

South Cambridgeshire District Council and Cambridge City Council
**Greater Cambridge Local Plan strategic spatial
options assessment: Green Infrastructure
Opportunity Mapping**

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

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Chapter 1 – Executive summary

1.1 South Cambridgeshire District Council and Cambridge City Council (the Councils) have commissioned LUC to undertake a Green Infrastructure (GI) Opportunity Mapping project to ensure the forthcoming joint Local Plan is based on sound evidence and includes deliverable interventions to enhance the GI network.

1.2 The overall aims of the study are twofold: to provide a robust evidence base on the quantity and quality of existing GI assets and networks within Greater Cambridge, and through analysis and consultation, identify specific and deliverable opportunities to enhance and expand the network, supported by appropriate policies.

1.3 The baseline assessment has to date identified a series of broad enhancement zones under seven GI themes which are currently being mapped. These zones are being drawn together to identify areas within which there is potential to deliver new, or enhance existing GI assets to realise multiple benefits across these themes.

1.4 The Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing, and have asked consultants producing Local Plan evidence studies to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

1.5 The emerging Greater Cambridge Green Infrastructure Opportunity Mapping baseline assessment has informed this assessment; drawing upon the information gathered to date from spatial datasets, stakeholders, other emerging evidence bases, existing studies and strategies.

1.6 For this strategic spatial options review, we initially considered the various broad areas of supply making up the strategic spatial options. For each broad area of supply, the baseline evidence from the GI Opportunity Mapping study was examined, and a set of opportunities and risks were identified. Drawing on the assessment of the broad areas of supply, consideration was given to the potential implications for GI under each strategic spatial option.

1.7 Each option has been shown to offer different opportunities and potential risks in terms of GI; no one option clearly performing better than the others in terms of GI. 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.

1.8 The minimum growth option potentially provides more scope to locate development to minimise impacts on existing assets, or to focus development to where the greatest opportunities can be achieved. The higher growth options reduce flexibility in relation to being able to target the location of development in this way and will result in greater landtake. Where space is constrained, GI provision will need to be more innovative.

1.9 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 1: Densification of existing urban areas - presents both risks and opportunities for GI. On the one hand, there is greater potential for piece-meal delivery of GI associated with multiple smaller developments and the added challenge of significant 'space' constraints. On the other hand, there are opportunities to deliver new GI where there may be existing deficiencies or challenges.

- Strategic Spatial Option 2: Edge of Cambridge - outside the Green Belt - provides opportunities to integrate a wider range of GI interventions associated with larger development. GI could also provide opportunities to address higher levels of deprivation in nearby areas. However, growth here presents risks to the existing GI network; particularly relating to increased recreational pressure on sites, and potential impacts on wetland assets to the east and north east.
- Strategic Spatial Option 3: Edge of Cambridge - Green Belt - 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. 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.
- Strategic Spatial Option 4: Dispersal - new settlements – provides an opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning could accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources. Additional sustainable transport routes provide an opportunity to integrate GI connectivity and mitigate potential severance.
- Strategic Spatial Option 5: Dispersal – villages – increases the likelihood of piece-meal GI interventions associated with multiple smaller developments, as opposed to delivering strategic GI opportunities. This may lead to greater challenges in delivering integrated ecological networks unless an overarching vision is established and supported in planning policy and land-use decision making.
- Strategic Spatial Option 6: Public transport corridors – whilst potentially placing additional recreational pressure on key GI assets, larger scale developments on public transport corridors may provide opportunities to integrate a wider range of GI opportunities; including opportunities for landscape-led masterplanning and planning in active travel networks to increase GI connectivity. There are also opportunities to support network enhancement and expansion zones identified by Natural England Habitat Network mapping. Higher delivery scenarios introduce greater scale of delivery to villages on public transport corridors; potentially resulting in piece-meal GI interventions in these locations unless strategically planned.
- Strategic Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster) – provides opportunities make a strategic contribution to strengthening GI assets. Wider development across villages south of Cambridge will need to consider cumulative impact/s on the grassland and wetland habitats along and between the river, stream and dyke corridors.
- Strategic Spatial Option 8: Expanding a growth area around transport nodes - 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.

1.10 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.

1.11 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 – Introduction

Introduction to evidence base

2.1 South Cambridgeshire District Council and Cambridge City Council (the Councils) have commissioned LUC to undertake a Green Infrastructure Opportunity Mapping project to ensure the forthcoming joint Local Plan is based on sound evidence and includes deliverable interventions to enhance the GI network.

2.2 The overall aims of the study are twofold: to provide a robust evidence base on the quantity and quality of existing GI assets and networks within Greater Cambridge, and through analysis and consultation, identify specific and deliverable opportunities to enhance and expand the network, supported by appropriate policies. GI assets serve to provide a range of ecosystem services for environmental, social and economic benefit, and this study will provide a clear understanding of strategic level opportunities to maximise these benefits, ensuring a resilient landscape; one that benefits both people and nature and is robust to external change such as climate change and flood risk.

2.3 The study is being developed collaboratively with relevant officers of the Councils, neighbouring authorities and local stakeholders, drawing on existing initiatives and the wider evidence base for the Local Plan (including Infrastructure, Viability, Landscape, Sustainability Appraisal, Green Belt and other relevant studies).

Initial findings

2.4 Greater Cambridge has a wealth of GI assets which serve to provide ecosystem services for environmental, social and economic benefit. To provide a comprehensive baseline and evaluation of the GI network in Greater Cambridge, the GI Opportunity Mapping Study uses a themed-based approach. The seven themes identified are:

- Landscape, cultural heritage and sense of place;
- Biodiversity and geodiversity;
- The water environment;
- Access and connectivity;
- Recreation and play;
- Carbon sequestration; and
- Agriculture and community food growing.

2.5 In addition to these themes, the cross-cutting themes of climate change, health and wellbeing and social inclusion are considered throughout.

2.6 The baseline assessment has to date identified a series of broad enhancement zones under each of the GI themes which are currently being mapped and drawn together to identify areas within which there is potential to deliver new, or enhance existing, GI assets to realise multiple benefits across these themes. Although the enhancement zone maps were not ready in time to directly inform this assessment, this review has considered all of the layers of information and stakeholder information available at this stage.

Assessment of strategic (non-site specific) spatial options

2.7 Cambridge City Council and South Cambridgeshire District Council completed public consultation on the Greater Cambridge Local Plan First Conversation (Issues and Options) in early 2020. Building on the initial options set out in the First Conversation, the Councils have identified three growth level options for homes and jobs and eight strategic (non-site specific) spatial options for testing. Description of the options and explanation of how they were developed is set out in the Greater Cambridge Local Plan: strategic spatial options for testing – methodology document.

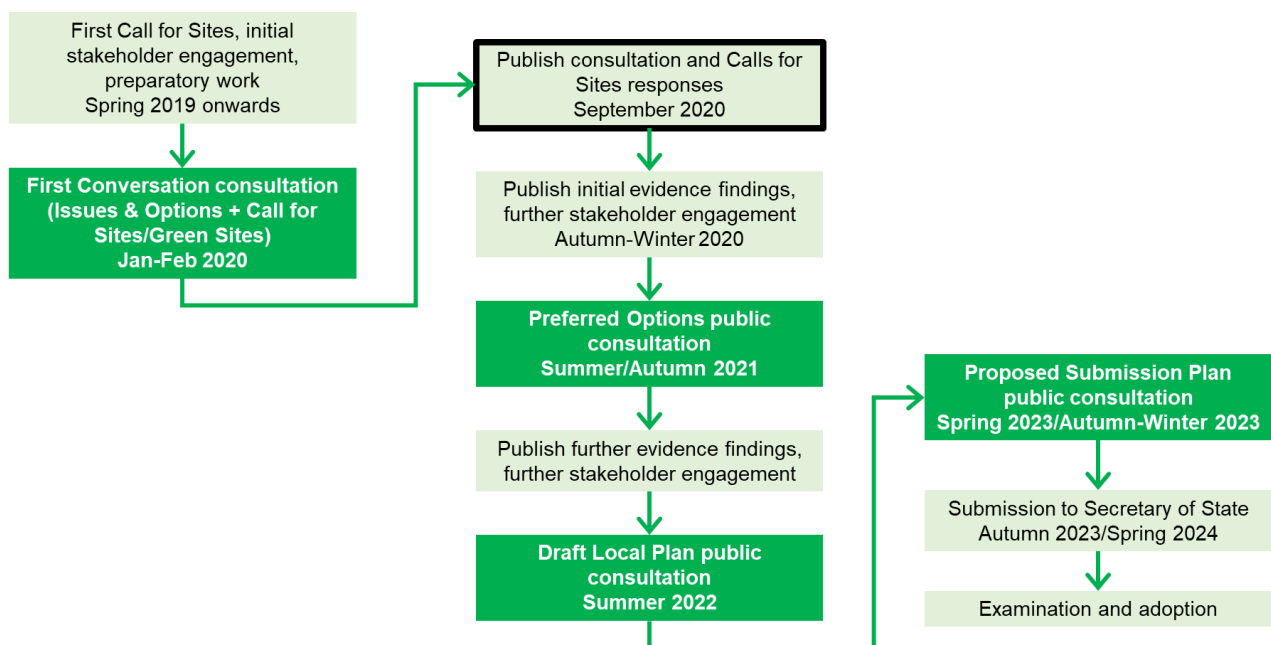
2.8 The Councils have asked consultants producing Local Plan evidence studies, including the Sustainability Appraisal, to assess the strategic options with regard to their initial evidence findings. This report forms one element of that assessment.

2.9 The initial evidence findings will be reported to the Joint Local Planning Advisory Group in Autumn 2020, and will help inform further engagement with stakeholders.

2.10 Preferred Options public consultation is planned for summer/autumn 2021, including a preferred strategy and draft allocations. The process of Local Plan preparation is set out below in Figure 1.

Figure 1: Process of Local Plan Preparation

Process of Local Plan preparation



The strategic options

2.11 The three growth level options tested through this report are:

- Minimum – Standard Method homes-led
- Medium – central scenario employment-led
- Maximum – higher employment-led

2.12 The spatial scenarios tested through this report are:

- 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

Methodology

2.13 The emerging Greater Cambridge Green Infrastructure Opportunity Mapping baseline report has informed this assessment; drawing upon the information gathered to date from spatial datasets, stakeholders, other emerging evidence bases, existing studies and strategies.

2.14 For this strategic spatial options review, we initially considered the various broad areas of supply making up the strategic spatial options. For each broad area of supply, the baseline evidence from the GI Opportunity Mapping study was examined, and a set of opportunities and risks were identified.

2.15 The broad areas of supply 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.

2.16 Each GI theme was considered in turn, with key pertinent points recorded against each broad area of supply. Chapter 3 of this report presents the findings of this assessment.

2.17 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.

2.18 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) were reviewed. Certain habitat types are associated with greater densities of soil carbon; these include acid grassland, coniferous woodland, bogs and

heathland. Soil carbon is found at lower densities in arable habitats and improved grassland¹. Similarly, CEH has mapped mean estimates of above-ground carbon density in vegetation. Changes in size and productivity of the above-ground carbon pool may act as a sink or source for carbon dioxide. As such, the carbon stored in vegetation plays a vital role in climate regulation². All these datasets were referred to during this options review.

2.19 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 under the minimum, medium and maximum growth scenarios. The findings of this assessment are presented in Chapter 3.

Limitations

2.20 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.

2.21 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.

¹ Henrys, P.A.; Keith, A.M.; Robinson, D.A.; Emmett, B.A. (2012). Model estimates of topsoil carbon [Countryside Survey]. NERC Environmental Information Data Centre.

² Henrys, P.A.; Keith, A.; Wood, C.M. (2016). Model estimates of aboveground carbon for Great Britain. NERC Environmental Information Data Centre.

Chapter 3 – Analysis

3.1 This Chapter presents the findings of the review of the likely impacts on the GI network of the strategic spatial options set out in the document 'Greater Cambridge Local Plan: strategic spatial options for testing – methodology'.

3.2 This Chapter is structured as follows:

- Commentary on overall levels of growth: providing information on the growth scenarios and the key implications of the overall quantum of growth for GI.
- Commentary on locations for development: providing a summary of the key risks and opportunities associated with each broad area of supply under the different growth scenarios.
- Commentary on the different spatial options: providing a summary of the potential implications for GI under each strategic spatial option.

Commentary on overall levels of growth

3.3 As set out in paragraph 2.11, three growth level options for housing have been assessed; minimum, medium and maximum. The minimum growth option has been defined using the 'Standard Method' for calculating housing needs, as set out in National Planning Practice Guidance. The medium and maximum options both go beyond the number of homes prescribed by the Standard Method, as a result of evidence of the higher housing growth potential in Greater Cambridge driven by employment forecasting set out in the Greater Cambridge Employment Land and Economic Development Evidence Study.

3.4 Different delivery rates are required to achieve the housing figures set out under each growth option, with delivery rates which reflect recent trends needed to deliver the minimum and medium growth options. Previously unachieved high delivery rates will be required to deliver the maximum growth option. The maximum growth option requires four times as much housing as the minimum option.

3.5 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.

3.6 The minimum growth option potentially provides more scope to locate development to minimise impacts on existing assets, or to focus development to where the greatest opportunities can be achieved. The higher growth options reduce flexibility in relation to being able to target the location of development in this way and will result in greater landtake. Where space is constrained, GI provision will need to be more innovative.

3.7 It may also be necessary to 'decouple' the location of some GI mitigation projects from the location of development – thereby focussing funding in areas where it can have greatest benefit. For example, an arguably greater effect could be achieved in relation to nature conservation if funding from development was used to enhance and extend existing designated areas in Greater Cambridge; even if this is remote from the development which provided the funding. This would require a specific developer contributions regime to be implemented such as the community infrastructure levy, or pooling of s106 funds. There may be greater potential for 'decoupling' under the higher growth option. If such 'decoupling' were to take place, GI will still

need to be provided as part of the form of development to reduce localised impacts and ensure that residents are able to access high quality GI.

Commentary on locations for development

3.8 This section 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 for each growth scenario. A second table presents the all time number of dwellings under each spatial option and for each growth scenario.

3.9 The tables of dwelling numbers are followed by a series of key opportunities and risks associated with that spatial option, concluding with information on the implications of higher delivery scenarios.

Cambridge Urban Area

Table 1: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	2,000	-	-	-	-	-	-	-
Medium	5,600	-	300	-	-	-	-	-
Maximum	6,800	-	-	-	-	-	-	-

Table 2: Dwellings 'all time'

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	2,000	-	-	-	-	-	-	-
Medium	5,600	-	300	-	-	-	-	-
Maximum	6,800	-	-	-	-	-	-	-

Opportunities

- May provide opportunities to deliver GI enhancements of wider benefit to the existing urban population.
- Opportunities to integrate active travel routes into the urban fringe.
- Opportunities in the east/south east and west/south west of Cambridge to use GI to support delivery of nearby Natural England's Habitat Network opportunity zones.
- Development in the south eastern corner could incorporate appropriate planting to support delivery of the B-Line and respect the chalk grassland character in this location.

- River Cam corridor and tributaries identified as having wider catchment woodland potential for flood mitigation (EA Working with Natural Processes). Strategic sensitive design guidance based on hydrological and ecological assessment will be required.

Risks

- Greater likelihood of piece-meal GI interventions as opposed to delivering strategic GI opportunities.
- May place additional recreational pressure on accessible open space resources including Country Parks such as Milton Park and Coton.
- May require innovative interventions (due to space restrictions) to meet open space and GI needs such as pocket parks, green roofs, increased canopy cover.
- May place additional pressures on accessible designated nature conservation sites within, and surrounding, urban area.
- Risk of impact on international designations – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen, and associated watercourses).
- Key sensitivities relate to water resources already under pressure and wetland habitats.
- Risk of loss of soft and permeable landscape which may exacerbate surface water flooding and urban heat island effect.

Implications for GI under higher delivery scenarios

- Much larger quantity of open space/GI required within 'space restricted' urban area. Need for innovative solutions due to space restrictions.
- Potential for greater pressures on nature conservation sites, sensitive habitats, parks and open spaces and water resources.
- Increased risk of impact on international designations – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen, and associated watercourses).

North East Cambridge

Table 3: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	1,900	1,900	-	-	-	1,900	-	-
Medium	1,900	1,900	-	-	-	1,900	-	1,900
Maximum	8,000	8,000	-	-	-	8,000	4,900	4,900

Table 4: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	8,300	8,300	-	-	-	8,300	-	-
Medium	8,300	8,300	-	-	-	8,300	-	8,300
Maximum	8,300	8,300	-	-	-	8,300	8,300	8,300

Opportunities

- Opportunity to integrate a more diverse range of GI opportunities through innovative measures.
- Existing deprivation levels higher in areas around the NEC and therefore GI associated with new development may provide opportunities to address quality of life issues.
- Opportunities to plan in active travel networks and support modal shift to active travel.
- There are 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).
- Opportunity to support network enhancement and expansion zones identified by Natural England Habitat Network mapping nearby.

Risks

- May place additional recreational pressure on existing key GI assets such as Country Parks.
- Key sensitivities within GI network include the wetland (specifically fenland) assets to the east and north east. Potential impacts on international fenland and washes sites via hydrological connectivity or through habitat loss or damage (of designated or functionally linked land).

Implications for GI under higher delivery scenarios

- This risk of additional recreational pressure on key GI assets increases markedly under the all time scenario with over four times the number of dwellings in comparison with minimum and medium 2041 scenarios.
- Maximum and all time scenarios present increased risk of impact on international designations and its functionally linked habitat – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen and associated watercourses) and north east fen-peat complex (Stow-cum-Quy Fen, Cam Washes, Wicken Fen and local peatlands).

Cambridge Airport

Table 5: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	1,900	-	-	-	-	-	--
Medium	1,900	1,900	-	-	-	-	-	-
Maximum	2,900	3,800	-	-	-	-	3,800	3,800

Table 6: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	9,500	-	-	-	-	-	-
Medium	9,500	9,500	-	-	-	-	-	-
Maximum	9,500	9,500	-	-	-	-	9,500	9,500

Opportunities

- Greater opportunities to integrate full range of GI opportunities associated with larger scale development at Cambridge Airport.
- Opportunities to plan in active travel networks and support modal shift to active travel.
- Whilst Cambridge Airport does not support any designated or priority habitats, the western boundary abuts Barnwell East Local Nature Reserve and associated swathe of enhancement and expansion opportunities (Natural England Habitat Network mapping) overlapping the Green Belt.

Risks

- Potential impacts on international sites, principally relate to wetland habitats including the numerous local fens, linked watercourses and ditch systems.
- Potential impact/s on national designations – Gog Magog and Fleam Dyke.
- Cambridge Airport currently supports the highest density (in tonnes per hectare) and largest continuous area of high estimated soil carbon density within Greater Cambridge as well as high levels of carbon in vegetation. Development on land supporting high levels of carbon may cause disturbance or loss thereof. The requirement to offset such loss to a proposed development would need to be considered as part of the carbon assessment thereof.

Implications for GI under higher delivery scenarios

- Increased risk of potential impacts on international sites, principally relating to wetland habitats including the numerous local fens, linked watercourses and ditch systems. This is of particular concern in the all time scenario, which includes approximately five times the number of dwellings and associated recreational need than in minimum and medium 2041 scenarios.
- Potential impact/s on national designations increased under 'all time' scale of development.

Green Belt Fringe

Table 7: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	3,900	-	-	-	-	-
Medium	400	-	9,500	-	-	-	-	-
Maximum	-	-	17,700	-	-	-	-	-

Table 8: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	3,900	-	-	-	-	-
Medium	400	-	9,500	-	-	-	-	-
Maximum	-	-	17,700	-	-	-	-	-

Opportunities

- Opportunity associated with requirement of National Planning Policy Framework (NPPF) for release of Green Belt sites to positively enhance remaining Green Belt.
- There are 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).
- 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 smaller extent to the west around Coton.

- Opportunity for urban extensions on Green Belt Fringe to cater for GI deficits in neighbouring urban areas, where biodiversity assets therein are currently in suboptimal condition and/or not in beneficial management.
- Development in the south eastern corner could incorporate appropriate planting to support delivery of the B-Line and respect the local chalk grassland character.

Risks

- Particular sensitivity within Green Belt corridors that protrude into urban areas where assets are at greatest risk of fragmentation or severance.
- Risk of impact on international designations – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen and associated watercourses) Detailed HRA in progress.
- 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.
- High levels of estimated carbon in vegetation occur at Trumpington and spanning the Cam corridor at Grantchester.
- East and south support highest densities of estimated soil carbon density. Development on land supporting high levels of carbon may cause disturbance or loss thereof. The requirement to offset such loss to a proposed development would need to be considered as part of the carbon assessment thereof.

Implications for GI under higher delivery scenarios

- Increased risk of impact on international designations – those in closest proximity include the south east fenland complex (Wilbraham Fen, Fulbourn Fen and associated watercourses) and north east fen complex and peatlands (Stow-cum-Quy Fen, Cam Washes, Wicken Fen and local peatlands). Detailed HRA in progress.
- Incurs greater potential for loss of land within Natural England Habitat Network mapping opportunity areas which may otherwise be available for habitat enhancement and creation to alleviate existing pressures and future opportunities.

Villages

Table 9: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	100	-	-	3,900	100	1,400	1,400
Medium	-	1,000	-	-	9,800	5,400	7,300	5,400
Maximum	-	-	-	-	17,700	4,600	3,900	3,900

Table 10: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	100	-	-	3,900	100	1,400	1,400
Medium	-	1,000	-	-	9,800	5,400	7,300	5,400
Maximum	-	-	-	-	17,700	4,600	3,900	3,900

Opportunities

- Greater concentration within fewer villages may increase potential for delivery of more strategic GI opportunities, particularly those related to active transport.

Risks

- 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.
- 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.
- Greater likelihood of piece-meal GI interventions as opposed to delivering strategic GI opportunities. This may translate to greater challenge in delivering integrated ecological networks unless an overarching vision is acknowledged and supported in planning policy and land-use decision making.
- 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).

Implications for GI under higher delivery scenarios

- Potential spread across greater number of villages incurs wider reach of impact risk across designated sites and notable habitats; and the greater scale of development incurs a potential increased magnitude of impact.
- Greater risk of impact on international designations, applying to both the designation and to functionally linked land.

New settlements on public transport corridors

Table 11: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	3,900	-	1,900	2,500	2,500

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Medium	-	5,000	-	7,350	-	2,500	2,500	2,500
Maximum	-	5,900	-	13,150	-	5,100	5,100	5,100

Table 12: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	9,000	-	4,500	4,500	4,500
Medium	-	5,900	-	22,500	-	9,000	4,500	4,500
Maximum	-	13,500	-	22,500	-	9,000	9,000	9,000

Opportunities

- Opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning to accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources.
- Additional sustainable transport routes provide an opportunity to integrate GI connectivity.
- Whilst there is risk of severance/ increased severance of the GI network by widening development along transport corridors, there are opportunities for GI connectivity across and along these potential barriers to be supported through landscape-led masterplanning.

Risks

- Sensitivities of GI assets in the vicinity of each new settlement will reflect the selected location, for example, the Ely (Waterbeach) rail link (fenland and wash Special Area of Conservation (SAC) Special Protection Area (SPA) and Ramsar designations), London (Duxford Chapel) rail link (Gog Magog-Roman Road-Fleam Dyke GI opportunity area) and London (Melbourn) rail link (surrounding Natural England Habitat Network Mapping Enhancement and Expansion area).
- Risk of severance/ increased severance of the GI network by widening development along transport corridors; GI connectivity across and along these potential barriers could be supported through landscape-led masterplanning.
- Depending on the location of new settlements and supporting infrastructure, potential risk of impact on international designation and/or functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, SPA & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure).

- Areas of high soil carbon density occur primarily along the south and east rail corridors, including Waterbeach, the Shelfords and Duxford. Pockets also occur along the guided busway (Oakington to Longstanton). Development on land supporting high levels of carbon may cause disturbance or loss thereof. The requirement to offset such loss to a proposed development would need to be considered as part of the carbon assessment thereof.

Implications for GI under higher delivery scenarios

- Depending on the location of new settlements and supporting infrastructure, increased risk of impact on international designation and/or functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, SPA & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure). This is increased under the 'all time' scenarios.
- Higher delivery scenarios spread across an additional location and incur wider reach of impact risk across designated sites and notable habitats; and the greater scale of development incurs a potential increased magnitude of impact.

New settlement on road network

Table 13: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	-	-
Medium	-	-	-	2,450	-	-	-	-
Maximum	-	-	-	4,550	-	-	-	-

Table 14: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	-	-
Medium	-	-	-	4,500	-	-	-	-
Maximum	-	-	-	9,000	-	-	-	-

Opportunities

- Opportunity to integrate a wider range of GI opportunities associated with larger scale development.

- Whilst there is a risk of severance/ increased severance of the GI network by widening development along transport corridors, there are opportunities for GI connectivity across and along these potential barriers to be supported through landscape-led masterplanning.

Risks

- Risk of severance/ increased severance of the GI network by widening development along transport corridors; GI connectivity across and along these potential barriers could be supported through landscape-led masterplanning.
- Depending on the location of new settlements and supporting infrastructure, risk of impact on international designation and/or functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, SPA & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure).

Implications for GI under higher delivery scenarios

- Increased risk of impact on international designation and/or functionally linked habitat.

New settlements on public transport corridors (southern cluster)

Table 15: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	2,500	-
Medium	-	-	-	-	-	-	2,500	-
Maximum	-	-	-	-	-	-	5,100	-

Table 16: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	4,500	-
Medium	-	-	-	-	-	-	4,500	-
Maximum	-	-	-	-	-	-	9,000	-

Opportunities

- Potential expansion of the parkland and country park network to be considered as part of the strengthening of GI assets in the vicinity.

- Opportunities for habitat enhancement relate typically to woodland (optimising connectivity to both existing (for example through the Cam and Granta corridors) and proposed woodland as part of forthcoming development) and to wetland-grassland mosaic. These collectively serve to support flood management, biodiversity and carbon capacity.
- Opportunity to make a strategic contribution to strengthening GI assets within the (provisional) Gog Magog-Roman Road-Fleam Dyke GI opportunity area and the area of Natural England Habitat Network Mapping Enhancement opportunity centred around Melbourne.
- Development in the south eastern corner could incorporate appropriate planting to support delivery of the B-Line and respect the local chalk grassland character.

Risks

- Wider development across villages south of Cambridge must consider cumulative impact/s on the grassland and wetland habitats along and between the river, stream and dyke corridors.
- The life sciences cluster area has relatively high levels of soil carbon and, in places, carbon in vegetation.

Implications for GI under higher delivery scenarios

- Greater scale of development incurs a potential increased magnitude of impact.

New settlements on public transport corridors (Cambourne area)

Table 17: Dwellings to 2041

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	-	2,500
Medium	-	-	-	-	-	-	-	2,500
Maximum	-	-	-	-	-	-	-	5,100

Table 18: Dwellings all time

Growth scenario	Spatial Option 1	Spatial Option 2	Spatial Option 3	Spatial Option 4	Spatial Option 5	Spatial Option 6	Spatial Option 7	Spatial Option 8
Minimum	-	-	-	-	-	-	-	4,500
Medium	-	-	-	-	-	-	-	4,500
Maximum	-	-	-	-	-	-	-	9,000

Opportunities

- Potential to further develop active transport connections linking GI assets with managed capacity for recreational access (for example Country Park and LNR network) to alleviate demand / potential demand on those with sensitive hydrological or ecological features.
- Opportunities to enhance wetland and grassland habitat and associated networks to support flood management and biodiversity.

Risks

- Potential impact/s on Eversden & Wimpole SAC and the numerous Site of Special Scientific Interest (SSSI) (primarily woodland in character) must be considered cumulatively. The SAC support 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. Note the Cambridge Hundreds extends north and south of the A428.
- High levels of estimated carbon in vegetation occur in association with the woodland and less intensively managed or diverse grasslands across the Cambridge Hundreds.

Implications for GI under higher delivery scenarios

- Greater scale of development incurs a potential increased magnitude of impact.

Commentary on the different spatial options

3.10 Drawing on the review of each broad supply area, this section provides a summary of the potential implications for GI under each strategic spatial option. The summary focuses on the main areas of supply under each option in order to differentiate between the options; some of which have similar additional areas of supply to support the main focus areas.

Strategic Spatial Option 1: Densification of existing urban areas

3.11 This approach would focus new homes and jobs within Cambridge, because it is the main urban area and centre for services and facilities. The primary location for development within the urban area is in North East Cambridge: this is the last major brownfield site within Cambridge urban area and is being taken forward separately via an Area Action Plan.

3.12 Focusing growth in the existing urban area presents both risks and opportunities for GI. On the one hand, there is greater potential for piece-meal delivery of GI associated with multiple smaller developments and the added challenge of significant 'space' constraints. On the other hand, there are opportunities to deliver new GI where there may be existing deficiencies or challenges. It is likely that innovative interventions will be required to retrofit GI into the existing urban area. 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.

3.13 The focus on existing urban areas will place additional pressure on existing nature conservation and recreation sites. There is also a risk of potential impacts on international nature conservation designations in closest proximity (south east fenland complex). However, there may also 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.

3.14 This strategic spatial option has additional areas of supply: NEC and Cambridge Airport (under the medium and maximum scenarios), which provide greater opportunities for integrating a wide range of GI given the larger scale of development in a single location. There is the

opportunity to create a GI network across these sites in an innovative and coherent manner which maximises benefits. However this 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.

3.15 Under the medium and maximum scenarios, there is increased risk of pressure on existing GI assets and a greater need to identify sufficient land to accommodate delivery of new GI close to the development. There is also increased risk of impact on designations in close proximity and, under 'all time' scenarios, the potential for loss of land within Natural England's Habitat Network opportunity zones.

Strategic Spatial Option 2: Edge of Cambridge - outside the Green Belt

3.16 This approach would create new homes and jobs in extensions on the edge of Cambridge, using land not in the Green Belt. The only large site on the edge of Cambridge not in the Green Belt is Cambridge Airport.

3.17 Focusing growth at the NEC and Cambridge Airport will provide opportunities to integrate a wider range of GI interventions associated with larger development. This includes active travel routes, new open spaces and GI that supports Natural England's Habitat Network opportunity zones. GI could also provide opportunities to address higher levels of deprivation in nearby areas.

3.18 However, growth here presents risks to the existing GI network; particularly relating to increased recreational pressure on 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.

3.19 Under the medium and maximum scenarios, there is increased risk of pressure on existing GI assets and a greater need to identify sufficient land to accommodate delivery of new GI close to the development. There is also increased risk of impact on designations in close proximity and, under 'all time' scenarios, the potential for loss of land within Natural England's Habitat Network opportunity zones.

3.20 Moving from minimum to medium and maximum scenarios introduces the need for additional new settlements on public transport corridors. Again, this may bring opportunities to integrate a wider range of GI opportunities associated with larger scale development, but the sensitivities of existing GI assets in the vicinity of each new settlement will reflect the selected location. There is a risk of severance/ increased severance of the GI network by widening development along transport corridors, but an opportunity to use GI to mitigate this. 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 – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, Special Protection Area (SPA) & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure). This applies to medium and maximum scenarios but is increased under the 'all time' target.

Strategic Spatial Option 3: Edge of Cambridge - Green Belt

3.21 This approach would create new homes and jobs in extensions on the edge of Cambridge, involving release of land from the Green Belt.

3.22 Focus on 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).

3.23 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.

3.24 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.

3.25 Moving to higher delivery numbers under the medium and maximum scenarios incurs greater potential for loss of land within Natural England Habitat Network mapping opportunity areas which may otherwise be available for habitat enhancement and creation to alleviate existing pressures and future opportunities.

Strategic Spatial Option 4: Dispersal - new settlements

3.26 New settlements would establish a whole new town or village, providing homes, jobs and supporting infrastructure in a new location, and would need to be supported by strategic transport infrastructure connecting to Cambridge.

3.27 Establishing new settlements on public transport corridors provides an opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning could accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources. Additional sustainable transport routes provide an opportunity to integrate GI connectivity and mitigate potential severance.

3.28 Sensitivities of existing GI assets in the vicinity of each new settlement will reflect the selected location, for example, the Ely (Waterbeach) rail link (fenland and wash SAC SPA and Ramsar designations), London (Duxford Chapel) rail link (Gog Magog-Roman Road-Fleam Dyke GI opportunity area) and London (Melbourn) rail link (surrounding NE Habitat Network Mapping Enhancement and Expansion area).

3.29 Depending on the location of new settlements and supporting infrastructure, there is an increased risk of impact on international designation and/or (particularly at 'all time' rates) functionally linked habitat – SAC woodland (principally habitat disturbance and associated loss/severance of function); SAC, SPA & Ramsar fen, wash and peatland (changes to the pattern of hydrology, recreational pressure and non-physical disturbance); SAC chalk grassland and heath (air pollution and changes to hydrology or soil condition, and recreational pressure).

3.30 Increasing the scale of development under the medium and maximum scenarios potentially incurs an increased magnitude of impact of the risks identified above.

Strategic Spatial Option 5: Dispersal – villages

3.31 This approach would spread new homes and jobs out to the villages. This increases the likelihood of piece-meal GI interventions associated with multiple smaller developments, as opposed to delivering strategic GI opportunities. This may lead to greater challenges in delivering integrated ecological networks unless an overarching vision is established and supported in planning policy and land-use decision making.

3.32 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. 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. 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).

3.33 Higher dwelling numbers associated with the medium and maximum scenarios incurs potential for a wider scale of impacts risk across designated sites and notable habitats.

3.34 The higher concentrations 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.

Strategic Spatial Option 6: Public transport corridors

3.35 This approach would focus homes and jobs along key public transport corridors and around transport hubs, extending out from Cambridge. This could be by expanding or intensifying existing settlements, or with more new settlements.

3.36 This option focuses development at NEC and one new settlement on a public transport corridor, and under the medium and maximum scenarios, a large proportion is distributed to villages on public transport corridors. These larger scale developments provide opportunities to integrate a wider range of GI opportunities; including opportunities for landscape-led masterplanning and planning in active travel networks to increase GI connectivity. There are also opportunities to support network enhancement and expansion zones identified by Natural England Habitat Network mapping near the NEC.

3.37 Development at NEC may place additional recreational pressure on key GI assets (especially under the 'all time' scenario), and key sensitivities include the wetland assets to 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.

3.38 Moving to the medium and maximum scenarios increases the potential magnitude of impacts noted above and introduces greater scale of delivery to villages on public transport corridors. 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. There is a greater likelihood of piece-meal GI interventions as opposed to delivering strategic GI opportunities. This may translate to greater challenge in delivering integrated ecological networks unless an

overarching vision is established and supported in planning policy and land-use decision making.

3.39 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.

Strategic Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster)

3.40 This approach would focus new homes close to existing and committed jobs within the life sciences cluster area around the south of Cambridge, including homes at existing villages and at new settlements.

3.41 Focusing delivery at a new settlement in the life sciences cluster area around the south of Cambridge 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. These could collectively serve to support flood management, biodiversity and carbon capacity. There is an opportunity to make a strategic contribution to strengthening GI assets within the (provisional) Gog Magog-Roman Road-Fleam Dyke GI opportunity area and the area of Natural England Habitat Network Mapping Enhancement opportunity centred around Melbourne.

3.42 Potential expansion of the parkland and country park network could be considered as part of the strengthening of GI assets in the vicinity. Development could incorporate appropriate planting to support delivery of the B-Line and respect the local chalk grassland character.

3.43 Wider development across villages south of Cambridge must consider cumulative impact/s on the grassland and wetland habitats along and between the river, stream and dyke corridors. Distributing additional housing to 14 villages in this area presents potential for impacts on designated or non-designated sites and the wider ecological network where these are in close proximity. Sensitivities of GI assets in the vicinity of each village will reflect the selected locations. Like other options involving development within the villages, there is a greater likelihood of piece-meal GI interventions as opposed to delivering strategic GI opportunities. This may translate to greater challenges in delivering integrated ecological networks unless an overarching vision is acknowledged and supported in planning policy and land-use decision making.

3.44 At the medium and maximum levels the greater scale of development may incur greater magnitude of impacts. Greater concentration within fewer villages may increase potential for delivery of more strategic GI opportunities, particularly those related to active transport.

Strategic Spatial Option 8: Expanding a growth area around transport nodes

3.45 This approach would focus new homes at Cambourne and along the A428 public transport corridor, on the basis that Cambourne is due to be served by a new East West Rail station and that Cambourne and the villages along the corridor are due to be served by the Cambridgeshire Autonomous Metro.

3.46 Development focused around Cambourne and along the A428 public transport introduces potential 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.

3.47 There is a risk of development (dwellings or supporting infrastructure) which may extend or exacerbate 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 with managed capacity for recreational access (for example Country Park and LNR network) to alleviate demand / potential demand on those with sensitive hydrological or ecological feature and opportunities to enhance wetland and grassland habitat and associated networks to support flood management and biodiversity.

3.48 This option also distributes development to a number of villages. 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. 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

3.49 Greater concentration within fewer villages may increase the potential for delivery of more strategic GI opportunities, particularly those related to active transport.

3.50 The medium scenario distributes some development to the NEC. The risks and opportunities associated with this broad area are as noted in other options; including the opportunity to integrate a wider range of GI opportunities associated with larger scale development.

3.51 The maximum scenario distributes some development to Cambridge Airport. The risks and opportunities associated with this broad area are as noted in other options; including the opportunity to integrate a wider range of GI opportunities associated with larger scale development.

Chapter 4 – Conclusion and next steps

5.1 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 others in terms of GI.

5.2 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.

5.3 The minimum growth option potentially provides more scope to locate development to minimise impacts on existing assets, or to focus development to where the greatest opportunities can be achieved. The higher growth options reduce flexibility in relation to being able to target the location of development in this way and will result in greater landtake. Where space is constrained, GI provision will need to be more innovative.

5.4 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 1: Densification of existing urban areas - presents both risks and opportunities for GI. On the one hand, there is greater potential for piece-meal delivery of GI associated with multiple smaller developments and the added challenge of significant 'space' constraints. On the other hand, there are opportunities to deliver new GI where there may be existing deficiencies or challenges.
- Strategic Spatial Option 2: Edge of Cambridge - outside the Green Belt - provides opportunities to integrate a wider range of GI interventions associated with larger development. GI could also provide opportunities to address higher levels of deprivation in nearby areas. However, growth here presents risks to the existing GI network; particularly relating to increased recreational pressure on sites, and potential impacts on wetland assets to the east and north east.
- Strategic Spatial Option 3: Edge of Cambridge - Green Belt - 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. 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.
- Strategic Spatial Option 4: Dispersal - new settlements – provides an opportunity to integrate a wider range of GI opportunities associated with larger scale development. Landscape-led masterplanning could accommodate generous GI provision to avoid risk of impact on nearby wetland habitats and water resources. Additional sustainable transport routes provide an opportunity to integrate GI connectivity and mitigate potential severance.
- Strategic Spatial Option 5: Dispersal – villages – increases the likelihood of piece-meal GI interventions associated with multiple smaller developments, as opposed to delivering strategic GI opportunities. This may lead to greater challenges in delivering integrated ecological networks unless an overarching vision is established and supported in planning policy and land-use decision making.
- Strategic Spatial Option 6: Public transport corridors – whilst potentially placing additional recreational pressure on key GI assets, larger scale developments on public transport

corridors may provide opportunities to integrate a wider range of GI opportunities; including opportunities for landscape-led masterplanning and planning in active travel networks to increase GI connectivity. There are also opportunities to support network enhancement and expansion zones identified by Natural England Habitat Network mapping. Higher delivery scenarios introduce greater scale of delivery to villages on public transport corridors; potentially resulting in piece-meal GI interventions in these locations unless strategically planned.

- Strategic Spatial Option 7: Supporting a high-tech corridor by integrating homes and jobs (southern cluster) – provides opportunities make a strategic contribution to strengthening GI assets. Wider development across villages south of Cambridge will need to consider cumulative impact/s on the grassland and wetland habitats along and between the river, stream and dyke corridors.
- Strategic Spatial Option 8: Expanding a growth area around transport nodes - 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.

5.5 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.

5.6 This will contribute towards the selection of a preferred strategic spatial option, ahead of any detailed identification and consideration of sites.