the short term the increase in accessibility of job opportunities would likely be minimal. Similarly, whilst development at new settlements and North East Cambridge are expected to provide some job

opportunities, these are likely to come forward in the longer term, particularly for the minimum and medium scenarios.

C.565 The Employment Study suggests that all growth scenarios could provide land for a range of employment types, although the document notes that the market's preference would be to see new B1a and some B1b space delivered in close proximity to the city. The provision of industrial and warehousing floorspace depends on the accessibility of these sites, particularly via the strategic road network. It also states the location of a new settlement may therefore have a bearing on its level of employment success.

C.566 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium growth scenarios, whereas mixed significant positive and minor negative uncertain effects are expected for the maximum growth scenario. When fully built out, significant positive and minor negative effects are expected against each scenario.

7. Supporting a high-tech corridor by integrating homes and jobs

C.567 Option 7 includes development in the south of Cambridge near the life sciences cluster area where there are existing and committed jobs. Both the minimum and medium growth scenarios include a smaller new settlement, while the maximum growth scenario includes a larger settlement however, both are on public transport corridors.

C.568 All growth scenarios include development across five villages all with existing or proposed public transport nodes however, the medium growth scenario could include 25% of development not on public transport corridors.

C.569 This option would support the growth of the science sector, as it would provide easy access to a large amount of job opportunities. Development is likely to be provided on public transport corridors and therefore can provide

access to job opportunities and the labour pool within Cambridge as well. In addition, the maximum growth scenario includes development at North East Cambridge and Cambridge Airport, which are both located in proximity to employment opportunities within Cambridge and are likely to provide additional employment opportunities. These larger developments, along with the new settlement, are expected to provide new employment opportunities. However, only limited employment opportunities may be delivered in the plan period, particularly for the minimum and medium growth scenarios.

C.570 This option would focus job growth and accessibility in and around Cambridge, particularly at the science cluster, which is already the main centre for employment and therefore may limit job growth in the wider Greater Cambridge area. The Employment Study suggests that all growth scenarios could provide land for a range of employment types, particularly providing sufficient land is provided with good accessibility via the strategic road network for industrial and warehousing floorspace. However, the document highlights that, whilst expansion of other sectors is feasible, the employment focus for this option is within the life sciences and therefore may result in a more limited range of job opportunities.

C.571 For 2020-2041, mixed minor positive and minor negative effects are expected for the minimum and medium scenarios, whereas mixed significant positive and minor negative effects are expected for the maximum growth scenario. When fully built out, significant positive and minor negative effects are expected against each scenario.

8. Expanding a growth area around transport nodes

C.572 Option 8 would focus development at Cambourne and along the A428 public transport corridor, as there will be a new railway station and public transport improvements serving these areas. Both the minimum and medium growth scenarios include the expansion of Cambourne by the equivalent of one new smaller settlement, while the maximum growth scenario includes a larger development.

C.573 This option would provide development at an existing growth area, adding to the critical mass of population that could generate demand for further services and employment provision. The Employment Study states that employment located at transport nodes around Cambourne will broadly enable good labour market accessibility. However, while it is likely that strategic transport infrastructure, such as the new railway station, connecting to Cambridge would be created, this is most likely to occur in the long term. Therefore, in the short term the accessibility to and from the area, especially jobs within Cambridge city, by sustainable transport would be more limited. The Employment Study notes that Cambourne has been slow to develop as an employment location, but has gained traction as a secondary office location in recent years for professional services and ICT. All growth scenarios could provide land for a range of employment types, particularly providing sufficient land is provided with good accessibility via the strategic road network for industrial and warehousing floorspace.

C.574 All growth scenarios also include growth at some villages along the A428 and, for the medium and maximum scenarios, growth at settlements within 5km of Cambourne. Whilst these would not be necessarily near existing employment centres (particularly Cambridge), those along the A428 could access these via public transport, particularly in the longer term when new strategic public transport infrastructure is implemented, and all would help job growth in more rural areas. The maximum growth scenario also includes growth at North East Cambridge and Cambridge Airport, which would both be within proximity to employment opportunities in the city and are likely to provide new employment opportunities.

C.575 For 2020-2041, mixed minor positive and significant negative effects are expected for the minimum and medium scenarios, whereas mixed significant positive and significant negative effects are expected for the maximum growth scenario. When fully built out, mixed minor positive and minor negative effects are expected for the minimum growth scenario, whereas mixed significant positive and minor negative uncertain effects are expected for the medium and maximum growth scenarios.

Best performing option

C.576 Options 4 'Dispersal – new settlements', 6 'Public transport corridors' and 7 'Supporting a high-tech corridor by integrating homes and jobs' perform well, particularly when fully built out. The maximum growth scenario for Option 3 'Edge of Cambridge – Green Belt' also performs well. Whilst Option 8 'Expanding a growth area around transport nodes' performs less well within the plan period, it performs well when fully built out as new strategic transport infrastructure is expected to be implemented in the longer term.

C.577 Options 5 'Dispersal-Villages' performs least well, as existing centres of employment are likely to be less accessible to development under this option. Options 1 'Densification of existing urban areas' and 2 'Edge of Cambridge – outside the Green Belt' also perform less well than other options, as they are less likely to be able to meet the full range of employment needs.

Appendix D

Appraisal Criteria Applied in the SA of Site Options

SA objective 1: To ensure that everyone has the opportunity to live in a decent, well-designed, sustainably constructed and affordable home.

Residential / mixed use site options

D.1 All of the residential site options are expected to have positive effects on this objective, due to the nature of the proposed development. Planning Practice Guidance states that affordable housing should only be sought for major residential development (usually 10 or more homes). The performance of the Plan against this objective depends on the overall level of housing development, rather than the number of homes delivered on any one particular site. Therefore:

- All residential sites will have a minor positive (+) effect.

D.2 Significant positive effects can only be determined when considering the cumulative effects of the Plan as a whole.

Employment site options

D.3 The location of employment sites is not considered likely to affect this objective, therefore the score for all site options will be negligible (0).

SA objective 2: To maintain and improve access to centres of services and facilities including health centres and education.

All site options

2a

D.4 Larger scale development could potentially incorporate the provision of new services. The location of all types of development sites could affect this objective by influencing people's ability to access existing services and facilities (both for local residents and employees during breaks and after work).

D.5 The defined city, town and rural centres are the areas in South Cambridgeshire and Cambridge City which provide access the high number of services and facilities. Local, neighbourhood and minor rural centres will provide access to a lower level of services and facilities. The location of proximity to these areas can therefore be used to establish the potential accessibility to a wider number of services and facilities in Greater Cambridge.

D.6 The HELAA assumes the following (note these are broad assumptions for the purposes of assessing all sites on a consistent basis):

Appendix D Appraisal Criteria Applied in the SA of Site Options

- Sites that will provide more than or equal to 2,500 new homes will provide a new local centre.
- Sites that will provide more than or equal to 10,000 new homes will provide a new district centre and/or superstore.

D.7 Therefore:

- Sites that are less than 720m from a defined city, district or rural centre / will provide a new local/district centre/superstore will have a significant positive (++) effect (green in the HELAA).
- Sites that are less than 720m from a defined local, neighbourhood, or minor rural centre will have an uncertain minor positive (+?) effect (green in the HELAA).
- Sites that are between 720m and 2,000m of a defined city, district, local, neighbourhood, rural or minor rural centre will have an uncertain minor negative (-?) effect (amber in the HELAA).
- Sites that are further than 2,000m of a defined city, district, local, neighbourhood, rural or minor rural centre will have an uncertain significant negative (--?) effect (red in the HELAA).

Residential / mixed use site options

2b

D.8 For sites which support residential use it will be necessary to consider access to education facilities. It is recognised that educational facilities are often not located within the town and village centres and are instead provided to meet the needs of specific catchment areas. Sites which provide a good level of access to services and facilities at centre locations may not always be those which provide a good level of access to educational facilities. The effects of sites on the educational element of this objective will depend on the access that they provide to existing educational facilities, although there are uncertainties

Appendix D Appraisal Criteria Applied in the SA of Site Options

for all positive effects, as the effects will depend on there being capacity at those schools to accommodate new pupils, and there are no further education facilities in Greater Cambridge.

D.9 New residential development could stimulate the provision of new schools/school places. The HELAA assumes the following (note these are broad assumptions for the purposes of assessing all sites on a consistent basis):

- Sites that will provide more than or equal to 1,650 new homes are expected to provide a new primary school.
- Sites that will provide more than or equal to 3,300 new homes are expected to provide both a new primary and a new secondary school.

D.10 Therefore, for residential sites, in addition to the assumptions set out to consider access to service and facilities centres:

- Sites that are within 900m of a secondary school / will provide a new secondary school and within 450m of a primary school / will provide a new primary school will have an uncertain significant positive (++?) effect (green for both in the HELAA).
- Sites that are within 900m of a secondary school / will provide a new secondary school or within 450m of a primary school / will provide a new primary school (but not both) will have an uncertain minor positive (+?) effect (green for one in the HELAA).
- Sites that are 450-1,000m from a primary school and/or 900-2,000m from a secondary school will have a minor negative (-) effect (both amber in the HELAA).
- Sites that are more than 2km from a secondary school and/or more than 1km from a primary school will have a significant negative (--) effect (red for both in the HELAA).

SA objective 3: To encourage social inclusion, strengthen community cohesion and advance equality between those who share a protected characteristic (Equality Act 2010) and those who do not

All types of site options

3a

D.11 The proximity of development to services and facilities and public transport links may help to address issues of social inclusion and equality. These issues (including access to facilities such as education and healthcare and proximity to public transport links, such as railway stations and bus stops) are considered under SA objective 2, SA objective 4, and SA objective 12 in the SA framework. Many other contributors to equality, social inclusion and community cohesion cannot be determined using geographical factors and will therefore be more relevant to policy assessments.

D.12 Achieving local regeneration may help to promote a sense of ownership and community cohesion among residents. It is recognised that this will depend in part on the detailed proposals for sites and their design, which are not known at this stage. However, development which occurs on brownfield land is likely to help promote the achievement of regeneration in Greater Cambridge.

Therefore:

- Sites that are on brownfield land will have a minor positive (+) effect.
- Sites that are on greenfield land will have a negligible (0) effect.

Appendix D Appraisal Criteria Applied in the SA of Site Options

- Sites that are on a mix of brownfield and greenfield land will have a mixed minor positive and negligible effect (+/0).

3b

D.13 The location of new developments will also affect social deprivation and economic inclusion by influencing how easily people are able to access job opportunities and access to decent housing in a given area. Areas which are identified as most deprived in Greater Cambridge are often also those which could benefit most from the achievement of regeneration.

- The delivery of housing or employment sites within a 40% most deprived area (according to the Index of Multiple Deprivation 2019) will therefore have a minor positive (+) effect.

3c

D.14 The city centre and district and rural centre locations of South Cambridgeshire and Cambridge City help to support community networks in Greater Cambridge. Development which contains retail and/or community uses and is to occur within existing city centres and district and rural centres could help to maintain the vitality and viability of these locations.

D.15 The HELAA assumes the following (note these are broad assumptions for the purposes of assessing all sites on a consistent basis):

- Sites that will provide more than or equal to 1,650 new homes will provide a new community centre.

D.16 Therefore:

- Site options that contain retail and/or community uses (including sites of more than 1,650 new homes) to be delivered within existing city, district and rural centres are expected to result in a significant positive (++) effect.

- Site options that contain retail and/or community uses (including sites of more than 1,650 new homes) to be delivered within an existing local, neighbourhood, or minor rural centre are expected to result in a minor positive (+) effect.
- All other site options will have a negligible (0) effect.

SA objective 4: To improve public health, safety and wellbeing and reduce health inequalities.

All types of site options

4a

D.17 Sites that are within walking distance (720m) of existing healthcare facilities (i.e. GP surgeries or hospitals) and areas/features which promote physical activities (open spaces, or sports facilities) among residents will ensure that residents have good access to healthcare services and are provided with opportunities for healthy lifestyle choices. This includes employment sites, which will provide employees with access to these types of features outside of working hours and during break times.

D.18 The HELAA assumes the following (note these are broad assumptions for the purposes of assessing all sites on a consistent basis):

- Sites that will provide more than or equal to 4,100 new homes will provide a new health centre.

D.19 Therefore:

Appendix D Appraisal Criteria Applied in the SA of Site Options

- Sites that are less than 720m from a healthcare facility / will provide a new health centre and an area of open space/sports facility (areas identified in Councils' Open Space Studies, country parks and CROW access land) will have a significant positive (++) effect.
- Sites that are less than 720m from either healthcare facility / will provide a new health centre or an area of open space/ sports facility (but not both) will have a minor positive (+) effect.
- Sites that are not within 720m of either a healthcare facility or an area of open space/ sports facility will have a minor negative (-) effect.

4b

- Sites that would result in a loss of open space or sports facility which could be replaced locally will have an uncertain minor negative (-?) effect (amber in the HELAA).
- Sites that would result in a loss of open space or sports facility which could not be replaced locally will have a significant negative (--) effect (red in the HELAA).
- Sites that would not result in the loss of any open space will have a negligible (0) effect.

D.20 If a number of sites are allocated within close proximity of one another, this could lead to existing healthcare facilities becoming overloaded. If at any point information becomes available regarding the capacity of existing healthcare facilities, this will be taken into account in the SA as relevant.

D.21 If development at a site is likely to incorporate new healthcare facilities, open space/sports facilities, it will be scored in accordance with the assumptions listed above.

SA objective 5: To conserve, enhance, restore and connect wildlife, habitats, species and/or sites of biodiversity or geological interest

All types of site options

D.22 Assessment is based on the HELAA assessment of impacts on biodiversity, which was carried out by biodiversity officers at Cambridge City Council and South Cambridgeshire District Council. Sites were assessed in terms of their potential impact on both statutory designations such as SSSIs and non-statutory designated sites such as County Wildlife Sites. Sites benefitting from statutory protection were assessed by reference to the Impact Risk Zones issued by Natural England. Assessment of sites with non-statutory designations assessment was more dependent on local knowledge. Sites with national or international protection, in close proximity to such sites or with links to these sites may be at risk of detrimental impacts which cannot be mitigated against and were therefore classified as 'red' in the HELAA. Where mitigation is possible, these sites were assessed as 'amber' in the HELAA. Development sites that are within close proximity of an international, national or local designated nature conservation site have the potential to affect the biodiversity or geodiversity of those sites/features, e.g. through habitat damage/loss, fragmentation, disturbance to species, air pollution, increased recreation pressure etc. Conversely, there may be opportunities to promote habitat connectivity if new developments include green infrastructure. Therefore, while proximity to designated sites provides an indication of the potential for an adverse effect, uncertainty exists, as appropriate mitigation may avoid adverse effects and may even result in beneficial effects. The potential impacts on undesignated habitats and species adjacent to the potential development sites cannot be determined at this strategic level of assessment. This would be determined once more specific proposals are developed and submitted as part of a planning application.

- Sites that would have a detrimental impact on designated sites, or those with a regional or local protection which cannot be reasonably mitigated or compensated as appropriate will have an uncertain significant negative (--?) effect (red in the HELAA).
- Sites that may have a detrimental impact on a designated site, or those with a regional or local protection but the impact could be reasonably mitigated or compensated have an uncertain minor negative (-?) effect (amber in the HELAA).
- Sites that would not have a detrimental impact on any designated site, or those with a regional or local protection could have a negligible (0?) effect (green in the HELAA).

SA objective 6: To conserve and enhance the character and distinctiveness of Greater Cambridge's landscapes and townscapes, maintaining and strengthening local distinctiveness and sense of place

All types of site options

D.23 Assessment is based on the HELAA assessment of impacts on landscape and townscape, which was carried out by officers at Cambridge City Council and South Cambridgeshire District Council. Site landscapes were assessed against the National and Regional Landscape Character Areas and how typical or atypical (how unique) they are to those National and District Character Areas. Sites to be assessed were located and reviewed and all constraints identified from the councils' GIS data and other planning sources such as MAGIC, if

needed. The presence of site designations or features were identified, for example Conservation Areas, Tree Preservation Orders, Important Countryside Frontages or Protected Green Space. Based on the constraints of the site, the scope of the intended proposals and/or expected unit numbers, it was considered whether the site was developable and if so, to what extent the landscape had been considered. For example, would there be enough room for adequate boundary buffering, would there be enough room for tree planting within the site, would the grain/density of the development fit in with surrounding development, and would the surrounding designations be impacted by the development. The effects of new development on the character and quality of the landscape will depend in part on its design, which is not yet known; therefore all effects will be to some extent uncertain at this stage. As it stands there has been no landscape character study or landscape sensitivity study that covers the whole of Greater Cambridge, and only within Cambridge have character areas been defined.

- Development of the site would have a neutral impact on the landscape may have a negligible effect (0?) (green in the HELAA).
- Sites that would have a detrimental impact on sensitive landscapes which could be mitigated may have a minor negative effect (-?) (amber in the HELAA).
- Sites that would have a detrimental impact on sensitive landscapes which cannot be mitigated may have a significant negative effect (--?) (red in the HELAA).

SA objective 7: To conserve and/or enhance the qualities, fabric, setting

and accessibility of Greater Cambridge's historic environment

All types of site options

D.24 Assessment is based on the HELAA assessment of impacts on the historic environment, which was carried out by officers at Cambridge City Council and South Cambridgeshire District Council. This was informed by identification of relevant constraints such as listed buildings and scheduled monuments.

Conservation officers then used other available evidence such as Conservation Area Appraisals to help consider the wider setting of an asset and the potential impact on any heritage assets. The sorts of issues considered included whether significant views would be impacted, whether development could be consistent with the characteristic layout of a conservation area and the access to the site. The extent to which these issues could be mitigated by only developing part of a site was also assessed. In addition, the County Archaeology Team have been consulted on the sites, and assessments have been informed by the Cambridgeshire Historic Environment Record (HER).

D.25 The NPPF states that when considering the impact of a proposed development on the significance of a designated heritage asset “great weight should be given to the asset’s conservation ... irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance”. However, development could also enhance the significance of the asset (provided that the development preserves those elements of the setting that make a positive contribution to or better reveals the significance of the asset).

D.26 In all cases, effects will be uncertain at this stage as the potential for negative or positive effects on historic and heritage assets will depend on the exact scale, design and layout of the new development and opportunities which may exist to enhance the setting of heritage features (e.g. where sympathetic

development replaces a derelict brownfield site which is currently having an adverse effect).

- Development of the site would not have a detrimental impact on any designated or non-designated heritage assets or archaeology could have a negligible (0?) effect on this objective (green for both historic environment and archaeology in the HELAA).
- Sites which could have a detrimental impact on a designated or non-designated heritage asset, the setting of a designated or non-designated heritage asset or archaeology, but the impact could be reasonably mitigated, could have a minor negative (-?) effect on this objective (amber in the HELAA for one or both of historic environment and archaeology (but not red for either)).
- Sites which would cause substantial harm, or severe or significant “Less than substantial harm” to a designated heritage asset or the setting of a designated heritage asset, or there is known archaeology of significance which cannot be reasonably mitigated (See paragraphs 193-195 of the NPPF) could have a significant negative (--?) effect on this objective (red in the HELAA for one or both of historic environment and archaeology).

SA objective 8: To make efficient use of Greater Cambridge’s land resources through the re-use of previously developed land and conserve its soils

All types of site options

D.27 The effects of new development on soils will depend on its location in relation to the areas of highest quality agricultural land in Greater Cambridge, and whether the land has previously been developed. Therefore:

Appendix D Appraisal Criteria Applied in the SA of Site Options

- Sites that consist of at least 25% greenfield land which is classed as being of Grade 1 or Grade 2 agricultural quality would have a significant negative (--) effect.
- Sites that consist of at least 25% greenfield land which is classed as being of Grade 3 agricultural quality (but where it is not known if it is Grade 3a or 3b land), but less than 25% Grade 1 or Grade 2 land, could have a significant negative effect although this is uncertain (--?).
- All other greenfield sites would have a minor negative (-) effect.
- Sites that are on brownfield land would have a minor positive (+) effect.

D.28 Sites that are on both brownfield and greenfield land will have a mixed effect, depending on the agricultural land classification of the greenfield part.

SA objective 9: To conserve mineral resources in Greater Cambridge

All types of site options

D.29 The effects of new development on mineral resources will depend on its location in relation to areas which have been identified for their importance for mineral reserves in Greater Cambridge. The Cambridgeshire and Peterborough Minerals and Waste Local Plan (2021) identifies Mineral Safeguarding Areas (MSAs) and Consultation Areas (CAs), although the latter relate to waste infrastructure as well. Development within or in close proximity to these areas can result in sterilisation of mineral resources. Therefore:

- Sites that are located directly within a MSA or CA would have a significant negative effect on mineral resources although this is uncertain (--?) dependent upon whether extraction could be achieved prior to any development.

- Sites that are located within 250m of a MSA would have a minor negative effect on mineral resources although this is uncertain (-?) dependent upon whether extraction could be achieved prior to any development.
- Sites located more than 250m from a MSAs or CA are expected to have a negligible (0) effect.

SA objective 10: To achieve sustainable water resource management and promote the quality of Greater Cambridge's waters

All types of site options

D.31 The effects of new development in terms of promoting more sustainable use of water resources will depend largely on people's behaviour as well as the design of new developments. However, where development takes place within Source Protection Zones (SPZs), there may be potential risks relating to contamination to result. In addition, the location of development could affect water quality during construction and operation depending on its proximity to watercourses and water bodies, such as lakes, streams and rivers. The extent to which water quality is affected would depend on construction techniques and the use of SuDS within the design, therefore effects are uncertain at this stage. Therefore:

- Sites that coincide with SPZ 1 would have a significant negative uncertain (--?) effect.
- Sites that coincide with SPZ 2 or SPZ 3 (but not SPZ1), or that contain a watercourse or waterbody could have a minor negative uncertain (-?) effect.
- Sites that are not within a SPZ could have a negligible (0) effect.

D.32 Any issues regarding supply of water resources, and waste water treatment capacity, are more appropriately appraised at the Local Plan scale, rather than through an assessment of each individual site.

SA objective 11: To adapt to climate change, including minimising flood risk

All types of site options

D.33 The effects of new development on this SA objective will depend to some extent on its design, for example whether it incorporates SuDS, which cannot be assessed at this stage. Where site options are located in areas of high flood risk, it could increase the risk of flooding in those areas (particularly if the sites are not previously developed) and would increase the number of people and assets at risk from flooding. The SFRA recommends that all areas within flood zone 2 are at risk of becoming flood zone 3 once climate change is taken into account. As such:

- Sites that are entirely or mainly within flood zones 2 or 3 (such that it cannot accommodate at least 5 additional dwellings or an increase of 500 square metres of employment floorspace) and/or sites that are a 'dry island' whereby all potential accesses to the adopted public highway require crossing land that is within Flood Zones 2 or 3 are likely to have a significant negative (--) effect (red in the HELAA).
- Sites are within flood zone 1 but have areas at high or medium risk from surface water flooding and/or sites that contain some land in Flood Zones 2 and/or 3 but there is sufficient land in Flood Zone 1 to accommodate 5 additional dwellings or an increase of 500 square metres of employment floorspace are likely to have a minor negative (-) effect (amber in the HELAA).

- Sites that are entirely or mainly within flood zone 1 and are at low risk of surface water flooding are likely to have a negligible (0) effect (green in the HELAA).

SA objective 12: To minimise Greater Cambridge's contribution to climate change

All types of site options

D.34 The effects of new development in terms of climate change and how development will respond to this issue will depend to some extent on its design, for example whether it incorporates renewable energy generation on site or includes SuDS. However, the proximity of development sites to sustainable transport links will affect the extent to which people are able to make use of non-car based modes of transport to access services, facilities and job opportunities, although the actual use of sustainable transport modes will depend on people's behaviour.

D.35 It is possible that new transport links such as bus routes or cycle paths may be provided as part of larger-scale housing developments or employment development but this cannot be assumed.

D.36 It is assumed that people would generally be willing to travel further to access a railway station than a bus stop. It is also recognised that many cyclists will travel on roads as well as dedicated cycle routes, and that the extent to which people choose to do so will depend on factors such as the availability of cycle storage facilities at their end destination, which are not determined by the location of sites. How safe or appealing particular roads are for cyclists cannot be determined at this strategic level of assessment. However, the proximity of

Appendix D Appraisal Criteria Applied in the SA of Site Options

site options to existing cycle routes can be taken as an indicator of how likely people are to cycle to or from a development site.

D.37 Rapid public transport in Greater Cambridge includes the Cambridge Busway and the railway. Spatial data on proposed rapid public transport stops used to inform assessments is based on the scheme proposals from Greater Cambridge Partnership. There is some uncertainty as to the exact locations and whether all will come forward.

D.38 Therefore:

12a

- Sites that are less than 1.8km from an existing rapid public transport stop (including Cambridge Busway and railway stations), are likely to have a significant positive (++) effect (green in the HELAA).
- Sites that are less than 1.8km from a proposed rapid public transport stop are likely to have significant positive uncertain (++) effects (green in the HELAA).
- Sites that are less than 450m from a bus stop are likely to have a minor positive (+) effect (green in the HELAA).
- Sites that are more than 1.8km from an existing or proposed rapid public transport stop (including Cambridge Busway and railway stations) and more than 450m from a bus stop could have a minor negative (-) effect.

12b

- Sites that are less than 720m of a defined city, district or rural centre will have a minor positive (+) effect (green in the HELAA).
- Sites that are not located within 720m of a defined city, district, or rural centre will have a minor negative (-) effect (amber or red in the HELAA).

SA objective 13: To limit air pollution in Greater Cambridge and ensure lasting improvements in air quality

All types of site options

D.39 Development sites that are within, or directly connected via road, to one of the Air Quality Management Areas (AQMA) in Greater Cambridge, or in AQMA in surrounding Districts, could increase levels of air pollution in those areas as a result of increased vehicle traffic. In the HELAA, 'amber' is the default score for sites within an Air Quality Management Area (AQMA) in case of changes to the AQMA and potential mitigation measures that can be put in place. Therefore:

- Sites that are incapable of being developed to provide healthy internal and external environments and acceptable quality of life / amenity living conditions in regard to air quality after careful design and mitigation are likely to have a significant negative (--) effect (red in the HELAA).
- Sites that are capable of being developed to provide healthy internal and external environments in regard to air quality after careful design and mitigation are likely to have a minor negative (-) effect (amber in the HELAA).
- All sites that are at low risk in regard to air quality are likely to have a negligible (0) effect on air quality (green in the HELAA).

SA objective 14: To facilitate a sustainable and growing economy

Employment / mixed use site options

D.40 All of the employment site options are expected to have positive effects on this objective, due to the nature of the proposed development. Larger sites will provide opportunities for the creation of more new jobs and so would have significant positive effects. Therefore:

- Sites that will provide more than or equal to 5ha employment land will have a significant positive (++) effect.
- Sites that will provide less than 5ha in size will have a minor positive (+) effect.

Residential site options

D.41 This objective focuses on economic growth in terms of the type and location of economic development to be delivered by the Local Plan. The potential for the specific location of residential sites within Greater Cambridge to influence economic factors is considered under SA objective 15. Therefore, a negligible (0) effect is expected for these types of site options in relation to SA objective 14.

SA objective 15: To deliver, maintain and enhance access to diverse employment opportunities, to meet both

current and future needs in Greater Cambridge

Employment site options

D.42 All employment sites will contribute to this objective and therefore all will have a positive effect. In addition, the provision of new employment sites within Greater Cambridge is likely to benefit the highest number of residents where are accessible by sustainable transport links. Therefore:

- Sites that are less than 1.8km from an existing rapid public transport stop (including Cambridge Busway and railway stations) are likely to have a significant positive (++) effect.
- Sites that are less than 1.8km from a proposed rapid public transport stop are likely to have significant positive uncertain (++) effects.
- All other employment sites are expected to have minor positive effect (+).

Residential site options

D.43 The location of residential sites will influence the achievement of this objective by determining how easily residents would be able to access job opportunities at existing employment sites.

D.44 The City of Cambridge provides access to a significant range of employment opportunities (including the city centre, business and science parks, and Addenbrooke's Hospital). Some of the larger villages in the South Cambridgeshire District provide services to smaller villages, providing some limited employment. The proximity of site options to employment areas also serves as an indicator of the level of employment opportunities which are likely to be accessible. Therefore:

Appendix D Appraisal Criteria Applied in the SA of Site Options

- Sites that are within 1.8km of an employment area would have a significant positive (++) effect (green in the HELAA).
- Sites that are within 720m of a city, district or rural centre would have a minor positive (+) effect (green in the HELAA).
- Sites that are more than 1.8km from an employment area and more than 720m from a local, neighbourhood or minor rural centre would have a minor negative (-) effect (amber or red in the HELAA).

Mixed use site options

D.45 Mixed use sites that provide both residential and employment uses will have significant positive (++) effects, as they will locate these uses in close proximity to each other.

D.46 In addition, if a site option would result in the loss of an existing employment site, a negative effect would occur in relation to the protection of existing employment sites.

D.47 Therefore (which could result in mixed effects overall):

- Sites that are currently in employment use would have a significant negative (--) effect.

Appendix E

Council's justification for selecting sites to take forward for allocation and discounting alternatives

Spatial strategy

E.1 The Councils explored a wide range of alternative options in developing the preferred options.

E.2 In considering the strategy choices available for the new Greater Cambridge Local Plan, evidence studies explored the sustainability merits of locating development within each of the five sources of supply from the adopted development strategy, comprising Cambridge urban area, edge of Cambridge (both non-Green Belt and Green Belt land), new settlements and villages. In addition to the preferred option, the Councils also identified four new development strategy choices not considered for previous plans, which form geographically focused hybrids of the previously identified sources of supply, comprising Public Transport Corridors, providing homes close to jobs in the research parks to the south of Cambridge, integrating development with planned infrastructure in the corridor to the west of Cambridge, and a hybrid involving release of land from the Green Belt. They reviewed the sustainability merits, opportunities and constraints for each of these ten potential strategy choices, considering evidence under each of the Local Plan themes, as well as considering Sustainability Appraisal results.

E.3 Drawing on evidence and consultation feedback, the Councils' preferred option is a blended strategy to meet a variety of needs, and respond to the opportunities provided by the sources of supply. It is strongly influenced by:

Appendix E Council's justification for selecting sites to take forward for allocation and discounting alternatives

- Reducing climate impacts through compact development located to connect homes and jobs and where active and sustainable travel can be maximised
- Making best use of suitable safeguarded and brownfield land
- Making best use of existing and committed key sustainable transport infrastructure
- Supporting rural communities to thrive and sustain services

E.4 The Councils' evidence and Sustainability Appraisal confirm that the urban area of Cambridge remains a highly sustainable broad location for additional homes and jobs, relating to its accessibility to existing jobs and services. A number of existing allocations are proposed for retention in this broad area. Beyond this, North East Cambridge provides the most significant development opportunity in this area. Given the very detailed assessment that informed the 2018 Cambridge Local Plan and that a number of allocations have yet to be implemented very limited new smaller allocations have been identified, whilst several new opportunity areas for regeneration have been identified alongside carrying forward those that have yet to come forward.

E.5 The Councils' evidence shows that the edge of Cambridge could be a sustainable location for homes and jobs, being accessible to existing jobs and services, and if development is planned at sufficient scale this could also support new infrastructure. A number of existing allocations on the edge of Cambridge continue to be built out. Beyond this, on the edge of Cambridge outside the Green Belt, Cambridge East provides the most significant development opportunity in this area, comprising land at Cambridge Airport that was originally identified for development in the 2003 Structure Plan and is safeguarded in the 2018 Local Plans for development should the site become available, which the landowner has now advised will be the case by 2030. There is also opportunity for additional homes within the built area of the existing site being built in North West Cambridge at Eddington.

E.6 The Councils do not consider that the housing needs of Greater Cambridge alone provide the 'exceptional circumstances' required in national policy to

Appendix E Council's justification for selecting sites to take forward for allocation and discounting alternatives

justify removing land from the Green Belt on the edge of Cambridge in this Local Plan, having regard to the identification of the proposed emerging strategy that can meet needs in a sustainable way without the need for Green Belt release. The Councils have therefore considered sites on the edge of Cambridge in the Green Belt individually to assess whether there could be any site specific exceptional circumstances that could justify release of land from the Green Belt. In all but one case the Councils do not consider that such exceptional circumstances exist. However, the Councils do think that it may be possible to demonstrate that exceptional circumstances exist to justify a limited release of Green Belt at Cambridge Biomedical Campus to provide an opportunity to improve the sustainability and qualities of this unique international campus and to allow it to continue to grow into the future.

E.7 Greater Cambridge's existing new settlements at Northstowe, Waterbeach and Bourn Airfield will continue to be built out through the new plan period to 2041 and beyond, and form a significant part of future supply. The Councils do not consider that further new settlements should be allocated. The most sustainable location for strategic scale development away from Cambridge is to expand on existing development in the Cambourne area, taking advantage of the significant benefits that will be provided by the proposed East West Rail station as well as the improvements already anticipated from the Greater Cambridge Partnership's Cambourne to Cambridge scheme. This significant improvement in public transport provides an opportunity to grow an existing new town, enhancing the critical mass of population, employment and services available locally to those communities.

E.8 The Councils also have evidence that locating homes close to existing and proposed jobs at the cluster of research parks to the south of Cambridge would help reduce commuting and associated carbon emissions and congestion. The Councils are supporting both jobs and homes growth in this area, through rolling forward a number of existing housing allocations, and by identifying new allocations, including for jobs at Babraham Research Campus, jobs and tied homes confirming the existing planning permission at Wellcome Genome Campus, and a number of housing sites at well-connected villages in the area.

Appendix E Council's justification for selecting sites to take forward for allocation and discounting alternatives

E.9 The Councils' evidence shows that Greater Cambridge's villages should play only a limited role in meeting future development needs to support delivery of a range of smaller sites and support the vitality of Greater Cambridge's villages. Alongside rolling forward a number of existing housing sites, the Councils have identified a limited number of new sites for housing at the more sustainable villages. In addition to the allocations within the sources of supply listed above, some of which will include both homes and employment space, the Councils have also identified a number of new employment allocations in the rural area to meet the specific needs of different sectors identified in the Councils' employment evidence.

E.10 The Councils do not consider that other alternatives such as distributed strategies or further new settlements perform as well, and therefore these options have not been taken forward. Whilst edge of Cambridge Green Belt sites performed in a similar way in many respects to Cambridge East, they would have significant Green Belt impacts and given the relatively good performance of Cambourne, which is not in the Green Belt and would benefit from East West Rail, there was considered to be no exceptional circumstances for releasing land on the edge of Cambridge to meet development needs as a matter of principle and that spatial option was not preferred. Consideration was given to whether there were any site specific exceptional circumstances for releasing any particular site from the Green Belt and only the Cambridge Biomedical Campus was identified as potentially being able to demonstrate such exceptional circumstances. All other sites on the edge of Cambridge in the Green Belt were not able to do so and were not preferred.

E.11 Consideration was given to the provision of a range of sizes and types of sites to give flexibility and help with delivery over the plan period, reflecting the Councils' evidence, and a modest element of housing was in principle considered to be an appropriate element of the strategy. Drawing on the Councils' evidence, a wide range of sites were considered but many were not preferred due to their impacts, with only a limited number of sites being preferred in Cambridge, close to centres of employment in the southern cluster, and in villages well served by public transport in the rest of the rural area. Allocating large numbers of sites in villages was not a preferred approach, as evidence demonstrated how poorly a dispersed strategy performed with regard

Appendix E Council's justification for selecting sites to take forward for allocation and discounting alternatives

to a number of issues, but particularly in relation to transport and carbon impacts.

E.12 In summary, drawing on the available evidence and consultation feedback, the Councils consider that alternatives to the preferred option would either distribute development to less sustainable locations that are distant from Cambridge or without the benefit of very high quality public transport (existing or proposed) that would generate greater car use contrary to the Local Plan's climate change theme, or would require the release of large areas of Green Belt on the edge of Cambridge which would cause significant harm to the purposes of the Cambridge Green Belt.

Identification of site options

E.13 More than 700 sites were tested by the Councils through the Greater Cambridge Housing and Employment Land Availability Assessment (2021) (HELAA), in a wide range of locations across Greater Cambridge. The testing of sites through the sustainability appraisal has focused on sites informed by the emerging preferred strategy option, and the testing carried out via the HELAA as to where a site was suitable, available and achievable for development.

E.14 Using the categorisation of broad strategy choices used to inform plan making, the following approach has been taken to identify sites for assessment.

Densification of existing urban areas: Cambridge urban area

E.15 All sites tested in the HELAA and identified as potential development options have been subject to site specific sustainability appraisal. Where sites were identified in the HELAA as either not suitable, not available or not achievable these sites have not been subject to appraisal, as they are not considered reasonable options.

Edge of Cambridge – outside Green Belt

E.16 All sites tested in the HELAA and identified as potential development options have been subject to site specific sustainability appraisal.

Edge of Cambridge - Green Belt

E.17 The HELAA process identified that most sites would result in significant landscape impacts. However, the edge of Cambridge performs well in many aspects of sustainability due to its proximity to the jobs, homes and infrastructure of the city.

E.18 The National Planning Policy Framework requires that Strategic policy making authorities consider the consequences for sustainable development of channelling development towards urban areas inside the Green Belt boundary, towards towns and villages inset within the Green Belt or towards locations beyond the outer Green Belt boundary.

E.19 It was therefore determined that all individual sites on the edge of Cambridge including those in the Green Belt should be subject to sustainability appraisal.

New settlements

E.20 No sites were identified as potential development options through the HELAA, and further new settlements do not form part of the preferred option for the plan following consideration of new settlements through the strategic options testing process. Therefore no sites were included for site specific sustainability appraisal.

Expanding a growth area around transport nodes

E.21 The preferred development strategy identifies Cambourne as a broad location for future development, in association with the opportunities provided by East West Rail and in particular the proposed new railway station. The location of the station has not yet been established and will be key to understanding where and how additional development should be planned, including considering the individual site constraints identified when testing these land parcels which were put forward through the call for sites process. The allocation of a specific site has therefore been rejected. However, individual sites in this area have been subject to SA site assessment, to inform the general appraisal of this broad location.

Rural Southern Cluster

E.22 All sites tested in the HELAA and identified as potential development options in the locations below have been subject to site specific sustainability appraisal. Where sites were identified in the HELAA as either not suitable, not available or not achievable these sites have not been subject to appraisal, as they are not considered reasonable options.

E.23 This was identified as sites at Rural Centres, Minor Rural Centres, and Group villages on transport corridors providing very good access to public transport. Sites at other villages on the corridor were not considered reasonable options, as they would not provide sustainable locations to allocate development. Residential proposals which would be detached from villages were rejected through the HELAA process as they would not provide a suitable location for development.

- Rural Centres
 - Great Shelford and Stapleford
 - Sawston

Appendix E Council's justification for selecting sites to take forward for allocation and discounting alternatives

- Minor Rural Centres
 - Linton
- Group Villages with very good Public Transport Access
 - Babraham
 - Great Abington
 - Little Abington
 - Duxford
 - Whittlesford

Rest of the rural area

E.24 All sites tested in the HELAA and identified as potential development options in the better served villages have been subject to site specific sustainability appraisal.

E.25 This was identified as sites at Rural Centres, Minor Rural Centres, and Group villages on transport corridors providing very good access to public transport. Sites at other villages were not considered reasonable options, as they would not provide sustainable locations to allocate development.

E.26 Residential proposals which would be detached from villages were rejected through the HELAA process as they would not provide a suitable location for development. Where sites were identified in the HELAA as either not suitable, not available or not achievable these sites have not been subject to appraisal, as they are not considered reasonable options.

- Rural Centres
 - Histon and Impington
- Minor Rural Centres
 - Bar Hill

Appendix E Council's justification for selecting sites to take forward for allocation and discounting alternatives

- Bassingbourn-cum-Kneesworth
- Comberton
- Cottenham
- Fulbourn
- Gamlingay
- Girton
- Melbourn
- Milton
- Papworth Everard
- Swavesey
- Waterbeach
- Willingham
- Group Villages with very good Public Transport Access
 - Foxton
 - Hardwick
 - Highfields Caldecote
 - Longstanton
 - Meldreth
 - Oakington and Westwick

E.27 A more flexible approach was taken to employment proposals, acknowledging that they may be located in rural areas, for example with good access to the road network for warehousing and distribution. Sites tested in the HELAA and identified as potential development options have been subject to site specific sustainability appraisal.

Site selection

E.28 A summary of why sites subject to appraisal were included in the First Proposals as preferred options, and why other sites were not included, has been provided as a separate document.

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