Cambridge Northern Fringe East Area Action Plan

Interim Sustainability Appraisal Report

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South Cambridgeshire District Council and Cambridge City Council

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	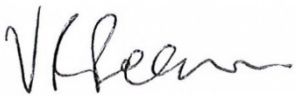
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Introduction

ENVIRON UK Ltd has been commissioned to undertake a Sustainability Appraisal (SA) of the options being considered as part of the Cambridge Northern Fringe East Area Action Plan (CNFE AAP). A Scoping Report was produced in August 2014 and this has been amended in line with consultee comments received.

This report is the Interim SA Report which outlines the results of an appraisal of the sustainability effects of the plan's options (also referred to as reasonable alternatives). The SEA Directive and transposing SEA Regulations require the identification, description and evaluation of the likely significant effects on the environment of "reasonable alternatives" taking into account the objectives and the geographical scope of the plan or programme" (Reg 12 (1(b)). This report is not the formal SA Report which will be prepared once an assessment of the Draft Plan has been undertaken.

Methodology

Stage A (scoping) of the SA is completed. The SA Scoping Report for the CNFE AAP can be accessed via the Cambridge City Council and South Cambridgeshire District Council websites.

The main output of Stage A was an SA Framework of sustainability objectives developed specifically for the CNFE AAP area. The SA is now in Stage B (Developing and refining options and assessing effects).

The SA has examined three key elements of the Issues and Options document. These are:

- The CNFE AAP Vision, Development Principles and Development Objectives;
- The Spatial Redevelopment Options (plus a 'Do Nothing/Committed Development Option which is based on the existing site uses and committed developments (see Section 3 of the main report); and
- Proposed Policy Approaches.

The above elements of the CNFE AAP have been appraised against the SA Framework and potential impacts associated with the options have been identified. The appraisal findings are presented for consultation alongside the CNFE AAP Issues and Options consultation document and will be used to inform the selection of a preferred option and the development of the draft AAP.

Appraisal Findings

<u>CNFE AAP Vision, Development Principles and Development Objectives</u>

A consistency check has been undertaken between the CNFE Vision, Development Principles and Development Options and the SA Framework, the check has mainly recorded consistency. Two opportunities to improve the vision have been identified: reference could be made to ensuring that the CNFE is resilient to climate change and that it supports addressing inequalities within the area.

Potential conflicts identified within the matrix reflect tensions between the Development Objectives and Principles and the SA Objectives. Development Objective 3: Maximise the Employment Opportunities could potentially conflict with SA Objectives relating to air and

noise pollution, water pollution, biodiversity, landscape and townscape and provision of open space as these factors could potentially be compromised at higher levels of development. Tensions between objectives are inevitable and it will be up to the AAP to ensure that all objectives can be met through either spatial planning or policy wording.

Spatial Redevelopment Options

The 'Do Nothing/Committed Developments' option does not perform particularly well against the SA Framework; mainly neutral and minor beneficial impacts have been recorded. No significant impacts have been recorded in the appraisal of this option.

There are a number of factors common to all of the redevelopment Options 1-4. For each of the Options 1-4, green space is included along the northern and eastern boundaries which should help to reduce adverse impacts on the Green Belt.

There are a number of uncertainties common to Options 1-4 and therefore they perform similarly against some of the SA Objectives. These uncertainties are:

- There is uncertainty over the type and location of contamination. Cambridge City Council is undertaking borehole surveys of ground contamination in order to provide additional information to feed into the development of the draft AAP. Further investigation will also be required through the planning application process to determine appropriate mitigation. See mitigation below.
- Information is not available on potential air quality and noise impacts relating to each of the options as transport modelling is not completed. However, the assessments of each option have identified the potential benefits of the location and therefore the opportunities available to seek a high modal share of non-car modes for all of the options. In addition, the assessments of the options which include higher levels of development (options 3 and 4) have identified the potential for them to generate higher levels of traffic.
- Each of the options 1-4 proposes redevelopment of a part of the Chesterton Sidings, the ecological value of which is uncertain but it could be important for biodiversity.
- Landscape character and visual impacts with regards to the Cambridge Green Belt and the City Townscape are to be assessed shortly but findings will not be available to inform Issues and Options. The AAP area has significant potential for townscape improvements. The impacts of development will need to be considered, in particular building height and design on the wider area. However, there is potential for beneficial impacts.
- Each of the Options 1-4 has the potential to reduce vulnerability to future climate change through the use of SUDS, green infrastructure and design and layout of the development. However, policies are yet to be developed in order to ensure that these are integrated into the development.
- Information is not available on potential traffic impacts relating to the options as transport modelling is not completed and therefore the appraisals against SA Objective 16 (see Section 2 of the main report) cannot be completed at this stage. The assessments of the Options 1-4 have identified uncertainty with regards to this SA Objective and potential adverse impacts with regards to traffic generation, particularly associated with the higher levels of development (i.e. options 3 and 4). However, there are also potential beneficial impacts associated with each of the options, from taking advantage of the opportunity for intensive land uses around the new transport

interchange and encouraging the use of sustainable modes of travel. The CNFE AAP area will be one of the most accessible sites by non-car modes in the Cambridge area.

Mitigation measures are put forward to address these areas of uncertainty. Enhancement measures are also put forward for each of the redevelopment options in order to improve their performance.

Option 1 represents a low level of growth and mainly performs well with regards to the SA Framework. Most SA objectives are supported by Option 1. No significant beneficial or adverse impacts have been identified in the appraisal, however, uncertainties identified in sub-section 4.3.2 apply to all of the Options 1-4 and once information is available to reduce these uncertainties, it is possible that adverse impacts could be identified, for example, in relation to air quality and traffic impacts. With regards to the potential beneficial impacts identified, Option 1 does not perform as well as Options 2-4.

Option 2 involves a medium level of growth. It performs well with regards to the SA Objectives, with a number of significant beneficial impacts being identified as well as the uncertainties common to all of the Options 1-4 (listed in sub-section 4.3.2). As for Option 1, and once information is available to reduce these uncertainties, it is possible that adverse impacts could be identified, for example, in relation to air quality and traffic impacts. Option 2 includes some residential development (440 dwellings) and might therefore require mitigation measures to avoid adverse impacts on new residents such as in relation to noise. This spatial option has been designed to avoid adverse impacts in relation to odour associated with the WRC.

Option 3 involves a high level of growth and a more intense redevelopment of the AAP area. With regards to beneficial impacts, Option 3 performs well with regards to the SA Objectives, with more significant beneficial impacts compared with Option 2. However, it should be noted that there are uncertainties common to all of the Options 1-4 (listed in sub-section 4.3.2) and therefore potential adverse impacts, for example, in relation to air quality, noise and traffic are currently unclear. Option 3 represents a more intense redevelopment than options 1 and 2 and therefore risks of adverse impacts occurring could be greater. Option 3 also includes some residential development (630 dwellings) and might therefore require mitigation measures to avoid adverse impacts on new residents such as in relation to noise. The spatial option has been designed to avoid adverse impacts in relation to odour associated with the WRC.

Option 3 should deliver net gains in biodiversity and will improve habitat connectivity, resulting in an enhanced and more comprehensive green infrastructure network (compared to Options 1 and 2) across the site which links into the new open space on the site and the existing open space to the south of the AAP boundary. In Option 3, as for Option 4, the green infrastructure network proposed on the AAP site covers a larger area compared to Options 1 and 2 and the 'Do Nothing/Committed Development' option.

It is assumed that Options 3 and 4 will have the potential to significantly improve energy efficiency of operations of the site and significant renewable energy generation will be incorporated into the development. The proposed policy approach to renewable and low carbon energy generation (1a) would particularly support Options 3 and 4 as the development of the policy would include consideration of the types of energy generation that could be suitable for the area and whether an area based approach could be used.

Options 3 and 4 will provide a significant amount of new employment opportunities (25,800 new jobs in Option 3 and 27,600 new jobs in Option 4) as well as new housing and

community facilities. It will allow for a comprehensive network of walking and cycling access across the site integrated with a green infrastructure network and significant open space.

Option 3 has been designed around constraints posed by potential odour impacts from the WRC facility. In this option, it is assumed that significant investment in the WRC can allow it to function on a much smaller site than present.

Options 3 and 4 will provide significant amounts of new office and R&D space and a net increase in industry/storage but requires existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have an adverse impact on those businesses in the short term. This mixed performance is also recorded for Option 2, although it provides less new office, R&D space and industry/storage than Options 3 and 4.

The performance of Option 4 against the SA Framework compared with Option 3 is not markedly different. Option 4 represents a more comprehensive redevelopment of the AAP area which may be made possible if an alternative location for the WRC can be identified. Option 4 does not provide any additional residential development compared with Option 3. However, the uncertainties common to all of the Options 1-4 (listed in sub-section 4.3.2), which relate to factors such as air quality, ecology, landscape and townscape, and traffic could be associated with adverse impacts, once information is available on which to appraise such impacts. It should therefore be noted that although Options 3 and 4 are associated with a greater number of potentially significant beneficial impacts, they could also be associated with adverse impacts, once further information becomes available in forthcoming months (see Section 6 for further details). Option 4 represents the most intense level of redevelopment of all of the options 1-4 and therefore could pose the highest risks of adverse impacts occurring in relation to townscape, traffic, air quality, noise and ecology (specifically relating to the Chesterton Sidings).

Option 4 proposes the relocation of the Water Recycling Centre (WRC), which would free up land for further redevelopment. A site for the relocated works is not identified, but would be outside the AAP area. This would be subject to a separate planning process. Impacts on sustainability objectives of this relocation are uncertain as it would depend on the location and nature of the site. Potential indirect and cumulative effects would need to be considered in more detail should this option be taken forward.

Each of the Options 1-4 proposes redevelopment of a part of the Chesterton Sidings, the ecological value of which is uncertain but it could be important for biodiversity. Option 4 proposes the largest part of Chesterton Sidings for redevelopment of all of the options and therefore poses the greatest risk of adverse impacts on biodiversity. However, the ecological value of the Chesterton Sidings requires confirmation through survey and there is potential for enhancements to be put in place to ensure that a net gain in biodiversity is achieved across the whole site.

Proposed policy approaches

The policy options have been appraised against the SA Framework. When carrying out the appraisal the team has considered how the approaches / options would work towards or against the various SA Objectives and whether any mitigation or enhancements need to be addressed whilst the policies are being developed.

The majority of the policy approaches posed did not have alternative options presented. These policy approaches all had positive impacts on the SA objectives, many of them significantly beneficial. No adverse impacts were recorded.

Some of the policy approaches were presented with alternative options and the results of the appraisal of these are summarised below:

- Building heights: Option A was seen as significantly beneficial in safeguarding the form and character of the area. Option B and C were less likely to do this and Option C in particular posed a risk to the character of the City as no maximum building heights are prescribed in this option.
- Change of use from office to residential or other purposes: Option A could potentially undermine efforts to regenerate the area. Option B, however could provide protection and help with regeneration efforts.
- Cambridge Science Park: Option A could lead to missed opportunities with regard to regeneration. Option B, however, could encourage greater intensification of use on the Cambridge Science Park and therefore, more sustainable development.
- Change of use from industrial to other purposes at Nuffield Road: Option A will have a neutral performance against the SA Objectives. Options B and C should result in beneficial impacts with regard to health and pollution but may result in negative impacts in relation to the local economy should spatial option 2 be taken forward because the option involves a net loss in industrial/storage uses.
- Hotel & conferencing facilities: Option A will have a neutral impact on the SA objectives. Options B and C perform similarly in that, by providing a hotel with or without conferencing facilities, the options would support the achievement of a number of the SA Objectives. Option C could perform marginally better than Option B, through the provision of more facilities to support local businesses.
- Private rented accommodation: Both options could have a positive impact on health and well-being and provision of more affordable housing. If, through further work, it is clear that if there is a demand for private rented accommodation in the area which will fulfil a housing need, then Option B will perform the best.
- Student housing: Option A would prevent response to any demand for student accommodation. Options B, C and D could all have positive impacts if developed using an up to date evidence base. However, a risk in developing student housing is that it could have the impact of reducing the overall supply of affordable housing as sites are developed for students and not the general population. Options B and D would seem to be the most effective in reducing this risk and therefore, have the potential to have the most positive impact. Option C would appear to pose the most risk to jeopardising the provision of affordable housing.
- Modal share target: Option C is likely to cause adverse impacts because it will not seek to constrain road traffic from the site which is likely to cause increases in road traffic which will cause increases in noise, air pollution, CO_2 and nuisance. This is also likely to constrain economic growth in the medium and long term. Options A and B are likely to have beneficial impacts on many of the SA Objectives. There may be some concern that higher modal share targets might inhibit some commercial demand for new floor space when linked with restricted car parking if some find it difficult to use their car. Therefore, Options A and B may have a slight adverse impact on Objective 14 in the short term. Options A and B are likely to have a beneficial impact on Objective 14 in the medium and long term as the travel options in the area significantly improve and users of the site become more used to alternative modes of travel. High modal share targets are likely to become more the norm in Cambridge and this site will have a competitive advantage because of its accessibility.

- Vehicular access and road layout: Option A would not appear to be a practical solution due to the congestion this will cause and the impacts this will have on the character of the site as Cowley Road is expected to serve as a green boulevard. Options B and C are likely to perform better both in terms of congestion and in terms of urban design principles.
- Parking at transport interchange: The current (and consented) interchange proposals (Option A) include parking for 450 cars and around 1000 bicycles at ground level and would have beneficial impacts in relation to pollution, climate change and the economy. Option B (provision of a multi storey car park) would have similar beneficial impacts but could potentially have a negative visual impact on houses to the east of the CNFE area.
- Car parking provision: Three options are presented with varying degrees of restriction in relation to car parking standards. All of the options are likely to have beneficial impacts on issues such as air quality, sustainable transport and climate change. Without specific traffic modelling on the impacts of different modal shares (and without further details on what would be needed to make the area an exemplar scheme) the significance of the impacts cannot be judged.
- Cycling parking provision: Three options are presented with varying degrees of restriction in relation to cycle parking standards. All of the options are likely to have beneficial impacts on issues such as air quality, sustainable transport and climate change. Options B and C are likely to have more beneficial impacts than Option A. However, the success of the standards is dependent on the transport strategy developed for the site.
- Sustainable design and construction and flood risk: It is not possible to state exactly how the sustainability performance of the options would differ because at this stage it is not clear what mix of development is likely to come forward. There are some conclusions that can be drawn however from the comparison of Options A and B. Option A (relying on district policies) may lead to uncertainty and it is less likely that the site will deliver development to the same standards with relation to sustainable design and construction and climate change as that which would be specified under Option B. Option B (developing a bespoke policy) would provide more clarity to developers and would be clearer in terms of the exact provisions required. However, if Option B is taken forward the councils should ensure that the most stringent provisions are applied to the site.
- Phasing and delivery approach: Option A states that the AAP will provide a sufficiently detailed development framework for the whole area with appropriate apportionment of infrastructure requirements across the area identified. Option B states that the AAP will require the planning application for the first phase of development to provide a masterplan for the whole AAP area. As long as an effective masterplan is developed the precise nature of the mechanism used is not important for the SA.

Next steps

This report will be consulted on alongside the CNFE AAP Issues and Options consultation document between 8th December 2014 and 2nd February 2015. The findings of the SA and the comments received will be taken into account within the next stage of work which will involve the development and appraisal of a preferred option for the CNFE. This will form Stages B3-B6 of the SA as set out in Table 2.1.

1 Introduction

1.1 Background

ENVIRON UK Ltd has been commissioned to undertake a Sustainability Appraisal (SA) of the options being considered as part of the Cambridge Northern Fringe East Area Action Plan (CNFE AAP). A Scoping Report was produced in August 2014 and this has been amended in line with consultee comments received.

This report is the Interim SA Report which outlines the results of an appraisal of the sustainability effects of the plan's options (also referred to as reasonable alternatives). The SEA Directive and transposing SEA Regulations require the identification, description and evaluation of the likely significant effects on the environment of "reasonable alternatives" taking into account the objectives and the geographical scope of the plan or programme" (Reg 12 (1(b)). This report is not the formal SA Report which will be prepared once an assessment of the Draft Plan has been undertaken.

1.2 The Area Action Plan

The CNFE site is located between the A14 and Chesterton and is bounded by the Cambridge – Kings Lynn railway line and Milton Road. It straddles the administrative boundaries of Cambridge City Council and South Cambridgeshire District Council. The Councils have taken a coordinated approach to its development. This approach is to seek the wider regeneration of this part of the city with the creation of a revitalised, employment-focused area centred on a new transport interchange.

In March 2014 Cambridge City Council and South Cambridgeshire District Council, following three rounds of consultation with the public and statutory consultees, submitted draft Local Plans to the Secretary of State. Both Local Plans included a commitment to prepare a joint Area Action Plan (AAP) for the site. The proposed boundary for the AAP was set out in the Local Plans under the associated Local Plan policies. Consequently, these draft Local Plans provide the policy framework for the CNFE AAP and the CNFE AAP must be in conformity with them. Figure 3.1 shows the boundary of the AAP area.

1.3 How to comment on this report

This report is not a legally required document, but has been prepared for consultation alongside the CNFE AAP Issues and Options consultation document between 8th December 2014 and 2nd February 2015 in order to present the potential sustainability implications of the issues and options. If you would like to make a comment about this report, please use the following contact details:

Cambridge City Council: Address: Planning Policy Team, Planning Services, Cambridge City Council, PO Box 700, Cambridge, CB1 0JH. Email: policysurveys@cambridge.gov.uk Tel: 01223 457384	South Cambridgeshire District Council: Address: Planning Policy Team, Planning & New Communities, South Cambridgeshire Hall, Cambourne Business Park, Cambourne, Cambridge, CB23 6EA Email: ldf@scambs.gov.uk Tel: 01954 713183

2 Methodology

This Section sets out the methodology used to assess the CNFE AAP Issues and Options. Government guidance and advice from statutory consultees sets out a five stage process (A-E) for undertaking SEA in order to meet the requirements of the SEA Regulations.

Table 2.1: SA key tasks

SA Stage	Purpose of the SA Stage
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope (scoping)	
A1: Identifying other relevant policies, plans and programmes and sustainability objectives	To document how the plan is affected by outside factors and suggest ideas for how any constraints can be addressed.
A2: Collecting baseline information	To provide a baseline evidence base of information about the district in order to identify sustainability issues, predict effects and monitor significant effects.
A3: Identifying sustainability issues and problems	To help focus the SA and streamline the subsequent stages, including baseline information analysis, setting of the SA framework, prediction of effects and monitoring.
A4: Developing the SA framework	To provide a framework of objectives and questions by which the sustainability of the plan can be tested.
A5: Producing scoping report and consulting on the scope of the SA	To consult with statutory bodies with social, environmental, or economic responsibilities to ensure the appraisal covers the key sustainability issues.
Stage B: Developing and refining options and assessing effects	
B1: Testing the plan objectives against the SA framework	To ensure that the overall objectives of the plan are in accordance with sustainability principles.
B2: Developing the plan options	To assist in the development and refinement of the plan options, by identifying potential sustainability effects of options. **<Current stage of the SA>**
B3 and B4: Predicting and evaluating the effects of the plan	To predict the significant effects of the plan and assist in the refinement of the plan.
B5: Considering ways of mitigating adverse effects and maximising beneficial effects	To ensure that all potential mitigation measures and measures for maximising beneficial effects are considered.
B6: Proposing measures to monitor the significant effects of implementing the plan	To detail the means by which the sustainability performance of the plan can be assessed.
Stage C: Preparing the SA Report	
C1: Preparing the SA Report	To provide a detailed account of the SA process.
Stage D: Consulting on the draft plan and SA Report	
D1: Public participation on the preferred options of the plan and the SA Report	To provide the public and statutory bodies with an early and effective opportunity to express their opinion on the SA Report

	and to use it as a reference point when commenting on the plan.

2.1 Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope (scoping)

The detailed methodology used for Stage A along with the findings of this stage are set out within the CNFE AAP SA Scoping Report which can be accessed via the Cambridge City Council and South Cambridgeshire District Council websites.

The main output of Stage A was an SA Framework which has drawn on the objectives of other relevant plans, policies and programmes and key sustainability issues identified within the review of baseline data. This framework is presented in Table 2.2.

ENVIRON has used the information gathered during stage A to undertake an evidence-based appraisal of the options. Where data has not been available, this has been identified within Section 2.3.

The SA Framework sets out objectives and decision-aiding questions against which to appraise the CNFE AAP and its alternatives. To maintain consistency with the higher tier Local Plans the SA framework for the SA of the CNFE AAP has been based on the SAs of the South Cambridgeshire Local Plan and the Cambridge Local Plan and has been adapted to reflect the issues faced by the AAP. Table 5.1 of the SA Scoping Report (see link above) sets out the process followed in developing the SA Framework for the CNFE AAP.

The SA Framework also incorporates objectives and decision-aiding questions which reflect the needs of Equalities Impact Assessment (EqIA) and Health Impact Assessment (HIA). Both Cambridge City Council and South Cambridgeshire District Council have prepared separate EqIAs for the Issues and Options consultation document. As a part of the consultation on the Issues and Options document, opinion is being sought on whether HIA will be a requirement of the CNFE AAP.

Table 2.2 SA Framework for the Cambridge Northern Fringe East

SA Objective	Proposed Sub-Objective / Decision-aiding questions
Land	
1. Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves.	Will it use land that has been previously developed? Will it use land efficiently? Will it minimise the degradation/loss of soils due to new development? Will it avoid the sterilisation of economic mineral reserves? Will it promote resource efficiency and recycling?
Environmental quality and pollution	
2. Improve air quality and minimise or mitigate against sources of environmental pollution	Will it maintain and improve air quality around the AAP and along the routes to the City including the A14? Will it ensure that dust pollution does not affect sensitive receptors? Will it minimise, and where possible improve on, unacceptable levels of noise pollution, and vibration? Will it minimise odour impacts? Will it remediate contaminated land?

Table 2.2 SA Framework for the Cambridge Northern Fringe East	
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**
3. Protect and where possible enhance the quality of the water environment	Will it ensure that groundwater is protected? Will it enhance surface water features including the quality of water entering the First Public Drain and the River Cam?
Biodiversity, flora and fauna	
4. Avoid adverse effects on designated sites and protected species	Will it conserve protected species (including Jersey Cudweed) and protect sites designated for nature conservation interest (including Local Nature Reserves and Wildlife Sites), and geodiversity?
5. Maintain and enhance the range and viability of characteristic habitats and species and improve opportunities for people to access and appreciate wildlife and green spaces	Will it deliver net gains in biodiversity? Will it reduce habitat fragmentation, maintain and enhance connectivity between existing green and blue infrastructure and enhance key native habitats? Will it help deliver habitat restoration ((helping to achieve Biodiversity Action Plan Targets)? Will it improve access to wildlife and green spaces, through delivery of and access to green infrastructure?
Landscape, townscape and cultural heritage	
6. Maintain and enhance the diversity and local distinctiveness of landscape and townscape character	Will in maintain and enhance the distinctiveness of landscape character, and the character of the Cambridge Green Belt? Will it maintain and enhance the diversity and distinctiveness of townscape character? Will it ensure the scale of development is sensitive to the existing key landmark buildings and low lying topography of the City? Will it protect the historic environment through appropriate design and scale of development? Will it lead to developments built to a high standard of design and good place making that reflects local character?
Climate change	
7. Minimise impacts on climate change (including greenhouse gas emissions)	Will it ensure deployment of energy efficiency and renewable energy technologies? Will it minimise contributions to climate change through sustainable construction practices?
8. Reduce vulnerability to future climate change effects.	Will it protect and enhance existing natural flood risk management infrastructure? Will it ensure that suitable sustainable drainage measures are incorporated into developments in order to manage surface water runoff? Will it provide green and blue infrastructure which will help reduce climate change impacts locally?

Table 2.2 SA Framework for the Cambridge Northern Fringe East	
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**
	Does it include measures to adapt to climate change in ways that do not increase greenhouse gas emissions including giving consideration to the layout and massing of new developments?
Human health and well being	
9. Maintain and enhance human health and wellbeing, and reduce inequalities	Will it promote good health and encourage healthy lifestyles? Will it help address levels of deprivation in north and east Cambridge? Will it reduce inequalities in health in the north and east of Cambridge?
10. Improve the quantity and quality of publically accessible open space.	Will it increase the quantity and quality of publically accessible open space? Will it protect and enhance community, leisure and open space provision, particularly in East Chesterton ward? Will it maintain and enhance open spaces and green space within the urban area and the Green Belt setting?
11. Ensure everyone has access to decent, appropriate and affordable housing	Will it support the provision of a range of housing types to meet identified needs?
Economy and infrastructure	
12. Redress inequalities related to age, disability, gender, race, faith, location and income	Will it improve relations between people from different backgrounds or social groups and contribute to community diversity? Will it ensure equal access for all?
13. Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities)	Will it provide accessibility to and improve quality of key local services and facilities, including health, education and leisure (shops, post offices, pubs etc?) Will it improve access to jobs and training for all? Will it encourage and enable engagement in community activities?
14. Improve the efficiency, competitiveness, vitality and adaptability of the local economy	Will it maintain and enhance competitiveness, and capitalise on Cambridge's position as one of the UK's most competitive cities? Will it provide high-quality employment land in appropriate, accessible locations to meet the needs of businesses, and the workforce? Will it protect the shopping hierarchy, supporting the vitality and viability of Cambridge, district and local centres? Will it provide appropriate office space? Will it minimise the loss of industrial floor space?
15. Support appropriate	Will it improve the level of investment in key community services and infrastructure, including communications infrastructure and broadband?

Table 2.2 SA Framework for the Cambridge Northern Fringe East	
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**
investment in people, places, communications and other infrastructure	Will it improve access to education and training for all, and support provision of skilled employees to the economy?
16. Reduce the need to travel and promote more sustainable transport choices.	Will it enable shorter journeys, improve modal choice and integration of transport modes to encourage or facilitate the use of modes such as walking, cycling and public transport? Will it encourage cycling for journeys over one mile? Will it discourage and reduce the use of the private car and ensure greater access to frequent public transport? Will it support movement of freight by means other than road? Will it promote infrastructure for zero emissions vehicles? Will it make the transport network safer for all users, both motorised and non-motorised?

2.2 Stage B: Assessing the elements of the plan

The AAP spatial redevelopment options and proposed policy approaches (which include options) have been subject to appraisal with reference to the SA Framework. The assessment is presented in Section 4 and is supported by assessment tables for the spatial redevelopment options in Annex B.

The appraisal has identified potential environmental, economic and social effects of the redevelopment options (Chapter 7 of the CNFE Issues and Options consultation document), including a 'committed development only' option and the policy options (Chapter 8 of the CNFE Issues and Options consultation document). The appraisal of the options has used an evidence-based approach to compare the options and record how the options contribute to achieving the SA Objectives within the SA Framework.

The proposed policy approaches within Chapter 8 of the CNFE Issues and Options consultation document cover a range of issues and the proposed policy approaches differ depending on each issue. For example, some policy options have several alternatives and some do not have any reasonable alternatives due to the nature of the issue e.g. key transport and movement principles. Each policy option has been appraised against the SA Framework, but because the policy options are so variable and some deal with only one specific issue, such as tall buildings and building heights, the appraisal is presented as a commentary in Section 4.

2.2.1 Defining what is a significant effect

The SEA Regulations specify the criteria that should be taken into account when determining likely significant effects. These criteria, which principally relate to the nature of the effects arising from the plan/plan option and the value and vulnerability of the receptors, are as follows:

- How valuable and vulnerable is the receptor that is being impacted?

- How probable, frequent, long lasting and reversible are the effects?
- What is the magnitude and spatial scale of the effect?
- Are the effects beneficial or adverse?

The assessment of significance should involve, where possible, the assessor considering the above criteria for each potential effect along with a consideration of how the plan will help to achieve (or not) the SA objectives. Table 2.3 sets out the key to the scoring system used within the appraisal presented in this Interim SA Report.

Table 2.3 Key to the appraisal scoring

Symbol	Likely impact against the SA Objective
+ +	Potentially significant beneficial impact, option supports the objective
+	Option supports this objective although it may have only a minor beneficial impact
~	Option has no impact or effect and is neutral insofar as the benefits and drawbacks appear equal and neither is considered significant
?	Uncertain or insufficient information is available on which to determine the appraisal at this stage
-	Option appears to conflict with the objective and may result in adverse impacts
- -	Potentially significant adverse impact, conflict with this objective

The term 'neutral effect' means there is no discernible beneficial or adverse effect. In some cases the policies are also not directly relevant to the SA objectives and these have been recorded as neutral. The SA has focused on identifying and recording significant impacts.

2.3 Difficulties encountered during the assessment

This SA has been undertaken at a strategic level and as such, detailed data concerning a number of issues is not yet available:

- Preparation and appraisal of the development options has highlighted the need for further assessment of the townscape, landscape and visual impact and related building height issues;
- Transport modelling is to be undertaken for the specific redevelopment options and therefore the appraisals have not been able to be completed with regards to potential effects of traffic e.g. on air quality and noise and impacts on the local transport network;
- There is uncertainty over the type and location of contamination across the AAP area. Further investigation is required. Cambridge City Council is undertaking borehole surveys of ground contamination in order to provide additional information to feed into the development of the draft AAP. Further investigation will also be required through the planning application process to determine appropriate mitigation; and
- Policy approaches and options have been assessed at this stage rather than draft policies which would be clearer with regards to intent and therefore potential impacts

might be easier to predict. The findings of the SA, along with consultation responses on the Issues and Option document, will be used to develop policies at the Draft Plan stage.

2.4 Habitats Regulations Assessment

Habitats Regulations Assessment (HRA) is required under the EU Habitats Regulations (92/43/EEC) and the Conservation of Habitats and Species Regulations 2010 and is an assessment of the potential effects of a proposed plan in combination with other plans and projects on one or more European sites and Ramsar Sites. The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures.

The first stage of HRA is screening which identifies the likely impacts upon a European sites and Ramsar sites, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant. If the screening stage concludes that there are likely to be no significant impacts on European sites then there is no need to progress to the next stage of Appropriate Assessment (AA).

A separate HRA is being undertaken for the CNFE AAP and this process has commenced. The methodology to be used for the HRA has been agreed with Natural England. An initial screening exercise is being undertaken of the Issues and Options consultation document in order to identify, at this early stage, the likelihood of the CNFE resulting in Likely Significant Effects (LSEs) on European sites and whether any of the options being considered present greater risks of LSEs occurring compared with the others. Formal HRA screening will be undertaken at the draft plan stage and it is at this stage that the HRA will reach a conclusion regarding which AA is required.

SA should report on potential effects on European sites and therefore the findings of the HRA will be fed into the SA.

3 Cambridge Northern Fringe East Area Action Plan

3.1 The Existing Site: Constraints and Opportunities

The CNFE AAP boundary is shown on Figure 3.1. The area contains a number of constraints and opportunities which have a strong influence on the alternative schemes possible for this area. The constraints and opportunities which have been considered by Cambridge City Council and South Cambridgeshire District Council in the development of the Issues and Options consultation document are discussed in this section.

Land Uses and creating balanced communities:

- CNFE is currently a mixed use area with a predominance of employment uses including office, industrial uses, storage and minerals and waste activities (see Figure 3.1). Much of the land in the area is under-utilised in terms of development density. There are also significant areas of vacant and under used land, including the former park and ride.
- Anglian Water's Water Recycling Centre (WRC) occupies around 40% of the area, and is currently undergoing a £20 million upgrade to meet Cambridge's planned growth needs to 2031.
- Neighbouring residential areas are home to some of the city's more disadvantaged communities. This AAP and subsequent development proposals represent a significant opportunity to provide employment opportunities and other benefits to local residents.
- Cambridge is one of the UK's five most competitive cities. Within CNFE, Cambridge Business Park and St John's Innovation Park, along with the nearby Cambridge Science Park, comprise around 30% of the office and R&D stock in the urban area of Cambridge.
- There is a high level of housing need in the Cambridge area. While opportunities for housing on CNFE are limited, due to constraints such as odour and land contamination, the area can still make a valuable contribution to overall housing supply.
- CNFE currently has very limited facilities (e.g. retail, leisure and community uses) both within its boundary and in the surrounding area.

Movement/Transportation:

- The Milton Road corridor in Cambridge has been identified in the Cambridge and South Cambridgeshire Transport Strategy (April 2014), and the Cambridgeshire Local Transport Plan 3 (November 2014) (which has been subject to SEA), for bus priority measures and cycle provision. There are wider improvements planned on the A10 corridor further north, including additional park and ride, and an orbital bus route is being investigated.
- The transport network in Cambridge is relatively constrained with finite capacity for vehicles. Access to the main part of the CNFE area is limited with just one main route in and out onto Milton Road. Capacity at this junction and along the Milton Road Corridor is a significant constraint. The Nuffield Road industrial area is separately accessed off Green End Road to the south.
- The AAP and subsequent development proposals provide an opportunity to maximise the sustainable transport opportunities offered by the proposed new railway station, the

extension to the Guided Bus and connection to the existing high quality off-road cycle network alongside the existing Guided Busway, as well as enhancements to the network including the new Chisholm Trail.

- The aim should be to reduce the proportion of employed city residents who drive to work to 24% in order to keep traffic levels stable. Careful consideration needs to be given to appropriate levels of car parking provision for the site.
- Permeability across the site is currently severely restricted due to physical barriers including the A14, the railway line and Milton Road. Increasing permeability is therefore crucial.

Environment and Open Space:

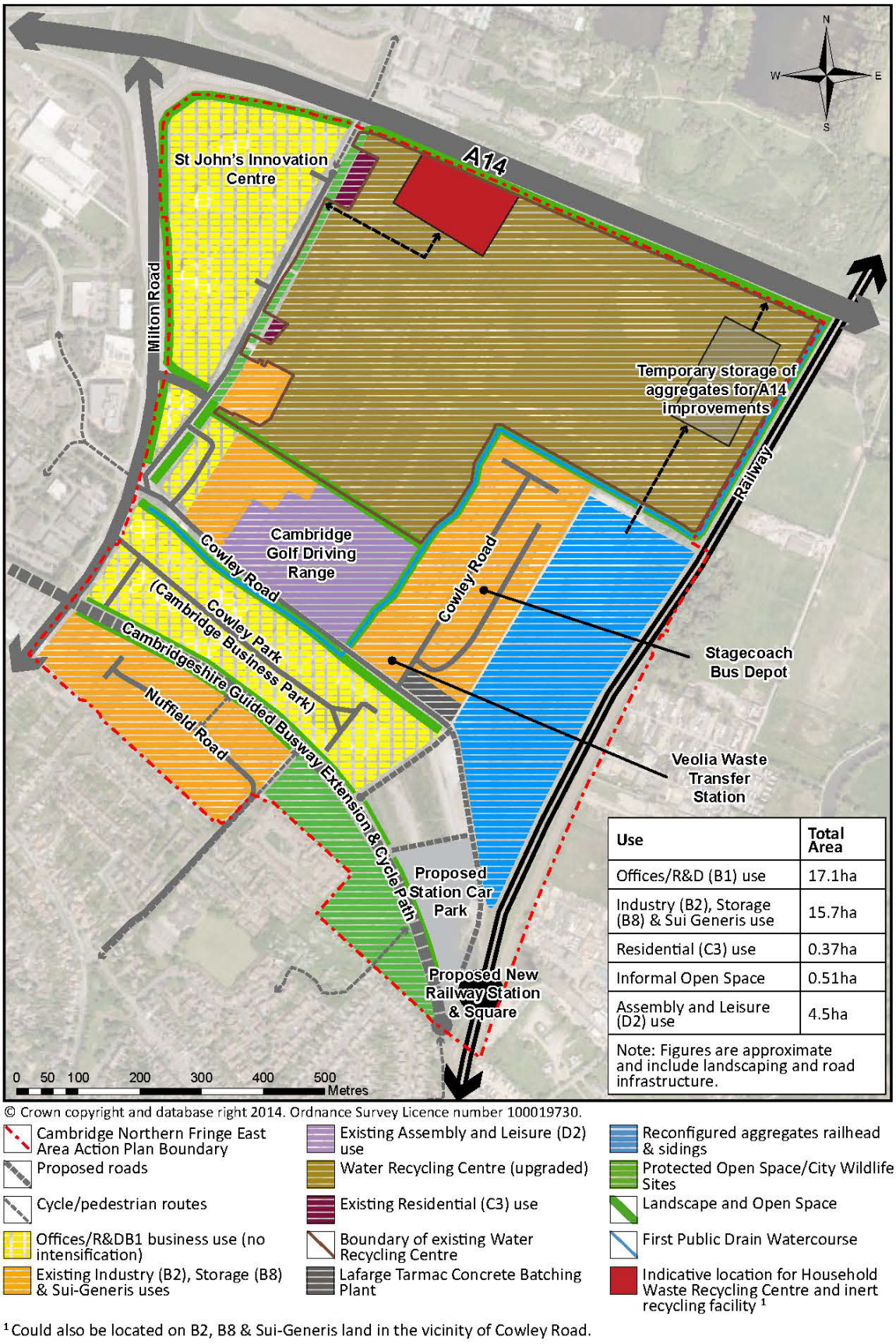
- Various contaminants are present on site, including heavy metals in soils, hydrocarbons in the soil and groundwater and chlorinated solvents. Elevated ground gases have also been identified on parts of the site. Further investigation and remediation will be required as part of any future development proposals.
- Anglian Water's WRC serves Cambridge and a number of surrounding villages;
- The River Cam lies towards the east of the site, and the First Public Drain, which provides the surface water drainage for the whole of CNFE and the surrounding area, flows through the site. Both are potential sources of fluvial flooding, although the risk to the CNFE site is low.
- There is a risk of surface water (pluvial) flooding within CNFE, although this is confined to small areas. Development proposals will need to take this level of risk into consideration, providing mitigation through carefully designed sustainable drainage systems and other design measures.
- Levels of groundwater in the area are known to be high, although there are no recorded instances of groundwater flooding within CNFE.
- The WRC is a source of both odour and insects, which have an impact on the amenity of the surrounding area and the mix of uses that will be considered acceptable within CNFE. Odour zones have been used to inform the location of different uses on the site in the spatial options proposed.
- Areas immediately adjacent to the A14, the railway line and sidings, and the minerals and waste operations will be unsuitable for some forms of development due to noise issues.
- Consideration will need to be given to air quality associated with the industrial areas and adjacent major roads; dust from the minerals and waste operations; and vibration close to the railway line and sidings. Measures to reduce light pollution from new development will also be required.
- CNFE includes several areas of green infrastructure which, along with their associated biodiversity, should be retained and enhanced, where possible.
- The area contains three identified areas of ecological value that will need to be protected and enhanced: Bramblefields Local Nature Reserve (LNR); the protected hedgerow on the east site of Cowley Road opposite St. John's Innovation Centre, which is a City Wildlife Site; and the First Public Drain, which is a Wildlife Corridor.
- The CNFE area has very limited existing open spaces, and what open space exists, such as the Bramblefields LNR and Nuffield Road allotments, is utilised by the existing community. Deficiencies in neighbouring areas highlight the importance of open space provision within the CNFE site.

Built Form and Sustainable Construction:

- The scale of development at CNFE will be determined by a range of factors including demand, viability and transport constraints. Consideration will need to be given to the massing of development and its visual impact on the immediate and wider area, and this will be assessed through the development of the AAP. Scale and massing therefore needs to be appropriate for the area and its context.
- Development at CNFE will need to complement and enhance the city's character through the use of high quality design that maximises opportunities to support the natural environment with new and existing open spaces.
- The AAP will ensure that development proposals take a holistic approach to sustainable development, integrating the principles of sustainable design and construction into development proposals from the outset.

Infrastructure:

- The following infrastructure that provides important services for Greater Cambridge will need to be taken into account in the AAP and any future development proposals:
  - The WRC;
  - The Cambridge to Ely railway line on the eastern boundary of the site;
  - The strategic aggregates railhead; and
  - The 132Kv overhead power line running east to west across the area.



Use	Total Area
Offices/R&D (B1) use	17.1ha
Industry (B2), Storage (B8) & Sui Generis use	15.7ha
Residential (C3) use	0.37ha
Informal Open Space	0.51ha
Assembly and Leisure (D2) use	4.5ha
Note: Figures are approximate and include landscaping and road infrastructure.	

- Cambridge Northern Fringe East Area Action Plan Boundary
- Proposed roads
- Cycle/pedestrian routes
- Offices/R&DB1 business use (no intensification)
- Existing Industry (B2), Storage (B8) & Sui-Generis uses
- Existing Assembly and Leisure (D2) use
- Water Recycling Centre (upgraded)
- Existing Residential (C3) use
- Boundary of existing Water Recycling Centre
- Lafarge Tarmac Concrete Batching Plant
- Reconfigured aggregates railhead & sidings
- Protected Open Space/City Wildlife Sites
- Landscape and Open Space
- First Public Drain Watercourse
- Indicative location for Household Waste Recycling Centre and inert recycling facility [1]

[1] Could also be located on B2, B8 & Sui-Generis land in the vicinity of Cowley Road.

Figure 3.1: Cambridge Northern Fringe East existing land uses and committed development

3.2 Vision, Development Objectives and Development Principles

The proposed Vision for the CNFE AAP is:

Box 3.1 PROPOSED VISION

CNFE will be a vibrant and successful employment led, mixed use neighbourhood, shaped as a whole by the community, and embracing;

- Successful regeneration of the wider area
- modern commercial business needs and buildings;
- sustainable urban living;
- the proposed new railway station and extension to the Cambridgeshire Guided Busway to create new high quality transport gateway and transform the area;
- opportunities to create a well-connected and vibrant place;
- opportunities to enhance the environmental assets

The development will also ensure;

- the new area is supported with the right transport, water, energy, social and community infrastructure;
- the relocation of existing businesses and release of former industrial land for other uses is properly managed and contributes towards creating sustainable communities;
- the regeneration and development of CNFE contributes to the wider growth agenda and shared prosperity of Greater Cambridge;
- the continued presence of strategic aggregates railheads that will facilitate the wider growth of Greater Cambridge;
- existing and new waste management facilities can be safeguarded/delivered (including Household Recycling Centre and inert waste recycling facility)

The development will reflect both Councils' visions for Cambridge's continued growth as an innovative, integrated, fair and sustainable city, whilst supporting sustainable economic growth and providing a high quality of life. The area will be comprehensively planned, but wholly integrated into the fabric of Cambridge.

The Development Principles (A-P) and Development Objectives (1-8) are presented in Box 3.2.

Box 3.2: Development Principles and Development Objectives

Over-arching objective: TO SECURE THE SUCCESSFUL REGENERATION AND REDEVELOPMENT OF THE CNFE AREA AS A NEW GATEWAY TO AND AREA OF CAMBRIDGE

Objective 1: Deliver a place that supports and fosters a strong new neighbourhood, well integrated with the wider community

A. Ensure that the needs of existing and future communities who live and work in and around Cambridge Northern Fringe East are met through development and that it is a place that can adapt to meet changing needs over time.

B. By creating a sustainable, cohesive and inclusive area through improving access to jobs, homes, open space, leisure facilities and other services within the development and to the wider community.

Objective 2: Provide a mix of land uses at densities that make best use of this highly sustainable location and regeneration opportunities

C. Increase the level of economic activity and vibrancy within Cambridge Northern Fringe East and the wider area, by accommodating an appropriate mix of office, R&D, industrial and other related employment uses supported by a range of commercial, retail, leisure, community and residential uses.

D. Focus higher density development around the transport hub and along public transport routes, taking account of the wider landscape and townscape context of the area.

Objective 3: Maximise the Employment Opportunities

E. Deliver additional flexible employment space to cater for a range of business types and sizes, and supporting a wide range of jobs for local income, skills and age groups

F. Manage the release of any redevelopment sites and where possible accommodate the existing businesses elsewhere within the CNFE area.

G. Support uses which are important to the operation of Greater Cambridge, including the strategic aggregates rail head, and the Water Recycling Centre.

Objective 4: Create a new local centre that meets the needs of the new community and which complements other facilities in the wider area

H. Create distinctive and well-connected mixed use local centre for Cambridge Northern Fringe East which provides a range facilities to meet the day to day needs of those live, work and visit the area.

Objective 5: Deliver high quality and well-designed buildings, streets and spaces that responds to the needs of the community and supports regeneration of the wider area

I. Create a distinctive local identity through development forms appropriate to the area and which create and improve the quality, appearance and function of the public realm.

J. Ensure the design, scale and location of new buildings help create streets and places that are safe, easy and convenient to navigate around, and which encourage social interaction.

Objective 6: Create an accessible, permeable, well-connected and well-integrated new neighbourhood

K. Create a gateway development that maximises the potential of the proposed new Railway Station and Cambridge Guided Busway as a transport hub.

L. Deliver enhanced connections for pedestrians, cyclists, buses, prioritise these modes to encourage a modal shift.

Objective 7: Enhance and protect the natural environment and existing and proposed open spaces

M. Create a network of green spaces and corridors to protect and enhance biodiversity and watercourses as attractive features, linking into the surrounding area.

N. Improve the setting of the area from key approaches including the route to the proposed new railway station.

O. Remediate land contamination.

Objective 8: Encourage a low carbon lifestyle & addressing climate change

P. Deliver sustainable forms of development, mitigating and adapting to the impacts of climate change.

3.3 Developing Options

3.3.1 Spatial Redevelopment

The draft CNFE AAP Issues and Options consultation document presents 4 options for the spatial redevelopment of the AAP area which have been developed using the opportunities and constraints identified (see Section 3.1).

Each option takes a more comprehensive approach to redevelopment than the previous option. The Spatial redevelopment Options are summarised in Box 3.3.

Box 3.3 Summary of Spatial Redevelopment Options

Option 1: Lower Level of Redevelopment – Creates an enhanced 'Boulevard' approach to the proposed new railway station, to provide a gateway to Cambridge. Focuses on regeneration of areas of more easily available land, allowing existing business and the Water Recycling Centre to stay, whilst creating a major new area for businesses. This option could be delivered early, but does little to secure the wider regeneration of the area.

Option 2: Medium Level of Redevelopment – Focuses on regeneration of areas of more easily available land, allowing existing business and the Water Recycling Centre to stay. Includes new homes and a local centre near the proposed new railway station, to create a vibrant mixed use area around the gateway. More comprehensive redevelopment improving existing areas south of Cowley Road, to integrate them into the Station area. A new road north of Cowley Road to separate out industrial traffic from the main station access. Option for Nuffield Road industrial area to change to offices / residential. This option could be delivered in the short to medium term.

Option 3: Higher Level of Redevelopment – Reconfiguration of the Water Recycling Centre onto a smaller site, with more indoor or contracted operations, subject to technical, financial and operational deliverability. Would retain the Water Recycling Centre on site but open up options for larger scale employment redevelopment and a mix of other uses. This option is complex and delivery of the full option would be in the longer term. The potential to phase redevelopment to achieve the objective of an early gateway to the proposed new railway station would need to be explored, whilst ensuring that the delivery of the full option is not prejudiced by piecemeal redevelopment. Also in this option, Nuffield Road industrial area is proposed for entirely residential development, with existing industry relocated north of Cowley Road.

Option 4: Maximum Level of Redevelopment - Water Recycling Centre relocated off site, subject to identification of a suitable, viable and deliverable alternative site being identified. This would free up a large area of land for redevelopment, and the opportunity to comprehensively address the area. This option is complex and delivery of the full option would be in the longer term. The potential to phase redevelopment to achieve the objective of an early gateway to the proposed new railway station would need to be explored, whilst ensuring that the delivery of the full option is not prejudiced by piecemeal redevelopment.

3.3.2 Proposed Policy Approaches

The CNFE AAP Issues and Options consultation document also presents a range of proposed policy approaches for consultation. The policy approaches cover the following topic areas:

- Land uses;
- Place making, gateway and building design;
- Density and building heights;
- Effective integration with the wider area;
- Employment;
- Housing;
- Services and facilities;
- Open space;
- Transport;
- Parking provision;
- Climate change; and
- Development management policies.

Detailed information about each option, along with the proposed policy approaches, can be found in Annex A.

3.3.3 Boundary extensions

The CNFE AAP Issues and Options consultation document also presents a range of options in relation to the extension of the boundary. These are assessed in Section 4.3 as part of the assessment of the Policy Approaches.

4 Sustainability Appraisal Findings

4.1 Introduction

This section presents the findings of the SA of the spatial redevelopment options and the proposed policy approaches. It also presents the findings of a consistency check comparing the AAP Vision, Development Objectives and Development Principles with the SA Framework Objectives.

4.2 Consistency check with the SA Framework

A consistency check has been undertaken comparing the AAP Vision, Development Objectives and Development Principles (see Boxes 3.1 and 3.2) with the SA Framework Objectives. The consistency check compares the draft vision and objectives developed for the plan with the SA Framework objectives and identifies where consistency and potential tensions between the two sets of objectives and the Vision may exist. The check also identifies whether there are any omissions from the Vision and objectives when compared with the SA Framework Objectives (which have been developed for the CNFE AAP area and reflect key sustainability issues) and can put forward suggestions for improvement.

The consistency check is presented in Table 4.1. The SA Objectives are listed in Table 2.2.

The consistency check has identified two opportunities to improve the Vision: reference could be made to ensuring that the CNFE is resilient to climate change and that it supports addressing inequalities within the area.

Potential conflicts identified within the matrix reflect tensions between the Development Objectives and Principles and the SA Objectives. For example, Development Objective 3: Maximise the Employment Opportunities could potentially conflict with SA Objectives relating to air and noise pollution, water pollution, biodiversity, landscape and townscape and provision of open space as these factors could potentially be compromised at higher levels of development. Tensions between objectives are inevitable and it will be up to the AAP to ensure that all objectives can be met through either spatial planning or policy wording.

Table 4.1 Consistency Matrix

Key to symbols: ✓ = consistent, ~ = neutral, O = opportunity to improve consistency, X = potential conflict

SA Objective	CNFE AAP Vision	CNFE AAP Development Principles and Development Objectives																							
		Objective 1	A	B	Objective 2	C	D	Objective 3	E	F	G	Objective 4	H	Objective 5	I	J	Objective 6	K	L	Objective 7	M	N	O	Objective 8	P
1.	✓	~	~	✓	✓	~	✓	✓	~	~	~	~	~	~	~	~	~	~	~	✓	~	~	✓	✓	✓
2.	✓	~	~	✓	✓	~	✓	X	X	~	X	~	~	~	~	~	~	~	~	✓	✓	~	~	✓	✓
3.	✓	~	~	✓	~	~	~	X	~	~	~	~	~	~	~	~	~	~	~	✓	✓	~	✓	✓	✓
4.	✓	~	~	✓	~	~	~	X	~	~	~	~	~	~	~	~	~	~	~	✓	✓	~	✓	✓	✓
5.	✓	~	~	✓	~	~	~	X	~	~	~	~	~	~	~	~	~	~	~	✓	✓	~	✓	✓	✓
6.	✓	✓	~	✓	✓	✓	✓	X	~	✓	~	~	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	✓	✓
7.	✓	~	~	✓	~	~	✓	~	~	~	~	~	~	~	~	✓	~	~	~	✓	~	~	~	✓	✓
8.	O	~	✓	✓	~	~	~	~	~	~	~	~	~	✓	~	~	~	~	~	✓	✓	~	~	✓	✓
9.	✓	✓	✓	✓	~	~	✓	✓	✓	~	~	~	~	✓	✓	✓	✓	✓	✓	✓	✓	~	✓	✓	✓
10.	✓	~	✓	✓	~	~	~	~	~	~	~	~	~	✓	✓	✓	✓	✓	✓	✓	✓	~	~	✓	✓
11.	✓	✓	✓	✓	✓	✓	~	~	~	~	X	~	~	~	~	~	~	~	~	~	~	~	✓	~	~
12.	O	✓	✓	✓	~	~	~	✓	✓	~	~	✓	✓	✓	✓	✓	✓	✓	~	~	~	~	~	~	~
13.	✓	✓	✓	✓	✓	✓	✓	~	~	~	~	✓	✓	✓	✓	✓	✓	✓	~	✓	✓	~	~	~	~
14.	✓	~	~	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	~	~	~	✓	✓	✓
15.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~	~	✓	✓	✓	✓	✓
16.	✓	✓	~	✓	✓	✓	✓	✓	~	~	~	✓	✓	✓	✓	✓	✓	✓	~	~	✓	✓	~	✓	✓

4.3 Spatial Redevelopment Options

Detailed assessment tables for the redevelopment options (presented within Chapter 7 of the Issues and Options consultation document) can be found in Annex B. A commentary justifying the appraisal findings can be found for each redevelopment option below.

Table 4.3 provides a summary of the performance of each option to allow quick comparison between the spatial options. The key to Table 4.3 is provided in Table 4.2.

Table 4.2 Key to the appraisal scoring

Symbol	Likely impact against the SA Objective
+ +	Potentially significant beneficial impact, option supports the objective
+	Option supports this objective although it may have only a minor beneficial impact
~	Option has no impact or effect and is neutral insofar as the benefits and drawbacks appear equal and neither is considered significant
?	Uncertain or insufficient information is available on which to determine the appraisal at this stage
-	Option appears to conflict with the objective and may result in adverse impacts
- -	Potentially significant adverse impact, conflict with this objective

Table 4.2 Spatial Redevelopment Options Comparison Table					
SA Objectives	**Potential impacts**				
	'Do Nothing'/ Committed Development	**Option 1**	**Option 2**	**Option 3**	**Option 4**
1. Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves.	+	+ / ?	+ + / ?	+ + / ?	+ + / ?
2. Improve air quality and minimise or mitigate against sources of environmental pollution	-	?	?	?	?
3. Protect and where possible enhance the quality of the water environment	~	+	+	~	~
4. Avoid adverse effects on designated sites and protected species	~	+	+	+ +	+ +
5. Maintain and enhance the range and viability of characteristic habitats and species and improve opportunities for people to access and appreciate wildlife and green spaces	~	+ / ?	+	+ +	+ +
6. Maintain and enhance the diversity and local distinctiveness of landscape and townscape character	-	+ / ?	+ / ?	+ + / ?	+ + / ?
7. Minimise impacts on climate change (including greenhouse gas emissions)	~	+	+	+ +	+ +
8. Reduce vulnerability to future climate change effects.	~	?	?	?	?
9. Maintain and enhance human health and wellbeing, and reduce inequalities	+	+	+ +	+ +	+ +
10. Improve the quantity and quality of publically accessible open space.	-	+	+ +	+ +	+ +
11. Ensure everyone has access to decent, appropriate and affordable housing	~	~	+	+	+
12. Redress inequalities related to age, disability, gender, race, faith, location and income	-	+	+ +	+ +	+ +
13. Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities)	-	+ / ?	+ + / ?	+ + / ?	+ + / ?
14. Improve the efficiency, competitiveness, vitality and adaptability of the local economy	~	+ / -	+ / -	+ + / -	+ + / -
15. Support appropriate investment in people, places, communications and other infrastructure	~	+	+ +	+ +	+ +
16. Reduce the need to travel and promote more sustainable transport choices.	-	+ / - / ?	- / + + /?	- - / + + /?	- - / + + /?

4.3.1 'Do Nothing'/Committed Development Option

This spatial option is essentially the 'business as usual' option and would involve no AAP or spatial planning intervention. In the appraisal of this option, mainly neutral and minor beneficial impacts have been recorded. No significant impacts have been recorded.

Potential adverse impacts have been identified in relation to the following SA Objectives:

- SA Objective 6 Maintain and enhance the diversity and local distinctiveness of landscape and townscape character: This option does not take advantage of the opportunity to enhance this gateway to Cambridge and it would also not enhance the townscape in this area which needs significant improvement.
- SA Objective 10 Improve the quantity and quality of publically accessible open space: This option will not improve the quantity and quality of open space in this area. This option will not help to address identified deficiencies in open space.
- SA Objective 12 Redress inequalities related to age, disability, gender, race, faith, location and income: This option does not contribute towards the achievement of this SA Objective and does not help to redress existing inequalities.
- SA Objective 13 Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities): This option does not contribute towards the achievement of this SA Objective does not help to redress existing deficiencies and inequality.
- SA Objective 16 Reduce the need to travel and promote more sustainable transport choices: This option may not involve the intensification of land uses and therefore would not optimise opportunities for intensive land uses around the new transport interchange or encourage use of sustainable modes of travel.

No uncertainties, mitigation or enhancement measures have been identified for this option.

4.3.2 Factors common to all spatial redevelopment options proposed (Options 1-4)

For each of the Options 1-4, green space is included along the northern and eastern boundaries which should help to reduce adverse impacts on the Green Belt.

In undertaking the appraisal it has become apparent that there are a number of uncertainties common to Options 1-4 and therefore they perform similarly against some of the SA Objectives. These uncertainties are:

- SA Objective 1 Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves: There is uncertainty over the type and location of contamination. Cambridge City Council is undertaking borehole surveys of ground contamination in order to provide additional information to feed into the development of the draft AAP. Further investigation will also be required through the planning application process to determine appropriate mitigation. See mitigation below.
- SA Objective 2 Improve air quality and minimise or mitigate against sources of environmental pollution: Information is not available on potential air quality and noise impacts relating to each of the options as transport modelling is not completed. However, the assessments of each option have identified the potential benefits of the location and therefore the opportunities available to seek a high modal share of non-car modes for all of the options. In addition, the assessments of the options which

include higher levels of development (options 3 and 4) have identified the potential for them to generate higher levels of traffic.

- SA Objective 5 Maintain and enhance the range and viability of characteristic habitats and species and improve opportunities for people to access and appreciate wildlife and green spaces: Each of the options 1-4 proposes redevelopment of a part of the Chesterton Sidings, the ecological value of which is uncertain but it could be important for biodiversity.
- SA Objective 6 Maintain and enhance the diversity and local distinctiveness of landscape and townscape character: Landscape character and visual impacts with regards to the Cambridge Green Belt and the City Townscape are to be assessed shortly but findings will not be available to inform Issues and Options. The AAP area has significant potential for townscape improvements. The impacts of development will need to be considered, in particular building height and design on the wider area. However, there is potential for beneficial impacts.
- SA Objective 8: Reduce vulnerability to future climate change effects: Each of the Options 1-4 has the potential to reduce vulnerability to future climate change through the use of SUDS, green infrastructure and design and layout of the development. However, policies are yet to be developed in order to ensure that these are integrated into the development.
- SA Objective 16 Reduce the need to travel and promote more sustainable transport choices: Information is not available on potential traffic impacts relating to the options as transport modelling is not completed and therefore the appraisals against this SA Objective cannot be completed at this stage. The assessments of the options 1-4 have identified uncertainty with regards to this SA Objective and potential adverse impacts with regards to traffic generation, particularly associated with the higher levels of development (i.e. options 3 and 4). However, there are also potential beneficial impacts associated with each of the options, from taking advantage of the opportunity for intensive land uses around the new transport interchange and encouraging the use of sustainable modes of travel. The CNFE AAP area will be one of the most accessible sites by non-car modes in the Cambridge area.

Mitigation measures are put forward to address these areas of uncertainty, as follows:

- Each parcel of land to be redeveloped will require a full and detailed site investigation in order to determine ground conditions and the presence, or not, of contamination. The Implementation Phasing Strategy will need to include a comprehensive Remediation Plan setting out the level of remediation required. A much higher standard of remediation would be required for sensitive developments such as residential dwellings with gardens. Residential gardens may not be suitable in some parts of the AAP area. Residential uses are proposed in areas where chlorinated solvents, Hydrocarbons, gases and vapours, PAHs, and diesel range organics have previously been identified (Nuffield Road area and near the proposed station);
- Any existing resources available on the site, such as materials from redundant buildings, should be reused as far as practicable;
- A Construction Environmental Management Plan (CEMP) including a Site Waste Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support planning applications

- Transport modelling needs to be undertaken. Traffic impacts on Milton Road and existing junctions need to be addressed. The findings of transport modelling will inform the SA with regards to potential impacts of traffic e.g. on air quality and noise and impacts on the local transport network;
- Ecological assessment and, if necessary, mitigation, compensation and enhancement will be needed for loss of habitat and species for the part of the Chesterton Sidings which are proposed for redevelopment;
- Findings of landscape character and visual impact assessment with regards to the Cambridge Green Belt and the City townscape are due to be commenced at the end of 2014 and the findings should be fed into the SA of the draft AAP. Policies are also proposed which would require design issues to be fully considered;
- Due to uncertainty, it is likely that an archaeological investigation will be required before any significant development takes place;
- In line with the proposed policy approach to sustainable design and construction (option B), policies should be included in the AAP which ensure all forms of flood risk are taken into account and SUDS are used to manage surface water. Policies should require specific consideration to adaption to climate change including giving consideration to the layout and massing of new developments;
- Transport modelling is required in order to understand potential impacts on the transport network associated with the options;
- Policies in the AAP should require infrastructure for zero emissions vehicles and road/travel safety within the AAP; and
- Frequency of public transport services will require consideration to ensure that they would meet the needs of the redeveloped area.

Enhancement measures are also put forward in the appraisal matrices (Annex B) in order to improve the performance of each of the options. These measures apply to each of the Options 1-4 apart from one measure indicated which applies to Options 3 and 4 only:

- Policies relating to specific habitats restoration / creation should be included within the AAP;
- In line with the proposed policy approach for energy and low carbon energy generation, standards could be set for the development with regards to energy efficiency and renewable energy generation;
- Options 3 and 4 only: The redevelopment of the AAP area presents an opportunity to implement a site-wide energy strategy, maximising opportunities for synergies between the differing uses proposed and identifying which energy generation technologies might be suitable;
- Developers should be encouraged to register with The Considerate Constructors Scheme which includes guidelines for respecting the community by considering the impact on their neighbours, and for protecting and enhancing the environment; and
- The AAP could include policies to ensure that training and employment opportunities are available for local people.

4.3.4 Option 1 - Lower Level of Redevelopment

This lower level of redevelopment option mainly performs well with regards to the SA Framework and most SA Objectives are supported by the option. No significant beneficial or adverse impacts have been identified in the appraisal, however, uncertainties identified in sub-section 4.3.2 apply to this option. Once information is available to reduce these uncertainties, it is possible that adverse impacts could be identified, for example, in relation to air quality and traffic impacts. With regards to the potential beneficial impacts identified, Option 1 does not perform as well as Options 2-4.

A mixed result (potential for both beneficial and adverse impacts) has been identified in relation to the following SA Objectives:

- SA Objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy. This is because the option will result in the provision of new office, R&D space and a net increase in industry/storage but requires existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have an adverse impact on those businesses in the short term.
- SA Objective 16 Reduce the need to travel and promote more sustainable transport choices. This option will provide some high quality employment in a location which will be highly accessible to non-car modes. However, there is the potential for redevelopment to increase road traffic and this requires modelling in order to determine whether an adverse impact could occur on the transport network and in relation to air quality and noise. This option does not improve pedestrian and cycle access through Cambridge Business Park or across to the Science Park.

Option 2 - Medium Level of Redevelopment

Option 2 involves a medium level of growth. It performs well with regards to the SA Objectives, with a number of significant beneficial impacts being identified as well as a number of uncertainties. All of the uncertainties identified in the appraisal of this option are common to each of the Options 1-4 and are listed in sub-section 4.3.2. As for Option 1, once information is available to reduce these uncertainties, it is possible that adverse impacts could be identified, for example, in relation to air quality and traffic impacts.

Significant beneficial impacts are identified in relation to:

- SA Objective 1 Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves: The option will result in the use of land previously developed and represents an intensive redevelopment.
- SA Objective 9 Maintain and enhance human health and wellbeing, and reduce inequalities: This option will provide a significant amount of new employment opportunities and some small scale housing and community facilities in a new local centre. This option includes better movement across the area for cyclists and pedestrians compared with option 1. It includes a green infrastructure network and new open space, thereby encouraging healthy lifestyles for residents and workers. It also will improve links with the interchange and the layout of the area within the south of the AAP.
- SA Objective 10 Improve the quantity and quality of publically accessible open space: This option provides significantly more informal open space than option 1 (+4.3

hectares compared with existing provision) and it will meet open space standards required by the addition of new residential development (440 dwellings).

- SA Objective 12 Redress inequalities related to age, disability, gender, race, faith, location and income: This option includes new housing development, a new local centre and provides up to 15,100 new jobs which should contribute to the achievement of this SA Objective and result in significant beneficial impacts.
- SA Objective 13 Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities): This option includes a new local centre and provides up to 15,100 new jobs which should contribute to the achievement of this SA Objective and result is significant beneficial impacts. It is unclear what the new local centre could provide. However, employment areas require complementary social and support facilities if they are to achieve the full potential of the area and this has been shown in several local studies.
- SA Objective 15 Support appropriate investment in people, places, communications and other infrastructure: This option will involve more significant investment in the AAP area than option 1, including a local centre which should provide facilities for the wider area. It will result in up to 15,100 new jobs.

In addition to the mitigation measures listed above at sub-section 4.3.2, the appraisal of this option has also identified that the new residential uses proposed in this option will require noise mitigation.

A mixed result (potential for both beneficial and adverse impacts) has been identified in relation to the following SA Objectives:

- SA Objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy. This is because the option will result in the provision of new office, R&D space and a net increase in industry/storage but requires existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have an adverse impact on those businesses in the short term.
- SA Objective 16 Reduce the need to travel and promote more sustainable transport choices. This option will provide some high quality employment in a location which is highly accessible by non-car modes. However, there is the potential for redevelopment to increase road traffic and this requires modelling in order to determine whether an adverse impact could occur on the transport network and in relation to air quality and noise. This option includes a dedicated HGV route and includes better movement across the area for cyclists and pedestrians compared with Option 1.

4.3.5 Option 3 High Level of Redevelopment

Option 3 involves a high level of growth. It performs well with regards to the SA Objectives, with a number of significant beneficial impacts being identified as well as a number of uncertainties. All of the uncertainties identified in the appraisal of this option are common to each of the Options 1-4 and are listed in sub-section 4.3.2. Therefore potential adverse impacts, for example, in relation to air quality and traffic are currently unclear. Option 3 represents a more intense redevelopment than options 1 and 2 and therefore risks of adverse impacts occurring, in relation to traffic, air quality and noise could be greater.

Significant beneficial impacts are identified in relation to:

- SA Objective 1 Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves: The option will result in the use of land previously developed and represents a more intensive redevelopment than Options 1 or 2.
- SA Objective 4 Avoid adverse effects on designated sites and protected species: In this option, as for Option 4, the green infrastructure network proposed on the AAP site covers a larger area compared to Options 1 and 2 and the 'Do Nothing/Committed Development' option.
- SA Objective 5 Maintain and enhance the range and viability of characteristic habitats and species and improve opportunities for people to access and appreciate wildlife and green spaces: This option should deliver net gains in biodiversity and will improve habitat connectivity, resulting in an enhanced and more comprehensive green infrastructure network (compared to Options 1 and 2) across the site which links into the new open space on the site and the existing open space to the south of the AAP boundary (including existing allotments and the Bramblefields LNR).
- SA Objective 6 Maintain and enhance the diversity and local distinctiveness of landscape and townscape character: in common with the other options 1, 2 and 4, Option 3 will result in improvements to the station approach to create a green boulevard and activity around the station and will also improve green areas and watercourses on the site. However, it represents a more comprehensive opportunity to improve the setting and approach to Cambridge compared with options 1 and 2 and involves the undergrounding of existing overhead lines. Until the findings of landscape character and visual impact assessment are available, there will be some uncertainty regarding the potential impacts on landscape and townscape character.
- SA Objective 7 Minimise impacts on climate change (including greenhouse gas emissions): It is assumed for Options 3 and 4 that they will have the potential to significantly improve energy efficiency of operations of the site and significant renewable energy generation will be incorporated into the development. The proposed policy approach to renewable and low carbon energy generation (1a) would particularly support this spatial option as its development would include consideration of the types of energy generation that could be suitable for the area and whether an area based approach could be used.
- SA Objective 9 Maintain and enhance human health and wellbeing, and reduce inequalities: This option will provide a significant amount of new employment opportunities as well as new housing and community facilities. It will allow for a comprehensive network of walking and cycling access across the site integrated with a green infrastructure network and significant open space, thereby encouraging healthy lifestyles for residents and workers.
- SA Objective 10 Improve the quantity and quality of publically accessible open space: This option provides significantly more informal open space than option 1 (+5 hectares compared with existing provision) and it will meet open space standards required by the addition of new residential development (630 dwellings).
- SA Objective 12 Redress inequalities related to age, disability, gender, race, faith, location and income: This option includes new housing development, a new local centre and provides significant employment opportunities (up to 25,800 new jobs) compared with options 1 and 2.
- SA Objective 13 Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities): This option includes a

new local centre and provides up to 25,800 new jobs which should contribute to the achievement of this SA Objective and result is significant beneficial impacts. It is unclear what the new local centre could provide. However, employment areas require complementary social and support facilities if they are to achieve the full potential of the area and this has been shown in several local studies.

- SA Objective 15 Support appropriate investment in people, places, communications and other infrastructure: This option will involve more significant investment in the AAP area than option 1, including a local centre which should provide facilities for the wider area. It will result in up to 25,800 new jobs.

In addition to the mitigation measures which are common to each of the Options 1-4 listed above at sub-section 4.3.2, the appraisal of this option has also identified that the new residential uses proposed in this option will require noise mitigation.

A mixed result (potential for both significant beneficial and adverse impacts) has been identified in relation to the following SA Objectives:

- SA Objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy. This is because the option will result in the provision of significant amounts of new office and R&D space and a net increase in industry/storage but requires existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have an adverse impact on those businesses in the short term.
- SA Objective 16 Reduce the need to travel and promote more sustainable transport choices. This option will provide high quality employment in a location which is highly accessible by non-car modes. It takes advantage of the opportunity for intensive land uses around the new transport interchange and encourages the use of sustainable modes of travel. However, there is the potential for redevelopment to increase road traffic and this requires modelling in order to determine whether an adverse impact could occur on the transport network and in relation to air quality and noise. The AAP will need to limit traffic within the local transport system to 2011 levels and this could be very challenging, given the level of redevelopment this option proposes. A new road parallel to Cowley Road (north-south route) in this option will remove industrial traffic from it.

4.3.6 Option 4 Maximum Level of Redevelopment

Option 4 involves maximising the level of growth within the AAP area and would be possible if an alternative site could be identified for the relocation of the WRC. Option 4 performs well with regards to the SA Objectives, with a number of significant beneficial impacts being identified as well as a number of uncertainties. All of the uncertainties identified in the appraisal of this option are common to each of the Options 1-4 and are listed in sub-section 4.3.2. In relation to the areas of uncertainty identified, Option 4 represents the most intense level of redevelopment of all of the options 1-4 and therefore could pose the highest risks of adverse impacts occurring in relation to traffic, air quality, noise and ecology (specifically relating to the Chesterton Sidings – see below).

Significant beneficial impacts are identified in relation to:

- SA Objective 1 Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves: The option will result in the use of land previously developed and represents a more intensive redevelopment than Options 1, 2 or 3.

- SA Objective 4 Avoid adverse effects on designated sites and protected species: In this option, as for Option 3, the green infrastructure network proposed on the AAP site covers a larger area compared to Options 1 and 2 and the 'Do Nothing/Committed Development' option.
- SA Objective 5 Maintain and enhance the range and viability of characteristic habitats and species and improve opportunities for people to access and appreciate wildlife and green spaces: This option should deliver net gains in biodiversity and will improve habitat connectivity, resulting in an enhanced and more comprehensive green infrastructure network (compared to Options 1 and 2) across the site which links into the new open space on the site and the existing open space to the south of the AAP boundary (including existing allotments and the Bramblefields LNR).
- SA Objective 6 Maintain and enhance the diversity and local distinctiveness of landscape and townscape character: in common with the other options 1, 2 and 3, Option 4 will result in improvements to the station approach to create a green boulevard and activity around the station and will also improve green areas and watercourses on the site. However, like Option 3, it represents a more comprehensive opportunity to improve the setting and approach to Cambridge compared with options 1 and 2 and involves the undergrounding of existing overhead lines. Until the findings of landscape character and visual impact assessment are available, there will be some uncertainty regarding the potential impacts on landscape and townscape character.
- SA Objective 7 Minimise impacts on climate change (including greenhouse gas emissions): It is assumed for Options 3 and 4 that they will have the potential to significantly improve energy efficiency of operations of the site and significant renewable energy generation will be incorporated into the development. The proposed policy approach to renewable and low carbon energy generation (1a) would particularly support this spatial option as its development would include consideration of the types of energy generation that could be suitable for the area and whether an area based approach could be used.
- SA Objective 9 Maintain and enhance human health and wellbeing, and reduce inequalities: This option will provide a significant amount of new employment opportunities as well as new housing and community facilities. It will allow for a comprehensive network of walking and cycling access across the site integrated with a green infrastructure network and significant open space, thereby encouraging healthy lifestyles for residents and workers.
- SA Objective 10 Improve the quantity and quality of publically accessible open space: This option provides significantly more informal open space than option 1 (+5 hectares compared with existing provision) and it will meet open space standards required by the addition of new residential development (630 dwellings).
- SA Objective 12 Redress inequalities related to age, disability, gender, race, faith, location and income: This option includes new housing development, a new local centre and provides significant employment opportunities (up to 27,600 new jobs) compared with Options 1 and 2.
- SA Objective 13 Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities): This option includes a new local centre and provides up to 27,600 new jobs which should contribute to the achievement of this SA Objective and result is significant beneficial impacts. It is unclear what the new local centre could provide. However, employment areas require

complementary social and support facilities if they are to achieve the full potential of the area and this has been shown in several local studies.

- SA Objective 15 Support appropriate investment in people, places, communications and other infrastructure: This option will involve more significant investment in the AAP area than option 1, including a local centre which should provide facilities for the wider area. It will result in up to 27,600 new jobs.

In addition to the mitigation measures which are common to each of the Options 1-4 listed above at sub-section 4.3.2, the appraisal of this option has also identified that the new residential uses proposed in this option will require noise mitigation.

A mixed result (potential for both significant beneficial and adverse impacts) has been identified in relation to the following SA Objectives:

- SA Objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy. This is because the option will result in the provision of significant amounts of new office and R&D space and a net increase in industry/storage but requires existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have an adverse impact on those businesses in the short term.
- SA Objective 16 Reduce the need to travel and promote more sustainable transport choices. This option will provide high quality employment in a location which is highly accessible by non-car modes. It takes advantage of the opportunity for intensive land uses around the new transport interchange and encourages the use of sustainable modes of travel. However, there is the potential for redevelopment to increase road traffic and this requires modelling in order to determine whether an adverse impact could occur on the transport network and in relation to air quality and noise. The AAP will need to limit traffic within the local transport system to 2011 levels and this could be very challenging, given the level of redevelopment this option proposes. Option 4 creates a more accessible and connected layout than other options which should better support walking and cycling across the site.

Option 4 proposes the relocation of the Water Recycling Centre (WRC), which would free up land for further redevelopment. A site for the relocated works is not identified, but would be outside the AAP area. This would be subject to a separate planning process. Impacts on sustainability objectives of this relocation are uncertain as it would depend on the location and nature of the site. Potential indirect and cumulative effects would need to be considered in more detail should this option be taken forward.

Each of the Options 1-4 proposes redevelopment of a part of the Chesterton Sidings, the ecological value of which is uncertain but it could be important for biodiversity. Option 4 proposes the largest part of Chesterton Sidings for redevelopment of all of the options and therefore poses the greatest risk of adverse impacts on biodiversity. However, the ecological value of the Chesterton Sidings requires confirmation through survey and there is potential for enhancements to be put in place to ensure that a net gain in biodiversity is achieved. This relates to SA Objective 5.

4.4 Appraisal of proposed policy approaches

The proposed policy options have been appraised against the appraisal framework set out in Section 2 and a brief appraisal commentary provided. When carrying out the appraisal the team has considered how the approaches / options would work towards or against the

various SA Objectives and whether any mitigation or enhancements need to be addressed whilst the policies are being developed. Because the elements of the plan being assessed are only approaches and not fully worked up policies at this stage, it is not possible in all cases to be definitive in identifying significant impacts. Where it is possible to assign a level of significance this has been included within the appraisal commentary. However, in the majority of cases it is only possible to conclude the nature of impact (i.e. beneficial or adverse).

A number of the policies draw upon standards and policies set out in the Cambridge Local Plan: Proposed Submission 2014 to provide a consistent approach across the whole area, which includes land within both Cambridge City Council and South Cambridgeshire District Council local authority areas. The relevant policies are:

- Place and building design;
- Tall buildings and skyline;
- Open space;
- Car parking provision; and
- Cycle parking.

In the case of these policies, the councils considered that it was not a reasonable option to consider using South Cambridgeshire Local Plan policies or standards. This is because using the Cambridge City Council standards / policies better suits the urban context of the site as it is a part of the City.

Another option for the policies would be to develop specific polices and standards for the CNFE area. It has not been deemed to be a reasonable approach to prepare another, different set of policies/standards for this single area because of the level of technical assessment that has already gone into the development of the Cambridge Local Plan policies, and the advantages of a consistent approach with the rest of the city.

4.4.1 Results of the appraisal

PROPOSED APPROACH: PLACE AND BUILDING DESIGN

The proposed approach refers to a number of policies within the Cambridge Local Plan (policies 55 -59). Policy 55 seeks to protect and enhance the special character of Cambridge by encouraging development that responds to its context. Policy 56 supports development that is designed to be attractive, high quality, accessible, inclusive and safe, positively enhancing the townscape. Policy 57 sets out the measures needed to ensure new buildings are considered high quality in terms of sustainability, functionality and design (including with relation to biodiversity). Policy 59 concerns landscape and the public realm and states that external spaces, landscape, public realm, and boundary treatments must be designed as an integral part of new development proposals and co-ordinated with adjacent sites and phases. Collectively the policies provide a coherent design approach to place and building design.

The policies seek to ensure that the character of Cambridge is protected and enhanced. In doing so the policies should ensure that the character and distinctiveness of the built environment is both protected and enhanced and in doing so should positively contribute to several of the sustainability objectives.

The policies were appraised for their sustainability impacts as part of the SA of the Cambridge Local Plan. This appraisal showed that the policies should lead to significant

positive impacts in terms of encouraging proposals that lead to high quality design and an improved public realm. For this appraisal, it is important to analyse these policies in the context of the CNFE. With regard to landscape and design, the CNFE area is not particularly sensitive in terms of townscape so would not require any particular considerations in this regard. As the Local Plan recognises, different elements of place making may be more or less important than others, depending on the nature and complexity of the site and its surroundings. Therefore, it is not considered that the policies will have different effects in the CNFE than they would when applied to Cambridge generally. Therefore, the policies support the achievement of the following SA Objectives and should result in significant beneficial impacts:

- SA Objective 5: Maintain and enhance the range and viability of characteristic habitats and species and improve opportunities for people to access and appreciate wildlife and green spaces
- SA Objective 6: Maintain and enhance the diversity and local distinctiveness of landscape and townscape character
- SA Objective 9: Maintain and enhance human health and wellbeing, and reduce inequalities
- SA Objective 10: Improve the quantity and quality of publically accessible open space

No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED APPROACH: DENSITIES

Much of the land in the area is under-utilised in terms of development density. The proposed approach should ensure that the density of the development reflects the specific needs of the area. As stated in the Issues and Options document, the high level of accessibility provided by the proposed new Railway Station and Guided Busway means that high densities, comparable with new developments near the existing Cambridge railway station, are possible. The supporting text of the policy approach mentions specific local issues that need to be built into the consideration of density including landscape and townscape impacts, residential amenity, parking requirements, building heights and layout, open space standards and water related issues, and legal and property constraints. As long as these issues are considered by the council when developing the density proposals for the site, the proposed approach will have a beneficial impact on the following SA objectives, helping to use land efficiently, respect local character and make local services more viable, thus potentially reducing the need to travel:

- SA Objective 1: Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves.
- SA Objective 6: Maintain and enhance the diversity and local distinctiveness of landscape and townscape character.
- SA Objective 13: Improve the quality, range and accessibility of services and facilities.
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED APPROACH: TALL BUILDINGS AND SKYLINES

The proposed approach refers to using Policy 60 of the Cambridge Local Plan. The Cambridge Local Plan has a policy on tall buildings (Policy 60: Tall buildings and the skyline in Cambridge) and an Appendix F called Tall Buildings and the Skyline. Appendix F sets out a detailed explanation of the required approach, methodology and assessment to developing and considering tall buildings in Cambridge.

Policy 60 was appraised for its sustainability impact as part of the SA of the Cambridge Local Plan. The SA stated that the inclusion of this policy / guidance will help to contribute to the sustainability objective of ensuring that the scale of new development is sensitive to the existing key landmark buildings and low lying topography of the City. It is important to analyse this policy in the context of the CNFE. CNFE cannot be seen in isolation of Cambridge as a whole in terms of building heights. Cambridge has a varied skyline composed of towers, chimneys and spires, many of which are associated with the historic core. The flat landscape and the relative uniformity of the existing built form, which is mainly three to four storeys in height, means that the few tall buildings, such as King's College Chapel, are major landmarks. Trees form an important element of the Cambridge skyline, within both the historic core and surrounding suburbs and the CNFE area is no exception in this respect. It is not considered that the policy will have a different effect in the CNFE than it would when applied to Cambridge generally. Therefore, the policies support the achievement of the following SA Objective and should result in significant beneficial impact:

- SA Objective 6: Maintain and enhance the diversity and local distinctiveness of landscape and townscape character.

No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

Please note that the Cambridge City Council are undertaking further work over the coming months in relation to landscape, skyline and building heights in the CNFE area. This further work will be incorporated into the SA when available.

PROPOSED OPTIONS: BUILDING HEIGHTS

As noted above, the Councils are undertaking further work over the coming months in relation to landscape, skyline and building heights in the CNFE area. This further work will be incorporated into the SA when available. In the absence of this work, however, some general conclusions can be drawn.

Option A will reflect the form and character of development currently in the area so will therefore have a significant beneficial effect on SA Objective 6: Maintain and enhance the diversity and local distinctiveness of landscape and townscape character.

Option B is less likely to reflect the character of development currently in the area, however, this is not necessarily detrimental and could provide new positive focal points and landmarks in the area, depending on how developments are designed and placed. As long as policies on design are followed by developers and adequate consultation is undertaken with the public and statutory consultees the impact of this option could be significantly beneficial. As highlighted in the policy approach this could also provide more flexibility in the overall

masterplanning of the site, therefore, having indirect beneficial impacts on several of the objectives.

Option C is also less likely to reflect the character of the area but poses more risk as no maximum building heights will be prescribed. This could detract from the current skyline of the city and has the most risk attached to it with regard to significant adverse impacts. If this option is taken forward it will be crucial for developers to enter into a positive and collaborative planning approach which includes statutory consultees and the public.

Please note that building heights would be included in the visual and landscape assessment which would be submitted with planning applications and that the Cambridge City Council's existing policy approach on Tall Buildings and Skylines outlined in the previous policy approach would also need to be adhered to.

PROPOSED APPROACH: BALANCED AND INTEGRATED COMMUNITIES – EFFECTIVE INTEGRATION WITH THE WIDER AREA

The proposed approach should improve the integration of neighbouring areas with the CNFE area and provide employment opportunities and community facilities. A key objective of Cambridge City Council is to address issues of social exclusion, poverty and disadvantage within Cambridge, ensuring that the prosperity benefits of growth are shared more fairly by all in the city. CNFE currently has very limited facilities (e.g., retail, leisure and community uses) both within its boundary and in the surrounding area. The approach supports the achievement of the following SA Objectives and should result in beneficial impacts:

- SA Objective 6 Maintain and enhance the diversity and local distinctiveness of landscape and townscape;
- SA Objective 9 Maintain and enhance human health and wellbeing, and reduce inequalities;
- SA Objective 10 Improve the quantity and quality of publically accessible open space;
- SA Objective 12 Redress inequalities related to age, disability, gender, race, faith, location and income; and
- SA Objective 13 Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities.

No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED APPROACH: NEW EMPLOYMENT USES

Cambridge has been identified as one of the five most competitive cities in the UK, and one of the most recession proof cities that is likely to lead Britain back to growth. It is important that employment uses proposed for the site are able to support the cutting edge nature of the economic sectors represented in Cambridge.

The proposed approach for new employment uses is likely to deliver a range of employment opportunities and meet the needs of different businesses, including local business clusters. The approach specifically supports the achievement of SA Objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy and should result in significant beneficial impacts.

No potential adverse impacts have been identified in relation to any of the other SA Objectives. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED APPROACH: SHARED SOCIAL SPACE

The supporting text to the policy approach recognises that employment areas require complementary social and support facilities if they are to achieve the full potential of the area. This has been supported through a number of studies including the Cambridge Cluster at 50 report[1] and the Employment Options Study which showed that the Northern Fringe Employment Area including CNFE should plan in facilities and focal points for social interaction for all new developments. The proposed approach should ensure that a vibrant working environment is developed which provides for the needs of workers. The proposed approach will have a beneficial impact on the following SA Objectives:

- SA Objective 9: Maintain and enhance human health and wellbeing, and reduce inequalities
- SA Objective 13: Improve the quality, range and accessibility of services and facilities.
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED OPTIONS: CHANGE OF USE FROM OFFICE TO RESIDENTIAL OR OTHER PURPOSES

Over the last ten years, and beyond, Cambridge has seen a loss of land and premises in industrial use as higher value uses, such as residential and retail, have put pressure on sites. The offices and industrial uses make up an important part of the economy meeting the needs of people and businesses in the local area, in particular the business services that high technology firms rely on, as well as helping to provide a diverse range of jobs. Therefore, it is important to safeguard these uses.

Policy option B will provide protection against employment uses being turned into housing. Policy option A will not provide this kind of protection and arguably could undermine efforts to regenerate the area.

Option A could have adverse impacts on the following SA objectives:

- SA Objective 14: Improve the efficiency, competitiveness, vitality and adaptability of the local economy
- SA Objective 15: Support appropriate investment in people, places, communications and other infrastructure.

[1] East of England Development Agency and Partners. Cambridge Cluster at 50: The Cambridge Economy; Retrospect and Prospect (2011)

Option B, if successful in protecting employment development could have beneficial impacts on the same SA objectives.

The proposed options would have a neutral impact on the remainder of the SA Objectives.

PROPOSED OPTIONS:CAMBRIDGE SCIENCE PARK

The development of the CNFE area will result in intensification of use which will help to turn the area into an employment hub. Option A will not lead to any adverse impacts, however, it may result in missed opportunities with regard to updating the building stock and look of the Science Park, increasing densities and providing additional employment space. In contrast Option B could encourage greater intensification of use on the Cambridge Science Park, and/or intensification over a shorter time period, than may otherwise occur and may enable the park to be integrated functionally with the rest of the AAP area and ensure more integrated public transport strategies to be developed. This will have beneficial impacts on the following SA objectives:

- SA Objective 1: Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves.
- SA Objective 6: Maintain and enhance the diversity and local distinctiveness of landscape and townscape character.
- SA Objective 14: Improve the efficiency, competitiveness, vitality and adaptability of the local economy.
- SA Objective 15: Support appropriate investment in people, places, communications and other infrastructure.
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

The proposed options would have a neutral impact on the remainder of the SA Objectives.

The council have also proposed extending the site boundary to include Chesterton Sidings Triangle. The option is to include a very small triangular area of land to the south of the sidings that (1) may be used for the proposed new railway station and (2) to provide a pedestrian/cycle access for CNFE as part of the Chisholm Trail. The option will be positive as it will enable positive planning of this small but important area of the CNFE area. The option will have a significant positive effect on the following SA Objective:

- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

In enabling sustainable transport it will also have positive benefits on other SA Objectives including:

- SA Objective 2: Improve air quality and minimise or mitigate against sources of environmental pollution.
- SA Objective 7: Minimise impacts on climate change (including greenhouse gas emissions).

There are also two discounted options for this policy approach:

- Land to the north of the A14; and

- Land to the east of the railway line, both within the control of South Cambridgeshire District Council.

These options have not been tested for their sustainability as they are not deemed to be reasonable options. The reasons for this as are stated in the Issues and Options report, namely:

- These areas do not include land which reflects the characteristics of the AAP area and would not be consistent with the submitted Local Plans;
- The areas are largely Green Belt and no changes to the Green Belt boundaries in these areas have been identified through the Local Plans' Green Belt review;
- Much of the land near the river is at high risk of flooding; and
- The area to the east contains Gypsy and Traveller site provision. Existing Gypsy and Traveller sites are proposed to be safeguarded in the South Cambridgeshire Submission Local Plan.

PROPOSED OPTIONS: CHANGE OF USE FROM INDUSTRIAL TO OTHER PURPOSES AT NUFFIELD ROAD

Option A will have a Neutral performance against the SA Objectives. It supports the achievement of 'SA objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy' by maintaining the industrial uses on the site but could result in adverse impacts with regards to nearby residents with regards to traffic issues (SA Objective 9 Maintain and enhance human health and wellbeing, and reduce inequalities).

Option B, replacing industrial uses with office and relocating existing businesses elsewhere in the AAP, should result in beneficial impacts with regards to:

- SA Objective 9 Maintain and enhance human health and wellbeing, and reduce inequalities; and
- SA Objective 2 Improve air quality and minimise or mitigate against sources of environmental pollution.

However, it could result in adverse impacts with regards to 'SA Objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy' should spatial option 2 to taken forward because the option involves a net loss in industrial/storage uses (-7.1 hectares compared to existing) and therefore there is a risk that businesses could not be relocated. However, spatial options 3 and 4 should be able to accommodate the existing businesses at Nuffield Road industrial area as they will result in net increases in industrial/storage uses.

Option C, release of employment land in the Nuffield Road area for residential uses and seeking to accommodate those existing business uses elsewhere within the CNFE area, should also result in beneficial impacts with regards to:

- SA Objective 9 Maintain and enhance human health and wellbeing, and reduce inequalities;
- SA Objective 2 Improve air quality and minimise or mitigate against sources of environmental pollution; as well as
- SA Objective 11 Ensure everyone has access to decent, appropriate and affordable housing

Again, it could result in adverse impacts with regards to 'SA Objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy' as for Option B above.

The redevelopment of the land at Nuffield Road should involve the remediation of contaminated land present on the site. This requires further investigation but residential development may be limited to dwellings without private gardens.

PROPOSED APPROACH: BALANCED AND INTEGRATED COMMUNITIES - WIDER EMPLOYMENT BENEFITS

Neighbouring residential areas are home to some of the city's more disadvantaged communities with pockets of employment and income deprivation. Requiring developers to consider how they can provide training and employment opportunities will be positive in reducing these inequalities. The policy approach could have beneficial impacts on the following SA objectives:

- SA Objective 9: Maintain and enhance human health and wellbeing, and reduce inequalities.
- SA Objective 12: Redress inequalities related to age, disability, gender, race, faith, location and income.
- SA Objective 13: Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities).
- SA Objective 14: Improve the efficiency, competitiveness, vitality and adaptability of the local economy.
- SA Objective 15: Support appropriate investment in people, places, communications and other infrastructure.

No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED OPTIONS: HOTEL & CONFERENCING FACILITIES

A need for a hotel in this area has not been identified within the baseline data review and therefore Option A, which does not make provision for a hotel within the CNFE AAP, does not result in any adverse impacts.

Options B and C include provision for a hotel with or without conferencing facilities, which would provide a facility for use by local businesses and their visitors would reduce the need to travel further afield for overnight accommodation. A hotel could also support the vitality of the area by creating an evening economy in this area, assuming that public spaces are designed for safety and security. The provision of a hotel could also provide a wider range of employment opportunities within this area.

Options B and C perform similarly in that, by providing a hotel with or without conferencing facilities, the options would support the achievement of the following SA Objectives and would result in minor positive impacts:

- SA Objective 13 Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities);

- SA Objective 14 Improve the efficiency, competitiveness, vitality and adaptability of the local economy;
- SA Objective 15 Support appropriate investment in people, places, communications and other infrastructure; and
- SA Objective 16 Reduce the need to travel and promote more sustainable transport choices.

Option C could perform marginally better than Option B, through the provision of more facilities to support local businesses.

No potential adverse impacts have been identified in relation to any of the other SA Objectives. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED APPROACH: BALANCED AND INTEGRATED COMMUNITIES - HOUSING MIX
PROPOSED APPROACH: AFFORDABLE HOUSING REQUIREMENT

The proposed approach to housing mix and affordability will have a significant beneficial impact on the following SA Objectives:

- SA Objective 11: Ensure everyone has access to decent, appropriate and affordable housing.

It will also have beneficial impacts on the following SA Objectives, but the significance of the impacts will be dependent on the exact mix of housing developed:

- SA Objective 9: Maintain and enhance human health and wellbeing, and reduce inequalities.
- SA Objective 12: Redress inequalities related to age, disability, gender, race, faith, location and income.

No potential adverse impacts have been identified in relation to any of the other SA Objectives. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED OPTIONS: PRIVATE RENTED ACCOMMODATION

There is a high level of housing need in the Cambridge area (see the Strategic Housing Market Assessment (SHMA) for the Cambridge sub-region). It is important to increase the supply of all types of housing, including affordable housing, and maintain a mix of different types of sizes, types and tenures of housing to meet a wide range of housing needs. The private rented sector is becoming more important in the city because of high house prices. Both of the options would help to achieve several of the SA Objectives including:

- SA Objective 9: Maintain and enhance human health and wellbeing, and reduce inequalities.
- SA Objective 11: Ensure everyone has access to decent, appropriate and affordable housing.

If it is clear that if there is a demand for private rented accommodation in the area which will fulfil a housing need, then Option B will perform the best. However, the councils needs to collect more evidence that this is indeed the case and ensure that any policy does not preclude the development of other forms of housing if they will help to fulfil the local housing need.

PROPOSED OPTIONS: STUDENT HOUSING

Student accommodation is a high percentage among the city accommodation and demand appears to be continuing. It is important to increase the supply of all types of housing, including student housing.

Four options are presented. Without detailed information about the need for student housing only general conclusions can be made.

Option A would prevent response to any demand for student accommodation. Options B, C and D could all have positive impacts if developed using an up to date evidence base. A risk in developing student housing is that it could have the impact of reducing the overall supply of affordable housing as sites are developed for students and not the general population. Options B and D would seem to be the most effective in reducing this risk and therefore, have the potential to have the most positive impact. Option C would appear to pose the most risk to jeopardising the provision of affordable housing.

PROPOSED APPROACH: PROVISION OF SERVICES AND FACILITIES

PROPOSED APPROACH: NEW LOCAL CENTRE:

The area currently has very limited facilities (e.g. retail, leisure and community uses) both within its boundary and in the surrounding area. This concern has been supported through a number of studies including the Cambridge Cluster at 50 report[2] and the Employment Options Study showed that the Northern Fringe Employment Area including CNFE should plan in facilities and focal points for social interaction for all new developments. The AAP and future development proposals offer an opportunity for provision of a new community core with shops, services, restaurants, cafés etc. with possible links to improved facilities on the Cambridge Science Park. The proposed approach should ensure that a vibrant working environment is developed which provides for the needs of the workers. The proposed approach will have a beneficial impact on the following SA objectives:

- SA Objective 9: Maintain and enhance human health and wellbeing, and reduce inequalities
- SA Objective 13: Improve the quality, range and accessibility of services and facilities.
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

[2] East of England Development Agency and Partners. Cambridge Cluster at 50: The Cambridge Economy; Retrospect and Prospect (2011)

PROPOSED APPROACH: OPEN SPACE

The CNFE has very limited existing open space and the East Chesterton Ward currently has 2.89 hectares of mixed quality protected open space per 1,000 population (source: Cambridge City Council Open Space and Recreation Strategy October 2011), which compares poorly to the target of 4.1 hectares per 1,000 population in the updated Open Space Standards of the Cambridge Local Plan 2014 Proposed Submission.

The lack of open space emphasises the importance of the CNFE AAP providing sufficient multi-functional open space for the area's needs, although this should be balanced with other needs and the nature of the area. Open spaces are a key aspect of high quality urban environments and are fundamental to the character of the city. As recognised in the Cambridge Local Plan 2014 Proposed Submission, an essential part of Cambridge's character stems from the relationship between the city's buildings and open spaces. It is likely that due to the restriction of space on the site off site contributions will be required to meet the open space standards in the Local Plan.

The policy approach will have a beneficial impact on the following SA Objectives:

- SA Objective 5: Maintain and enhance the range and viability of characteristic habitats and species and
- SA Objective 6: Maintain and enhance the diversity and local distinctiveness of landscape and townscape character improve opportunities for people to access and appreciate wildlife and green spaces.
- SA Objective 9: Maintain and enhance human health and wellbeing, and reduce inequalities; and
- SA Objective 10: Improve the quantity and quality of publically accessible open space.

The significance of the impacts will be dependent on what is planned on site and the balance between on-site provisions and off site contributions. No potential adverse impacts have been identified although care needs to be taken to ensure that development on the site remains viable. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED APPROACH: KEY TRANSPORT AND MOVEMENT PRINCIPLES

Further work needs to be completed on access to the site including traffic modelling. However, the policy approach sets out some positive principles that will help to guide the development of the site. The transport network in Cambridge is relatively constrained with finite capacity for vehicles and access to the main part of the CNFE area is limited with just one main route in and out onto Milton Road. Capacity at this junction and along the Milton Road Corridor is a significant constraint. Permeability across the site is currently severely restricted due to physical barriers including the A14, the railway line and Milton Road. Increasing permeability is therefore challenging and crucial. It is recognised that the AAP and subsequent development proposals provide an opportunity to maximise the sustainable transport opportunities offered by the proposed new railway station, the extension to the Guided Bus and connection to the existing high quality off-road cycle network alongside the existing Guided Busway, as well as enhancements to the network including the new

Chisholm Trail. The policy approach will have a beneficial impact on the following SA Objectives:

- SA Objective 2: Improve air quality and minimise or mitigate against sources of environmental pollution.
- SA Objective 7: Minimise impacts on climate change (including greenhouse gas emissions).
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED OPTIONS: MODAL SHARE TARGET

Because of the constrained nature of the Cambridge transport system it is vitally important that traffic levels are kept stable and that a modal share target is set. The traffic modelling that will be carried out will provide evidence for the appraisal. In the absence of the modelling work only a broad assessment can be made.

The 2011 census showed that despite the increase in population in the ten years since the previous census, the proportion of employed residents of the city who drove to work dropped from 37.5% to 30%. In order for these traffic levels to continue to remain stable, despite the forecast growth for the city, work undertaken by the councils indicate that the proportion of employed city residents who drive to work needs to fall even further, to 24%. The sites highly sustainable location highlights the potential to achieve the 24% needed across the city to keep traffic levels stable. With the existing and future pressures on the city's road network, CNFE must seek to facilitate the greatest possible public transport and cycle mode share.

Option C is likely to cause adverse impacts because it will not seek to constrain road traffic from the site. This is likely to cause increases in road traffic which will cause increases in noise, air pollution, CO2 and nuisance. This is also likely to constrain economic growth in the medium and long term. Therefore, the option is likely to have adverse impacts on the following SA Objectives:

- SA Objective 2: Improve air quality and minimise or mitigate against sources of environmental pollution.
- SA Objective 7: Minimise impacts on climate change (including greenhouse gas emissions).
- SA Objective 14: Improve the efficiency, competitiveness, vitality and adaptability of the local economy
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

Options A and B are likely to have beneficial impacts on most of the above SA Objectives through helping to restrict road traffic (in association with the transport strategy that is set for the site). However, without specific traffic modelling on the impacts of different modal shares (and without further details on what would be needed to make the area an exemplar scheme) the significance of the impacts cannot be judged.

There may be some concern that higher modal share targets might inhibit some commercial demand for new floor space when linked with restricted car parking if some find it difficult to use their car. Therefore, Options A and B may have a slight adverse impact on Objective 14 in the short term. Options A and B are likely to have a beneficial impact on Objective 14 in the medium and long term as the travel options in the area significantly improve and users of the site become more used to alternative modes of travel. High modal share targets are likely to become more the norm in Cambridge and this site will have a competitive advantage because of its accessibility.

PROPOSED OPTIONS: VEHICULAR ACCESS AND ROAD LAYOUT

The current access to the site is limited with just one main route (Cowley Road) in and out onto Milton Road. The junction acts as a bottleneck constraint to further development as it suffers from heavy peak time congestion. Investigations are currently ongoing with regard to access solutions for the site but the results are not yet available. In the absence of this work only a broad assessment can be made.

Option A would not appear to be a practical solution due to the congestion this will cause and the impacts this will have on the character of the site as Cowley Road is expected to serve as a green boulevard. Having all traffic access the site in this way would undermine the urban design aspirations of this element of the AAP masterplan. Therefore, Option A would have adverse impacts on the following SA Objectives:

- SA Objective 6: Maintain and enhance the diversity and local distinctiveness of landscape and townscape character
- SA Objective 10: Improve the quantity and quality of publically accessible open space
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

It would seem that Options B and C are likely to perform better both in terms of congestion and in terms of urban design principles. It is difficult to assess in detail without the results of the access investigations. However, Option B is likely to perform better against SA Objectives 6 and 10. However, Option C might perform better in transport terms as it is more likely to reduce congestion (as it provides more road space for vehicle access) and may perform well in terms of safety as it separates HGVs from other road traffic.

PROPOSED OPTIONS: *PARKING AT TRANSPORT INTERCHANGE*

The current (and consented) interchange proposals include parking for 450 cars and around 1000 bicycles at ground level. Option A will have beneficial impacts on the following SA Objectives:

- SA Objective 2: Improve air quality and minimise or mitigate against sources of environmental pollution
- SA Objective 7: Minimise impacts on climate change (including greenhouse gas emissions)
- SA Objective 14: Improve the efficiency, competitiveness, vitality and adaptability of the local economy

- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

It will do this through enabling access to more sustainable modes of transport and therefore helping to promote the competitiveness of the area and providing beneficial environmental impacts of modal switch.

Option B, provision of a multi storey car park is quite a significant change. This will need to be assessed as part of an additional planning permission especially in terms of visual impacts on houses to the east of the CNFE area and the impacts are also dependent on the planned heights of the buildings in the immediate area (which is currently unknown). Option B would have the beneficial impacts identified above but would also potentially have adverse impacts on the following SA Objective:

- SA Objective 6: Maintain and enhance the diversity and local distinctiveness of landscape and townscape character

In addition, Option B could possibly have a beneficial impact on the following SA Objective through making more effective use of land:

- SA Objective 1: Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves.

PROPOSED OPTIONS: CAR PARKING PROVISION

Three options are presented with varying degrees of restriction in relation to car parking standards. Careful consideration needs to be given to appropriate levels of car parking provision for the site, with a potentially strong argument for strict parking standards given CNFE's highly sustainable location. Similarly to the policy approach on modal share, the traffic modelling that will be carried out will provide evidence for the appraisal. In the absence of the modelling work only a broad assessment can be made. Without specific traffic modelling on the impacts of different modal shares (and without further details on what would be needed to make the area an exemplar scheme) the significance of the impacts cannot be judged.

All of the options are likely to have positive impacts on the following SA Objectives:

- SA Objective 2: Improve air quality and minimise or mitigate against sources of environmental pollution.
- SA Objective 7: Minimise impacts on climate change (including greenhouse gas emissions).
- SA Objective 14: Improve the efficiency, competitiveness, vitality and adaptability of the local economy.
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

However, it will be important that a practical sustainable transport strategy is developed to enable people to access the site using modes other than the car.

Please note that an option based on less restrictive parking standards has not been developed (and assessed) as this was not considered a reasonable approach given the context of the site and its access issues.

PROPOSED OPTIONS: CYCLE PARKING PROVISION

Three options are presented with varying degrees of restriction in relation to cycle parking standards. Given the sustainable location of the site, there is the potential for many trips generated by the development to be made by bike. The site already has the potential to be connected in a number of directions to existing or planned high quality cycle infrastructure. The planned Chisholm Trail will connect the site to Cambridge Station and the Addenbrooke's campus and eastwards, the site will also connect to the guided busway through the new guided busway extension. There are also plans for upgrades to the cycling infrastructure along Cowley Road. All of the options are likely to have positive impacts on the following SA Objectives:

- SA Objective 2: Improve air quality and minimise or mitigate against sources of environmental pollution.
- SA Objective 7: Minimise impacts on climate change (including greenhouse gas emissions).
- SA Objective 14: Improve the efficiency, competitiveness, vitality and adaptability of the local economy.
- SA Objective 16: Reduce the need to travel and promote more sustainable transport choices.

Options B and C are likely to have more beneficial impacts than Option A. However, the success of the standards is dependent on the transport strategy developed for the site.

PROPOSED OPTIONS: SUSTAINABLE DESIGN AND CONSTRUCTION AND FLOOD RISK

The Cambridge Local Plan has the following policies in relation to sustainable design and construction:

- Policy 27: Carbon reduction, community energy networks, sustainable design and construction, and water use
- Policy 28: Allowable solutions for zero carbon development
- Policy 29: Renewable and low carbon energy generation
- Policy 31: Integrated water management and the water cycle
- Policy 32: Flood risk

The South Cambridgeshire Local Plan also has a number of policies (shown below):

- Policy CC/1: Mitigation and Adaptation to Climate Change
- Policy CC/2: Renewable and Low Carbon Energy Generation
- Policy CC/3: Renewable and Low Carbon Energy in New Developments
- Policy CC/4: Sustainable Design and Construction
- Policy CC/8: Sustainable Drainage Systems

The SAs for the Cambridge Local Plan and the South Cambridgeshire Local Plan find that the policies will be generally positive in terms of promoting sustainability (although with some reservations about the use of the phrase “unless it can be demonstrated that such provision is not technically or economically viable” in Cambridge Local Plan Policy 27 and some concern about the effects of large numbers of solar panels on townscape in South Cambridgeshire).

The district policies are not exactly the same and have slightly different provisions. Table 4.4 below sets out the requirements for each.

It is not possible to state exactly how the sustainability performance of the policies would differ because it is not clear what mix of development is likely to come forward. There are some conclusions that can be drawn however from the comparison of Options A and B.

- Option A might be a difficult approach to develop because there are differences in the policy approaches in the two plans. This may lead to uncertainty and it is less likely that the site will deliver development to the same standards with relation to sustainable design and construction and climate change as that which would be specified under Option B.
- Option B would provide more clarity to developers and would be clearer in terms of the exact provisions required. However, if Option B is taken forward the councils should ensure that the most stringent provisions are applied to the site.

Table 4.4 Comparison of sustainable construction and design policies			
Issue	**Option A**		**Option B**
	Cambridge	**South Cambridgeshire**	**New Policy**
Provision of a sustainability statement	Promoters of major development... should prepare a sustainability statement … outlining their approach to the following issues: • adaptation to climate change • carbon reduction • water management • site waste management • e. use of materials	Planning permission will only be granted for proposals that demonstrate and embed the principles of climate change mitigation and adaptation into the development. Applicants must submit a Sustainability Statement to demonstrate how these principles have been embedded into the development proposal.	All development proposals to demonstrate how the principles of sustainable design and construction have been integrated into the design of proposals, giving specific consideration to: • adaptation to climate change • carbon reduction (both in relation to the design and layout of developments and buildings themselves and through the promotion of sustainable modes of transport) • water management • site waste management • use of materials.
New homes	By 2016 Code for sustainable Homes Level 4 On-site reduction of regulated carbon emissions relative to Part L 2006: 44% - 60% on-site, with remainder dealt with through allowable solutions (as per national zero carbon policy) 80 litres/head/day	Proposals for new dwellings and new non-residential buildings of 1,000 m2 or more will be required to reduce carbon emissions (over the requirements set by Building Regulations) by a minimum of 10% through the use of on-site renewable energy technologies. All new residential developments must achieve as a minimum the equivalent of Code for Sustainable Homes Level 4 for water efficiency (105 litres per person per day). The Council is relying on the planned changes to Building Regulations anticipated	Given that the proposed adoption of the AAP will be late 2016, national zero carbon policy for new homes will have come into force, and as such additional carbon reduction standards for any new residential development at CNFE will not be required, in line with the outcomes of the Housing Standards Review. Any new residential development to meet the optional water efficiency standards resulting from the Housing Standards Review of 110 litres per person per day.

Table 4.4 Comparison of sustainable construction and design policies			
Issue	**Option A**		**Option B**
	Cambridge	**South Cambridgeshire**	**New Policy**
		to come into force in 2013 and 2016, which will progressively improve the energy efficiency requirements of new homes	
Other development	By 2016 BREEAM Excellent Water efficiency: Full credits to be achieved for category Wat 01 On site carbon reduction: In line with 2013 Part L By 2019 BREEAM Excellent Water efficiency: Full credits to be achieved for category Wat 01 On site carbon reduction: In line with national zero carbon policy	Proposals for new dwellings and new non-residential buildings of 1,000 m2 or more will be required to reduce carbon emissions (over the requirements set by Building Regulations) by a minimum of 10% through the use of on-site renewable energy technologies. Proposals for non-residential development must be accompanied by a water conservation strategy, which demonstrates a minimum water efficiency standard equivalent to the BREEAM standard for 2 credits for water use levels unless demonstrated not practicable.	All new non-residential development will be required to meet a minimum of BREEAM excellent. Carbon reduction for new non-residential development would be linked to the mandatory requirements set out for BREEAM excellent. New non-residential development should achieve maximum BREEAM credits for water efficiency.
Allowable solutions	Where compliance with national zero carbon policy necessitates the use of the allowable solutions framework (ASF), developers will have the option to: a. deliver their own allowable solutions locally; b. make a contribution to the Cambridgeshire Community Energy Fund; or	Where 'allowable solutions' are needed for a proposal to achieve zero carbon (as set out in Building Regulations), and if a Cambridgeshire Community Energy Fund exists, the Council's preference is that developers contribute to this fund to ensure that the benefits are retained locally.	

Table 4.4 Comparison of sustainable construction and design policies			
Issue	**Option A**		**Option B**
	Cambridge	**South Cambridgeshire**	**New Policy**
	c. offset via third-party allowable solutions providers into a project selected from a local Energy Efficiency and Renewable and Low Carbon Energy Infrastructure Projects List.		
Approach to SUDS	A detailed policy on the design of natural drainage features. A flood risk policy that states: the destination of the discharge obeys the following priority order: • firstly, to ground via infiltration; • then, to a water body; • then, to a surface water sewer.	Development proposals must incorporate appropriate sustainable surface water drainage systems (SuDS) appropriate to the nature of the site. A flood risk policy that states: the destination of the discharge obeys the following priority order: i. Firstly, to the ground via infiltration; ii. Then, to a water body; iii. Then, to a surface water sewer; iv. Discharge to a foul water or combined sewer is unacceptable.	Surface water to be managed close to the surface and on the surface with priority given to nature services through the use of sustainable drainage systems (SuDS). Water should be seen as a resource and be re-used where practicable, offsetting potable water demand. A water sensitive approach should be taken to the design of development proposals.
Flood risk	The peak rate of run-off over the lifetime of the development, allowing for climate change, is no greater for the developed site than it was for the undeveloped site. The post-development volume of run-off, allowing for climate change over the development lifetime, is no greater than it would have been for the undeveloped site.	In order to minimise flood risk, development will only be permitted where: a. The sequential test and exception tests established by the National Planning Policy Framework demonstrate the development is acceptable (where required).	All development should ensure that all forms of flood risk are taken into consideration and that proposals are not at risk of flooding or increase the risk of flooding elsewhere.

PROPOSED APPROACH: RENEWABLE AND LOW CARBON ENERGY GENERATION

A number of studies have assessed Cambridge's potential for renewable and low carbon energy generation. These studies suggest that the main focus for renewable and low carbon energy generation will be from the potential that Cambridge offers for the development of district heat networks and the use of micro generation, such as solar panels. Cambridge City Council recognises that the opportunities for stand-alone renewable energy schemes within Cambridge are limited. However, it is keen to support opportunities where they arise, in particular small-scale and community schemes that are most likely to be viable within Cambridge. The policy approach would have beneficial impacts on the following SA Objectives:

- SA Objective 7: Minimise impacts on climate change (including greenhouse gas emissions).

The site has so far not been recognised as having potential for district heating. However, the fact that the policy requires further consideration will be positive in reducing carbon emissions. Anaerobic digestion could also provide a valuable form of renewable heat and power in this context.

PROPOSED APPROACH: HEALTH IMPACT ASSESSMENT

Health Impact Assessment (HIA) is a method of considering the positive and adverse impacts of development on the health of different groups in the population, in order to enhance the benefits and minimise any risks to health. The policy approach will have positive impacts on the following SA Objective:

- SA Objective 9: Maintain and enhance human health and wellbeing, and reduce inequalities

The policy will also ensure conformity with the South Cambridgeshire Local Plan (Submission Draft 2014) which includes a policy on this issue (Policy SC/2). This will be through ensuring major developments assess their impacts on health and therefore, maximise the health benefits of their proposals. No potential adverse impacts have been identified. The proposed approach would have a neutral impact on the remainder of the SA Objectives.

PROPOSED OPTIONS: PHASING AND DELIVERY APPROACH

Option A states that the AAP will provide a sufficiently detailed development framework for the whole area with appropriate apportionment of infrastructure requirements across the area identified. Option B states that the AAP will require the planning application for the first phase of development to provide a masterplan for the whole AAP area.

As long as an effective masterplan is developed the precise nature of the mechanism used is not important for the Sustainability Appraisal.

5 Conclusions

5.1 Introduction

This section summarises the key findings of the SA and presents conclusions.

5.2 CNFE AAP Vision, Development Principles and Development Objectives

The consistency check between the CNFE Vision, Development Principles and Development Options and the SA Framework has mainly recorded consistency. Two opportunities to improve the vision have been identified: reference could be made to ensuring that the CNFE is resilient to climate change and that it supports addressing inequalities within the area.

Potential conflicts identified within the matrix reflect tensions between the Development Objectives and Principles and the SA Objectives. Development Objective 3: Maximise the Employment Opportunities could potentially conflict with SA Objectives relating to air and noise pollution, water pollution, biodiversity, landscape and townscape and provision of open space as these factors could potentially be compromised at higher levels of development. Tensions between objectives are inevitable and it will be up to the AAP to ensure that all objectives can be met through either spatial planning or policy wording.

5.3 Spatial Redevelopment options

Spatial Redevelopment Options presented within Chapter 7 of the draft Issues and Options consultation document have been appraised along with a 'Do Nothing/Committed Developments' option which is based on the existing site uses and committed developments (see Section 3). The latter option does not perform particularly well against the SA Framework; mainly neutral and minor beneficial impacts have been recorded. No significant impacts have been recorded in the appraisal of this option.

There are a number of factors common to all of the redevelopment Options 1-4. For each of the Options 1-4, green space is included along the northern and eastern boundaries which should help to reduce adverse impacts on the Green Belt.

There are a number of uncertainties common to Options 1-4 and therefore they perform similarly against some of the SA Objectives. These uncertainties are:

- There is uncertainty over the type and location of contamination. Cambridge City Council is undertaking borehole surveys of ground contamination in order to provide additional information to feed into the development of the draft AAP. Further investigation will also be required through the planning application process to determine appropriate mitigation. See mitigation below.
- Information is not available on potential air quality and noise impacts relating to each of the options as transport modelling is not completed. However, the assessments of each option have identified the potential benefits of the location and therefore the opportunities available to seek a high modal share of non-car modes for all of the options. In addition, the assessments of the options which include higher levels of development (options 3 and 4) have identified the potential for them to generate higher levels of traffic.
- Each of the options 1-4 proposes redevelopment of a part of the Chesterton Sidings, the ecological value of which is uncertain but it could be important for biodiversity.

- Landscape character and visual impacts with regards to the Cambridge Green Belt and the City Townscape are to be assessed shortly but findings will not be available to inform Issues and Options. The AAP area has significant potential for townscape improvements. The impacts of development will need to be considered, in particular building height and design on the wider area. However, there is potential for beneficial impacts.
- Each of the Options 1-4 has the potential to reduce vulnerability to future climate change through the use of SUDS, green infrastructure and design and layout of the development. However, policies are yet to be developed in order to ensure that these are integrated into the development.
- Information is not available on potential traffic impacts relating to the options as transport modelling is not completed and therefore the appraisals against SA Objective 16 (see Section 2 of the main report) cannot be completed at this stage. The assessments of the Options 1-4 have identified uncertainty with regards to this SA Objective and potential adverse impacts with regards to traffic generation, particularly associated with the higher levels of development (i.e. options 3 and 4). However, there are also potential beneficial impacts associated with each of the options, from taking advantage of the opportunity for intensive land uses around the new transport interchange and encouraging the use of sustainable modes of travel. The CNFE AAP area will be one of the most accessible sites by non-car modes in the Cambridge area.

Mitigation measures are put forward to address these areas of uncertainty. Enhancement measures are also put forward for each of the redevelopment options in order to improve their performance.

Option 1 represents a low level of growth and mainly performs well with regards to the SA Framework. Most SA objectives are supported by Option 1. No significant beneficial or adverse impacts have been identified in the appraisal, however, uncertainties identified in sub-section 4.3.2 apply to all of the Options 1-4 and once information is available to reduce these uncertainties, it is possible that adverse impacts could be identified, for example, in relation to air quality and traffic impacts. With regards to the potential beneficial impacts identified, Option 1 does not perform as well as Options 2-4.

Option 2 involves a medium level of growth. It performs well with regards to the SA Objectives, with a number of significant beneficial impacts being identified as well as the uncertainties common to all of the Options 1-4 (listed in sub-section 4.3.2). As for Option 1, and once information is available to reduce these uncertainties, it is possible that adverse impacts could be identified, for example, in relation to air quality and traffic impacts. Option 2 includes some residential development (440 dwellings) and might therefore require mitigation measures to avoid adverse impacts on new residents such as in relation to noise. This spatial option has been designed to avoid adverse impacts in relation to odour associated with the WRC.

Option 3 involves a high level of growth and a more intense redevelopment of the AAP area. With regards to beneficial impacts, Option 3 performs well with regards to the SA Objectives, with more significant beneficial impacts compared with Option 2. However, it should be noted that there are uncertainties common to all of the Options 1-4 (listed in sub-section 4.3.2) and therefore potential adverse impacts, for example, in relation to air quality, noise and traffic are currently unclear. Option 3 represents a more intense redevelopment than options 1 and 2 and therefore risks of adverse impacts occurring could be greater. Option 3 also includes some residential development (630 dwellings) and might therefore require

mitigation measures to avoid adverse impacts on new residents such as in relation to noise. The spatial option has been designed to avoid adverse impacts in relation to odour associated with the WRC.

Option 3 should deliver net gains in biodiversity and will improve habitat connectivity, resulting in an enhanced and more comprehensive green infrastructure network (compared to Options 1 and 2) across the site which links into the new open space on the site and the existing open space to the south of the AAP boundary. In Option 3, as for Option 4, the green infrastructure network proposed on the AAP site covers a larger area compared to Options 1 and 2 and the 'Do Nothing/Committed Development' option.

It is assumed that Options 3 and 4 will have the potential to significantly improve energy efficiency of operations of the site and significant renewable energy generation will be incorporated into the development. The proposed policy approach to renewable and low carbon energy generation (1a) would particularly support Options 3 and 4 as the development of the policy would include consideration of the types of energy generation that could be suitable for the area and whether an area based approach could be used.

Options 3 and 4 will provide a significant amount of new employment opportunities (25,800 new jobs in Option 3 and 27,600 new jobs in Option 4) as well as new housing and community facilities. It will allow for a comprehensive network of walking and cycling access across the site integrated with a green infrastructure network and significant open space.

Option 3 has been designed around constraints posed by potential odour impacts from the WRC facility. In this option, it is assumed that significant investment in the WRC can allow it to function on a much smaller site than present.

Options 3 and 4 will provide significant amounts of new office and R&D space and a net increase in industry/storage but requires existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have an adverse impact on those businesses in the short term. This mixed performance is also recorded for Option 2, although it provides less new office, R&D space and industry/storage than Options 3 and 4.

The performance of Option 4 against the SA Framework compared with Option 3 is not markedly different. Option 4 represents a more comprehensive redevelopment of the AAP area which may be made possible if an alternative location for the WRC can be identified. Option 4 does not provide any additional residential development compared with Option 3. However, the uncertainties common to all of the Options 1-4 (listed in sub-section 4.3.2), which relate to factors such as air quality, ecology, landscape and townscape, and traffic could be associated with adverse impacts, once information is available on which to appraise such impacts. It should therefore be noted that although Options 3 and 4 are associated with a greater number of potentially significant beneficial impacts, they could also be associated with adverse impacts, once further information becomes available in forthcoming months (see Section 6 for further details). Option 4 represents the most intense level of redevelopment of all of the options 1-4 and therefore could pose the highest risks of adverse impacts occurring in relation to townscape, traffic, air quality, noise and ecology (specifically relating to the Chesterton Sidings).

Option 4 proposes the relocation of the WRC, which would free up land for further redevelopment. A site for the relocated works is not identified, but would be outside the AAP area. This would be subject to a separate planning process. Impacts on sustainability objectives of this relocation are uncertain as it would depend on the location and nature of

the site. Potential indirect and cumulative effects would need to be considered in more detail should this option be taken forward.

Each of the Options 1-4 proposes redevelopment of a part of the Chesterton Sidings, the ecological value of which is uncertain but it could be important for biodiversity. Option 4 proposes the largest part of Chesterton Sidings for redevelopment of all of the options and therefore poses the greatest risk of adverse impacts on biodiversity. However, the ecological value of the Chesterton Sidings requires confirmation through survey and there is potential for enhancements to be put in place to ensure that a net gain in biodiversity is achieved across the whole site.

5.4 Proposed policy approaches

The policy options have been appraised against the appraisal framework set out in Section 2 and a brief appraisal commentary provided for each. When carrying out the appraisal the team has considered how the approaches / options would work towards or against the various SA Objectives and whether any mitigation or enhancements need to be addressed whilst the policies are being developed.

The majority of the policy approaches posed did not have alternative options presented. These policy approaches all had positive impacts on the SA objectives, many of them significantly beneficial. No adverse impacts were recorded.

Some of the policy approaches were presented with alternative options and the results of the appraisal of these are summarised below:

- Building heights: Option A was seen as significantly beneficial in safeguarding the form and character of the area. Option B and C were less likely to do this and Option C in particular posed a risk to the character of the City as no maximum building heights are prescribed in this option.
- Change of use from office to residential or other purposes: Option A could potentially undermine efforts to regenerate the area. Option B, however could provide protection and help with regeneration efforts.
- Cambridge Science Park: Option A could lead to missed opportunities with regard to regeneration. Option B, however, could encourage greater intensification of use on the Cambridge Science Park and therefore, more sustainable development.
- Change of use from industrial to other purposes at Nuffield Road: Option A will have a neutral performance against the SA Objectives. Options B and C should result in beneficial impacts with regard to health and pollution but may result in negative impacts in relation to the local economy should spatial option 2 be taken forward because the option involves a net loss in industrial/storage uses.
- Hotel & conferencing facilities: Option A will have a neutral impact on the SA objectives. Options B and C perform similarly in that, by providing a hotel with or without conferencing facilities, the options would support the achievement of a number of the SA Objectives. Option C could perform marginally better than Option B, through the provision of more facilities to support local businesses.
- Private rented accommodation: Both options could have a positive impact on health and well-being and provision of more affordable housing. If, through further work, it is clear that if there is a demand for private rented accommodation in the area which will fill a housing need, then Option B will perform the best.

- Student housing: Option A would prevent response to any demand for student accommodation. Options B, C and D could all have positive impacts if developed using an up to date evidence base. However, a risk in developing student housing is that it could have the impact of reducing the overall supply of affordable housing as sites are developed for students and not the general population. Options B and D would seem to be the most effective in reducing this risk and therefore, have the potential to have the most positive impact. Option C would appear to pose the most risk to jeopardising the provision of affordable housing.
- Modal share target: Option C is likely to cause adverse impacts because it will not seek to constrain road traffic from the site which is likely to cause increases in road traffic which will cause increases in noise, air pollution, CO2 and nuisance. This is also likely to constrain economic growth in the medium and long term. Options A and B are likely to have beneficial impacts on many of the SA Objectives. There may be some concern that higher modal share targets might inhibit some commercial demand for new floor space when linked with restricted car parking if some find it difficult to use their car. Therefore, Options A and B may have a slight adverse impact on Objective 14 in the short term. Options A and B are likely to have a beneficial impact on Objective 14 in the medium and long term as the travel options in the area significantly improve and users of the site become more used to alternative modes of travel. High modal share targets are likely to become more the norm in Cambridge and this site will have a competitive advantage because of its accessibility.
- Vehicular access and road layout: Option A would not appear to be a practical solution due to the congestion this will cause and the impacts this will have on the character of the site as Cowley Road is expected to serve as a green boulevard. Options B and C are likely to perform better both in terms of congestion and in terms of urban design principles.
- Parking at transport interchange: The current (and consented) interchange proposals (Option A) include parking for 450 cars and around 1000 bicycles at ground level and would have beneficial impacts in relation to pollution, climate change and the economy. Option B (provision of a multi storey car park) would have similar beneficial impacts but could potentially have a negative visual impact on houses to the east of the CNFE area.
- Car parking provision: Three options are presented with varying degrees of restriction in relation to car parking standards. All of the options are likely to have beneficial impacts on issues such as air quality, sustainable transport and climate change. Without specific traffic modelling on the impacts of different modal shares (and without further details on what would be needed to make the area an exemplar scheme) the significance of the impacts cannot be judged.
- Cycling parking provision: Three options are presented with varying degrees of restriction in relation to cycle parking standards. All of the options are likely to have beneficial impacts on issues such as air quality, sustainable transport and climate change. Options B and C are likely to have more beneficial impacts than Option A. However, the success of the standards is dependent on the transport strategy developed for the site.
- Sustainable design and construction and flood risk: It is not possible to state exactly how the sustainability performance of the options would differ because it is not clear what mix of development is likely to come forward. There are some conclusions that can be drawn however from the comparison of Options A and B. Option A (relying on

district policies) may lead to uncertainty and it is less likely that the site will deliver development to the same standards with relation to sustainable design and construction and climate change as that which would be specified under Option B. Option B (developing a bespoke policy) would provide more clarity to developers and would be clearer in terms of the exact provisions required. However, if Option B is taken forward the councils should ensure that the most stringent provisions are applied to the site.

- Phasing and delivery approach: Option A states that the AAP will provide a sufficiently detailed development framework for the whole area with appropriate apportionment of infrastructure requirements across the area identified. Option B states that the AAP will require the planning application for the first phase of development to provide a masterplan for the whole AAP area. As long as an effective masterplan is developed the precise nature of the mechanism used is not important for the Sustainability Appraisal.

6 Next Steps

This report will be consulted on alongside the CNFE AAP Issues and Options consultation document at the end of 2014 and beginning of 2015.

The findings of the SA and the comments received will be taken into account within the next stage of work which will involve the development and appraisal of a preferred option for the CNFE. This will form Stages B3-B6 of the SA as set out in Table 2.1.

Technical work is scheduled to take place within forthcoming months and the findings of this work will provide information to inform the SA and the development of a preferred option for the CNFE AAP. The SA has so far identified that a lack of information has meant that there are uncertainties at present with regards to potential impacts on townscape, traffic, air quality and noise. The technical work is as follows:

- Landscape character and visual impact assessment with regards to the Cambridge Green Belt and the City townscape is due to be commenced by Cambridge City Council at the end of 2014;
- Cambridge City Council is undertaking borehole surveys of ground contamination in order to provide additional information to feed into the development of the draft AAP; and
- Transport modelling based on the detailed options. Once the transport modelling is completed potential impacts of traffic on the local network and in relation to air quality and noise impacts can be considered.

Cambridge Northern Fringe East Area Action Plan

Interim Sustainability Appraisal Report

Annex A: Spatial Development Options

Prepared for:
South Cambridgeshire District Council and Cambridge City Council

Prepared by:
ENVIRON
Exeter, UK

Date:
November 2014

Project or Issue Number:
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Date:	November 2014

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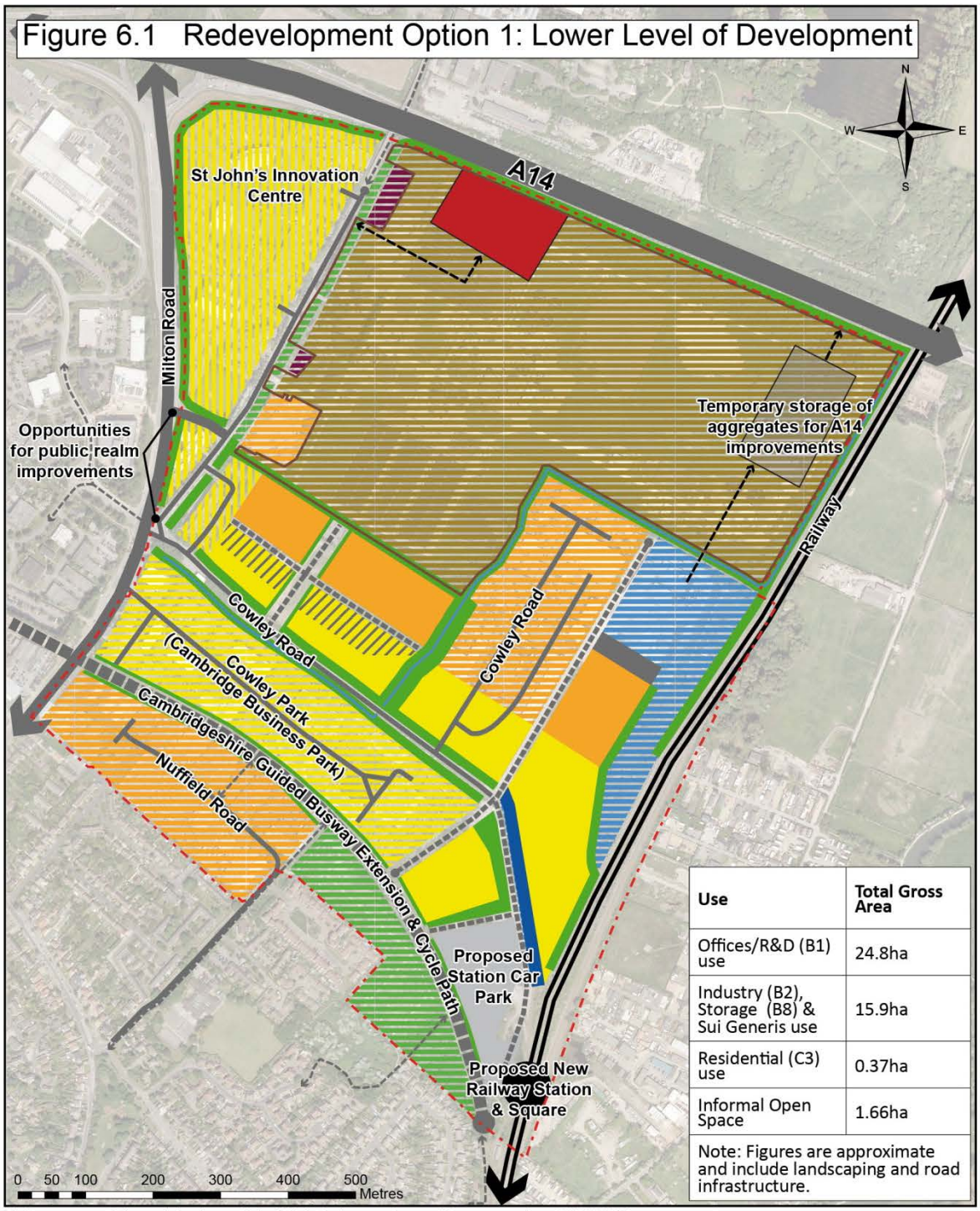
Issue	**Description of Status**	**Date**	**Reviewer Initials**	**Author Initials**
1	Draft to Client	10/11/2014		VP

1 Introduction

This Annex presents the Spatial Development Options as they are presented within Chapter 7 of the draft Cambridge Northern Fringe East Area Action Plan Issues and Options Report.

Figure 6.1 Redevelopment Option 1: Lower Level of Development



Use	Total Gross Area
Offices/R&D (B1) use	24.8ha
Industry (B2), Storage (B8) & Sui Generis use	15.9ha
Residential (C3) use	0.37ha
Informal Open Space	1.66ha
Note: Figures are approximate and include landscaping and road infrastructure.	

- Cambridge Northern Fringe East Area Action Plan Boundary
- Proposed roads
- Cycle/pedestrian routes
- Offices/R&D (B1) use
- Existing Offices/R&D (B1) use with potential for plot intensification
- Proposed Office/R&D (B1) use
- Office/R&D (B1) car parking area only
- Existing Industry (B2), Storage (B8) & Sui-Generis uses
- Proposed Industry (B2), Storage (B8) & Sui-Generis uses [1]
- Water Recycling Centre (upgraded)
- Existing Residential (C3) use
- Boundary of existing Water Recycling Centre
- Relocated Concrete Batching Plant
- Local Centre
- Reconfigured aggregates railhead & sidings
- Protected Open Space/City Wildlife Sites
- Landscape and Open Space
- First Public Drain Watercourse
- Indicative location for Household Waste Recycling Centre and inert recycling facility [2]

[1] Could include the relocation of the Veolia Waste Transfer site and relocated B2, B8 and Sui Generis uses.
[2] Could also be located on B2, B8 & Sui-Generis land in the vicinity of Cowley Road.

OPTION 1 – LOWER LEVEL OF REDEVELOPMENT

Enhanced station approach and new employment redevelopment to deliver a gateway to Cambridge. Focus on regeneration of vacant or more easily available land. Would support early delivery, but less comprehensive development of the area.

- Improvements to Station approach to create green 'Boulevard' and activity around the Station
- Major new Office / R&D development along Cowley Road and around the new Station
- Industry and Warehousing to the rear of Cowley Road
- Local services such as small shops or coffee shops, along the Station approach
- New Household Waste Recycling Centre on Waste Water Recycling Centre or industrial land
-

LAND USE/COMMUNITY

Positive

- Provides land for additional offices / R&D and industry
- Supports existing successful businesses
- Regenerates vacant sites in the area
- New local services for employers and visitors

Negative

- Retaining Nuffield Road industrial uses continues local traffic issues with heavy goods vehicles
- Water recycling centre constrains more comprehensive redevelopment
- Limited local services on Station approach fails to create a 'hub' for the area
- No residential uses means area focused entirely on employment

MOVEMENT/TRANSPORTATION

Positive

- Minimal changes to existing road network needed
- Enhances the approach to the proposed new railway station

Negative

- Heavy reliance on Cowley Road to access all uses in the area
- Does not improve pedestrian and cycle access through Cambridge Business Park or across to the Science Park
- Traffic impacts on Milton Road and existing junctions need to be addressed.

ENVIRONMENT/OPEN SPACE

Positive

- Creates an enhanced 'green' boulevard to the proposed new railway station
- Improves green areas and watercourses on the site.

Negative

- Limited land for new open spaces.

BUILT FORM

Positive

- Retains most existing buildings and uses, which limits disruption to existing firms
- Creates business, shops and services along the Station approach

Negative

- Limited redevelopment opportunities possible due to existing constraints

DELIVERY OF VISION

Positive

- Fewer land interests means less complex development
- Developments more likely to come forward earlier, following soon after the Station

Negative

- Will not deliver such a major regeneration or vision for wider area

POSSIBLE OUTPUTS FROM THIS KIND OF OPTION

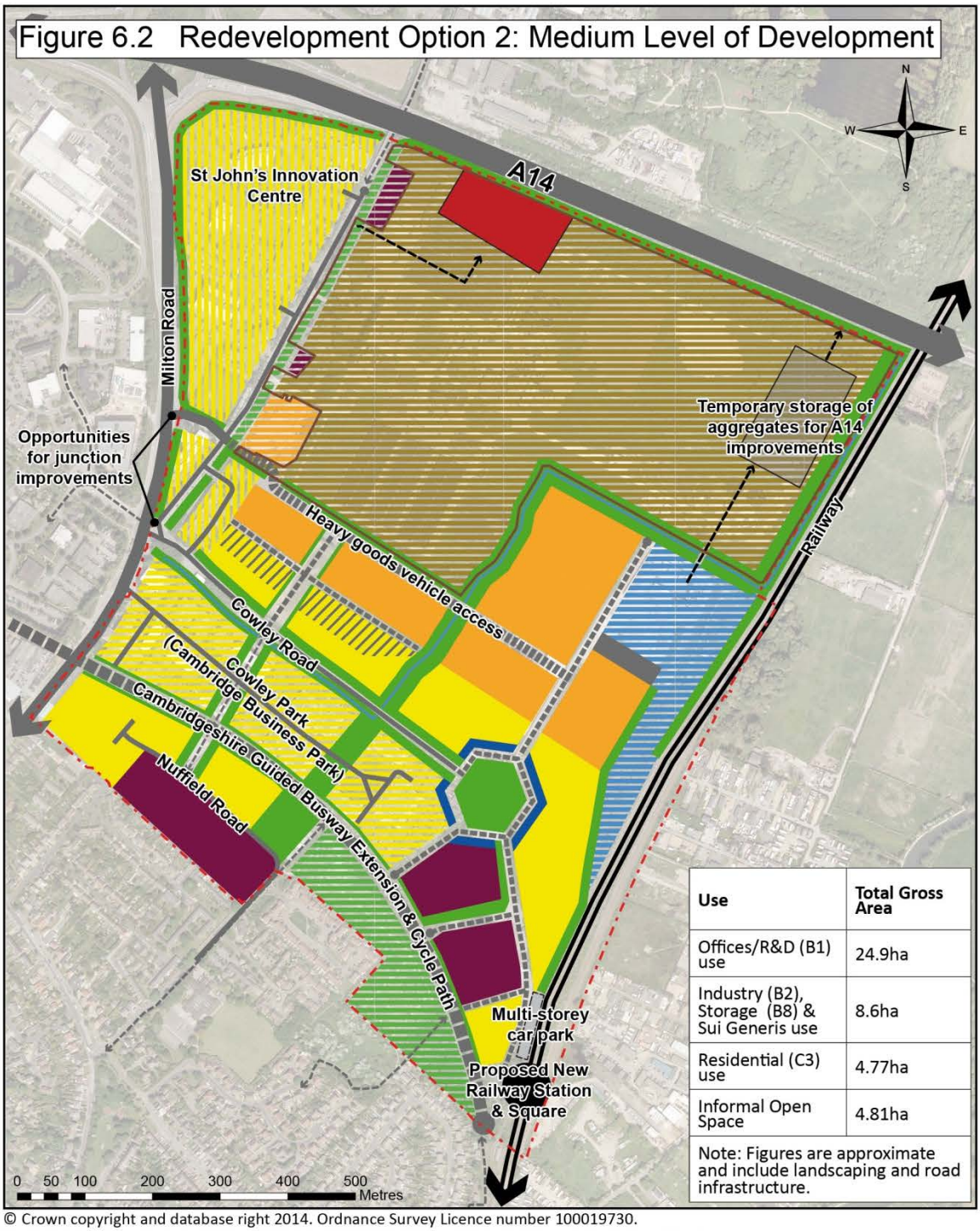
Offices/R&D: +7.7 hectares (+162,000m² and up to 13,600 jobs);

Industry/Storage: +0.2 hectares;

Residential: 0 Hectares (0 dwellings);

New informal open space: +1.2 hectares

Figure 6.2 Redevelopment Option 2: Medium Level of Development



Use	Total Gross Area
Offices/R&D (B1) use	24.9ha
Industry (B2), Storage (B8) & Sui Generis use	8.6ha
Residential (C3) use	4.77ha
Informal Open Space	4.81ha
Note: Figures are approximate and include landscaping and road infrastructure.	

- Cambridge Northern Fringe East Area Action Plan Boundary
- Proposed roads
- Cycle/pedestrian routes
- Existing Offices/R&D (B1) use
- Existing Offices/R&D (B1) use with potential for plot intensification
- Proposed Offices/R&D (B1) use
- Offices/R&D (B1) use car parking area only
- Existing Industry (B2), Storage (B8) & Sui-Generis uses
- Proposed Industry (B2), Storage (B8) & Sui-Generis uses [1]
- Existing Residential (C3) use
- Proposed Residential (C3) use
- Water Recycling Centre (upgraded)
- Relocated Concrete Batching Plant
- Local Centre
- Boundary of existing Water Recycling Centre
- Reconfigured aggregates railhead & sidings
- Protected Open Space/City Wildlife Sites
- Landscape and Open Space
- First Public Drain Watercourse
- Indicative location for Household Waste Recycling Centre and inert recycling facility [2]

[1] Could include the relocation of the Bus Depot and Veolia Waste Transfer site and relocated B2, B8 and Sui Generis uses.
[2] Could also be located on B2, B8 & Sui-Generis land in the vicinity of Cowley Road.

OPTION 2 – MEDIUM LEVEL OF REDEVELOPMENT

Slightly more comprehensive regeneration still focused on areas of more easily available land. Residential development and local centre near station. Intensification and redevelopment of existing developed areas, creating more employment development opportunities. Would support early delivery, but less comprehensive development than other options.

As option 1, but:

- Station car park replaced with multi-storey, to free up space for development
- High density residential development near the new Station
- More substantial local centre around a new public open space, providing a greater range of shops and services
- Further improved cycle and pedestrian links through the area, linking Nuffield Road to Cowley Road
- Creation of a Green Corridor of open space crossing the site
- Intensification of development of existing industrial / office areas to make best use of these areas
- New heavy goods vehicle route to serve industrial / storage areas north of Cowley Road
- Redevelopment of Nuffield Road Industrial Estate for offices / residential

LAND USE/COMMUNITY

Positive

- Provides more land for additional Office /R&D uses
- Residential uses, a larger local centre and new public open spaces create a more balanced neighbourhood, and activity at different times of the day
- Intensification makes best use of land whilst maintaining existing buildings and businesses

Negative

- Need to relocate larger number of existing employment uses, particularly from Nuffield Road
- Overall reduction in land area for Industry / Warehousing
- Residential uses around the station are 'cut off' from neighbouring residential areas
- Water Recycling Centre constrains more comprehensive redevelopment

MOVEMENT/TRANSPORTATION

Positive

- Dedicated heavy goods vehicle route separates lorries from traffic going to the Station
- Further improves the approach to proposed new Railway Station
- Better movement across the area for cyclists / pedestrians

Negative

- Potential traffic impact on Milton Road and existing junctions due to amount of development

ENVIRONMENT/OPEN SPACE

Positive

- Further enhances 'green' boulevard to the new Station
- Significant new open space at the heart of the area
- Improves connections between green areas and wildlife sites
- Improved setting and approach to Cambridge

Negative

- Residential uses require noise mitigation

BUILT FORM

Positive

- Potential to create activity and development fronting onto key routes

Negative

- Visual impact of multi-storey car park on edge of the development will need to be considered

DELIVERY OF VISION

Positive

- More land interests and greater complexity of development, but still potential for early delivery

Negative

- Relocation of businesses affected by loss of industrial land
- Cost of multi-storey car park to replace surface car parking at the station
- Will not deliver such a major regeneration or vision for wider area

POSSIBLE OUTPUTS FROM THIS KIND OF OPTION

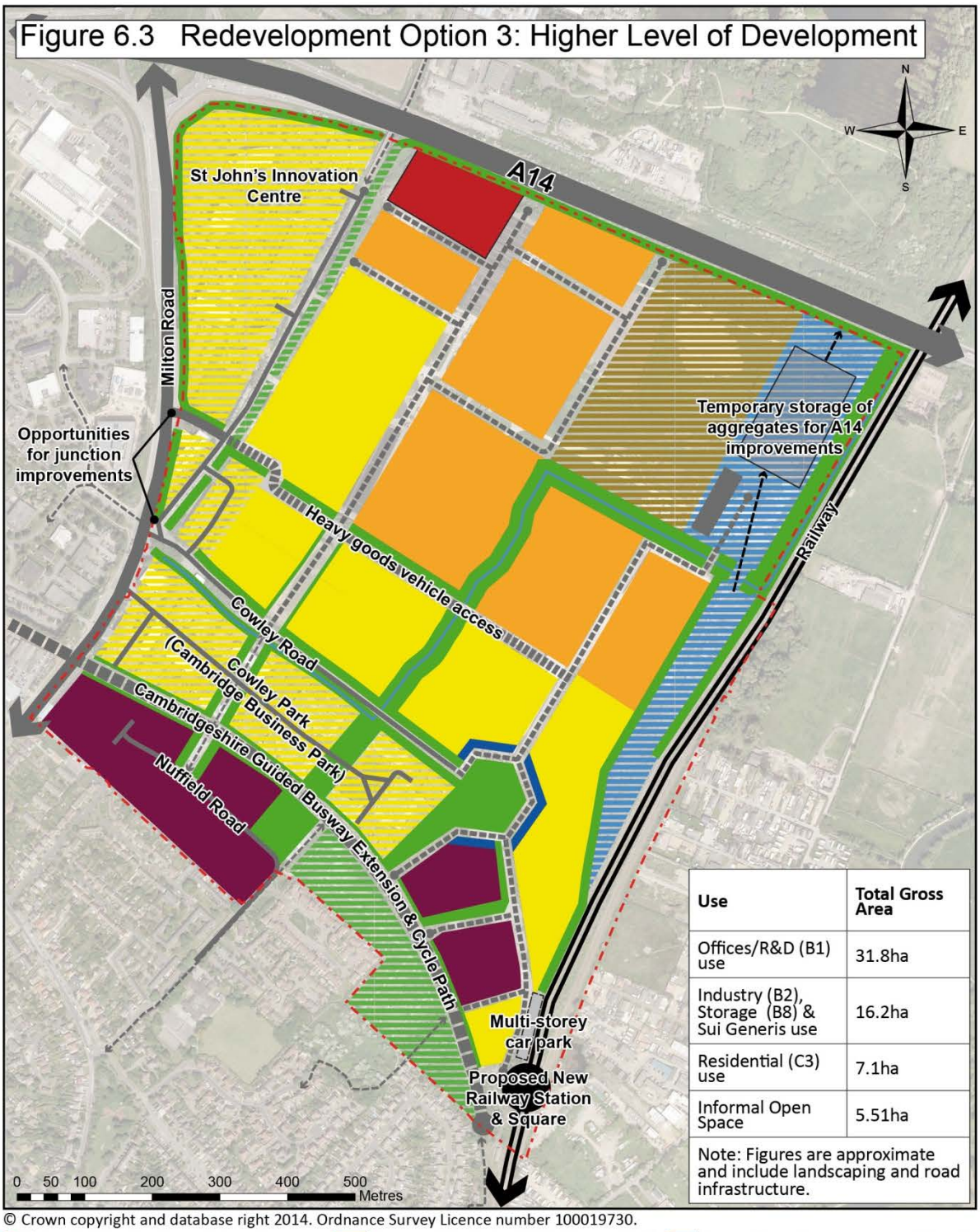
Offices/R&D: +7.8 hectares (+180,000m^2 and up to 15,100 jobs);

Industry/Storage: -7.1 hectares net;

Residential +4.4 hectares (300 dwellings near Station, 140 Dwellings at Nuffield Road);

New Informal open space: +4.3 hectares

Figure 6.3 Redevelopment Option 3: Higher Level of Development



Use	Total Gross Area
Offices/R&D (B1) use	31.8ha
Industry (B2), Storage (B8) & Sui Generis use	16.2ha
Residential (C3) use	7.1ha
Informal Open Space	5.51ha
Note: Figures are approximate and include landscaping and road infrastructure.	

- Cambridge Northern Fringe East Area Action Plan Boundary
- Proposed roads
- Cycle/pedestrian routes
- Existing Offices/R&D (B1) use with potential for plot intensification
- Proposed Offices/R&D (B1) use
- Existing Industry (B2), Storage (B8) & Sui-Generis uses
- Proposed Industry (B2), Storage (B8) & Sui-Generis uses [1]
- Existing Residential (C3) use
- Proposed Residential (C3) use
- Water Recycling Centre (Indoor and contracted)
- Relocated Concrete Batching Plant
- Local Centre
- Reconfigured aggregates railhead & sidings
- Protected Open Space/City Wildlife Sites
- Landscape and Open Space
- First Public Drain Watercourse
- Indicative location for Household Waste Recycling Centre and inert recycling facility [2]

[1] Could include the relocation of the Bus Depot and Veolia Waste Transfer site and relocated B2, B8 and Sui Generis uses.
[2] Could also be located on B2, B8 & Sui-Generis land in the vicinity of Cowley Road.

OPTION 3 – HIGH LEVEL OF REDEVELOPMENT

Reconfiguration of the Water Recycling Centre onto a smaller site, with more indoor/contracted operations. Would free up some land for redevelopment, but technical / financial / operational constraints need further exploration to see if delivery is viable.

As option 2 but:

- Water Recycling Centre upgrade to reduce site area and reduce environmental constraints
- Significant increase in land for new Offices / R&D, and Industrial / Storage development
- New north south vehicular route to connect new developments
- Redevelopment of Nuffield Road Industrial Estate for housing

LAND USE/COMMUNITY

Positive

- Reduction of Water Recycling Centre site frees up land for development
- Allows more land to be used for office / R&D and other uses
- Complete redevelopment of Nuffield Road will create more comprehensive new neighbourhood

Negative

- Reduction of Water Recycling Centre site may prove impracticable
- Need to relocate existing business uses (but there is capacity on site)
- Residential uses around the station are 'cut off' from neighbouring residential areas (but potential to vary option to include more residential)

MOVEMENT/TRANSPORTATION

Positive

- New road parallel to Cowley Road (north-south route) creates a more accessible and better connected layout for this larger regeneration
- Residential redevelopment of Nuffield Road will remove industrial traffic from the road and improve amenity of adjacent residential areas

Negative

- Potential traffic impact on Milton Road and existing junctions due to larger amount of development

ENVIRONMENT/OPEN SPACE

Positive

- More opportunities for additional open space

Negative

- Moves aggregate sidings nearer to watercourse, pollution risks would need to be carefully managed

BUILT FORM

Positive

- Greater potential for intensification of uses on existing sites (due to reduced environmental constraints)
- Location of residential development next to proposed new railway station and local centre is very sustainable
- Compact residential use with complimentary uses will create a more balanced use of land

Negative

- Need to overcome possible conflict of uses between railhead and associated sidings with adjacent B1 Office/R&D uses. Matters to consider may include noise and dust.

DELIVERY OF VISION

Positive

- More comprehensive redevelopment of the area, and greater opportunities to deliver the vision and meet development needs of Greater Cambridge

Negative

- Dependent on upgrade of Water Recycling Centre, financial and technical issues make delivery difficult
- Some parts of the development more likely to come forward later

POSSIBLE OUTPUTS FROM THIS KIND OF OPTION

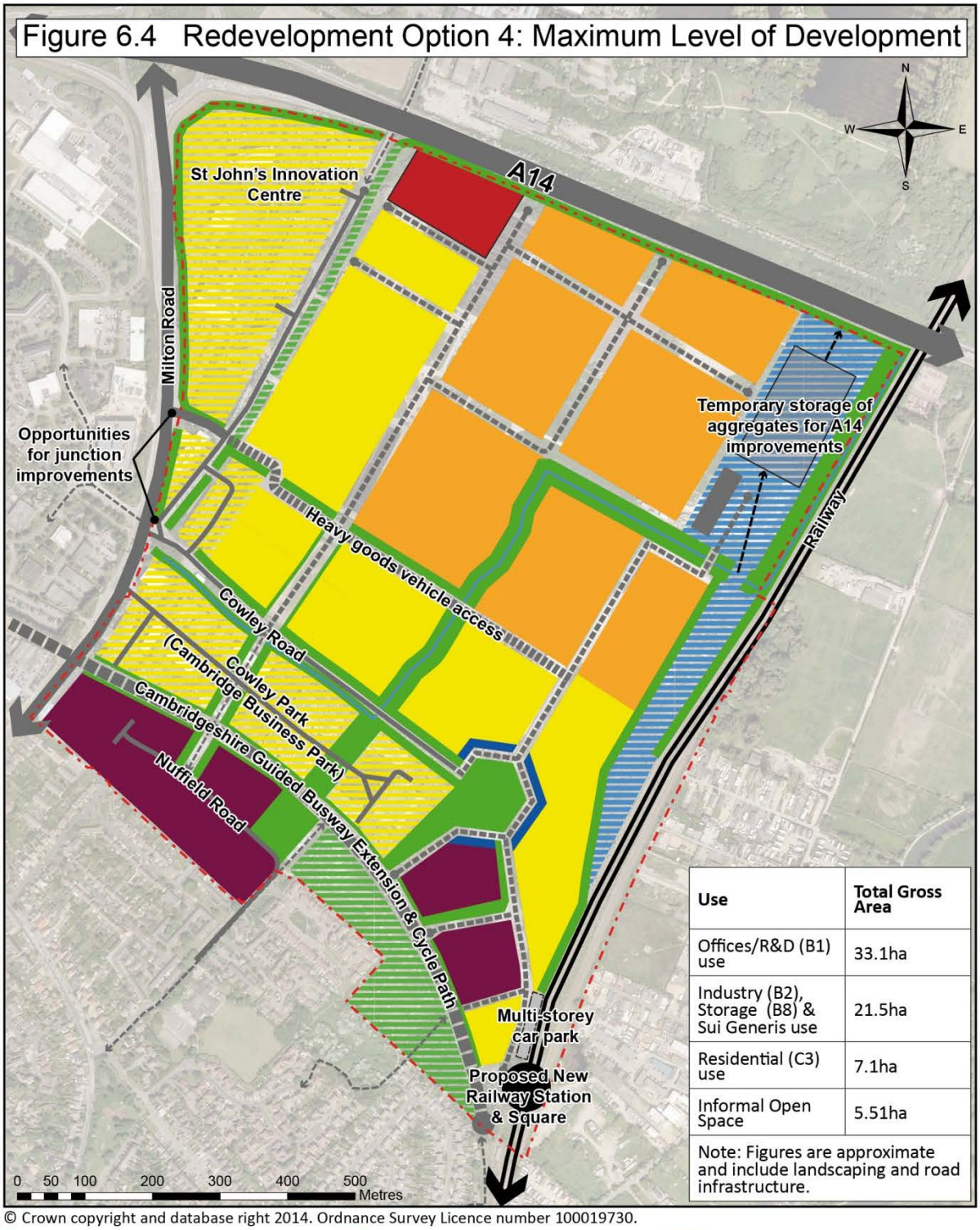
Offices/R&D: +14.7 hectares (+307,000m^2 and up to 25,800 jobs);

Industry/Storage: +0.5 hectares net;

Residential +6.7 hectares (300 dwellings near Station, 330 dwellings near Nuffield Road);

New informal open space: +5.0 hectares

Figure 6.4 Redevelopment Option 4: Maximum Level of Development



Use	Total Gross Area
Offices/R&D (B1) use	33.1ha
Industry (B2), Storage (B8) & Sui Generis use	21.5ha
Residential (C3) use	7.1ha
Informal Open Space	5.51ha
Note: Figures are approximate and include landscaping and road infrastructure.	

- Cambridge Northern Fringe East Area Action Plan Boundary
- Proposed roads
- Cycle/pedestrian routes
- Existing Offices/R&D (B1) use with potential for plot intensification
- Proposed Offices/R&D (B1) use
- Existing Industry (B2), Storage (B8) & Sui-Generis uses
- Proposed Industry (B2), or Distribution (B8) & Sui-Generis uses [1]
- Existing Residential (C3) use
- Proposed Residential (C3) use
- Relocated Concrete Batching Plant
- Local Centre
- Reconfigured aggregates railhead & sidings
- Protected Open Space/City Wildlife Sites
- Landscape and Open Space
- First Public Drain Watercourse
- Indicative location for Household Waste Recycling Centre and inert recycling facility [2]

[1] Could include the relocation of the Bus Depot and Veolia Waste Transfer site and relocated B2, B8 and Sui Generis uses.
[2] Could also be located on B2, B8 & Sui-Generis land in the vicinity of Cowley Road.

OPTION 4 – MAXIMUM LEVEL OF REDEVELOPMENT

Water Recycling Centre relocated off site. This would allow comprehensive development of the wider area, but relocation / technical / financial / operational constraints need further exploration to confirm whether delivery is viable. Full delivery is complex and would be in the longer term. The potential to phase redevelopment to achieve the objective of an early gateway to the proposed new railway station would need to be explored, whilst ensuring that the delivery of the full option is not prejudiced by piecemeal redevelopment.

As Option 3 but:

- Relocation of the Water Recycling Centre off site (an alternative site has not been identified)
- Maximises capacity for redevelopment, particularly new Offices / R&D

LAND USE/COMMUNITY

Positive

- Relocation of Water Recycling Centre offsite enables comprehensive redevelopment of the area
- Provides land for even more Office/ R&D, and Industrial / Storage

Negative

- Possible imbalance between land uses (e.g. residential is a minor component overall)
- Need to find an alternative viable site for Water Recycling Centre

MOVEMENT/TRANSPORTATION

Positive

- Expanded block layout creates a more accessible and better connected layout for this larger redevelopment option

Negative

- Potential traffic impact on Milton Road and existing junctions due to larger amount of development

ENVIRONMENT/OPEN SPACE

Positive

- More opportunities for additional open space

Negative

BUILT FORM

Positive

- Opportunity for a more comprehensive scheme and flexible built form

Negative

DELIVERY OF VISION

Positive

- More comprehensive redevelopment of the area, and greater opportunities to deliver the vision and meet development needs of Greater Cambridge

Negative

- Dependent availability of alternative site and funding replacement Water Recycling Centre
- Some parts of the development more likely to come forward later

POSSIBLE OUTPUTS FROM THIS KIND OF OPTION

Offices/R&D: +16.0 hectares (+328,000m^2 and up to 27,600 jobs);

Industry/Storage: +5.8 hectares net;

Residential +6.7 hectares (300 dwellings near Station, 330 dwellings at Nuffield Road);

New informal open space: +5.0 hectares

Cambridge Northern Fringe East Area Action Plan

Interim Sustainability Appraisal Report

Annex B: Detailed Assessment Tables for Spatial Redevelopment Options

Prepared for:
South Cambridgeshire District Council and Cambridge City Council

Prepared by:
ENVIRON
Exeter, UK

Date:
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ENVIRON

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Date:	November 2014

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Version Control Record

Issue	Description of Status	Date	Reviewer Initials	Author Initials
A	First Draft	27/10/2014	JC	VP/EJ
1	Draft to Client	28/10/2014	JC	VP/EJ
2	Second Draft to Client	30/11/14	JC	VP/EJ
3	Third Draft to Client	03/11/14	JC	VP/EJ
4	Fourth Draft with minor amendments	04/11/14	JC	VP/EJ
5	Final version	24/11/14		VP

Table B.1 Key to the appraisal scoring	
Symbol	**Likely effect against the SA Objective**
+ +	Potentially significant beneficial impact, option supports the objective
+	Option supports this objective although it may have only a minor beneficial impact
~	Option has no impact or effect and is neutral insofar as the benefits and drawbacks appear equal and neither is considered significant
?	Uncertain or insufficient information is available on which to determine the appraisal at this stage
-	Option appears to conflict with the objective and may result in adverse impacts
- -	Potentially significant adverse impact, conflict with this objective

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Land						
1. Minimise the irreversible loss of undeveloped land, protect soils and economic mineral reserves.	• Will it use land that has been previously developed? • Will it use land efficiently? • Will it minimise the degradation/loss of soils due to new development? • Will it avoid the sterilisation of economic mineral reserves? • Will it promote resource efficiency	+	+ / ?	+ + / ?	+ + / ?	+ + / ?
		The committed development within the AAP boundary includes a new railway station and an extension of the Cambridgeshire Guided Busway to form a new transport interchange. The interchange proposals include parking for 450 cars and around 1000 bicycles. These developments will utilise previously developed land. This option may not involve the intensification of land uses and	The option will result in the use of land previously developed although this will be fairly minimal as this option focuses on land that is more easily available. The minerals safeguarding area will be protected in this option. This option will not result in any large scale remediation of contaminated land within the AAP. **Mitigation:** Each parcel of land to be redeveloped will require a full and detailed site investigation in order	The option will result in the use of land previously developed and represents an intensive redevelopment. The minerals safeguarding area will be protected in this option. **Mitigation:** Each parcel of land will require a full and detailed site investigation in order to determine ground conditions and the presence, or not, of contamination. The Implementation Phasing Strategy will need to include a comprehensive Remediation Plan	The option will result in the use of land previously developed and represents a more intensive redevelopment than Options 1 and 2. The minerals safeguarding area will be protected in this option. **Mitigation:** Each parcel of land will require a full and detailed site investigation in order to determine ground conditions and the presence, or not, of contamination. The Implementation	The option will result in the use of land previously developed and represents an even more intensive redevelopment than Option 3. The minerals safeguarding area will be protected in this option. **Mitigation:** Each parcel of land will require a full and detailed site investigation in order to determine ground conditions and the presence, or not, of contamination. The Implementation Phasing Strategy will need to include a comprehensive Remediation Plan

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	and recycling?	therefore may not represent as efficient a use of land when compared with the other options. This option will not result in any large scale remediation of contaminated land within the AAP. The minerals safeguarding area will be protected in this option.	to determine ground conditions and the presence, or not, of contamination. The Implementation Phasing Strategy will need to include a comprehensive Remediation Plan setting out the level of remediation required. A much higher standard of remediation would be required for sensitive developments such as residential dwellings with gardens. Residential gardens may not be suitable in some parts of the AAP area. Residential uses are proposed in areas where chlorinated solvents, Hydrocarbons, gases and vapours, PAHs, and diesel	setting out the level of remediation required. A much higher standard of remediation would be required for sensitive developments such as residential dwellings with gardens. Residential gardens may not be suitable in some parts of the AAP area. Residential uses are proposed in areas where chlorinated solvents, Hydrocarbons, gases and vapours, PAHs, and diesel range organics have previously been identified (Nuffield Road area and near the proposed station). Any existing resources available	Phasing Strategy will need to include a comprehensive Remediation Plan setting out the level of remediation required. A much higher standard of remediation would be required for sensitive developments such as residential dwellings with gardens. Residential gardens may not be suitable in some parts of the AAP area. Residential uses are proposed in areas where chlorinated solvents, Hydrocarbons, gases and vapours, PAHs, and diesel range	setting out the level of remediation required. A much higher standard of remediation would be required for sensitive developments such as residential dwellings with gardens. Residential gardens may not be suitable in some parts of the AAP area. Residential uses are proposed in areas where chlorinated solvents, Hydrocarbons, gases and vapours, PAHs, and diesel range organics have previously been identified (Nuffield Road area and near the proposed station). Redevelopment of this scale will utilise a significant amount of

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
			range organics have previously been identified (Nuffield Road area and near the proposed station). Any existing resources available on the site, such as materials from redundant buildings, should be reused as far as practicable. A Construction Environmental Management Plan (CEMP) including a Site Waste Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support	on the site, such as materials from redundant buildings, should be reused as far as practicable. A Construction Environmental Management Plan (CEMP) including a Site Waste Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support planning applications.	organics have previously been identified (Nuffield Road area and near the proposed station). Redevelopment of this scale will utilise a significant amount of resources and will generate a considerable amount of spoil and waste building material. Any existing resources available on the site, such as materials from redundant buildings, should be reused as far as practicable. A Construction Environmental Management Plan (CEMP) including a Site Waste	resources and will generate a considerable amount of spoil and waste building material. Any existing resources available on the site, such as materials from redundant buildings, should be reused as far as practicable. A Construction Environmental Management Plan (CEMP) including a Site Waste Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support planning applications.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
			planning applications.		Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support planning applications.	
Environmental Quality and pollution						
2. Improve air quality and minimise or mitigate against sources of environmental pollution	• Will it maintain and improve air quality around the AAP and along the routes to the City including the A14? • Will it ensure that dust pollution does not	- This option will mainly have a neutral impact on this SA Objective. However, the new transport interchange will create new sources of noise from trains and the station public address system in this	? Information is not available on potential air quality and noise impacts relating to the redevelopment as transport modelling is not completed. This option does not improve pedestrian and cycle access through Cambridge	? Information is not available on potential air quality and noise impacts relating to the redevelopment as transport modelling is not completed. The reduction in industrial and storage land in this option potentially	? Information is not available on potential air quality and noise impacts relating to the redevelopment as transport modelling is not completed. The reduction of the WRC site allows more land to be redeveloped	? Information is not available on potential air quality and noise impacts relating to the redevelopment as transport modelling is not completed. The removal of the WRC from the AAP allows comprehensive redevelopment of the site and avoids most

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	affect sensitive receptors? • Will it minimise, and where possible improve on, unacceptable levels of noise pollution, and vibration? • Will it minimise odour impacts? • Will it remediate contaminated land?	southern part of the AAP area. It is assumed that potential impacts on existing receptors will be mitigated through the planning application process. The ongoing operation of the aggregates importing business will generate dust and noise and vibration. This option currently includes some uses within the WRC odour zones which may be negatively affected by odour and insects.	Business Park or across to the Science park. This spatial option has been designed to avoid sensitive uses within the WRC odour zones. The concrete batching plant is relocated further north in the AAP area so that it is closer to the aggregates railhead and sidings. **Mitigation:** Transport modelling needs to be undertaken. Traffic impacts on Milton Road and existing junctions need to be addressed.	may reduce the air quality and pollution impacts of this option by comparison to the other options. This option includes a dedicated HGV route which should avoid some noise and air quality impacts from traffic in the southern part of the AAP area, including the station and local centre. This option includes better movement across the area for cyclists and pedestrians compared with option 1. There could be potential impacts on Milton Road and existing junctions due to the amount of	and reduces the area affected by odour. A new road parallel to Cowley Road (north-south route) will remove industrial traffic from the road and potentially improve air quality and noise impacts for adjacent residential areas. There could be potential impacts on Milton Road and existing junctions due to the larger amount of development proposed compared with Options 1 and 2. The concrete batching plant is relocated further north in the AAP area so that it is	potential impacts from odour and the constraint that this poses to the other options. However, some odour impact may be associated with the pumping station which will need to remain on site and that is why employment uses have been identified in this location in Option 4. This option creates a more accessible and better connected layout than other options which should better support walking and cycling across the site. There could be potential impacts on Milton Road and existing junctions due to the larger amount of development

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
				development proposed. This spatial option has been designed to avoid sensitive uses within the WRC odour zones. The concrete batching plant is relocated further north in the AAP area so that it is closer to the aggregates railhead and sidings. **Mitigation:** Transport modelling needs to be undertaken. Traffic impacts on Milton Road and existing junctions need to be addressed. The new residential uses proposed in this option will require noise mitigation.	closer to the aggregates railhead and sidings. **Mitigation:** Transport modelling needs to be undertaken. Traffic impacts on Milton Road and existing junctions need to be addressed. The new residential uses proposed in this option will require noise mitigation.	proposed compared with Options 1 and 2. The concrete batching plant is relocated further north in the AAP area so that it is closer to the aggregates railhead and sidings. **Mitigation:** Transport modelling needs to be undertaken. Traffic impacts on Milton Road and existing junctions need to be addressed. The new residential uses proposed in this option will require noise mitigation.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
3. Protect and where possible enhance the quality of the water environment	• Will it ensure that groundwater is protected? • Will it enhance surface water features including the quality of water entering the First Public Drain and the River Cam?	~	+	+	~	~
		No current water quality issues have been identified within the baseline data e.g. within the First Public Drain.	This option has the potential to improve watercourses within the AAP area and includes them as part of improved green infrastructure on the site.	This option has the potential to improve watercourses within the AAP area and includes them as part of improved green infrastructure on the site. Construction practices would need to be carefully managed through a CEMP in order to avoid pollution entering watercourses during construction.	This option moves the aggregate sidings closer to a watercourse and therefore pollution risks would need to be carefully managed. Otherwise, this option further enhances green infrastructure on the site which contains the on site watercourses. Construction practices would need to be carefully managed through a CEMP in order to avoid pollution entering watercourses during construction.	This options moves the aggregate sidings closer to a watercourse and therefore pollution risks would need to be carefully managed. Otherwise, this option further enhances green infrastructure on the site which contains the on site watercourses. Construction practices would need to be carefully managed through a CEMP in order to avoid pollution entering watercourses during construction.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Biodiversity, flora and fauna						
4. Avoid adverse effects on designated sites and protected species	• Will it conserve protected species (including Jersey Cudweed) and protect sites designated for nature conservation interest (including Local Nature Reserves and Wildlife Sites), and geodiversity?	~ City Wildlife Site will remain as it is. It is currently isolated from other green infrastructure. The LNR is located close to the new transport interchange and it is assumed that potential negative impacts on the LNR will be mitigated through the planning application process.	+ In this option the City Wildlife Site is integrated within a network of green infrastructure across the AAP site which should result in a beneficial impact on the City Wildlife Site.	+ In this option the City Wildlife Site is integrated within a network of green infrastructure across the AAP site which should result in a beneficial impact on the City Wildlife Site.	+ + In this option the City Wildlife Site is integrated within a network of green infrastructure across the AAP site which should result in a beneficial impact on the City Wildlife Site. In this option, as for Option 4, the green infrastructure network proposed on the AAP site covers a larger area compared to Options 1 and 2 and the 'Do Nothing/Committed Development' option.	+ + In this option the City Wildlife Site is integrated within a network of green infrastructure across the AAP site which should result in a beneficial impact on the City Wildlife Site. In this option, as for Option 3, the green infrastructure network proposed on the AAP site covers a larger area compared to Options 1 and 2 and the 'Do Nothing/Committed Development' option.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
5. Maintain and enhance the range and viability of characteristic habitats and species and improve opportunities for people to access and appreciate wildlife and green spaces	• Will it deliver net gains in biodiversity? • Will it reduce habitat fragmentation, maintain and enhance connectivity between existing green and blue infrastructure and enhance key native habitats? • Will it help deliver habitat restoration ((helping to achieve Biodiversity Action Plan Targets)? • Will it improve	~ This option will not result in net gains for biodiversity or improve habitat connectivity and reduce fragmentation. It will not help to improve access to green spaces or deliver habitat restoration.	+ / ? This option should deliver net gains in biodiversity and will improve habitat connectivity, resulting in an enhanced and comprehensive green infrastructure network across the site (compared to the 'Do Nothing/Committed Development' option) which links into the new open space on the site and the existing open space to the south of the AAP boundary (including existing allotments and the Bramblefields LNR). This option proposes redevelopment of a small part of the Chesterton Sidings,	+ / ? This option should deliver net gains in biodiversity and will improve habitat connectivity, resulting in an enhanced and comprehensive green infrastructure network (compared to the 'Do Nothing/Committed Development' option and Option 1) across the site which links into the new open space on the site and the existing open space to the south of the AAP boundary (including existing allotments and the Bramblefields LNR). This option proposes redevelopment of a small part of the Chesterton Sidings,	+ + / ? This option should deliver net gains in biodiversity and will improve habitat connectivity, resulting in an enhanced and more comprehensive green infrastructure network (compared to Options 1 and 2) across the site which links into the new open space on the site and the existing open space to the south of the AAP boundary (including existing allotments and the Bramblefields LNR). This option proposes redevelopment of the Chesterton Sidings,	+ + / ? This option should deliver net gains in biodiversity and will improve habitat connectivity, resulting in an enhanced and more comprehensive green infrastructure network (compared to Options 1 and 2) across the site which links into the new open space on the site and the existing open space to the south of the AAP boundary (including existing allotments and the Bramblefields LNR). This option proposes a greater redevelopment of the Chesterton Sidings, the ecological value of which is uncertain but it could be

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	access to wildlife and green spaces, through delivery of and access to green infrastructure ?		the ecological value of which is uncertain but it could be important for biodiversity. **Mitigation:** ecological assessment and, if necessary, mitigation, compensation and enhancement will be needed for loss of habitat and species for the part of the Chesterton Sidings which are proposed for redevelopment. **Enhancement:** Policies relating to specific habitats restoration / creation should be included within the AAP.	the ecological value of which is uncertain but it could be important for biodiversity **Mitigation:** ecological assessment and, if necessary, mitigation, compensation and enhancement will be needed for loss of habitat and species for the part of the Chesterton Sidings which are proposed for redevelopment. **Enhancement:** Policies relating to specific habitats restoration / creation should be included within the AAP.	the ecological value of which is uncertain but it could be important for biodiversity **Mitigation:** ecological assessment and, if necessary, mitigation, compensation and enhancement will be needed for loss of habitat and species for the part of the Chesterton Sidings which are proposed for redevelopment. **Enhancement:** Policies relating to specific habitats restoration / creation should be included within the AAP.	important for biodiversity. **Mitigation:** ecological assessment and, if necessary, mitigation, compensation and enhancement will be needed for loss of habitat and species for the part of the Chesterton Sidings which are proposed for redevelopment. **Enhancement:** Policies relating to specific habitats restoration / creation should be included within the AAP.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Landscape, townscape and cultural heritage						
6. Maintain and enhance the diversity and local distinctiveness of landscape and townscape character	• Will in maintain and enhance the distinctiveness of landscape character, and the character of the Cambridge Green Belt? • Will it maintain and enhance the diversity and distinctiveness of townscape character? • Will it ensure the scale of development is sensitive to the existing key landmark buildings and	- This option This option does not take advantage of the opportunity to enhance this gateway to Cambridge and it would also not enhance the townscape in this area which needs significant improvement.	+ / ? Option will result in improvements to station approach to create green boulevard and activity around the station. It will also improve green areas and watercourses on the site. Limited redevelopment opportunities prevent wide scale changes to the appearance of the AAP area. Landscape character and visual impacts with regards to the Cambridge Green Belt and the City Townscape are to be assessed shortly but findings will not be	+ / ? Option will result in improvements to station approach to create green boulevard and activity around the station. It will also improve green areas and watercourses on the site. This options represents an opportunity to improve the setting and approach to Cambridge. It includes significant open space close to a new local centre. Landscape character and visual impacts with regards to the Cambridge Green Belt and the City Townscape are to be	+ + / ? Option will result in improvements to station approach to create green boulevard and activity around the station. It will also improve green areas and watercourses on the site. This options represents a more comprehensive opportunity to improve the setting and approach to Cambridge. It includes significant open space close to a new local centre. The existing overhead lines will be undergrounded	+ + / ? Option will result in improvements to station approach to create green boulevard and activity around the station. It will also improve green areas and watercourses on the site. This options represents a comprehensive opportunity to improve the setting and approach to Cambridge. It includes significant open space (more than the other options) close to a new local centre. The existing overhead lines will be undergrounded which

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	low lying topography of the City? • Will it conserve and enhance the historic environment, heritage assets and their settings through appropriate design and scale of development ? • Will it lead to developments built to a high standard of design and good place making that reflects local character?		available to inform Issues and Options. However, proposed policy approaches with regards to place and building design and tall buildings support this SA Objective. **Mitigation**: Findings of landscape and visual assessment required to complete assessment. Due to uncertainty, it is likely that an archaeological investigation will be required before any significant development takes place.	assessed shortly but findings will not be available to inform Issues and Options. However, proposed policy approaches with regards to place and building design and tall buildings support this SA Objective. **Mitigation**: Findings of landscape and visual assessment required to complete assessment. Due to uncertainty, it is likely that an archaeological investigation will be required before any significant development takes place.	which will improve the appearance of the AAP area. Landscape character and visual impacts with regards to the Cambridge Green Belt and the City Townscape are to be assessed shortly but findings will not be available to inform Issues and Options. However, proposed policy approaches with regards to place and building design and tall buildings support this SA Objective. **Mitigation**: Findings of landscape and visual assessment required to	will improve the appearance of the AAP area. Landscape character and visual impacts with regards to the Cambridge Green Belt and the City Townscape are to be assessed shortly but findings will not be available to inform Issues and Options. However, proposed policy approaches with regards to place and building design and tall buildings support this SA Objective. **Mitigation**: Findings of landscape and visual assessment required to complete assessment. Due to uncertainty, it is likely that an archaeological

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
					complete assessment. Due to uncertainty, it is likely that an archaeological investigation will be required before any significant development takes place.	investigation will be required before any significant development takes place.
Climate Change						
7. Minimise impacts on climate change (including greenhouse gas emissions)	• Will it ensure deployment of energy efficiency and renewable energy technologies ? • Will it minimise contributions to climate change through sustainable	~ This option will have a neutral impact. It is assumed that it will not result in a significant change in energy efficiency and renewable energy technologies on site. It will not result in any large scale redevelopment of the site and	+ This option involves low growth and it is assumed that it will have little impact on this SA Objective. New development will be required to include high levels of energy efficiency and some onsite renewable energy development and therefore a beneficial impact is recorded.	+ This option includes more growth that Option 1 but not to the scale as that proposed within options 3 and 4. New development will be required to include high levels of energy efficiency and some onsite renewable energy development and therefore a beneficial impact is	+ + It is assumed for Options 3 and 4 that they will have the potential to significantly improve energy efficiency of operations of the site and significant renewable energy generation will be incorporated into the development. The proposed policy approach to	+ + It is assumed for Options 3 and 4 that they will have the potential to significantly improve energy efficiency of operations of the site and significant renewable energy generation will be incorporated into the development. The proposed policy approach to renewable and low

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	construction practices?	therefore will minimise climate change contributions (e.g. greenhouse gas emissions) through construction.	Redevelopment could utilise a significant amount of resources and will generate a considerable amount of spoil and waste building material. Any existing resources available on the site, such as materials from redundant buildings, should be reused as far as practicable. **Enhancement:** In line with the proposed policy approach for energy and low carbon energy generation, standards could be set for the development with regards to energy efficiency and renewable energy generation.	recorded. Redevelopment could utilise a significant amount of resources and will generate a considerable amount of spoil and waste building material. Any existing resources available on the site, such as materials from redundant buildings, should be reused as far as practicable. **Enhancement:** In line with the proposed policy approach for energy and low carbon energy generation, standards could be set for the development with regards to energy efficiency and	renewable and low carbon energy generation (1a) would particularly support this spatial option as its development would include consideration of the types of energy generation that could be suitable for the area and whether an area based approach could be used. Redevelopment of this scale will utilise a significant amount of resources and will generate a considerable amount of spoil and waste building material. Any existing resources available on the site, such as	carbon energy generation (1a) would particularly support this spatial option as its development would include consideration of the types of energy generation that could be suitable for the area and whether an area based approach could be used. Redevelopment of this scale will utilise a significant amount of resources and will generate a considerable amount of spoil and waste building material. Any existing resources available on the site, such as materials from redundant buildings, should be reused as far as practicable.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
			A Construction Environmental Management Plan (CEMP) including a Site Waste Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support planning applications.	renewable energy generation. A Construction Environmental Management Plan (CEMP) including a Site Waste Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support planning applications.	materials from redundant buildings, should be reused as far as practicable. **Enhancement:** In line with the proposed policy approach for energy and low carbon energy generation, standards should be set for the development with regards to energy efficiency and renewable energy generation. The redevelopment of the AAP area presents an opportunity to implement a site-wide energy strategy, maximising opportunities for synergies between	**Enhancement:** In line with the proposed policy approach for energy and low carbon energy generation, standards should be set for the development with regards to energy efficiency and renewable energy generation. The redevelopment of the AAP area presents an opportunity to implement a site-wide energy strategy, maximising opportunities for synergies between the differing uses proposed and identifying which energy generation technologies might be suitable. A Construction Environmental

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
					the differing uses proposed and identifying which energy generation technologies might be suitable. A Construction Environmental Management Plan (CEMP) including a Site Waste Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support planning applications.	Management Plan (CEMP) including a Site Waste Management Plan (incorporating a waste audit and strategy, consistent with the adopted Cambridgeshire and Peterborough Minerals and Waste Plan) will be required to support planning applications.
8. Reduce vulnerability to future	• Will it protect and enhance existing	~	?	?	?	?

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
climate change effects.	natural flood risk management infrastructure ? • Will it ensure that suitable sustainable drainage measures are incorporated into developments in order to manage surface water runoff? • Will it provide green and blue infrastructure which will help reduce climate change impacts locally?	There is some risk of pluvial flood risk but the baseline data does not identify any existing issues.	The option has the potential to reduce vulnerability to future climate change through the use of SUDS, green infrastructure and design and layout of the development. However, policies are yet to be developed in order to ensure that these are integrated into the development. **Mitigation:** In line with the proposed policy approach to sustainable design and construction (option B), policies should be included in the AAP which ensure all forms of flood risk are taken into account and SUDS are used to manage surface water. Policies	The option has the potential to reduce vulnerability to future climate change through the use of SUDS, green infrastructure and design and layout of the development. However, policies are yet to be developed in order to ensure that these are integrated into the development. **Mitigation:** In line with the proposed policy approach to sustainable design and construction (option B), policies should be included in the AAP which ensure all forms of flood risk are taken into account and SUDS are used to manage surface	The option has the potential to reduce vulnerability to future climate change through the use of SUDS, green infrastructure and design and layout of the development. However, policies are yet to be developed in order to ensure that these are integrated into the development. This option includes significantly more open space which will help to manage surface water. **Mitigation:** In line with the proposed policy approach to sustainable design and construction (option B), policies should be included in the AAP which	The option has the potential to reduce vulnerability to future climate change through the use of SUDS, green infrastructure and design and layout of the development. However, policies are yet to be developed in order to ensure that these are integrated into the development. This option includes significantly more open space which will help to manage surface water. **Mitigation:** In line with the proposed policy approach to sustainable design and construction (option B), policies should be included in the AAP which ensure all forms of flood risk are taken into account

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	• Does it include measures to adapt to climate change in ways that do not increase greenhouse gas emissions including giving consideration to the layout and massing of new developments?		should require specific consideration to adaption to climate change including giving consideration to the layout and massing of new developments.	water. Policies should require specific consideration to adaption to climate change including giving consideration to the layout and massing of new developments.	ensure all forms of flood risk are taken into account and SUDS are used to manage surface water. Policies should require specific consideration to adaption to climate change including giving consideration to the layout and massing of new developments.	and SUDS are used to manage surface water. Policies should require specific consideration to adaption to climate change including giving consideration to the layout and massing of new developments.
Human health and well being						
9. Maintain and enhance human health and wellbeing, and reduce inequalities	• Will it promote good health and encourage healthy lifestyles?	+	+	+ +	+ +	+ +
		This option includes the redevelopment of the southern part of the site into a new transport interchange. The	This option will provide new employment opportunities which should help to address some	This option will provide a significant amount of new employment opportunities and some small scale	This option will provide a significant amount of new employment opportunities as	This option will provide the largest amount of new employment opportunities as well as new housing.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	• Will it help address levels of deprivation in north and east Cambridge? • Will it reduce inequalities in health in the north and east of Cambridge?	interchange will provide a sustainable transport route into Cambridge. The AAP area already has connections to the existing high quality off-road cycle network alongside the Guided Busway and the new Chisholm Trail. Permeability across the site is currently severely constrained and therefore does not promote sustainable transport (walking/cycling) within the AAP area.	issues related to deprivation. This option does not significantly improve walking and cycling access across the whole site but will improve links with the interchange and the layout of the area within the south of the AAP. **Enhancement:** Developers should be encouraged to register with The Considerate Constructors Scheme which includes guidelines for respecting the community by considering the impact on their neighbours, and for protecting and enhancing the environment.	housing and community facilities in a new Local Centre which should help to address some issues related to deprivation. This option includes better movement across the area for cyclists and pedestrians compared with option 1. It includes a green infrastructure network and new open space, thereby encouraging healthy lifestyles for residents and workers. It also will improve links with the interchange and the layout of the area within the south of the AAP. See SA Objective 2 for information about potential noise and air quality impacts.	well as new housing and community facilities. It will allow for a comprehensive network of walking and cycling access across the site integrated with a green infrastructure network and significant open space, thereby encouraging healthy lifestyles for residents and workers. It also will improve links with the interchange and the layout of the area within the south of the AAP. Contaminated land assessment and remediation will be put in place in order to ensure	Compared with the other options, it will allow for a more comprehensive network of walking and cycling access across the site integrated with a green infrastructure network and significant open space thereby encouraging healthy lifestyles for residents and workers. It also will improve links with the interchange and the layout of the area within the south of the AAP. Contaminated land assessment and remediation will be put in place in order to ensure acceptable conditions for residential and other types of development.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
				Enhancement: Developers should be encouraged to register with The Considerate Constructors Scheme which includes guidelines for respecting the community by considering the impact on their neighbours, and for protecting and enhancing the environment.	acceptable conditions for residential and other types of development. See SA Objective 2 for information about potential noise and air quality impacts. **Enhancement:** Developers should be encouraged to register with The Considerate Constructors Scheme which includes guidelines for respecting the community by considering the impact on their neighbours, and for protecting and enhancing the environment.	See SA Objective 2 for information about potential noise and air quality impacts. **Enhancement:** Developers should be encouraged to register with The Considerate Constructors Scheme which includes guidelines for respecting the community by considering the impact on their neighbours, and for protecting and enhancing the environment.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
10. Improve the quantity and quality of publically accessible open space.	• Will it increase the quantity and quality of publically accessible open space? • Will it protect and enhance community, leisure and open space provision, particularly in East Chesterton ward? • Will it maintain and enhance open spaces and green space within the urban area and the Green Belt setting?	-	+	+ +	+ +	+ +
		This option will not improve the quantity and quality of open space in this area. This option will not help to address identified deficiencies in open space.	This option provides some limited additional open space (+1.2 hectares), particularly along the Cowley Road / main boulevard linking to the new station. For all options, green space is included along the northern and eastern boundaries which should help to reduce adverse impacts on the Green Belt.	This option provides significantly more informal open space than option 1 (+4.3 hectares compared with existing provision) and it will meet open space standards required by the addition of new residential development (440 dwellings). For all options, green space is included along the northern and eastern boundaries which should help to reduce adverse impacts on the Green Belt.	This option provides significantly more informal open space than option 1 (+5 hectares compared with existing provision) and it will meet open space standards required by the addition of new residential development (630 dwellings). For all options, green space is included along the northern and eastern boundaries which should help to reduce adverse impacts on the Green Belt.	This option provides significantly more informal open space than option 1 (+5 hectares compared with existing provision) and it will meet open space standards required by the addition of new residential development (630 dwellings). For all options, green space is included along the northern and eastern boundaries which should help to reduce adverse impacts on the Green Belt.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
11. Ensure everyone has access to decent, appropriate and affordable housing	• Will it support the provision of a range of housing types to meet identified needs?	~	~	+	+	+
		Option does not include provision of new housing.	Option does not include provision of new housing.	Option includes 300 dwellings near the new station and 140 new dwellings at Nuffield Road. More dense development may be more appropriate around the station. Types of housing may be determined to some degree by contaminated present and remediation available.	Option includes 300 dwellings near the new station and 330 new dwellings at Nuffield Road. More dense development may be more appropriate around the station. Types of housing may be determined to some degree by contaminated present and remediation available.	Option includes 300 dwellings near the new station and 330 new dwellings at Nuffield Road. More dense development may be more appropriate around the station. Types of housing may be determined to some degree by contaminated present and remediation available.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Economy and Infrastructure						
12. Redress inequalities related to age, disability, gender, race, faith, location and income	• Will it improve relations between people from different backgrounds or social groups and contribute to community diversity? • Will it ensure equal access for all?	-	+	+ +	+ +	+ +
		This option does not contribute towards the achievement of this SA Objective and does not help to redress existing inequalities.	This option includes up to 13,600 new jobs. **Enhancement:** The AAP could include policies to ensure that employment opportunities are available for local people, in order to support this SA Objective.	This option includes new housing development, a new local centre and provides up to 15,100 new jobs which should contribute to the achievement of this SA Objective and result is significant beneficial impacts. **Enhancement:** The AAP could include policies to ensure that employment opportunities are available for local people, in order to support this SA Objective.	This option includes new housing development, a new local centre and provides significant employment opportunities (up to 25,800 new jobs) compared with options 1 and 2. **Enhancement:** The AAP could include policies to ensure that employment opportunities are available for local people, in order to support this SA Objective.	This option includes new housing development, a new local centre and provides the greatest employment opportunities (up to 27,600 new jobs) compared with the other options. **Enhancement:** The AAP could include policies to ensure that employment opportunities are available for local people, in order to support this SA Objective.

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
13. Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities)	• Will it provide accessibility to and improve quality of key local services and facilities, including health, education and leisure (shops, post offices, pubs etc?) • Will it improve access to jobs and training for all? • Will it encourage and enable engagement in community activities?	-	+ / ?	+ +	+ +	+ +
		This option does not contribute towards the achievement of this SA Objective and does not help to redress existing deficiencies and inequality.	This option includes up to 13,600 new jobs. This option includes additional small shops or coffee shops along the station approach. These facilities are not as likely to attract custom from the local people as the local centre proposed in the other options but this is unclear until it is known what is likely to be proposed in each option.	This option includes a new local centre and provides up to 15,100 new jobs which should contribute to the achievement of this SA Objective and result is significant beneficial impacts. It is unclear what the new local centre could provide. However, employment areas require complementary social and support facilities if they are to achieve the full potential of the area and this has been shown in several local studies.	This option includes new housing development, a new local centre and provides significant employment opportunities (up to 25,800 new jobs) compared with options 1 and 2. It is unclear what the new local centre could provide. However, employment areas require complementary social and support facilities if they are to achieve the full potential of the area and this has been shown in several local studies.	This option includes new housing development, a new local centre and provides the greatest employment opportunities (up to 27,600 new jobs) compared with the other options. It is unclear what the new local centre could provide. However, employment areas require complementary social and support facilities if they are to achieve the full potential of the area and this has been shown in several local studies.

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SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
14. Improve the efficiency, competitiveness, vitality and adaptability of the local economy	• Will it maintain and enhance competitiveness, and capitalise on Cambridge's position as one of the UK's most competitive cities? • Will it provide high-quality employment land in appropriate, accessible locations to meet the needs of businesses, and the workforce? • Will it protect the shopping hierarchy, supporting the vitality	~ This option both supports and works against this SA Objective, in that it does not reduce the amount of industrial uses but does not necessarily provide new office development not does it especially support cluster businesses or support competitiveness. There is no other local centre within the immediate vicinity. The nearest local or district centre is on the A1309 towards the city centre on the boundary between the Kings Hedges and East Chesterton wards.	+ / - This option will result in the provision of new office and R&D space (+162,000m^2 compared to existing). It will also result in a net increase in industry/storage (+0.2hectares compared with existing). The provision of these uses will help to maintain and enhance the economy of Cambridge and improve competitiveness. It will provide high quality employment in an accessible location. However, the option requires existing	+ / - This option will include new office and R&D space (+180,000m^2 compared to existing) which will contribute to the achievement of this SA Objective and result in significant beneficial impacts. The provision of these uses will help to maintain and enhance the economy of Cambridge and improve competitiveness. It will provide high quality employment in an accessible location. This option will, however, result in a loss of industrial/storage uses compared with	+ + / - This option will include significant amounts of new offices and R&D space (+307,000m^2 compared to existing) which will contribute to the achievement of this SA Objective and result in significant beneficial impacts. The provision of these uses will help to maintain and enhance the economy of Cambridge and improve competitiveness. It will provide high quality employment in an accessible location. It will	+ + / - This option will include significant amounts of new offices and R&D space (+328,000m^2 compared to existing) which will contribute to the achievement of this SA Objective and result in significant beneficial impacts. The provision of these uses will help to maintain and enhance the economy of Cambridge and improve competitiveness. It will provide high quality employment in an accessible location. It will provide additional industrial/storage uses (+5 hectares

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SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	and viability of Cambridge, district and local centres? • Will it provide appropriate office space? • Will it minimise the loss of industrial floor space?	It is not considered likely that the new facilities would compete with retail areas elsewhere within Cambridge.	industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have a negative impact on those businesses in the short term. There is no other local centre within the immediate vicinity. The nearest local or district centre is on the A1309 towards the city centre on the boundary between the Kings Hedges and East Chesterton wards. It is not considered likely that the new local centre would compete with retail	the baseline ('Do Nothing/Committed Development' option) which relates to one of the decision-aiding questions. However, the options require existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have a negative impact on those businesses in the short term. There is no other local centre within the immediate vicinity. The nearest local or district centre is on the A1309 towards the	provide additional industrial/storage uses (+0.5 hectares compared with existing). However, the options require existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have a negative impact on those businesses in the short term. There is no other local centre within the immediate vicinity. The nearest local or district centre is on the A1309 towards the city centre on	compared with existing). However, the options require existing industrial and storage businesses to relocate which will have a potential impact on their efficiency, vitality and economic performance. This will have a negative impact on those businesses in the short term. There is no other local centre within the immediate vicinity. The nearest local or district centre is on the A1309 towards the city centre on the boundary between the Kings Hedges and East Chesterton wards. It is not considered likely that

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
			areas elsewhere within Cambridge.	city centre on the boundary between the Kings Hedges and East Chesterton wards. It is not considered likely that the new local centre would compete with retail areas elsewhere within Cambridge.	the boundary between the Kings Hedges and East Chesterton wards. It is not considered likely that the new local centre would compete with retail areas elsewhere within Cambridge.	the new local centre would compete with retail areas elsewhere within Cambridge.
15. Support appropriate investment in people, places, communications and other infrastructure	• Will it improve the level of investment in key community services and infrastructure, including communications infrastructure and broadband? • Will it improve access to	~	+	+ +	+ +	+ +
		This option does not support significant investment into this part of Cambridge and does not support the achievement of this SA Objective. Please see above for comments in relation to the provision of new local facilities.	The types of infrastructure that the AAP may be able to include/support are communications/IT, transport, public realm/open space, and a local centre. This option proposes low growth in the AAP area but will support existing successful businesses and regenerate vacant	The types of infrastructure that the AAP may be able to include/support are communications/IT, transport, public realm/open space, and a local centre. This option will involve more significant investment in the AAP area than option 1, including a Local Centre which should	The types of infrastructure that the AAP may be able to include/support are communications/IT, transport, public realm/open space, and a local centre. This option will involve more significant investment in the AAP area than options 1 and 2,	The types of infrastructure that the AAP may be able to include/support are communications/IT, transport, public realm/open space, and a local centre. This option will involve more significant investment in the AAP area than options 1, 2 and 3, including a Local Centre which should

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	education and training for all, and support provision of skilled employees to the economy?		sites within the area. It will result in up to 13,600 new jobs. Please see above for comments in relation to the provision of a new local centre. **Enhancement:** The AAP could include policies to ensure that training and employment opportunities are available for local people, in order to support this SA Objective.	provide facilities for the wider area. It will result in up to 15,100 new jobs. Please see above for comments in relation to the provision of a new local centre. **Enhancement:** The AAP could include policies to ensure that training and employment opportunities are available for local people, in order to support this SA Objective.	including a Local Centre which should provide facilities for the wider area. It will result in up to 25,800 new jobs. Please see above for comments in relation to the provision of a new local centre. **Enhancement:** The AAP could include policies to ensure that training and employment opportunities are available for local people, in order to support this SA Objective.	provide facilities for the wider area. It will result in up to 27,600 new jobs. Please see above for comments in relation to the provision of a new local centre. **Enhancement:** The AAP could include policies to ensure that training and employment opportunities are available for local people, in order to support this SA Objective.
16. Reduce the need to travel and promote more sustainable	• Will it enable shorter journeys, improve modal choice and	-	- / + / ?	- / + + / ?	- - / + + / ?	- - / + + / ?
		The committed development within the AAP boundary includes	Information is not available on potential traffic impacts relating to the	Information is not available on potential traffic impacts relating to the	Information is not available on potential traffic impacts as	Information is not available on potential traffic impacts as modelling is not

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SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
transport choices.	integration of transport modes to encourage or facilitate the use of modes such as walking, cycling and public transport? • Will it encourage cycling for journeys over one mile? • Will it discourage and reduce the use of the private car and ensure	a new railway station and an extension of the Cambridgeshire Guided Busway to form a new transport interchange. The interchange proposals include parking for 450 cars and around 1000 bicycles. This option may not involve the intensification of land uses and therefore does not optimise opportunities for intensive land uses around the new transport interchange or	redevelopment as transport modelling is not completed and therefore the appraisal of this option cannot be completed at this stage. This option does not improve pedestrian and cycle access through Cambridge Business Park or across to the Science Park. Traffic impacts on Milton Road and existing junctions need to be addressed. However, this option will provide some high quality employment in a	redevelopment as transport modelling is not completed and therefore the appraisal of this option cannot be completed at this stage. This option includes a dedicated HGV route. This option includes better movement across the area for cyclists and pedestrians compared with Option 1. There could be potential impacts on Milton Road and existing junctions due to the amount of	modelling is not completed and therefore the appraisal of this option cannot be completed at this stage. There could be potential impacts on Milton Road and existing junctions due to the larger amount of development proposed compared with Options 1 and 2. The AAP will need to limit traffic within the local transport system to 2011 levels[1] and this could be very challenging, given	completed and therefore the appraisal of this option cannot be completed at this stage. There could be potential impacts on Milton Road and existing junctions due to the larger amount of development proposed compared with Options 1 and 2. The AAP will need to limit traffic within the local transport system to 2011 levels[2] and this could be very challenging, given the level of redevelopment this option proposes.

[1] Cambridgeshire County Council, Cambridgeshire Local Transport Plan 2011-2026 (CCC, 2011).

[2] Cambridgeshire County Council, Cambridgeshire Local Transport Plan 2011-2026 (CCC, 2011).

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
	greater access to frequent public transport? • Will it support movement of freight by means other than road? • Will it promote infrastructure for zero emissions vehicles? • Will it make the transport network safer for all users, both motorised and non-motorised?	encourage use of sustainable modes of travel. The extension of the Cambridge Guided Busway into the new railway station will create links to the north and west of the city. CNFE can be linked with areas to the east and south-east of the city.	location which will be one of the most accessible sites by non-car modes in the Cambridge area. **Mitigation:** Transport modelling is required in order to understand potential impacts on the transport network associated with the options. Policies in the AAP should require infrastructure for zero emissions vehicles and road/travel safety within the AAP. Frequency of public transport services will require consideration to ensure that they would meet the needs of the redeveloped area.	development proposed. However, this option will provide some high quality employment in a location which will be one of the most accessible sites by non-car modes in the Cambridge area. **Mitigation:** Transport modelling is required in order to understand potential impacts on the transport network associated with the options. Policies in the AAP should require infrastructure for zero emissions vehicles and road/travel safety within the AAP.	the level of redevelopment this option proposes. A new road parallel to Cowley Road (north-south route) will remove industrial traffic from the road. However, this option will provide high quality employment in a location which will be one of the most accessible sites by non-car modes in the Cambridge area. This option takes advantage of the opportunity for intensive land uses around the new transport interchange and encourages the use of sustainable modes of travel.	However, this option will provide high quality employment in a location which will be one of the most accessible sites by non-car modes in the Cambridge area. This option takes advantage of the opportunity for intensive land uses around the new transport interchange and encourages the use of sustainable modes of travel. This option creates a more accessible and connected layout than other options which should better support walking and cycling across the site. **Mitigation:** Transport modelling is required in order to understand potential impacts on the

Table B.2 Appraisal of Spatial Redevelopment Options						
SA Objective	**Proposed Sub-Objective / Decision-aiding questions**	**Do Nothing/ Committed Development**	**Option 1**	**Option 2**	**Option 3**	**Option 4**
				Frequency of public transport services will require consideration to ensure that they would meet the needs of the redeveloped area.	**Mitigation:** Transport modelling is required in order to understand potential impacts on the transport network associated with the options. Policies in the AAP should require infrastructure for zero emissions vehicles and road/travel safety within the AAP. Frequency of public transport services will require consideration to ensure that they would meet the needs of the redeveloped area.	transport network associated with the options. Policies in the AAP should require infrastructure for zero emissions vehicles and road/travel safety within the AAP. Frequency of public transport services will require consideration to ensure that they would meet the needs of the redeveloped area.