

South Cambridgeshire District Council and
Cambridge City Council

Greater Cambridge Local Plan

Strategic Spatial Options

Assessment: Green Infrastructure

Opportunity Mapping Supplement

Prepared by LUC

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South Cambridgeshire District Council and Cambridge City Council

Greater Cambridge Local Plan Strategic Spatial Options Assessment: Green Infrastructure Opportunity Mapping Supplement

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Chapter 1 – Introduction

Introduction

1.1 This Greater Cambridge Local Plan Strategic Spatial Options Assessment: Green Infrastructure Opportunity Mapping Supplement Report assesses with regard to Green Infrastructure (GI), the working assumption Greater Cambridge Local Plan preferred option development strategy, and a new blended Edge of Cambridge: Green Belt alternative, in a comparable way to that completed for the strategic spatial options in November 2020.

1.2 Alongside other evidence assessments and Sustainability Appraisal, consideration of the preferred option and Edge of Cambridge: Green Belt alternative alongside the strategic spatial options assessments ensures consideration of a range of reasonable alternative strategies.

Context

1.3 For the strategic spatial options stage we completed assessments of the three growth levels and eight strategic spatial options.

1.4 Further to this, ahead of the Preferred Options Plan consultation taking place in autumn 2021, officers from Greater Cambridge Shared Planning on behalf of the two councils shared with us a working assumption preferred option development strategy, including preferred growth level and distribution assumptions for dwellings, jobs and associated population growth.

1.5 Please note that use of the working assumption preferred option development strategy to inform this evidence base does not confer formal support by either council for that strategy. No decisions will be taken on development strategy assumptions until relevant member committees meet and approve documents for the Local Plan preferred options consultation. Such decisions will be informed by appraisal of reasonable alternatives. Setting out working assumptions in this and other notes does not prejudice those decisions.

Growth level

1.6 Following consideration of the November 2020 strategic spatial options evidence bases and Sustainability Appraisal, Greater Cambridge Shared Planning have determined that the medium

level of homes associated with the central employment scenario represents the objectively assessed need for homes in Greater Cambridge. Having determined this, the previously assessed alternative growth options of minimum and maximum are no longer considered to represent reasonable alternatives.

1.7 Further to the above, the Greater Cambridge Local Plan Preferred Option growth level is the medium homes level, including a 1:1 commuting ratio for housing growth generated by additional jobs above those supported by the Standard Method, in line with the councils' aims of limiting longer distance commuting and thereby limiting carbon emissions (described as medium+). We, and other evidence base consultants, did not assess the medium+ level of growth for the Strategic Spatial options, but we do not consider that rerunning the evidence testing of the strategic spatial options against a new medium+ housing figure would result in materially different outcomes to our November 2020 conclusions.

1.8 Drawing on the above, we are testing the new spatial options of preferred option and Blended Strategy including Edge of Cambridge: Green Belt based on the medium+ growth level, and have not assessed the impacts of the previous alternative growth levels in relation to these new spatial options.

Spatial Distribution

1.9 The Councils' working assumption preferred option is a blended strategy including a number of broad supply locations. To ensure that the preferred option is tested against reasonable alternatives, an assessment of the preferred option blended strategy has been completed, so that it can be compared against:

- the strategic spatial options tested last year;
- other reasonable alternative blended strategies.

1.10 Some of the spatial options tested last year were blended strategies and others not. The Councils reviewed the strategic spatial options tested in November to see whether these included a range of reasonable alternative blended strategies, noting that they don't need to test every possible reasonable alternative. The conclusion to this assessment was that the only alternative blended strategy not yet tested was one including development at Edge of Cambridge: Green Belt. The Councils therefore identified a blended strategy development

distribution for this spatial option, which is directly comparable to the preferred option and broadly comparable to the strategic spatial options from November 2020.

Spatial options tested

1.11 Eight spatial options (numbered 1 to 8) were tested in the November 2020 report. This Supplementary Report assesses two further options.

- Spatial Option 9: Preferred option growth level: preferred options spatial strategy.
- Spatial Option 10: Preferred option growth level: Blended Strategy including Edge of Cambridge: Green Belt.

Methodology

1.12 This Supplement Report assesses the above spatial options using the same methodology as completed for the [Greater Cambridge Local Plan Strategic Spatial Options Assessment: Green Infrastructure Opportunity Mapping](#). See that report for further detail.

1.13 The initial assessment of spatial options was informed by the [Greater Cambridge Green Infrastructure Opportunity Mapping baseline report](#). Subsequent to this, the Greater Cambridge Green Infrastructure Opportunity Mapping Recommendations Report has been finalised, and it has been possible to draw upon the findings from both of these reports for this supplementary assessment. The recommendations report identifies 14 Strategic GI Initiatives that it is proposed could be delivered to enhance the GI network in Greater Cambridge.

1.14 For this current assessment, we have again considered the various broad areas of supply making up the strategic spatial options. For each broad area of supply, evidence from the GI Opportunity Mapping study was examined, and a set of opportunities and risks were identified.

1.15 The broad areas of supply assessed previously include:

- Cambridge Urban Area.
- North East Cambridge (NEC).
- Cambridge Airport (safeguarded land).
- Green Belt Fringe.

- New settlements on public transport corridors.
- New settlements on the road network.
- Villages.
- 'Science cluster'.
- Cambourne and surrounds.

1.16 For this supplementary assessment, an additional broad area was assessed:

- North West Cambridge.

1.17 Whilst closely linked to the Cambridge Urban Area broad area of supply, North West Cambridge has been assessed separately for this supplementary assessment given its specific mention in the detailed supply figures.

1.18 Each GI theme was considered in turn, with key pertinent points recorded against each broad area of supply. Chapter 2 of this report presents the findings of this assessment.

1.19 A number of GIS datasets were used in the assessment including those identifying designated nature conservation sites, cultural heritage assets and data on habitats and habitat networks. National maps of the Buglife B-Lines were reviewed to assess the opportunities for development to support these 'insect pathways' for pollinators. Other datasets reviewed included those mapping open space and Country Parks, rivers and waterbodies, deprivation indices, 'Environment Agency Working with Natural Processes' and peat soils.

1.20 To support an understanding of the implications for carbon sequestration and storage, Centre for Ecology and Hydrology (CEH) national maps of mean estimates of carbon density in topsoil (0-15cm depth) and above-ground carbon density in vegetation were reviewed. Using the assessment of the broad areas of supply, each strategic spatial option was examined in turn, taking account of the combinations of broad areas of supply included, and the number of dwellings assigned to each.

Limitations

1.21 It must be noted that this is a high-level assessment, and in some cases it is not possible to be definitive about the likely impacts without more spatial specificity.

1.22 The realisation of the GI opportunities identified in this assessment will be reliant on a planning framework that has sufficient mechanisms in place to ensure that high quality GI is delivered in step with development. This will need to be supported by guidance on what high quality GI looks like in Greater Cambridge and robust management plans that ensure that GI is managed and maintained into the future. This will need to be factored in to the viability of development.

Chapter 2 – Analysis

1.23 This Chapter presents the findings of the review of the likely impacts on the GI network of the two additional strategic spatial options’.

1.24 This Chapter is structured as follows:

- Commentary on locations for development: providing a summary of the key risks and opportunities associated with North West Cambridge broad area of supply.
- Commentary on spatial options 9 and 10: providing a summary of the potential implications for GI under each strategic spatial option.

Commentary on locations for development

1.25 Section 3 of [Greater Cambridge Local Plan Strategic Spatial Options Assessment: Green Infrastructure Opportunity Mapping](#) sets out each broad supply area in turn. Each broad supply area is introduced by a table setting out the number of dwellings to 2041 under each spatial option . A second table presents the all time number of dwellings for each spatial option .

1.26 The tables of dwelling numbers are followed by a series of key opportunities and risks associated with that spatial option.

1.27 Table 1 sets out the distribution of dwellings to 2041 by broad area of supply for spatial options 9 and 10. Table 2 sets out the distribution of dwellings for 'all time' by broad area of supply for these spatial options.

Table 1: Dwellings to 2041

Broad area of supply	Spatial Option 9	Spatial Option 10
Cambridge Urban Area	200	200
North East Cambridge (NEC)	3,900	3,900
North West Cambridge	1,000	1,000

Broad area of supply	Spatial Option 9	Spatial Option 10
Cambridge Airport (safeguarded land)	2,900	2,900
Green Belt Fringe	-	2,000
New settlements on public transport corridors	-	-
New settlements on the road network	-	-
Villages	900	900
'Science cluster'	600	600
Cambourne and surrounds	2,000	-

Table 2: Dwellings 'all time'

Broad area of supply	Spatial Option 9	Spatial Option 10
Cambridge Urban Area	200	200
North East Cambridge (NEC)	8,350	8,350
North West Cambridge	1,500	1,000
Cambridge Airport (safeguarded land)	7,000	7,000
Green Belt Fringe	-	2,000
New settlements on public transport corridors	-	-
New settlements on the road network	-	-
Villages	900	900
'Science cluster'	600	600

Broad area of supply	Spatial Option 9	Spatial Option 10
Cambourne and surrounds	10,000	-

1.28 As outlined above, with the exception of the North West Cambridge location, an assessment of all the broad areas of supply was undertaken for the main Strategic spatial option assessment (Nov 2020). The following provides a summary of the key risks and opportunities associated with North West Cambridge broad area of supply.

North West Cambridge

Opportunities

- May provide opportunities to deliver GI enhancements of wider benefit to the existing urban population.
- Opportunity to integrate a wider range of GI opportunities associated with larger scale development whilst also integrating urban greening features (Strategic GI Initiative 12) and increasing canopy cover (Strategic GI Initiative 10).
- Opportunities to integrate active travel routes into the urban fringe.
- Opportunity to support network enhancement zones identified by Natural England Habitat Network mapping nearby.
- May support Strategic GI Initiative 6: North Cambridge green space and Strategic GI Initiative 7: West Cambridge GI buffer – Coton Corridor.
- Whilst there is a risk of severance/ increased severance of the GI network by widening development along and between transport corridors, there are opportunities for GI connectivity across and along these potential barriers to be supported through landscape-led masterplanning.

Risks

- May place additional recreational pressure on accessible open space resources including Country Parks such as Milton Park and Coton as well as Madingley Hall.

- Risk of loss of soft and permeable landscape which may exacerbate surface water flooding and urban heat island effect.
- In close proximity to Great Crested Newt Amber zone. Amber zones contain main population centres for GCN and comprise important connecting habitat that aids natural dispersal.
- High levels of estimated carbon in vegetation occur around the M11.
- Risk of severance/ increased severance of the GI network by widening development along and between transport corridors; GI connectivity across and along these potential barriers could be supported through landscape-led masterplanning.

Commentary on the different spatial options

1.29 Drawing on the review of each broad supply area, this section provides a summary of the potential implications for GI under strategic spatial options 9 and 10.

Strategic Spatial Option 9: Preferred option growth level: preferred options spatial strategy

1.30 This spatial option would distribute homes across Cambridge urban area, North East Cambridge, Cambridge Airport, North West Cambridge, Cambourne (highest dwelling numbers at full build out), , southern science cluster and the villages.

1.31 There is a risk that further development within Cambridge existing urban area will place additional recreational pressure on existing sites, and opportunities to increase the permeability of the urban area will be needed so as not to exacerbate surface water flooding and the urban heat island effect.

1.32 The NEC and Cambridge Airport provide significant opportunities for integrating a wide range of GI given the larger scale of development in a single location. There is opportunity to create a GI network across these sites in an innovative and coherent manner which maximises benefits. Strategic GI Initiative 6: North Cambridge green space and Strategic GI Initiative 2A: River Cam Corridor (NEC to Waterbeach) are of particular relevance to development at NEC and Strategic GI Initiative 4: Enhancement of the eastern fens is of particular relevance to the Airport.

1.33 However development presents risks to the existing GI network; particularly relating to increased recreational pressure on nearby sites, and the potential for impacts on wetland assets to the east and north east. The Cambridge Airport area has been identified as having high estimated levels of soil carbon and carbon in vegetation which development may cause disturbance or loss thereof. However, there are habitat expansion and enhancement opportunities in close proximity.

1.34 Development in North West Cambridge may provide an opportunity to integrate a wider range of GI opportunities associated with larger scale development whilst also integrating urban greening features (Strategic GI Initiative 12) and increasing tree canopy cover (Strategic GI Initiative 10), extending the associated benefits into the existing urban area. As with NEC and the Airport, there are opportunities to integrate active travel routes into the urban fringe and support Strategic GI Initiative 6: North Cambridge green spaces and Strategic GI Initiative 7: West Cambridge GI buffer – Coton Corridor.

1.35 Development focused around Cambourne has the potential for impact/s on Eversden & Wimpole SAC and the numerous SSSI (primarily woodland in character) which must be considered cumulatively. The SAC supports barbastelle bats who also rely on habitats in the wider area for foraging. Mitigation may include strategic woodland, parkland, species-rich grassland, and wetland creation across the Cambridge Hundreds as set out in Strategic GI Initiative 8 Western gateway multifunctional GI corridors.

1.36 There is a risk of development (dwellings or supporting infrastructure) extending or exacerbating existing north-south severance; but also an opportunity to introduce GI connectivity across the A428 corridor. There is potential to further develop active transport connections linking GI assets.

1.37 Where development is directed towards the southern science cluster, there may be opportunities to enhance the GI network through Strategic GI Initiative 3: Gog Magog Hills and chalkland fringe and development could incorporate appropriate planting to support delivery of Strategic Initiative 9: Pollinator corridors whilst respecting the local chalk grassland character. Where development is in close proximity to the chalk stream network (or upstream catchments), there may be opportunities for associated GI to contribute to Strategic GI Initiative 1: Revitalising the chalk stream network.

1.38 For the additional homes dispersed across villages, sensitivities of GI assets in the vicinity of each village will reflect the selected locations. The nature, extent and magnitude of

potential impacts cannot be determined in the absence of information on where development will be specifically located. Piece-meal GI interventions in villages may translate to greater challenges in delivering integrated ecological networks. Therefore opportunities for enhancing the GI network alongside village growth should be guided by the range of Strategic GI Initiatives (both spatial and dispersed) presented in the GI Opportunity Mapping Study.

Strategic Spatial Option 10: Preferred option growth level: Blended Strategy including Edge of Cambridge: Green Belt

1.39 This approach would distribute homes across Cambridge urban area, North East Cambridge, Cambridge Airport, North West Cambridge, Green Belt fringe, southern science cluster and the villages.

1.40 There is a risk that further development within Cambridge urban area will place additional recreational pressure on existing sites and opportunities to increase the permeability of the urban area will be needed so as not to exacerbate surface water flooding and the urban heat island effect.

1.41 As with Strategic Spatial Option 9, development at NEC and Cambridge Airport provide greater opportunities for integrating a wide range of GI given the larger scale of development in a single location. There is opportunity to create a GI network across these sites in an innovative and coherent manner which maximises benefits. Strategic GI Initiative 6: North Cambridge green space and Strategic GI Initiative 2A: River Cam Corridor (NEC to Waterbeach) are of particular relevance to development at NEC and Strategic GI Initiative 4: Enhancement of eastern fens is of particular relevance to the Airport.

1.42 However development presents risks to the existing GI network; particularly relating to increased recreational pressure on nearby sites, and potential impacts on wetland assets to the east and north east. The Cambridge Airport area has been identified as having high estimated levels of soil carbon and carbon in vegetation. Development may cause disturbance or loss thereof. However, there are habitat expansion and enhancement opportunities in close proximity.

1.43 Development in North West Cambridge may provide an opportunity to integrate a wider range of GI opportunities associated with larger scale development whilst also integrating urban greening features (Strategic GI Initiative 12) and increasing canopy cover (Strategic GI Initiative 10), extending the associated benefits into the existing urban area. As with NEC and the Airport, there are opportunities to integrate active travel routes into the urban fringe and support Strategic GI Initiative 6: North Cambridge green spaces and Strategic GI Initiative 7: West Cambridge GI buffer – Coton Corridor.

1.44 Additional supply in the Green Belt Fringe provides an opportunity for urban extensions to cater for GI deficits in neighbouring urban areas. There are also opportunities associated with the requirement of the NPPF for the release of Green Belt sites to positively enhance the remaining Green Belt. 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 are also opportunities to connect to/ expand key GI assets such as the parkland and country park network, and cycle/footpaths (to alleviate/ avoid additional pressure on existing routes within spatially constrained watercourse corridors).

1.45 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. 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. 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.

1.46 Where dwellings are directed towards the southern science cluster, there may be opportunities to enhance the GI network through Strategic GI Initiative 3: Gog Magog Hills and chalkland fringe and development could incorporate appropriate planting to support delivery of Strategic Initiative 9: Pollinator corridors whilst respecting the local chalk grassland character. Where development is in close proximity to the chalk stream network (or upstream catchments), there may be opportunities for associated GI to contribute to Strategic GI Initiative 1: Revitalising the chalk stream network.

1.47 For the additional homes dispersed across villages, sensitivities of GI assets in the vicinity of each village will reflect the selected locations. The nature, extent and magnitude of potential impacts cannot be determined in the absence of information on where development will be specifically located. Piece-meal GI interventions in villages may translate to greater challenges in delivering integrated ecological networks. Therefore opportunities for enhancing the GI network alongside village growth should be guided by the range of Strategic GI Initiatives (both spatial and dispersed) presented in the GI Opportunity Mapping Study.

Chapter 3 – Conclusion and next steps

2.1 The assessment has concluded that each option offers different opportunities and potential risks in terms of GI; no one option clearly performing better than the other in terms of GI.

2.2 Additional growth will put pressure on the existing GI network; the higher the level of growth, the greater the increased pressure. Development can also provide opportunities for GI such as new areas of GI for recreation or habitat provision, or enhancement of existing areas which already perform a specific function (such as important habitats); to improve the efficacy of this function.

2.3 Whilst not easily simplified due to the complexities of GI, a high level summary of the implications for GI under each strategic spatial option is provided below:

- Strategic Spatial Option 9: Preferred option growth level: preferred option spatial strategy - presents both risks and opportunities for GI. Development at NEC, the Airport and North West Cambridge provides opportunities to integrate a wider range of GI interventions associated with larger development whilst also providing opportunities to deliver new GI where there may be existing deficiencies or challenges. Development around Cambourne introduces potential impact/s on Eversden & Wimpole SAC and the numerous SSSI. There is a risk of development extending or exacerbating existing north-south severance; but also an opportunity to introduce GI connectivity across the A428 corridor. There is potential to further develop active transport connections linking GI assets.
- Strategic Spatial Option 10: Preferred option growth level: Blended Strategy including Edge of Cambridge: Green Belt – also presents both risks and opportunities for GI. Development at NEC, the Airport and North West Cambridge provides opportunities to integrate a wider range of GI interventions associated with larger development whilst also providing opportunities to deliver new GI where there may be existing deficiencies or challenges. There are also opportunities associated with the requirement of the NPPF for the release of Green Belt sites to positively enhance the remaining Green Belt. There is some sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance and a potential risk of impacts on international designations.

2.4 The Councils will use the findings of this review alongside similar reviews for other emerging and existing evidence studies to test the strategic spatial options through the Sustainability Appraisal.