Appendix VIIa: SA of Strategic Housing and Employment Site Allocations

Categories of Significance		
Symbol	**Meaning**	**Sustainability Effect**
++	Major Positive	Proposed development encouraged as would resolve existing sustainability problem
+	Minor Positive	No sustainability constraints and proposed development acceptable
0	Neutral	Neutral effect
?	Uncertain	Uncertain or Unknown Effects
-	Minor Negative	Potential sustainability issues: mitigation and/or negotiation possible
--	Major Negative	Problematical and improbable because of known sustainability issues; mitigation likely to be difficult and/or expensive
- +	SA Objectives 2, 4, 5 & 11 consider more than one sub-topic such that more than more than one significant effect may be predicted with two symbols. No 2 Communities – first symbol refers to in/out of Green Belt; second symbol refers to community & settlement identities No 4 Employment – first symbol refers to employment support; second symbol refers to vitality/viability of town centres No 5 Health & Equality – first symbol refers to regeneration/deprivation; second symbol refers to Green Infrastructure for health & well-being No 11 Soil & Land – first symbol refers to greenfield & agricultural land qualities; second symbol relates previously developed land	

PROPOSED HOUSING ALLOCATIONS: SUMMARY														
Site Allocation	**SA Objectives**													
	1	**2**		**3**	**4**		**5**		**6**	**7**	**8**	**9**	**10**	**11**		**12**	**13**	**14**
	Housing	Communities - Green Belt; Identity		Services & Facilities	Employment		Health & Equality		Highways & Air Quality	Sustainable Transport	Energy & Climate Change	Water Resources & Quality	Flood Risk	Soil		Biodiversity & Geodiversity	Landscape	Historic Environment
North of Luton 4000 homes, up to 20ha of employment	++	--	-	++	+ +	+	+ +	+ +	0?	+	+?	0?	0	- -	0	+?	--?	0?
East of Arlesey 2000 homes	++	0	-	++	+ +	+	0	+ +	0?	+	+?	0?	0	- -	0	+?	+	0?
Marston Vale 5000 homes, 40ha of employment land	++	0	-	++	+ +	+	0	+ +	-?	++	+?	0?	0	- - ?	0	+?	+	-?
Biggleswade East 1500 homes	++	0	-	++	0	+	0	+ +	0?	+	+?	0?	-	- -	0	+?	+	-?

Growth Location Allocation: Luton North
Number of Dwellings: 4000 homes
Employment Land: Up to 20 hectares

SA Topic & Objective	Assessment of Effects **Nature of the likely sustainability effect (including positive/negative, short - medium term (5-10 years)/long term (10 - 20 years plus), permanent/temporary, secondary, cumulative and synergistic); Uncertainty**		
1. Housing To ensure that the housing needs of all residents and communities are met	The delivery of up to 4000 new homes can make a significant contribution to achieving the overall housing needs of Central Bedfordshire as well as the needs of Luton with the potential for major long-term positive effects. It is assumed that development at the site allocation can meet the policy objectives of draft Local Plan policy (Housing Mix) to provide an appropriate mix of housing types, tenures and sizes.	++	
2. Communities[1] To maintain and enhance community and settlement identities	The site allocation will also result in the loss of Green Belt land. The Green Belt Study[2] identifies that this land as parcel L2, all of which is considered to make a strategic contribution to the purposes of the Green Belt. This includes making a relatively strong contribution to the unrestricted sprawl of large built-up areas, a strong contribution in safeguarding the countryside from encroachment, and a relatively strong contribution to preserving the setting and character of historic towns[3]. As such, development at the site allocation is considered to have the potential for major long-term negative effects. Development at the site allocation location will expand the urban area of Luton north and significantly contribute to the coalescence of Luton and lower Sundon, with the site allocation boundary approx. 200m from Lower Sundon as opposed to the current 800m between Luton's northern boundary and Lower Sundon[4]. The site allocation is adjacent to the northern boundary of Luton, and therefore could integrate well with the existing urban area of Luton. The site allocation is therefore considered unlikely to have a negative effect on the community or settlement identity of Luton. However, the site allocation is likely to have indirect negative effects on the identity of the smaller surrounding settlements such as Lower Sundon, as the rural character of the settlement may be degraded. Therefore, the site allocation is considered to have the potential for minor long-term cumulative negative effects on communities.	--	-

[1] Please note that first symbol relates to location in/out of Green Belt designation; second symbol relates to effects on integration & identity for existing settlements
[2] LUC for Central Bedfordshire Council Green Belt Study (October 2016)
[3] Ibid.
[4] Measured using Magic Map (2017)

	The North Houghton Regis urban extension of 7000 homes is to the west of the allocation, however it is not considered likely that there will be cumulative effects with this allocation on settlement identities due to the barrier of the M1 between the development sites.	
3.Services & Facilities To improve accessibility to services and facilities[5]	The site allocation is within close proximity to a range of existing services/facilities in North Luton. The site allocation is within 800m of a primary school, a secondary school, a supermarket, and pubs/restaurants[6]. The site allocation is not within 800m of some communities/facilities including healthcare facilities or a Post Office[7]. However due to the strategic size of the site allocation it is expected that development will provide new community services/facilities, and this is further confirmed in the draft Local Plan Vision for North Luton which states that new local community facilities will be provided. Furthermore, it is considered that there is also the potential for significant provisions to support improved accessibility in this area. Development could focus on providing services/facilities where there are known capacity issues or where there is no existing provision to address existing community requirements. The phasing of development throughout the Plan period provides the opportunity for development to provide services/facilities to meet identified deficits in the earlier phases of development, mitigating against any potential capacity issues. The provision of new services/facilities should continue through the development of the site. Overall potential for a long-term major positive effect on services/facilities.	++
4. Employment To support the economy and ensure that there are suitable opportunities for employment[8]	The site allocation has been predominantly highlighted for the development of housing, however up to 20ha of the site allocation has been identified as future employment land. Therefore, there is the potential for a major positive effect through the delivery of a strategic level of employment development. The site allocation is in close proximity to Luton as a major employment source for Central Bedfordshire and located adjacent to the strategic employment allocation RFI Sundon & thus it is likely to increase	++ +

[5] This relates to the provision of services and facilities, such as schools, healthcare centres, shops, and hospitality (café, restaurant, pub).
[6] Measured using Google Maps (2017)
[7] Ibid.
[8] first symbol refers to employment support; second symbol refers to vitality/viability of town centres

	accessibility to employment areas in this respect. Development at the site allocation may also support the vitality and viability of the major town centres in close proximity, Dunstable and Luton, with the potential for minor long term and cross-boundary positive effects.	
5. Health & Equality To improve the health and wellbeing of communities and reduce inequalities[9]	The site allocation is not within an area of higher deprivation however the site is adjacent to areas of higher deprivation located in the north of Luton. These include areas which are within the 10% most deprived neighbourhoods in the country[10]. Development adjacent to deprived areas has the potential to provide benefits for deprived communities, including better access to services/facilities and employment opportunities. Therefore, it is considered there is the potential for a long-term minor positive effect on adjacent deprived communities as a result of development at the site allocation. The Environmental Framework[11] identifies this area as located within The Chalk Arc, a priority corridor of the strategic green infrastructure network. The priority corridor is identified as an area where investment and project delivery can make most impact in securing multi-functional green infrastructure. Of importance is The Chalk Arc Project[12] that focuses on securing green space in and around proposed housing growth. The growth location is identified in the Chalk Arc Project as Area D – North Luton and Chilterns priority zone. The aim here is to improve public perception of safety at the northern end of Great Bramingham Park and increase the site's biodiversity by improving an area of chalk grassland. Development in this area could also contribute to improving the visual impact of the Friends of Gill Blowers Community Orchard and wildflower meadow. It is considered therefore that development in this area has the potential to support green infrastructure priorities and have long-term positive effects. This is further considered to indirectly positively affect the landscape objectives of the National Character Area 110: Chilterns (see SA Objective 13). The site allocation is within 450m of a range of open/recreational spaces[13]. This includes Bramingham Park, outdoor football pitches, amenity greenspace, and children's play facilities, all of which are located within Luton. Furthermore, due to the size of proposed development it is expected that there will be additional provision of open spaces and recreational facilities. This will promote healthy lifestyles among residents, with associated long-term major positive effects.	++ ++

[9] first symbol refers to regeneration/deprivation; second symbol refers to Green Infrastructure for health & well-being
[10] Open Data Communities (2017) [Online at: http://dclgapps.communities.gov.uk/imd/idmap.html]
[11] http://www.centralbedfordshire.gov.uk/environment/natural/environmental-framework.aspx
[12] http://www.bedscape.org.uk/BRMC/chalkarc/home.htm
[13] Measured using GIS (2017)

6. Highways & Air Quality To maintain and improve the existing highway network and reduce associated indirect impacts on air quality and greenhouse gas emissions	The site allocation is adjacent to the M1 in the west of the site, and the A6 to the east of the site. Early transport modelling[14] identifies that development adjacent to Luton is likely to increase congestion for routes into Luton and other urban roads as well as links to the strategic highway network; however, this could be mitigated through good access to public transport networks including the Midland Main railway line. The proposed M1-A6 Link Road will provide significant mitigation for increased congestion and will help address existing congestion issues on the road network. Recent additional funding[15] indicates more certainty for this major highway improvement that will complement other proposed schemes and benefit the wider sub-regional area with positive effects in the longer-term that could be synergistic and cumulative. However, without the proposed Link Road there is the potential for development at the site location to have a significant negative effect on traffic on the strategic road network, and therefore the Link Road should be seen as a necessity for the site allocation. Given the scale of development is it anticipated that development can provide significant infrastructure investment to the strategic and local road network, and mitigation is provided through draft Local Plan Policy (Strategic Transport Improvements, Mitigation of Transport Impacts on the Network, Connectivity and Accessibility, Development and Public Transport Interchanges and Low Emission Vehicles). New infrastructure has the potential to address existing congestion and provide major improvements to the road network, such as with this allocation and the proposed Link Road. However, the precise likely impacts and effectiveness of mitigation measures are uncertain until further transport modelling studies are completed for the Council later in 2017. There are 3 AQMAs in Luton[16] sited adjacent to the M1 and one in nearby Dunstable. The site allocation is	**0?**

[14] Aecom (2016) for Central Bedfordshire Council. Technical Note Stage 1A Growth Area Analysis
[15] http://www.centralbedfordshire.gov.uk/news/march/gov-funding-link-road.aspx
[16] https://uk-air.defra.gov.uk/aqma/maps

	located to the north of these AQMAs approximately 1km distance and development will likely result in an increase in traffic on the M1 with potential increases in poor air quality. It had been assumed that long-term air quality is likely to improve as a result of stringent emissions controls on new vehicles via European standards[17]. In 15 to 20 years' time low emission vehicles will make up the majority of cars on the roads in the UK. It is also likely that there will be reductions in various contributing sectors that will also result in reductions in background concentrations of atmospheric pollutants. However, whilst there have been very significant drops in exhaust emissions, the NO_2 emissions from road transport have not been reduced as much as expected because emissions during real world driving conditions are often higher than those measured during the type approval test, especially for diesel vehicles. The EU Commission has changed the test procedures (2017) and this discrepancy should resolve the predicted improvements in air quality in time. However, this is uncertain at this stage. Therefore, in the longer term when this development is further progressed there is likely to be improved air quality and the potential for neutral effects but uncertainty until the further transport studies are completed.	
7. Sustainable Transport To encourage a demonstrable modal shift and reduce the need to travel	The site allocation is not within walking distance to the nearest railway station, which is approx. 2.5km to the south (Leagrave Station)[18]. However, the site allocation is within 400m of existing bus stops[19]. Services from these bus stops include regular services (hourly or more frequent) to Luton Town Centre, Dunstable, Marsh Farm and Sundon Park. Due to the strategic level of growth at the site allocation, enhancements to bus services and the provision of new bus stops within the site area are possible. This includes a viable extension to such services which operate in the northern area of Luton (e.g. service number 20, 23, 823 and services supporting the Marsh Farm area[20]) through appropriate development contributions. There is a national cycle route (6) which passes through Luton[21], and is approx. 2.5km south of the site allocation[22]. Development here could provide improvements by connecting the northern area of Luton with the national cycle route, with long-term positive effects. There are PRoW footpaths within the site allocation, and enhancements could be made to the local PRoW network with positive effects.	+

[17] http://ec.europa.eu/environment/air/transport/road.htm
[18] Measured using Google Maps (2017)
[19] Ibid.
[20] Measured using Google Maps (2017)
[21] https://www.sustrans.org.uk/ncn/map?lat=56.54737192673878&lng=-3.1420902812500 36&zoom=5&route-type=all-routes&filters=
[22] Measured using Google Maps (2017)

	The M1 to the west and A6 represent barriers to movement in those directions, however there are no barriers to movement to the south of the site allocation, with a comprehensive network of roadside footpaths providing safe access to Luton. Overall potential for a long-term minor positive effect on sustainable transport.	
8. Energy & Climate Change To maximise the potential for energy efficiency, reduce greenhouse gas emission and ensure that the built and natural environment and its communities withstand the effects of climate change[23]	Given the potential sustainable transport connections identified against SA Objective 7 it is anticipated that development in this growth location can support a continued reduction in GHG emissions, this is further supported by draft Local Plan policy (Connectivity and Accessibility). It is further anticipated that through compliance with draft Local Plan policy (Successful and Sustainable Places,) development could achieve policy targets for energy efficiency, high quality design standards that ensure resilience to the effects of climate change and offer potential opportunities for renewable energy production. Potential for a long-term minor positive effect but some uncertainty at this stage.	**+?**
9. Water Resources & Quality To minimise the demand for water and maintain or improve water quality	The Water Cycle Study[24] identifies that this site allocation lies within the Upper Lea catchment, located on unconfined chalk geology, in which there are a large number of abstraction licences for groundwater resources, utilised for supporting the public water supply and agricultural uses. There is no surface water available for licensing across this catchment at any flow level as the recent flows are below the requirement to meet a Good Ecological Status. It is identified that no new consumptive licenses for groundwater will be granted in the catchment, and the water resources (for both surface and groundwater abstraction) are available less than 30% of the time, indicating pressures on the catchment for resources. It is also recognised[25] that one of the most likely effects of climate change to impact upon Central Bedfordshire will be a shortage of water resources. There are no strategic limitations on development growth as Water Companies have a statutory duty to supply water; however, capacity for providing additional supply varies & any new infrastructure requirements have to be aligned with Water Resources Management Plans. The addition of 4000 new homes in this area is therefore considered to have the potential for cumulative effects on water resources but uncertainty until the scale & location is identified and the Water Cycle Study Phase 2 is undertaken.	**0?**

[23] Please note that Flood Risk is considered by the SA within objective number 10
[24] JBA for Central Bedfordshire Council (Jan 2017) Water Cycle Study Stage 1
[25] LDA Design (2012) Central Bedfordshire Climate Change Adaptation Evidence Base Final Report

	The River Lee through Luton has been classified as poor quality with regard to the EU Water Framework Directive, but this is not near to the site allocation. The site allocation is not within zones 1-2 of any source protection zones or within any Drinking water safeguard zones or protected areas and with draft Local Plan Policies on Climate Change & Sustainability, Water Quality and Pollution, strong mitigation measures are in place to ensure at least neutral effects on water quality. Other draft Policies such as on Sustainable Drainage offer possibilities for enhancement through resolving existing problems but uncertain at this stage until more detailed studies.	
10. Flood Risk To reduce the risk of flooding from all sources	The site allocation is not in an area at risk of flooding[26]. Draft Local Plan policy (Successful and Sustainable Places) requires development to maximise opportunities for Sustainable Drainage Systems, where applicable. Likely residual neutral effects.	**0**
11. Soil[27] To protect and conserve soil	Development at the site allocation will result in the loss of greenfield land with the potential for minor long-term negative effects. There is Grade 2 best and most versatile agricultural land in the site allocation, and some Grade 3 agricultural land (sub-grade 3a or 3b not known)[28]. Development would not be able to avoid the areas with best and most versatile agricultural land as they comprise a large area of the site allocation. Therefore, the loss of best and most versatile agricultural land is considered to have a major negative effect on soil resources. The site allocation does not contain any previously developed land, with a neutral effect.	**--** **0**
12. Biodiversity & Geodiversity To protect, enhance and manage	The nearest Natura 2000 site to the site allocation is the Chiltern Beechwoods SAC, located approx. 14km to the south west, and is designated for the presence of beech forests and stag beetle[29]. The site allocation is not located within the Nature Improvement Area, but is located close to nationally designated biodiversity sites. Directly to the north-west is Sundon Chalk Quarry SSSI and County Wildlife Site (CWS)[30], containing a range of habitats which have enabled a rich and varied insect fauna to	**+?**

[26] Environment Agency (2016) Flood Map for Planning
[27] first symbol refers to greenfield & agricultural land qualities; second symbol relates previously developed land
[28] Central Bedfordshire Council GIS layers (2017)
[29] DEFRA (2017) Magic Map Application
[30] Ibid.

biodiversity & geodiversity	develop, making this one of the most important invertebrate sites in the county[31]. These habitats include two Priority Habitats; Lowland Calcareous Grassland and Deciduous Woodland[32]. Approx. 1km to the east is Galley and Warden Hills SSSI (also a designated CWS and Local Nature Reserve (LNR)) that supports characteristic down land flora, including many locally uncommon species and nationally rare plants, as well as Lowland Calcareous Grassland Priority Habitat[33]. Approx. 2km north-west of the site allocation is Fancott Woods & Meadows SSSI which contains Lowland Meadows Priority Habitat[34]. In addition, there are two locally designated County Wildlife Sites within the site allocation which contain Deciduous Woodland Priority Habitats[35]; these habitats also extend beyond the designated sites. The site allocation also contains areas located within the existing biodiversity network. Development at the site allocation has the potential for negative effects on national and locally designated biodiversity, including a potential increase in recreational use of the surrounding SSSI sites, as well as an increase in noise, light and air pollution. Furthermore, there is the potential for a loss of Local Wildlife Sites and fragmentation of existing Priority Habitat as a result of development at the site allocation. These effects may be compounded by the cumulative effect of development in the local area. However, due to the strategic level of development proposed, there is also the potential to support increased connectivity through new habitat creation or contributions to existing habitat improvements. Draft Local Plan policy (Nature Conservation) seeks to ensure that development does not adversely affect CWSs, and draft policy (Enhancing Ecological Networks) seeks to ensure that development positively contributes to biodiversity. The provision of new public open spaces and recreational facilities as part of development, and improvements to the green infrastructure network will help to mitigate against any increases in visitor use of SSSIs and CWSs in the surrounding area. Therefore, negative effects will likely be reduced to neutral. Possible enhancements that could be applied to improve the local biodiversity network in this area include the provision of ecological corridors or stepping stones such as hedges or woodland to enhance connections between existing sites and areas of Priority Habitat, and ensure safe pathways for wildlife. There would also be the opportunity to encourage future residents of any development to engage with	

[31] Sundon Chalk Quarry Citation (1998) [Accessed Online: 2016] http://www.sssi.naturalengland.org.uk/citation/citation_photo/1005586.pdf
[32] DEFRA (2016) Magic Map Application
[33] Galley & Warden Hills Citation (1998) [Accessed Online: 2016] http://www.sssi.naturalengland.org.uk/citation/citation_photo/1000571.pdf
[34] DEFRA (2016) Magic Map Application
[35] DEFRA (2016) Magic Map Application

	local biodiversity in a sustainable way by providing appropriate access. These enhancements would help meet the aims of the Central Bedfordshire Nature Conservation Strategy[36] and the Central Bedfordshire Environmental Framework[37]. The HRA of the Plan concluded that the allocation would not have likely significant effects on Natura 2000 designated sites for air quality, recreational disturbance, changes to water levels and quality, or habitat loss. At this strategic level, it is considered that there is the potential for minor positive effects on biodiversity, although there remains some uncertainty until further site level assessments are conducted.	
13. Landscape Protect and enhance the landscape and townscape	This site allocation is adjacent to the designated Chilterns AONB landscape[38]. Development at this site has significant potential to negatively affect the AONB setting through urbanisation in a previously undeveloped area. It is considered therefore that there is the potential for major long-term negative effects against SA Objective 13. Mitigation measures could include development avoiding the AONB and screening with creative design that could reduce negative effects on the setting of the AONB – however, this is uncertain until further studies are undertaken. The site allocation is within the Chilterns National Character Area, and the statements of environmental opportunity identify the need to conserve the Chilterns' groundwater resource and secure sustainable water use (discussed further in SA Objective 9) and to create or enhance green infrastructure in relation to the urban fringe and growth areas such as Luton (discussed in SA Objective 5) to support the objectives of this landscape area. The Central Bedfordshire Landscape Character Assessment[39] identifies the site allocation as being located within the Houghton Regis-North Luton Rolling Chalk Farmland area. The landscape has a high visual sensitivity and has a range of positive landscape features which includes the fields within the site allocation which are an important survival of relict landscape and hedgerows providing landscape patterning. The strategy for the landscape area includes conserving and enhancing positive features (opportunities for hedgerow strengthening in relation to transport corridors)[40].	**--?**

[36] Central Bedfordshire Council (2015) Central Bedfordshire Nature Conservation Strategy
[37] Central Bedfordshire Council (no date) Environmental Framework
[38] DEFRA (2016) Magic Map Application
[39] Central Bedfordshire Council (2015) Central Bedfordshire Landscape Character Assessment
[40] Ibid.

14. Historic Environment To ensure the protection and enhancement of heritage assets, the historic environment and its setting	There are a number of Archaeological Notification Areas within the site allocation[41], in which development (according with draft Local Plan Policy Archaeology) could contribute to investigating and recording heritage assets of archaeological significance. There are no designated heritage assets within the site allocation. Just adjacent to the south-eastern edge of the site allocation is Dray's Ditches Scheduled Monument, earthworks that date back to Bronze and Iron Age times and which are related to the ancient route of Icknield Way[42]. In 2012 this Scheduled Monument was identified on the Heritage at Risk Register, noted to be in 'generally satisfactory' condition 'but with significant localised problems, including dumping'[43]. Now in 2017 it is not identified in the at Risk Register and as such it is assumed that these issues have been reviewed and addressed. Increased development in the area should ensure that it supports any measures in place to avoid the resurgence of such localised problems. The site allocation is within the setting of the Scheduled Monument, however it is expected that appropriate landscaping and design will protect the setting of the Scheduled Monument, and mitigate against potential negative effects. A short distance to the north of the site allocation, Lower Sundon contains the Listed Buildings of the Church of St Mary, St Mary's Vicarage, Chestnut Cottage and Aubers Farmhouse[44]. Development may require mitigation measures to avoid negative effects on the settings of these Listed Buildings. Mitigation is provided through draft Local Plan policy (Built Heritage) which should ensure development does not lead to any significant effects.	**0?**

[41] Central Bedfordshire Council GIS Map Layers
[42] Luton Borough Council (2016) Luton's Heritage: https://www.luton.gov.uk/Leisure_and_culture/Events,%20tourism%20and%20accommodation/Pages/Luton's%20heritage.aspx
[43] http://www.luton-dunstable.co.uk/sites-listed-inat-risk-report-heritage-body/story-21699316-detail/story.html
[44] Central Bedfordshire Council GIS Map Layers

	Overall, likely neutral effects with an element of uncertainty at this stage until lower level assessments have been completed.	

SUMMARY:

Key Positive Effects:

- Potential for major positive effects through the provision of a strategic level of housing and the provision of new employment land.
- The site allocation has access to some services/facilities, but will provide additional services/facilities which can address any existing capacity issues or lack of provision, with a major positive effect, although some uncertainty at this strategic level.
- There is the potential for a major positive effect through a strategic level of new employment land, and a minor positive effect through supporting the vitality of existing town and city centres.
- The site allocation can improve an area of deprivation, and has good access to POS and will provide enhancements to local GI, with major positive effects on health and equality.
- There is existing access to bus stops with regular services, and opportunities to enhance local public transport facilities, including expansion to existing bus routes and the provision of new services, with a minor positive effect.
- The site allocation is expected to be able to incorporate energy efficiency measures with positive effects on energy and climate change.
- The site allocation may achieve an overall net gain for biodiversity in the area, with a potential minor positive effect, although some uncertainty until lower level assessments are completed.

Key Negative Effects:

- The site allocation is within the Green Belt and will result in coalescence of Luton with Lower Sundon, with a major negative effect.
- There is the potential for the character of local settlements to be affected by the site allocation, with a minor negative effect on community and settlement identities.
- The site allocation will result in the loss of grade 2 and 3 best and most versatile agricultural land, with a major negative effect.
- The site is in close proximity to AQMAs located along the M1 within Luton, however it is considered that mitigation is available through public transport, Local Plan Policy and the promotion of low emission vehicles, such that significant negative effects are not expected.
- The site is adjacent to the Chilterns AONB, with a potential major negative effect on the landscape designation.

SA Recommendations for the North of Luton Site-Specific Policy:

- Ensure that appropriate masterplanning and site level landscaping are used to minimise the increase in coalescence with Lower Sundon and protect the settlement identity. Landscaping can be designed to provide GI enhancements in line with the GI strategy for Central Bedfordshire and local aims for the Chalk Arc GI network.
- Development should be appropriately designed to protect the setting of the AONB.
- Detail the requirement for new development to address community needs for services/facilities, including providing new services/facilities where there is a lack of provision or capacity issues. Phasing of development can ensure services/facilities delivered early on contribute to meeting any identified deficit, and are provided at suitable stages through the development timeline to meet the need of residents.
- Development should be required to contribute towards improvements to Bramingham Park in line with the GI Strategy for the Chalk Arc. Further improvements to GI include the provision of new amenity greenspace and new public open spaces, which would have synergistic positive effects on both GI and health. Enhancements to existing habitats would have benefits for GI and the South Totternhoe Link biodiversity network.
- The site-specific Policy for North of Luton should include the requirement for a new M1-A6 Link Road, with a potential housing number limit until the relief road has been constructed to ensure implementation of this mitigation. Development should encourage sustainable transport use and discourage the use of private vehicle by making the necessary investment and appropriate design of development to reduce effects on the highway network and associated air quality.
- Set out the requirements for sustainable transport, including cycling and pedestrian routes linking with other strategic routes to produce an exemplar sustainable transport network. Development should ensure all future development will have good access to bus services by extending existing services in the area. There should also be services from the site allocation to the nearest railway station. Improvements to the PRoW network and cycle network should be in line with the Chalk Arc GI strategy, for example linking the PRoW network with the Icknield Way.
- Require development at the site allocation to maximise opportunities for Sustainable Drainage System, including connectivity with the GI aspirations for the Chalk Arc.
- Ensure development makes appropriate contributions to biodiversity and achieves an overall net gain. Potential to require visitor surveys of nearby designated sites to analyse potential effect of increased recreational use. Due to the potential effects on nearby designated sites, the local plan should ensure that development at the site allocation will mitigate these effects through avoidance using design and masterplanning, and set out the specific requirements for biodiversity including linkages with habitats and in accordance with the Chalk Arc GI Strategy. This could include linking the South Totternhoe Link biodiversity network with areas of Priority Habitat and the creation and enhancement of calcareous grassland.
- The site-specific policy for the site allocation should encourage development to positively contribute to the strategy for the landscape area as detailed in the Landscape Character Assessment, and contribute to the environmental opportunities identified. Landscaping should incorporate GI requirements for the Chalk Arc GI area.

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
SA Objective	**Assessment of Effects** **Nature of the likely sustainability effect (including positive/negative, short - medium term (5-10 years)/long term (10 - 20 years plus), permanent/temporary, secondary, cumulative and synergistic); Uncertainty**	
1. Housing To ensure that the housing needs of all residents and communities are met	The delivery of up to 2000 new homes can make a significant contribution to achieving the overall housing needs of Central Bedfordshire with the potential for major long-term positive effects. It is assumed that development at the site allocation can meet the policy objectives of draft Local Plan policy (Housing Mix) to provide an appropriate mix of housing types, tenures and sizes.	**++**

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes			
2. Communities[45] To maintain and enhance community and settlement identities	Development at the site allocation will not result in the loss of any Green Belt land with neutral effects. Housing growth at this site location will expand the urban area of Arlesey east and contribute to coalescence between Arlesey and Fairfield and Arlesey and Stotfold. Although the Masterplan for the proposed development suggests that a landscape buffer of public open space will be retained between the housing development and the settlement of Fairfield, the development will still contribute towards the coalescence of the two settlements with minor negative effects. Development in this area will integrate well with the existing townscape of Arlesey as the site is located adjacent to the existing urban edge of the settlement. However, it is likely to have indirect negative effects on the identity of the smaller settlement of Fairfield to the east, with a potential loss of rural character and separation which characterises the settlement. The A507 provides a degree of separation between Arlesey and Stotfold, such that the identity of Stotfold is unlikely to be significantly affected by development at the location. Potential for a cumulative negative effect on the settlement identity with the MA8 Arlesey Cross Allocation of 1000 homes to the north of the allocation. This will result in a larger extension of the existing settlement with a more pronounced effect on the identity of the settlement and the overall coalescence of Arlesey with Fairfield and Stotfold. Landscaping can be designed to provide GI enhancements in line with the GI strategy for Central Bedfordshire and local aims for the Ivel River Valley Corridor GI network.	0	-
3. Services & Facilities To improve accessibility to services and facilities[46]	Development at the site allocation is in close proximity to the currently limited services and facilities available within Arlesey. This includes schools, restaurants, a Post Office and a pharmacy, all of which are within 800m of the site allocation[47]. Extant Policy MA8 Arlesey Cross[48] comprises two development sites to the east and west of the High Street allocated for a minimum of 1,000	++	

[45] Please note that first symbol relates to location in/out of Green Belt designation; second symbol relates to effects on integration & identity for existing settlements
[46] This relates to the provision of services and facilities, such as schools, healthcare centres, shops, and hospitality (café, restaurant, pub).
[47] Measured using Google Maps (2017)
[48] http://www.centralbedfordshire.gov.uk/planning/policy/development-briefs/arlesey.aspx

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
	new homes. The adopted Masterplan includes requirements for new employment space, a new school, other amenities, and environmental improvements. The site allocation will therefore also have access to additional services/facilities provided as part of the Arlesey Cross development. Given the scale of development at the site it is considered that there is also the potential for significant delivery of new community services/facilities and the potential to support improved accessibility in this area, building upon the Masterplan proposals[49] with the potential for a major long term positive effect against SA Objective 3. New provision of services/facilities can help address existing community issues, including capacity and lack of specific services/facilities. This is supported by draft Local Plan policy (Connectivity and Accessibility). The phasing of development throughout the Plan period provides the opportunity for development to provide services/facilities to meet identified deficits in the earlier phases of development in line with development proposed at Arlesey Cross, mitigating against any potential capacity issues. The provision of new services/facilities should continue through the development of the site.	
4. Employment To support the economy and ensure that there are suitable opportunities for employment[50]	The site allocation will not result in the loss of employment land and has been identified as providing new employment land, along with the MA8 Arlesey Cross site, with a major positive effect. Arlesey is located on a strategic rail connection route which is likely to increase accessibility to employment areas. Development in this location is also likely to support the vitality and viability of local town centres, including Arlesey and Stotfold, with the potential for minor long term positive effects. Arlesey is also well connected to the A1 for access to larger towns along this corridor.	++ +
5. Health & Equality To improve the health and wellbeing of communities	The growth location is not within or adjacent to an area of higher deprivation and thus unlikely to lead to any significant positive or negative effects.	0 ++

[49] Axiom Developments Ltd. (2017) Arlesey East Concept Masterplan
[50] first symbol refers to employment support; second symbol refers to vitality/viability of town centres

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
and reduce inequalities[51]	The Environmental Framework[52] identifies this site location as located within the Ivel River Valley, a priority corridor of the strategic green infrastructure network. The priority corridor is identified as an area where investment and project delivery can make most impact in securing multi-functional green infrastructure. Specific focuses include, landscape enhancements, creation of the Great North Cycle Route and enhancing connections between settlements. A key issue for this GI area is the lack of strategic accessible greenspace. It is considered therefore that development in this area has the potential to support green infrastructure priorities and have minor long-term positive effects against SA Objective 5. Public Open Space in Arlesey includes a football ground, playing fields and allotments. All of these open/recreational spaces are within 480m of the site allocation[53]. Fairfield, to the east of the site allocation also contains public open spaces which include a recreation area and amenity greenspace, and these facilities are also within 480m of the site allocation[54]. The strategic level of development provides the opportunity to enhance and provide new areas of existing open/recreational spaces, which will promote healthy lifestyles among residents, with associated long-term minor positive effects on health. The proposed country park separating Arlesey from Fairfield will provide open space and GI opportunities for residents including proposals to enhance the CWS (Blue and Green Lagoons) to the south of the allocation.	
6. Highways & Air Quality To maintain and improve the existing highway	The site allocation is adjacent to the A507 in the north-east corner, and this provides access to the A1 approximately 3.5km to the east[55]. Early transport modelling[56] identifies that all new potential growth in this area is likely to have an impact on the A1 and cause further congestion and	**0?**

[51] first symbol refers to regeneration/deprivation; second symbol refers to Green Infrastructure for health & well-being
[52] http://www.centralbedfordshire.gov.uk/environment/natural/environmental-framework.aspx
[53] Measured on GIS using Central Bedfordshire Council GIS Layers (2017)
[54] Ibid.
[55] Measured using Google Maps (2017)
[56] Aecom (2016) Technical Note Stage 1A Growth Area Analysis

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
network and reduce associated indirect impacts on air quality and greenhouse gas emissions	infrastructure improvements are likely to be required. The nearest junction for the A1 has been noted as having congestion issues during peak periods[57]. The local community of Arlesey has also expressed concern about the capacity of the local road network to accommodate future development[58]. Given the scale of development is it anticipated that development can provide significant infrastructure investment. Indicative proposals suggest a relief road through the site allocation will be provided, connecting the south of Arlesey to the A507 in the north east, via the Arlesey Cross development[59]. This will aim to prevent an increase in traffic along Arlesey High Street. Further small-scale improvements to the local road network will be required to mitigate against the increase in traffic. Further mitigation is provided through draft Local Plan policy (Strategic Transport Improvements, Mitigation of Transport Impacts on the Network, Connectivity and Accessibility, Development and Public Transport Interchanges and Low Emission Vehicles). New infrastructure in combination with the Arlesey Cross Masterplan has the potential to address existing congestion and provide major improvements to the road network, such as with this allocation and the proposed Link Road. However, the precise likely impacts and effectiveness of mitigation measures are uncertain until further transport modelling studies are completed for the Council later in 2017. Therefore, a residual neutral effect with some uncertainty is considered for the site allocation. The site option will not result in an increase in traffic within an AQMA[60]. It had been assumed that long-term air quality is likely to improve as a result of stringent emissions controls on new vehicles via European standards[61]. In 15 to 20 years' time low emission vehicles will make up the majority of cars on the roads in the UK. It is also likely that there will be reductions in various contributing sectors that will also result in reductions in background concentrations of atmospheric pollutants. However, whilst there have been very significant drops in exhaust emissions, the NO_2 emissions from road transport have not been reduced as much as expected because emissions during real world driving conditions are often higher than those measured during the type approval test,	

[57] Central Bedfordshire Local Transport Plan (2013) Arlesey & Stotfold Local Area Transport Plan
[58] Ibid.
[59] Draft Central Bedfordshire Local Plan (2017)
[60] https://uk-air.defra.gov.uk/aqma/maps
[61] http://ec.europa.eu/environment/air/transport/road.htm

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
	especially for diesel vehicles. The EU Commission has changed the test procedures (2017) and this discrepancy should resolve the predicted improvements in air quality in time. However, this is uncertain at this stage. Therefore, in the longer term when this development is further progressed there is likely to be improved air quality and the potential for neutral effects but uncertainty until the further transport studies are completed.	
7. Sustainable Transport To encourage a demonstrable modal shift and reduce the need to travel	The site allocation is well connected to the existing urban area of Arlesey. Bus services from Arlesey include regular services (hourly or more frequent) to Letchworth Garden City and Hitchin, and less regular services to Bedford. The site allocation is within 800m of bus stops within Arlesey[62]. It is anticipated that growth in this location could accommodate a viable extension to such services which operate in Arlesey (e.g. service number 72, 96, 97 and W7[63]) through appropriate development contributions, with positive effects on sustainable transport. There is the potential for in-combination improvements with the Arlesey Cross development to ensure sustainable transport enhancements benefit the whole settlement. Arlesey also has a railway station, which is located approx. 1.7km to the north west of the site allocation[64]. Although the site allocation is not within walking distance of the railway station, there is access via local bus services, with positive effects. National Cycle Route 12 is located approx. 1km to the north of the site allocation[65]. Connections to the national cycle route from the site allocation could be incorporated via the Arlesey Cross development which proposes a network of pedestrian and cycleways. The site allocation has existing PRoW network with some footpaths connecting the settlements of Arlesey and Fairfield. Development here can enhance these footpaths and therefore provide improvements to the connectivity between Arlesey and Fairfield, with potential minor positive effects.	+

[62] Measured using Google Maps (2017)
[63] Google Maps https://www.google.co.uk/maps
[64] Measured using Google Maps (2017)
[65] https://www.sustrans.org.uk/ncn/map?lat=56.54737192673878&lng=-3.1420902812500 36&zoom=5&route-type=all-routes&filters=

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
8. Energy & Climate Change To maximise the potential for energy efficiency, reduce greenhouse gas emission and ensure that the built and natural environment and its communities withstand the effects of climate change[66]	Given the potential sustainable transport connections identified against SA Objective 7 it is anticipated that development in this growth location can support a continued reduction in GHG emissions, this is further supported by draft Local Plan policy (Connectivity and Accessibility). It is further anticipated that through compliance with draft Local Plan policy (Successful and Sustainable Places,) development could achieve policy targets for energy efficiency, high quality design standards that ensure resilience to the effects of climate change and offer potential opportunities for renewable energy production. Potential for a long-term minor positive effect but some uncertainty at this stage.	**+?**
9. Water Resources & Quality To minimise the demand for water and maintain or improve water quality	The Water Cycle Study identifies that this site allocation lies within the Upper Bedford and Ouse catchment, where the main pressure on water resources is the abstraction of water for public supply. Abstraction for consumption is only available for up to 32% of the time and 25% of licenses in the area are time limited and tied to a Common End Date (CED) of March 2028. It is also recognised[67] that one of the most likely effects of climate change to impact upon Central Bedfordshire will be a shortage of water resources. The Ruthamford South Water Resource Zone (WRZ) is predicted to be in supply-demand deficit by 2026/27 as a result of growth and reduced yield. There are no strategic limitations on development growth as Water Companies have a statutory duty to supply water; however, capacity for providing additional supply varies & any new infrastructure requirements have to be aligned with Water Resources Management Plans. The addition of 2000 new homes at this allocation, and the 1000 homes at the adjacent Arlesey Cross development, is therefore considered to have the potential for cumulative effects on water resources but uncertainty until the Water Cycle Study Phase 2 is undertaken. Rivers in the vicinity of the growth location are considered to be in a moderate overall water body class. The majority of watercourses in the Plan area are not currently meeting 'good' classification and the most common reason for this is 'pollution from waste water'. The Water	**0?**

[66] Please note that Flood Risk is considered by the SA within objective number 10
[67] LDA Design (2012) Central Bedfordshire Climate Change Adaptation Evidence Base Final Report

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
	Cycle Study identifies that all WwTWs have some capacity within their existing quality permits to accommodate future development without causing a class of 10% deterioration, however in some settlements the available capacity is quite small, and in some cases development may also require WwTW upgrades. With draft Local Plan Policies on Climate Change & Sustainability, Water Quality and Pollution, strong mitigation measures are in place to ensure at least neutral effects on water quality, and ensure that development supports local WRMPs with high water efficiency targets.	
10. Flood Risk To reduce the risk of flooding from all sources	The site allocation is entirely within Flood Zone 1[68] (low probability of flood risk), with an overall neutral effect on flooding. Draft Local Plan policy (Successful and Sustainable Places) requires development to maximise opportunities for Sustainable Drainage Systems, where applicable, and there may be possibilities for enhanced effects to help resolve existing flooding problems.	**0**
11. Soil To protect and conserve soil	Development at this site allocation will result in the loss of greenfield land with the potential for minor long-term negative effects. The site allocation is predominantly Grade 2 agricultural land, with a small area of Grade 3 (sub-grade 3a or 3 b not known) agricultural land to the south east and a small area of non-agricultural land to the south west[69]. Given that the location is greenfield land, development is unlikely to contain or require remediation for any contaminated land. Due to the loss of best and most versatile agricultural land a major negative effect is considered for this SA Objective. The site allocation does not contain any previously developed land, with a neutral effect.	**--** **0**

[68] Environment Agency (2017) Flood Map for Planning
[69] Central Bedfordshire Council GIS layers (2017)

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
12. Biodiversity & Geodiversity To protect, enhance and manage biodiversity & geodiversity	The nearest Natura 2000 site to the site allocation is Eversden and Wimpole Woods SAC, designated for Barbastelle bats[70], and is approx. 20km to the north east of the site allocation, such that significant negative effects are not expected[71]. The site allocation is not within the Nature Improvement Area and there are no National Nature Reserves or SSSIs in close proximity to the site allocation[72]. There is a Local Nature Reserve (LNR) approx. 2km to the east of the site allocation[73], however the town of Stotfold is located between the growth location and the LNR, and there are no recorded sensitivities for the LNR. There are two County Wildlife Sites (CWS) to the west of the site allocation, with Lowland Meadow Priority Habitat, Semi-Improved Grassland Priority Habitat and Deciduous Woodland Priority Habitat in the same location[74]. However, the town of Arlesey is between the site allocation and the CWSs and Priority Habitats. Blue Lagoon CWS is located within the south of the site allocation, along with a small area of Deciduous Woodland Priority Habitat[75]. Indicative proposals suggest that the CWS will be enhanced and maintained. The site allocation is not located within the biodiversity network, which instead follows the path of the River Purwell on the other side of Arlesey to the west of the site. The HRA of the Plan concluded that the allocation would not have likely significant effects on Natura 2000 designated sites for air quality, recreational disturbance, changes to water levels and quality, or habitat loss. Development at the site allocation could contribute to the improvement of the biodiversity network. The creation of new habitats and ecological corridors could help connect Priority Habitats to the CWSs, creating safe paths for local wildlife. Existing rural pathways in and around the site allocation should be maintained and possibly enhanced to allow future residents to have access to open green space, with minor positive benefits for the health of residents. These enhancements would help meet the aims of the Central Bedfordshire Nature Conservation Strategy[76] and the Central Bedfordshire Environmental Framework[77]. This could complement and	**+?**

[70] DEFRA (2016) Magic Map Application
[71] Ibid.
[72] Central Bedfordshire Council GIS layers (2017)
[73] DEFRA (2016) Magic Map Application
[74] Ibid.
[75] Central Bedfordshire Council GIS layers (2017)
[76] Central Bedfordshire Council (2015) Central Bedfordshire Nature Conservation Strategy

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
	enhance the green and blue infrastructure requirements with the Arlesey Cross Masterplan for synergistic and cumulative positive effects. The provision of new public open spaces and recreational facilities as part of development, and improvements to the green infrastructure network will help to mitigate against any increases in visitor use of SSSIs and CWSs in the surrounding area. Indicative proposals[78] for the site allocation suggest that the CWS and Priority Habitat will be retained. It is considered that the provision of green space as part of development will ensure residents will mitigate against increased recreational pressure on SSSIs in the local area. Therefore, significant effects on designated biodiversity sites are not expected as a result of development, but there is the potential for significant net gains to biodiversity, with a potential long-term minor positive effect. Some uncertainty remains at this strategic level.	
13. Landscape Protect and enhance the landscape and townscape	This site allocation is not within or adjacent to the designated Chilterns AONB landscape[79]. The site allocation is within the East Anglian Chalk National Character Area[80], and the statements of environmental opportunity identify the need to conserve the groundwater resource and secure sustainable water use (SA Objective 9 identifies the available mitigation) and to create or enhance green infrastructure in relation to the urban fringe and growth areas. There are significant views from Arlesey to Fairfield (and please see SA objective No 2 previously about coalescence). Development in this location has the potential to support the objectives of this landscape area. The local landscape assessment identifies the site allocation as being located partially within the Upper Ivel Clay Valley[81]. The visual sensitives of the area include open views over arable farmland and the landscape strategy focuses on enhancing degraded features such as hedgerows and tree planting to increase biodiversity. The site allocation is also partially within the Fairfield Chalk Farmland, whose visual sensitivities include open views over arable farmland and the enclosed	+

[77] Central Bedfordshire Council (no date) Environmental Framework
[78] Axiom Developments Ltd. (2017) Arlesey East Concept Masterplan
[79] Defra (2017) Magic Map
[80] Natural England (2015) East Anglian Chalk National Character Area Profile
[81] Central Bedfordshire Council (2015) Central Bedfordshire Landscape Character Assessment

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes		
	nature of the Blue Lagoon CWS, with the landscape strategy focusing on renewing elements in poor condition and integration new development[82]. The site allocation will result in loss or degradation visually sensitive features for the area, predominantly the open nature of arable farmland, but also a potential effect on the enclosed nature of the CWS. This will have long-term minor negative effects on the landscape. A LVIA for the site option[83] determined that the landscape has a low/medium landscape sensitivity. The assessment acknowledges the potential for negative effects on the landscape, however through sensitive design that responds to the localised context, it is considered that the site allocation could be integrated with the local landscape. Therefore, it is considered that there is the potential for a minor positive effect on landscape through appropriate landscaping and design contributing to the landscape strategy for the area.	
14. Historic Environment To ensure the protection and enhancement of heritage assets, the historic environment and its setting	There are 3 Archaeological Notification Areas within the site allocation[84], in which development (according with draft Local Plan Policy Archaeology) could contribute to investigating and recording heritage assets of archaeological significance. The site allocation does not contain any designated heritage assets; however, it is located in close proximity to Listed Buildings in both Arlesey and Fairfield[85]. Given the scale of development at this location it is likely to affect the open countryside setting in between these two areas, and design will be required to respond to differing heritage settings in the south east and west. Mitigation is provided through draft Local Plan policy (Built Heritage) which should ensure development does not lead to any significant effects on the settings of the Listed Buildings, with the potential for a residual neutral effect. There remains an element of uncertainty until site level assessments have been completed.	**0?**

[82] Ibid.
[83] Aspect Landscape Planning (August 2017) Land East of Arlesey: Landscape and Visual Appraisal
[84] Central Bedfordshire Council GIS Map Layers
[85] Ibid.

Growth Location: East of Arlesey
Number of Dwellings: up to 2000 homes

SUMMARY:

Key Positive Effects:

- The site allocation will provide housing to meet the need of Central Bedfordshire, with long term major positive effects.
- The site allocation is within walking distance to an existing range of services/facilities, and the provision of new services/facilities at Arlesey Cross and the new development will have major positive effects.
- The site allocation has existing access to open and recreational spaces, and indicative proposals suggest there will be new provision as part of development, with potential improvements to the Ivel River Valley GI network, with major positive effects on health.
- The site allocation can provide enhancements to the existing sustainable transport network, with minor positive effects.
- The site allocation is expected to be able to incorporate energy efficiency measures with positive effects on energy and climate change.
- A net gain on biodiversity can be achieved at the site allocation, with no significant effects on internationally or nationally designated biodiversity, with a minor positive effect, although some uncertainty at this strategic level.
- Potential for contributions towards landscape strategy and enhancements of the existing landscape, with minor positive effects.

Key Negative Effects:

- The site allocation will result in the loss of best and most versatile agricultural land, with a major negative effect on soils.
- Development at the site allocation will have a minor negative effect on communities through the contribution to coalescence and loss of settlement character.

SA Recommendations for the East of Arlesey Site-Specific Policy:

- Ensure that appropriate masterplanning and site level landscaping are used to minimise the increase in coalescence to protect the settlement identity of Fairfield. Landscaping can be designed to provide GI enhancements in line with the GI strategy for Central Bedfordshire and local aims for the Ivel River Valley Corridor GI network.
- New services/facilities should be a requirement for development at the site allocation to meet the needs of local communities and address and existing issues with services/facilities within Arlesey and Fairfield. Phasing of development can ensure services/facilities delivered early on contribute to meeting any identified deficit, and are provided at suitable stages through the development timeline to meet the need of residents.
- The proposed relief road should be a necessary requirement for the site allocation.
- Enhancements to the existing bus network in Arlesey with the proposed development at Arlesey Cross and the site allocation can provide a comprehensive sustainable transport network for the settlement, and ensure access to the railway station. Improvements to the PRoW network to enhance connections between settlements and additional cycle routes and contributions to the Great North

Growth Location: East of Arlesey **Number of Dwellings:** up to 2000 homes
Cycle Route should be delivered in line with the GI strategy for the Ivel River Valley GI corridor. ▪ Require development at the site allocation to maximise opportunities for Sustainable Drainage System, including connectivity with the GI aspirations for the Ivel River Valley where relevant. ▪ Development should achieve a net gain for biodiversity. The CWS and Priority Habitat should be retained and enhanced in line with the indicative proposals, and the opportunities detailed in the GI strategy for the Ivel River Valley should be incorporated. Opportunities for heathland and acid grassland linkages should be encouraged and biodiversity improvements should be integrated with the Ivel Valley GI network such that positive effects are synergistic. ▪ Mitigation measures outlined in the site level landscape assessment should be required for development to be permitted. The development should contribute towards the landscape strategy for the Upper Ivel Clay Valley, and address environmental opportunities for the East Anglian Chalk National Character Area. Where possible, landscape enhancements should integrate with the Ivel River Valley GI network.

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land	
SA Objective	**Assessment of Effects** **Nature of the likely sustainability effect (including positive/negative, short - medium term (5-10 years)/long term (10 - 20 years plus), permanent/temporary, secondary, cumulative and synergistic); Uncertainty**

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
1. Housing To ensure that the housing needs of all residents and communities are met	The delivery of up to 5000 new homes can make a significant contribution to achieving the overall housing needs of Central Bedfordshire with the potential for major long-term positive effects. It is assumed that development at the growth location can meet the policy objectives of draft Local Plan policy (Housing Mix) to provide an appropriate mix of housing types, tenures and sizes.	++
2. Communities[86] To maintain and enhance community and settlement identities	Development in this area will not result in the loss of any Green Belt land and neutral effects. Housing growth at the site allocation will expand the urban area of Marston Moretaine south and east resulting in the direct coalescence of Marston Moretaine and Lidlington and Brogborough, with the potential for long term negative effects against SA Objective 2. Development in this area could integrate well with the existing urban areas of Marston Moretaine and Lidlington, but will directly negative effect the individual identities of these settlements through coalescence.	0 -
3. Services & Facilities To improve accessibility to services and facilities[87]	Development at the site allocation is in close proximity to services and facilities available within Marston Moretaine and Lidlington. Given the scale of development at the site the provision of new services and facilities will have to be made. These significant provisions will support improved accessibility in this area and address existing accessibility issues, with the potential for a major long term positive effect against SA Objective 3. This is supported by draft Local Plan policy (Connectivity and Accessibility). The phasing of development throughout the Plan period provides the opportunity for development to provide services/facilities to meet identified deficits in the earlier phases of development, mitigating against any potential capacity issues.	++

[86] Please note that first symbol relates to location in/out of Green Belt designation; second symbol relates to effects on integration & identity for existing settlements
[87] This relates to the provision of services and facilities, such as schools, healthcare centres, shops, and hospitality (café, restaurant, pub).

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land			
4. Employment To support the economy and ensure that there are suitable opportunities for employment[88]	The site allocation has been identified predominantly for the development of housing, however 40ha of employment land has been proposed for a new business park, which would include employment land for office, distribution and manufacturing industries. This will contribute to meeting the identified jobs needs for Central Bedfordshire, with long term major positive effects. The site allocation is in close proximity along the A421 to Bedford and Milton Keynes as major employment sources for Central Bedfordshire. It is connected by rail to these two areas already and with the development of the East-West Rail Link this is likely to increase accessibility and proximity to Ridgmont station to the south west, further supporting the vitality and viability of these town centres, as well as local centres such as Ampthill, with the potential for minor long term and cross-boundary positive effects.	++	+
5. Health & Equality To improve the health and wellbeing of communities and reduce inequalities[89]	The site allocation is not within or adjacent to an area of higher deprivation and thus unlikely to lead to any significant effects. The Environmental Framework[90] identifies this area as located within Marston Vale, a priority corridor of the strategic green infrastructure network. The priority corridor is identified as an area where investment and project delivery can make most impact in securing multi-functional green infrastructure. Development in this area can also support the objectives of the Community Forest of Marston Vale, which has been identified as a strategic area for landscape improvements, and support increased connectivity and regenerate land marred by industrialisation (from the brick making industry). There is also the potential for enhancements to blue infrastructure through the delivery of part of the Bedford to Milton Keynes Waterway Park. Due to the strategic level of growth and the location of the site allocation is considered therefore that development in this area has the potential to support green infrastructure and blue infrastructure priorities and have long-term positive effects against SA Objective 5. The site allocation is in close proximity to a range of existing public open space. This includes Marston Vale Millennium Country Park, adjacent to the north east of the site allocation. Other	0	+ +

[88] first symbol refers to employment support; second symbol refers to vitality/viability of town centres
[89] first symbol refers to regeneration/deprivation; second symbol refers to Green Infrastructure for health & well-being
[90] http://www.centralbedfordshire.gov.uk/environment/natural/environmental-framework.aspx

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
	areas of open space include a playing field and community woodland adjacent to the east of the site and an area of informal recreation space to the west. All of which are within 450m of the site allocation, and are therefore considered to be easily accessible. Indicative proposals suggest the site allocation will provide a range of new open spaces, with long-term positive effects on health through the promotion of healthy lifestyles.	
6. Highways & Air Quality To maintain and improve the existing highway network and reduce associated indirect impacts on air quality and greenhouse gas emissions	The site allocation is well located regarding access to the strategic road network, including the A421 and M1. Early transport modelling[91] identifies that infrastructure improvements, such as to the M1 J13 and other local highway issues, would be crucial given the level of stress and identified congestion on the strategic routes in this area. The strategic level of development proposed would result in an increase in traffic in the local area, including on roads which experience congestion and a potential increase on traffic in nearby settlements such as Marston Moretaine and Lidlington.. Given the scale of development is it anticipated that development can provide significant infrastructure investment which could mitigate against the increase in traffic as a result of development. Further mitigation is provided through draft Local Plan policy (Strategic Transport Improvements, Mitigation of Transport Impacts on the Network, Connectivity and Accessibility, Development and Public Transport Interchanges and Low Emission Vehicles). Good sustainable transport links should also provide mitigation by reducing the reliance on private vehicle use. However, the precise likely impacts and effectiveness of mitigation measures are uncertain until further transport modelling studies are completed for the Council later in 2017. The nearest AQMA to the site allocation is in Ampthill[92] some 6km distance and is unlikely to result in an increase in traffic in this area such that significant negative effects are not considered likely. It	**-?**

[91] Aecom (2016) Technical Note Stage 1A Growth Area Analysis
[92] https://uk-air.defra.gov.uk/aqma/maps

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
	had been assumed that long-term air quality is likely to improve as a result of stringent emissions controls on new vehicles via European standards[93]. In 15 to 20 years' time low emission vehicles will make up the majority of cars on the roads in the UK. It is also likely that there will be reductions in various contributing sectors that will also result in reductions in background concentrations of atmospheric pollutants. However, whilst there have been very significant drops in exhaust emissions, the NO_2 emissions from road transport have not been reduced as much as expected because emissions during real world driving conditions are often higher than those measured during the type approval test, especially for diesel vehicles. The EU Commission has changed the test procedures (2017) and this discrepancy should resolve the predicted improvements in air quality in time. However, this is uncertain at this stage. The Energy Recovery Facility at Rookery Pit South and Brogborough Landfill Gas Power station are in relatively close proximity to the locational area and as such air quality will need to be considered in the context of future occupiers; Development Management Policies CC7 Pollution and HQ1 Health Impact Assessment should provide mitigation measures.	
7. Sustainable Transport To encourage a demonstrable modal shift and reduce the need to travel	The site allocation is well connected to the existing urban areas of Marston Moretaine and Lidlington, which are both served by bus services. This includes hourly or more frequent services to Wharley End and Bedford. It is anticipated that growth in this location could accommodate viable extensions to such services through appropriate development contributions. This could include improvements to existing services and bus stop facilities. The site allocation is within 800m of a railway station in Lidlington and a railway station in Millbrook[94]. Development at the site allocation could contribute to improved access to the railway stations, and contribute to meeting the objectives provided by the Marston Vale Community Rail Partnership, which aims to improve trains services. The development of the East-West Rail Link and the site allocations proximity to Ridgmont station to the south west will support sustainable transport objectives with positive effects.	++

[93] http://ec.europa.eu/environment/air/transport/road.htm
[94] Measured using Google Maps (2017)

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
	There are multiple PRoW routes passing through the settlement, including the Marston Vale Trail. National Cycle Route 51 passes through the north of the site allocation[95]. Development at the site allocation can provide enhancements to footpaths and cycleways, improving connectivity for local residents and linking in with neighbouring areas for a cumulative effect on sustainable transport networks. The size and scope of a new settlement offers strong opportunities through early masterplanning and creative design to provide exemplar opportunities for sustainable transport (including bus services, rail links and cycling network) with potential long-term major positive effects.	
8. Energy & Climate Change To maximise the potential for energy efficiency, reduce greenhouse gas emission and ensure that the built and natural environment and its communities withstand the effects of climate change[96]	Given the potential sustainable transport connections identified against SA Objective 7 it is anticipated that development at the site allocation can support a continued reduction in GHG emissions, this is further supported by draft Local Plan policy (Connectivity and Accessibility). It is further anticipated that through compliance with draft Local Plan policy (Successful and Sustainable Places,) development could achieve policy targets for energy efficiency, high quality design standards that ensure resilience to the effects of climate change and offer potential opportunities for renewable energy production. Potential for a long term minor positive effect but some uncertainty at this stage.	**+?**
9. Water Resources & Quality To minimise the demand for water and maintain or improve water quality	The Water Cycle Study identifies that this site allocation lies within the Upper Bedford and Ouse catchment, where the main pressure on water resources is the abstraction of water for public supply. Abstraction for consumption is only available for up to 32% of the time and 25% of licenses in the area are time limited and tied to a Common End Date (CED) of March 2028. It is also recognised[97] that one of the most likely effects of climate change to impact upon Central Bedfordshire will be a shortage of water resources. The Ruthamford South Water Resource Zone (WRZ) is predicted to be in supply-demand deficit by 2026/27 as a result of growth and reduced	**0?**

[95] https://www.sustrans.org.uk/ncn/map?gclid=EAIaIQobChMIhpre8dii1wIVowrTCh1LCgH_EAAYASAAEgJySPD_BwE
[96] Please note that Flood Risk is considered by the SA within objective number 10
[97] LDA Design (2012) Central Bedfordshire Climate Change Adaptation Evidence Base Final Report

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
	yield. There are no strategic limitations on development growth as Water Companies have a statutory duty to supply water; however, capacity for providing additional supply varies & any new infrastructure requirements have to be aligned with Water Resources Management Plans. The addition of 3000 new homes in this area is therefore considered to have the potential for cumulative effects on water resources but uncertainty until the Water Cycle Study Phase 2 is undertaken. Rivers in the vicinity of the site allocation are considered to be in a moderate overall water body class. The majority of watercourses in the Plan area are not currently meeting 'good' classification and the most common reason for this is 'pollution from waste water'. The Water Cycle Study identifies that all WwTWs have some capacity within their existing quality permits to accommodate future development without causing a class of 10% deterioration, however in some settlements the available capacity is quite small, and in some cases development may also require WwTW upgrades With draft Local Plan Policies on Climate Change & Sustainability, Water Quality and Pollution, strong mitigation measures are in place to ensure at least neutral effects on water quality, and ensure that development supports local WRMPs with high water efficiency targets.	
10. Flood Risk To reduce the risk of flooding from all sources	There is a small area of Flood Zone 2 and 3[98] along the western boundary of the site allocation. Indicative proposals suggest that residential and employment development would not be contained within this area, with the potential for a residual neutral effect. Draft Local Plan policy (Successful and Sustainable Places) requires development to maximise opportunities for Sustainable Drainage Systems, where applicable, and there may be possibilities for enhanced effects to help resolve existing flooding problems but uncertain at this stage of appraisal. Likely residual neutral effects.	**0**

[98] Environment Agency (2016) Flood Map for Planning

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land			
11. Soil To protect and conserve soil	Development at this site allocation will predominantly result in the loss of greenfield land with the potential for minor long-term negative effects. Small areas of Grade 3a best and most versatile agricultural land have been identified within the site allocation[99], and the loss of these areas has the potential for permanent major negative effects against SA Objective 11. Development can avoid these areas to reduce the extent of the negative effects, however it is recognised that there remains an element of uncertainty at this level of assessment. The site allocation is within an area which has a history of mineral extraction, and therefore land contamination is an existing issue for the site allocation. Development may require the remediation of contaminated land, with a potential negative effect. The site allocation does not contain any previously developed land, with a neutral effect.	--?	0
12. Biodiversity & Geodiversity To protect, enhance and manage biodiversity & geodiversity	The nearest Natura 2000 site to the site allocation is Chiltern Beechwoods SAC, approx. 21km to the south and designated for its beech woodlands[100]. Upper Nene Valley Gravel Pits Ramsar and SPA sites are located approx. 22km to the north of the site allocation[101], both of which are designated for their wintering waterbird populations. To the north-west of the site allocation is Marston Thrift SSSI and Local Nature Reserve (LNR)[102], which is an example of ash/maple woodland[103]. To the east of the site allocation is Kings Wood and Glebe Meadows SSSI and LNR, another example of ash/maple woodland[104]. To the south-west is Cooper's Hill SSSI and LNR, one of the best remaining examples in Bedfordshire of Lowland Heath[105]. Due to the size of the site allocation development may affect these sites. This may occur through increased recreation use from future residents resulting in habitat disturbance and	+?	

[99] DEFRA (2016) Magic Map Application
[100] DEFRA (2016) Magic Map Application
[101] Ibid.
[102] Ibid.
[103] Marston Thrift Citation (1984) [Online: 2016] http://www.sssi.naturalengland.org.uk/citation/citation_photo/1000684.pdf
[104] Kings Wood and Glebe Meadows Citation (1998) [Online: 2016] http://www.sssi.naturalengland.org.uk/citation/citation_photo/1000638.pdf
[105] Cooper's Hill Citation (1998) [Online: 2016] http://www.sssi.naturalengland.org.uk/citation/citation_photo/1000484.pdf

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
	destruction. Other possible impacts may be increased noise and light pollution having adverse effects on local wildlife residing at these sites. The site allocation and surrounding land is mostly greenfield with a range of hedgerows present, and the damage or loss of hedgerows would have an impact on ecological corridors. There is the potential for a cumulative effect with development in the neighbouring authorities of Bedford and Milton Keynes. However, the HRA of the Plan concluded that the allocation would not have likely significant effects on Natura 2000 designated sites for air quality, recreational disturbance, changes to water levels and quality, or habitat loss. There are a number of locally designated County Wildlife Sites (CWS) within and around the site allocation. This includes Brogborough Lake CWS and Lidlington Pit CWS in the site allocation boundary. Within the site allocation there are blocks of Deciduous Woodland Priority Habitat and Lowland Meadows Priority Habitat[106]. Biodiversity network is located largely to the south and to the west. Development at the site allocation therefore has the potential to result in fragmentation of Priority Habitats and the disruption of local wildlife. The site allocation is within a Great Crested Newt re-colonisation area. A small amount of the site allocation is also located in the Nature Improvement Area (NIA), providing opportunities to improve the NIA's and Central Bedfordshire's biodiversity network. The area around the site allocation has a high number of Priority Habitats and nationally and locally designated biodiversity sites. Improving existing ecological corridors between sites and habitats within the NIA and sites and habitats outside the NIA will benefit both the NIA and surrounding ecosystem, and help meet NIA targets of strengthening ecological networks. Providing connections for current residents and future residents between the growth location and the NIA would also provide benefits for resident's health and help meet targets of enhancing public awareness and providing opportunities for people to access and experience the Ridge. Potential for long-term minor positive effects. These enhancements would help meet the aims of the Central Bedfordshire Nature Conservation Strategy[107] and the Central Bedfordshire Environmental Framework[108].	

[106] DEFRA (2016) Magic Map Application
[107] Central Bedfordshire Council (2015) Central Bedfordshire Nature Conservation Strategy
[108] Central Bedfordshire Council (no date) Environmental Framework

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
	The site allocation is also located in the Forest of Marston Vale, a community forest made up of a patchwork of woodlands which includes local SSSI and LNR sites. The aim of the designation is to regenerate the industrially scarred landscape, whilst meeting objectives which include creating new opportunities for nature conservation, improving access for all and encourage community commitment to the concept[109]. Development at this site allocation could support the objectives of the Forest of Marston Vale with the potential for minor long term positive effects. The creation of the Bedford & Milton Keynes Waterway[110], which has the potential to pass through the site allocation, will provide enhancement to the local biodiversity and GI networks, providing blue and green corridors which will allow wildlife movement and creating new habitat areas, with biodiversity gains. Mitigation is provided through draft Local Plan policy (Nature Conservation) which seeks to ensure that development does not adversely affect designated biodiversity sites, and draft Local Plan policy (Enhancing Ecological Networks) further seeks to ensure that development positively contributes to biodiversity. Mitigation is also provided through draft Local Plan policy (Nature Conservation) which ensures that development will not adversely affect designated biodiversity. The provision of new public open spaces and recreational facilities as part of development, and improvements to the green infrastructure network will help to mitigate against any increases in visitor use of SSSIs and CWSs in the surrounding area. There is the potential for multiple enhancements to existing bio and geodiversity, and for development to achieve an overall net gain for biodiversity. The existing Priority Habitat and CWS sites should be retained as detailed in indicative proposals, and development should protect the populations of Great Crested Newts. Potential for a minor positive effect with some uncertainty until site level assessments are completed.	
13. Landscape Protect and enhance the landscape and townscape	This site allocation is not located adjacent to or within the designated AONB landscape[111]. The site allocation is within the Bedfordshire and Cambridgeshire Claylands National Character Area, and the statements of environmental opportunity identify the potential to create high quality green	+

[109] http://marstonvale.org/
[110] http://www.b-mkwaterway.org.uk/the-waterway/route/
[111] DEFRA (2016) Magic Map Application

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
	infrastructure (identified against SA Objective 5) and landscape regeneration in new development and the need to protect the aquifers and quality of the River Great Ouse (SA Objective 9 outlines the available mitigation for such effects). Development at the site allocation is considered overall to support these objectives with the potential for minor long term positive effects against SA Objective 13. The local landscape assessment places the site predominantly within the North Marston Clay Vale character area[112]. Visual sensitivities in this area include the extensive views and contrast between the open vale and woodland slopes. The landscape strategy for the area includes renewing the landscape which has previously been used for mineral extraction, and that regeneration should be environmentally-led. Development at the site allocation has the potential to effect visually sensitive features of the character area. However, masterplanning for the site allocation shows appropriate landscaping that will help achieve the landscape strategy for the area and enhance the local landscape, with minor positive effects for the SA Objective.	
14. Historic Environment To ensure the protection and enhancement of heritage assets, the historic environment and its setting	There are a number of Archaeological Notification Areas within the site allocation[113], in which development (according with draft Local Plan policy Archaeology) could contribute to investigating and recording heritage assets of archaeological significance. The site allocation does not contain any Listed Buildings, however there are Listed Buildings adjacent to the site allocation in the north west and east and the site allocation surrounds a Listed Building in the south of the site allocation. The site allocation also surrounds a Scheduled Monument in the same location. The Medieval village and moated sites at Thrupp End Scheduled Monument[114] are the remains of a deserted village known from low earthworks and aerial photography, and is located adjacent to the east of the site allocation. Development at the site allocation may have negative effects on the setting of these designated heritage assets. Mitigation is provided through draft Local Plan policy (Built Heritage) which could ensure	**-?**

[112] Central Bedfordshire Council (2015) Central Bedfordshire Landscape Character Assessment
[113] Central Bedfordshire Council GIS Map Layers
[114] https://historicengland.org.uk/listing/the-list/list-entry/1010364

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land		
	development does not lead to any significant effects on the settings of the Listed Buildings and Scheduled Monument. However, due to the location of the scheduled monuments within the site options and designated heritage assets in the surrounding landscape, it is still considered there is the potential for a minor negative effect[115], although some uncertainty until site level assessments are completed.	

SUMMARY:

Key Positive Effects:

- The site allocation will provide housing to meet the needs of Central Bedfordshire, with major positive effects.
- The site allocation is within walking distance of existing services/facilities, and will provide new services/facilities and improve access, with a major positive effect.
- The site allocation will provide 40ha of employment land in the form of a business park, with major positive effects on employment.
- Areas of the site allocation are within walking distance of 2 railway stations and existing bus stops, and can provide strategic enhancements to these services, with major positive effects.
- The site allocation will provide new open/recreational spaces and enhancements to GI at a strategic level, with long term major positive effects.
- The site allocation is expected to be able to incorporate energy efficiency measures with positive effects on energy and climate change.
- Development will support the vitality of existing town centres of Milton Keynes, Bedford and Ampthill and there is access to employment opportunities, with a minor positive effect.
- The site allocation can provide enhancements to biodiversity with long term minor positive effects.
- Development at the site allocation can enhance the existing landscape and contribute towards the landscape strategy for the area, with minor positive effects.

Key Negative Effects:

- The site allocation contains best and most versatile agricultural land, and there is the potential for contaminated land to be present, with a potential major negative effect, although some uncertainty at this level of assessment.
- The site allocation will result in an increase in traffic on the existing road network where congestion is an existing issue, with a minor

[115] Significant constraints identified by CBC officers

Growth Location: Marston Vale
Number of Dwellings: New settlement up to 5000 homes and 40ha of employment land

negative effect although some uncertainty as transport studies are on-going.
- Development at the site allocation will result in the coalescence of settlements and the loss of settlement identity, with a minor negative effect, although some uncertainty remains.
- Potential for long-term minor negative effects on the designated heritage assets in the site allocation and in the surrounding landscape, with some uncertainty at this stage of assessment.

SA Recommendations for the Marston Valley Site-Specific Policy:
- Landscaping and design should protect the distinct settlement identities of Marston Moretaine and Lidlington from being affected by new development and should ensure coalescence is mitigated against, and a holistic approach should be taken to ensure that there are synergistic benefits for the Marston Vale GI network and biodiversity.
- Development should provide services/facilities to support local communities, with a focus on ensuring the communities of Lidlington and Brogborough have access to new services/facilities to address the existing lack of services/facilities within these settlements. Phasing of development can ensure services/facilities delivered early on contribute to meeting any identified deficit, and are provided at suitable stages through the development timeline to meet the need of residents.
- The site allocation is well located to provide strategic blue and green infrastructure benefits, and support the objectives of the Marston Vale priority GI corridor. Specifically, development should be required to contribute to both the Marston Vale Community Forest and the Bedford to Milton Keynes Waterway Park. Smaller scale GI improvements should also be required for synergistic positive effects.
- Development should be required to contribute to local transport infrastructure improvements, specifically junction 13 of the M1 which has been identified as a requirement by initial transport assessments. Development should be required to help address existing congestion issues in the area and to mitigate against further traffic increases.
- Enhancements to existing bus services and contributions to meet the aims of the Marston Vale Community Rail Partnership should be necessary as part of development. Enhancements to PRoW and cycle networks should be in line with the Marston Vale GI strategy for the area, and if possible should be integrated with the Marston Vale Community Forest and the Bedford to Milton Keynes Waterway Park.
- Require development at the site allocation to maximise opportunities for Sustainable Drainage System, including connectivity with the Marston Vale GI aspirations for this area where relevant.
- Development should achieve for a net gain for biodiversity. Existing sensitive biodiversity features should be retained and integrated with the Marston Vale GI network. This includes the potential for biodiversity improvements as part of the Milton Keynes to Bedford Waterpark, which will be part of the site allocation. Development should contribute towards the aims of the Forest of Marston Vale, and provide linkages with the Greensand Ridge Nature Improvement Area to ensure biodiversity benefits are wide reaching. The populations of Great Crested Newts should be protected, as should the re-colonisation area. A visitor study of nearby biodiversity designations should also be required to understand the potential effects of increased recreational pressure. Developers should also

Growth Location: Marston Vale **Number of Dwellings:** New settlement up to 5000 homes and 40ha of employment land
consult with Bedfordshire Local Nature Partnership who are developing a Natural Capital Investment Plan for the Oxford-Cambridge Growth Corridor, to asses show development could contribute towards this. ▪ Development should be environmentally-led to meet the landscape strategy for the area, and landscaping should be appropriate to ensure the visual sensitives of the area are retained and protected. Enhancements to the existing landscape should be in line with the Marston Vale GI strategy and positively contribute to the Forest of Marston Vale.

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)		
SA Objective	**Assessment of Effects** **Nature of the likely sustainability effect (including positive/negative, short - medium term (5-10 years)/long term (10 - 20 years plus), permanent/temporary, secondary, cumulative and synergistic); Uncertainty**	
1. Housing To ensure that the housing needs of all residents and communities are met	The delivery of up to 3000 new homes can make a significant contribution to achieving the overall housing needs of Central Bedfordshire with the potential for major long-term positive effects. It is assumed that development at the site allocation can meet the policy objectives of draft Local Plan policy (Housing Mix) to provide an appropriate mix of housing types, tenures and sizes.	**++**

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)			
2. Communities[116] To maintain and enhance community and settlement identities	Development in this area will not result in the loss of any Green Belt land, with an overall neutral effect. Housing growth at this site allocation will expand the urban area of Biggleswade. Development during phase 1 will not result in coalescence, however phase 2 of development has the potential to contribute towards the coalescence of Biggleswade with the village of Sutton to the north east of Biggleswade and to the coalescence with Dunton to the south east of the site allocation. Mitigation measures (physical separation and significant soft landscaping) would be required to address the potential effects of coalescence. Development would represent a strategic increase in housing development to the east of the town, which would alter the identity of the settlement. The rural and separated nature of the villages of Sutton and Dunton would also be negatively affected by development at the site allocation, specifically during phase 2 of the development process. Overall potential for a minor negative effect on community and settlement identities.	**0**	**-**
3. Services & Facilities To improve accessibility to services and facilities[117]	Development at the Phase 1 area of the site allocation is in close proximity to services and facilities available within Biggleswade. This includes primary and secondary school facilities, shops, healthcare facilities, pubs and restaurants. Given the scale of development at the site it is considered that there is also the potential for new provision of services/facilities for the local community, and infrastructure to support improved accessibility in this area, with the potential for a major long term positive effects. This is supported by draft Local Plan policy (Connectivity and Accessibility). The phasing of development throughout the Plan period provides the opportunity for development to provide services/facilities to meet identified deficits in the earlier phases of development, mitigating against any potential capacity issues. The provision of new services/facilities should continue through the development of the site.	**++?**	
4. Employment To support the	The site allocation has been identified for the development of housing and will not result in the loss of existing employment land, as such is unlikely to lead to any significant effects against this SA Objective,	**0**	**+**

[116] Please note that first symbol relates to location in/out of Green Belt designation; second symbol relates to effects on integration & identity for existing settlements
[117] This relates to the provision of services and facilities, such as schools, healthcare centres, shops, and hospitality (café, restaurant, pub).

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)		
economy and ensure that there are suitable opportunities for employment[118]	with the potential for a neutral effect. However, the allocation is located close to a strategic rail connection route which is likely to increase accessibility to employment areas. Development in this location may also support the vitality and viability of Biggleswade town centre, with the potential for minor long term positive effects.	
5. Health & Equality To improve the health and wellbeing of communities and reduce inequalities[119]	The growth location is not within or adjacent to an area of higher deprivation and thus unlikely to lead to any significant effects. The Environmental Framework[120] identifies this area as located within the Ivel River Valley, a priority corridor of the strategic green infrastructure network. The priority corridor is identified as an area where investment and project delivery can make most impact in securing multi-functional green infrastructure. Opportunities for this area include creating a Green Wheel around Biggleswade, the proposed creation of the Great North Cycle Route, and potential GI linkages relating to Biggleswade Common. The strategic level of development proposed at the site allocation can contribute to achieving the aims of the GI strategy for the Ivel River Valley. This will also support the objectives of the Bedfordshire and Cambridgeshire Claylands National Character Area (see SA Objective 13). It is considered therefore that development in this area has the potential to support green infrastructure priorities and have major long-term positive effects against SA Objective 5. The western area of the site allocation, which will be developed in phase 1, is in close proximity to several public/recreational areas, which includes Biggleswade Common (a key GI asset) and informal recreation areas. Development at the site allocation can provide improvements to public open space provision within Biggleswade, with potential long-term positive effects on health through the promotion of healthier lifestyles. Improvements to open spaces can be linked with GI for synergistic positive effects.	**0** **++**
6. Highways & Air Quality To maintain and improve the existing	Early transport modelling[121] identifies that all new potential growth in this area is likely to have negative effects on the A1 and cause further congestion such that infrastructure improvements are likely to be required. However, an initial transport study[122] for the site allocation concluded that whilst there will be an increase in vehicles on the local road network, the road network can accommodate these with no	**0?**

[118] first symbol refers to employment support; second symbol refers to vitality/viability of town centres
[119] first symbol refers to regeneration/deprivation; second symbol refers to Green Infrastructure for health & well-being
[120] http://www.centralbedfordshire.gov.uk/environment/natural/environmental-framework.aspx
[121] Aecom (2016) Technical Note Stage 1A Growth Area Analysis
[122] Peter Brett Associates on behalf of UK Regeneration (August 2017) Land East of Biggleswade Initial Transport Strategy

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)		
highway network and reduce associated indirect impacts on air quality and greenhouse gas emissions	significant effects. The A1 is predicted to retain 25% to 44% spare capacity post-development. Furthermore, there is the potential for enhancements to sustainable transport which will provide further mitigation against the increase in traffic. Given the scale of development is it anticipated that development can provide infrastructure investment, and mitigation is provided through draft Local Plan policy (Strategic Transport Improvements, Mitigation of Transport Impacts on the Network, Connectivity and Accessibility, Development and Public Transport Interchanges and Low Emission Vehicles) with the potential for a residual neutral effect with an element of uncertainty until further transport impact studies have been completed. There is an AQMA in Sandy[123]. However, the site allocation is located some distance from this such that mitigation measures should be effective with likely neutral effects.	
7. Sustainable Transport To encourage a demonstrable modal shift and reduce the need to travel	It is anticipated that growth in this location could accommodate a viable extension to bus services which operate in the eastern area of Biggleswade (e.g. service number 85, 85A, 188 and W3[124]) through appropriate development contributions. The existing eastern urban edge of Biggleswade is also located less than 1.5 miles from Biggleswade Station[125], with the potential for a minor long term positive effect through good access to a railway station which has regular services to London and Peterborough. Furthermore, the railway station will have improved services as part of the Thameslink regional rail network by 2020, and the East-West Rail Link will also provide sustainable transport benefits for the settlement. Walking routes and cycleways could be included as part of masterplanning and to enhance the existing network with the potential for synergistic and cumulative positive effects. This could include contributions towards the Great North Cycle Route and enhancements to existing PRoW within the site allocation.	+

[123] https://uk-air.defra.gov.uk/aqma/maps
[124] Google Maps
[125] Google Maps estimated drive time from London Road to Biggleswade Station

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)		
8. Energy & Climate Change To maximise the potential for energy efficiency, reduce greenhouse gas emission and ensure that the built and natural environment and its communities withstand the effects of climate change[126]	Given the potential sustainable transport connections identified against SA Objective 7 it is anticipated that development at this site allocation can support a continued reduction in GHG emissions, this is further supported by draft Local Plan policy (Connectivity and Accessibility). It is further anticipated that through compliance with draft Local Plan policy (Successful and Sustainable Places,) development could achieve policy targets for energy efficiency, high quality design standards that ensure resilience to the effects of climate change and offer potential opportunities for renewable energy production. Potential for a long-term minor positive effect but some uncertainty at this stage.	**+?**
9. Water Resources & Quality To minimise the demand for water and maintain or improve water quality	The Water Cycle Study identifies that this site allocation lies within the Upper Bedford and Ouse catchment, where the main pressure on water resources is the abstraction of water for public supply. Abstraction for consumption is only available for up to 32% of the time and 25% of licenses in the area are time limited and tied to a Common End Date (CED) of March 2028. It is also recognised[127] that one of the most likely effects of climate change to impact upon Central Bedfordshire will be a shortage of water resources. The Ruthamford South Water Resource Zone (WRZ) is predicted to be in supply-demand deficit by 2026/27 as a result of growth and reduced yield. There are no strategic limitations on development growth as Water Companies have a statutory duty to supply water; however, capacity for providing additional supply varies & any new infrastructure requirements have to be aligned with Water Resources Management Plans. The addition of 1500 new homes in this area is therefore considered to have the potential for cumulative effects on water resources but uncertainty until the Water Cycle Study Phase 2 is undertaken. Rivers in the vicinity of the growth location are considered to be in a moderate overall water body class. The majority of watercourses in the Plan area are not currently meeting 'good' classification and the most common reason for this is 'pollution from waste water'. The Water Cycle Study identifies that all	**0?**

[126] Please note that Flood Risk is considered by the SA within objective number 10
[127] LDA Design (2012) Central Bedfordshire Climate Change Adaptation Evidence Base Final Report

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)		
	WwTWs have some capacity within their existing quality permits to accommodate future development without causing a class of 10% deterioration, however in some settlements the available capacity is quite small, and in some cases development may also require WwTW upgrades With draft Local Plan Policies on Climate Change & Sustainability, Water Quality and Pollution, strong mitigation measures are in place to ensure at least neutral effects on water quality, and ensure that development supports local WRMPs with high water efficiency targets.	
10. Flood Risk To reduce the risk of flooding from all sources	There are areas of flood risk within the site allocation[128]. Flood Zone 2 & 3 are located in the west and central area of the site allocation, and will affect both phases of development[129]. Development may find it difficult to avoid these areas of the site allocations, and therefore it is considered there is the potential for a long-term minor negative effect. Some uncertainty until masterplanning has been completed for the proposed development. Draft Local Plan policy (Successful and Sustainable Places) requires development to maximise opportunities for Sustainable Drainage Systems, where applicable, and there may be possibilities for enhanced effects to help resolve existing flooding problems.	-
11. Soil To protect and conserve soil	Development at the site allocation will result in the loss of greenfield land with the potential for minor long-term negative effects. There is best and most versatile agricultural land[130] in the site allocation. This includes grade 1, 2 and 3 agricultural land, dispersed across both phase 1 and 2 areas for development. Development in this area therefore has the potential for major long term negative effects against SA Objective 11. The site allocation does not contain any previously developed land, with a neutral effect.	-- 0

[128] Environment Agency (2016) Flood Map for Planning
[129] Ibid.
[130] DEFRA (2016) Magic Map Application

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)		
12. Biodiversity & Geodiversity To protect, enhance and manage biodiversity & geodiversity	The nearest Natura 2000 site to the site allocation is Eversden and Wimpole Woods SAC, designated for Barbastelle bats[131], and is approximately 12km to the north east of the site allocation. The nearest SSSIs are Sandy Warren (designated due to heathland habitat and approx. 3km to the north west), and Potton Wood SSSI (designated for woodland, and approx. 3km to the north east)[132]. Henlow Common and Langford Meadows Local Nature Reserve (LNR) is located approx. 5km to the south-west of the site allocation[133]. The site allocation does not contain any County Wildlife Sites (CWS), however Biggleswade Common CWS is approx. 300m to the north west. There is a small amount of Deciduous Woodland Priority Habitat in the site allocation. The northern, western and central area of the site allocation contains existing biodiversity network. The HRA of the Plan concluded that the allocation would not have likely significant effects on Natura 2000 designated sites for air quality, recreational disturbance, changes to water levels and quality, or habitat loss. There is the potential for an increase in recreational use of local SSSIs and the nearby SAC, and this has the potential to be cumulative with development in South Cambridgeshire. Mitigation is provided through draft Local Plan policy (Nature Conservation) which seeks to ensure that development does not adversely affect designated sites and draft Local Plan policy (Enhancing Ecological Networks) further seeks to ensure that development positively contributes to biodiversity. The provision of new public open spaces and recreational facilities as part of development, and improvements to the green infrastructure network will help to mitigate against any increases in visitor use of SSSIs and CWSs in the surrounding area. Development at the site allocation has the potential to provide enhancement to the biodiversity network. Currently there is a lack of biodiversity network in the land around the south of the site allocation. However, development could help connect the biodiversity network in the west of the site allocation with the biodiversity network to the west of Biggleswade, forming a band of biodiversity network running along the southern border of the settlement. This network could connect the existing	**+?**

[131] http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0030331
[132] DEFRA (2016) Magic Map Application
[133] http://www.centralbedfordshire.gov.uk/environment/natural/environmental-framework.aspx

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)		
	blocks of Priority Habitats and provide an ecological corridor to allow safe wildlife movement. These enhancements would help meet the aims of the Central Bedfordshire Nature Conservation Strategy[134] and the Central Bedfordshire Environmental Framework[135]. It is important that the existing CWSs and Priority Habitat blocks are protected, possibly with the use of buffer zones around valuable areas, and future residents should have access to the CWSs with benefits for the health of future residents. There is the potential for long term minor positive effects, although some uncertainty until more detailed assessments are completed.	
13. Landscape Protect and enhance the landscape and townscape	This growth location is not located adjacent to or within the designated AONB landscape[136]. The growth location is within the Bedfordshire and Cambridgeshire Claylands National Character Area, and the statements of environmental opportunity identify the potential to create high quality green infrastructure (identified against SA Objective 5) and landscape regeneration in new development and the need to protect the aquifers and quality of the River Great Ouse (SA Objective 9 outlines the available mitigation for such effects). Development at this site allocation is considered overall to support these objectives with the potential for minor long term positive effects against SA Objective 13. The site allocation is pre-dominantly within the Dunton Clay Vale Landscape Character Area[137]. Visual sensitives in this area include far reaching views to the east and a high degree of containment. The landscape strategy for the area is to restore and repair elements that have been lost or degrade. The site allocation is not likely to result in a loss of visually sensitive features for the landscape, however development can support the local landscape strategy, with potential minor positive effects.	+

[134] Central Bedfordshire Council (2015) Central Bedfordshire Nature Conservation Strategy
[135] Central Bedfordshire Council (no date) Environmental Framework
[136] DEFRA (2016) Magic Map Application
[137] Central Bedfordshire Council (2015) Central Bedfordshire Landscape Character Assessment

Growth Location: Biggleswade East **Number of Dwellings:** up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)		
14. Historic Environment To ensure the protection and enhancement of heritage assets, the historic environment and its setting	There are a number of Archaeological Notification Areas within the site allocation[138], in which development (according with draft Local Plan Policy Archaeology) could contribute to investigating and recording heritage assets of archaeological significance. The phase 1 area of the site does not contain any designated heritage assets; however the phase 2 area of the site allocation includes a designated Scheduled Monument; Newton Bury moated site, and there is another scheduled monument approx. 1km to the south west (Stratton Park moated enclosure and associated manorial earthworks) and 300m to the north (John O'Gaunts Hill). The northern area of the phase 2 location is adjacent to Sutton Conservation Area, with potential negative effects on the designation. There is a Listed Building (Sunderland Farmhouse) within the centre of the site allocation, and several Listed Buildings in Sutton adjacent to the north of the site allocation. There is the potential for negative effects on a range of designated heritage assets both within the site allocation and adjacent to the site allocation as a result of development during both phase 1 and phase 2. These effects are likely to be significant, however mitigation is provided through draft Local Plan policy (Built Heritage) which should ensure development does not lead to any major significant effects on the setting of Designated Heritage Assets. Overall potential for a minor negative effect, however there remains an element of uncertainty until site level assessments have been completed.	**-?**

[138] Central Bedfordshire Council GIS Map Layers

Growth Location: Biggleswade East
Number of Dwellings: up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)

SUMMARY:

Key Positive Effects:

- The site allocation will provide a strategic level of housing, with a major positive effect.
- The site allocation can provide new services/facilities and enhance access to existing services/facilities, with potential major positive effects against SA Objective 3.
- Major positive effects on health through enhancements to the GI network for the Ivel River Valley GI corridor, and the potential provision of new public open spaces.
- Development will support the vitality of Biggleswade town centre, with a minor positive effect on employment.
- There are good existing sustainable transport links in Biggleswade, and the potential to enhance services and access, with potential minor positive effects.
- Potential positive effect on energy as development is considered able to incorporate energy efficiency measures.
- The site allocation can enhance biodiversity and provide an overall net gain in biodiversity, with a potential minor positive effect. Some uncertainty until site level assessments are completed.
- The site allocation will not result in the loss of visually sensitive features for the landscape, but can contribute towards the landscape strategy and environmental opportunities, with minor positive effects.

Key Negative Effects:

- The site allocation will result in the loss of greenfield and best and most versatile agricultural land, with a major negative effect.
- The site allocation will contribute to the coalescence of Biggleswade with Sutton and Dunton, with a minor negative effect on community and settlement identities.
- Potential for a minor negative effect on flood risk, as the site allocation is partially within Flood zone 2 and 3.
- There are designated heritage assets within and adjacent to the site allocation, including a Scheduled Monument within the site boundary, with potential minor negative effects on the historic environment. Some uncertainty until site level assessments are completed.

SA Recommendations for the East Biggleswade Site-Specific Policy:

- Landscaping and design need to be considered to address the potential coalescence and loss of settlement identities for Biggleswade, Sutton and Dunton during phase 2 of development. The use of landscape buffers and the location of residential development should be considered, and where possible linked with the Ivel River Valley GI network.
- Development should make appropriate contributions to local services/facilities and improve access to existing provision, with a focus on addressing existing capacity issues or lack of specific services/facilities. Phasing of development can ensure services/facilities delivered early on contribute to meeting any identified deficit, and are provided at suitable stages through the development timeline

Growth Location: Biggleswade East
Number of Dwellings: up to 1500 homes Phase 1 (area adjacent to east Biggleswade) and a further 1500 homes in Phase 2 (larger area further to the east)

to meet the need of residents.

- The site allocation is well located to provide strategic green infrastructure benefits, Specifically, development should be required to contribute towards the Ivel River Valley GI Strategy, and can address opportunities including enhancing the Biggleswade Common and providing a Green wheel around Biggleswade. The site allocation should provide new areas of open space, and link these within the GI network for cumulative positive effects.
- Improvements to key junctions and the local road network where appropriate to ensure the increase in traffic does not result in exacerbating congestion issues.
- Development at the site allocation should provide access to the railway station, via bus services, footpaths or cycle paths. Furthermore, development should be required to extend existing bus services and provide new services where possible. Improvements to the cycle network and PRoW network should be in line with the Ivel River Valley GI strategy, and be integrated with the Green wheel around Biggleswade.
- Require development at the site allocation to maximise opportunities for Sustainable Drainage System, including connectivity with the GI aspirations for the Ivel River Valley area where relevant.
- Development should achieve an overall net gain for biodiversity by linking areas of fragmented biodiversity network. Development should retain existing Priority Habitat and provide habitat improvements which link in with the Ivel River and surrounding Priority Habitats. Biodiversity improvements should be in line with the Ivel River Valley GI strategy, and this could include contributions to the opportunities relating to Biggleswade Common and the Biggleswade Green Wheel. Visitor survey studies may be necessary to assess the potential effects of development, including cumulative effects in the longer term, on nearby SSSIs and the Eversden and Wimpole Woods SAC.
- Development should contribute towards the landscape strategy for the Dunton Clay Vale Landscape Character Area and the environmental opportunities for the Bedfordshire and Cambridgeshire Claylands National Character Area.

PROPOSED STRATEGIC EMPLOYMENT ALLOCATIONS: SUMMARY														
	SA Objectives													
	1	2		3	4		5		6	7	8	9	10	11		12	13	14
	Housing	Communities – Green Belt; Identity		Services & Facilities	Employment		Health & Equality		Highways & Air Quality	Sustainable Transport	Energy & Climate Change	Water Resources & Quality	Flood Risk	Soil		Biodiversity & Geodiversity	Landscape	Historic Environment
Sundon Rail Freight Interchange up to 40ha employment land/ up to 2000 jobs	0	- -	0	0	+ +	+ +	+	+ +	0?	++	+?	0?	0	- - ?	0	+	-?	0
Biggleswade, West of A1: up to 40 hectares of new employment land /up to 2000 new jobs	0	0	- ?	0	+ +	+ +	0	+ +	0?	++?	+?	0?	0	- -	0	+	+?	0?
Ridgmont, M1 Junction 13: up to 35ha of employment land/ up to 2000 new jobs	0	0	0	0	+ +	?	0	+ +	0?	++	+?	0?	0	- - ?	0 ?	+	+?	0?
RAF Henlow Mixed Use Specialist Employment[139] 130 ha	0	0	- ?	+?	++	+	0?	+	0?	+	+?	0?	0	-- ?	+?	+?	+?	?

[139] In December 2017, it was decided by the Council that this strategic site should be progressed as a strategic allocation at this time [previously considered and assessed as a Safeguarded Broad Locational Option – please see Appendix VIIb for SA details].

Employment allocation: Sundon Rail Freight Interchange **Employment Land/Jobs: 40 hectares of new employment land with up to 2000 new jobs**		
SA Objective	**Assessment of Effects** **Nature of the likely sustainability effect (including positive/negative, short - medium term (5-10 years)/long term (10 - 20 years plus), permanent/temporary, secondary, cumulative and synergistic); Uncertainty**	
1. Housing To ensure that the housing needs of all residents and communities are met	No housing is being proposed as part of this employment allocation. Likely neutral effect.	**0**
2. Communities To maintain and enhance community and settlement identities	The employment allocation is located within the Green Belt. The Green Belt Study[140] identifies the land as located within Parcel L2, which is considered to make a strong contribution to the purposes of Green Belt. Development therefore has the potential for major long term negative effects. The development of employment land is unlikely to significantly affect the identity of any settlement as it is not located within or directly adjacent to a settlement but rather alongside the railway line, although Sundon village is nearby. Potential for neutral effects on settlement identity.	**--** **0**
3. Services & Facilities To improve accessibility to services and facilities[141]	Given the scale of the employment allocation it is likely that sufficient services and facilities can be provided on site to satisfy the needs of the employees on site, without the need to travel offsite. Despite this, the allocation is in close proximity to the major settlements of Luton, Houghton Regis and Dunstable which offer a wide range of service and facility provisions. Development at the location is unlikely to lead to any significant effects against this SA Objective.	**0**

[140] LUC for Central Bedfordshire Council Green Belt Study (October 2016)
[141] This relates to the provision of services and facilities, such as schools, healthcare centres, shops, and hospitality (café, restaurant, pub).

4. Employment To support the economy and ensure that there are suitable opportunities for employment	The allocation will deliver new employment land and jobs to support the economy with the potential for major long term positive effects. The location is adjacent to a railway line in close proximity to Harlington and Leagrave railway stations, and also has the potential to create a new railway station to allow for increased access. Potential for major long term cumulative positive effects. The proximity of Luton, Houghton Regis and Dunstable indicate opportunities to support and enhance the vitality and viability of town centres with further positive effects.	++	++
5. Health & Equality To improve the health and wellbeing of communities and reduce inequalities	The employment allocation is in close proximity to deprived areas in the North of Luton. Development can therefore provide employment opportunities for local people, which will help address deprivations within the local communities, and a potential minor positive effect. The Environmental Framework[142] identifies this area as located within The Chalk Arc, a priority corridor of the strategic green infrastructure network. The priority corridor is identified as an area where investment and project delivery can make most impact in securing multi-functional green infrastructure. Of importance is The Chalk Arc Project[143] that focuses on securing green space in and around proposed housing growth. The employment allocation is identified in the Chalk Arc Project as Area D – North Luton and Chilterns priority zone. The aim here is to improve public perception of safety at the northern end of Great Bramingham Park and increase the site's biodiversity by improving an area of chalk grassland. Development in this area could also contribute to improving the visual impact of the Friends of Gill Blowers Community Orchard and wildflower meadow. It is considered therefore that development in this area has the potential to support green infrastructure priorities and have major long-term positive effects. This is further considered to indirectly positively affect the landscape objectives of the National Character Area 110: Chilterns (see SA Objective 13). There is a SSSI and CWS adjacent to the site and there may be potential to enhance these biodiversity sites as part of the overall green infrastructure for people and wildlife (and please see SA Objective No 12 following).	+	++
6. Highways & Air Quality To maintain and improve the existing highway	Development of new employment land may generate increased traffic in this area and early transport modelling[144] identifies that development adjacent to Luton is likely to increase congestion for routes into Luton and other urban roads as well as links to the strategic highway network. However, the site will benefit from the proposed North Luton Link Road, which will be	0?	

[142] http://www.centralbedfordshire.gov.uk/environment/natural/environmental-framework.aspx
[143] http://www.bedscape.org.uk/BRMC/chalkarc/home.htm
[144] Aecom (2016) for Central Bedfordshire Council. Technical Note Stage 1A Growth Area Analysis

network and reduce associated indirect impacts on air quality and greenhouse gas emissions	delivered as part of the North Luton Strategic Housing Allocation and address existing congestion issues to the North of Luton. Mitigation is provided through draft Local Plan Policies Strategic Transport Improvements, Mitigation of Transport Impacts on the Network, Connectivity and Accessibility, Development and Public Transport Interchanges and Low Emission Vehicles. Potential overall for a residual neutral effect. However, the precise likely impacts and effectiveness of mitigation measures are uncertain until further transport modelling studies are completed for the Council later in 2017. There are 3 AQMAs in Luton[145] and one in nearby Dunstable. However, the employment allocation is located some distance from these AQMAs such that mitigation measures should be effective with likely neutral effects. It had been assumed that long-term air quality is likely to improve as a result of stringent emissions controls on new vehicles via European standards[146]. In 15 to 20 years' time low emission vehicles will make up the majority of cars on the roads in the UK. It is also likely that there will be reductions in various contributing sectors that will also result in reductions in background concentrations of atmospheric pollutants. However, whilst there have been very significant drops in exhaust emissions, the NO_2 emissions from road transport have not been reduced as much as expected because emissions during real world driving conditions are often higher than those measured during the type approval test, especially for diesel vehicles. The EU Commission has changed the test procedures (2017) and this discrepancy should resolve the predicted improvements in air quality in time. However, this is uncertain at this stage.	
7. Sustainable Transport To encourage a demonstrable modal shift and reduce the need to travel	The employment allocation is located adjacent to a railway line in close proximity to the existing railway stations at Harlington and Leagrave. New bus connections to the existing stations serving the site would also support sustainable transport connections with the potential for enhanced positive effects. There is the potential to provide a new cycle network to connect to National Cycle Route 6, which is to the south of the employment allocation[147]. A comprehensive footpath could also be provided to link with the North of Luton. There is significant potential for the creation of sustainable transport connections and to encourage a modal shift. Its location adjacent to major settlements in the Plan area and just outside the Plan area (Dunstable, Houghton Regis and Luton) also reduces the need to travel for many potential employees.	++

[145] https://uk-air.defra.gov.uk/agma/maps
[146] http://ec.europa.eu/environment/air/transport/road.htm
[147] https://www.sustrans.org.uk/ncn/map?gclid=EAIaIQobChMIn_iKw9zF1wIVEpMbCh1t0Q4dEAAYASAAEgLYmPD_BwE

8. Energy & Climate Change To maximise the potential for energy efficiency, reduce greenhouse gas emission and ensure that the built and natural environment and its communities withstand the effects of climate change[148]	Given the potential sustainable transport connections identified against SA Objective 7 it is anticipated that development in this employment allocation can support a continued reduction in GHG emissions, this is further supported by draft Local Plan policy (Connectivity and Accessibility). It is further anticipated that through compliance with draft Local Plan policy (Successful and Sustainable Places), development could achieve policy targets for energy efficiency, high quality design standards that ensure resilience to the effects of climate change and offer potential opportunities for renewable energy production. Potential for a long-term minor positive effect but some uncertainty at this stage.	**+?**
9. Water Resources & Quality To minimise the demand for water and maintain or improve water quality	The Water Cycle Study[149] identifies that this allocation lies within the Upper Lea catchment, located on unconfined chalk geology, in which there are a large number of abstraction licences for groundwater resources, utilised for supporting the public water supply and agricultural uses. There is no surface water available for licensing across this catchment at any flow level as the recent flows are below the requirement to meet a Good Ecological Status. It is identified that no new consumptive licenses for groundwater will be granted in the catchment, and the water resources (for both surface and groundwater abstraction) are available less than 30% of the time, indicating pressures on the catchment for resources. It is also recognised[150] that one of the most likely effects of climate change to impact upon Central Bedfordshire will be a shortage of water resources. There are no strategic limitations on development growth as Water Companies have a statutory duty to supply water; however, capacity for providing additional supply varies & any new infrastructure requirements have to be aligned with Water Resources Management Plans. The addition of employment growth in this area is therefore considered to have the potential for cumulative effects on water resources but uncertainty until the scale & location is identified and the Water Cycle Study Phase 2 is undertaken. The River Lee through Luton has been classified as poor quality with regard to the EU Water Framework Directive, but this is not near to the employment allocational. The allocation is not within zones 1-2 of any source protection zones and with draft Local Plan Policies on Climate	**0?**

[148] Please note that Flood Risk is considered by the SA within objective number 10
[149] JBA for Central Bedfordshire Council (Jan 2017) Water Cycle Study Stage 1
[150] LDA Design (2012) Central Bedfordshire Climate Change Adaptation Evidence Base Final Report

	Change & Sustainability, Water Quality and Pollution, strong mitigation measures are in place to ensure at least neutral effects on water quality. Other draft Policies such as on Sustainable Drainage offer possibilities for enhancement through resolving existing problems but uncertain at this stage until more detailed studies.	
10. Flood Risk To reduce the risk of flooding from all sources	The employment allocation is not in an area at risk of flooding from rivers or the sea[151]. Draft Local Plan policy (Successful and Sustainable Places) requires development to maximise opportunities for Sustainable Drainage Systems, where applicable, with the potential for some positive effects. Likely residual neutral effects.	**0**
11. Soil To protect and conserve soil	Development in this allocation will predominantly result in the loss of greenfield land with the potential for minor long-term negative effects. There is some Grade 2 best and most versatile agricultural land in the south of the employment allocation and some grade 3 (sub-grade 3a or 3b no known) in the west[152].It is recognised that there remains an element of uncertainty in the agricultural land classification until lower level site assessments have been completed, however at this stage it is considered there is the potential for the loss of best and most versatile agricultural land, with a major negative effect. Given that the location is greenfield land, development is unlikely to contain or require remediation for any contaminated land and will not regenerate brownfield land, with a neutral effect.	**--?** **0**
12. Biodiversity & Geodiversity To protect, enhance and	There are no internationally designated biodiversity sites in the employment allocation, with no significant negative effects likely.	**+**

[151] Environment Agency (2016) Flood Map for Planning
[152] Central Bedfordshire Council GIS layers (2017)

manage biodiversity & geodiversity	To the north and east of the employment allocation is Sundon Chalk Quarry SSSI, designated for the presence of Fen, Marsh and Swamp Habitat, and for Calcareous Grassland, and is noted as being one of the most important invertebrate sites in the county[153]. Fancott Woods and Meadows SSSI is located approx. 1km to the north west of the allocation, and is designated for its Neutral Grassland[154]. Both sites are also designated as County Wildlife Sites (CWS). Chalton Scrub & Grassland CWS is within the south of the employment site[155]. There may be possibilities to enhance these sites with positive effects for both wildlife and human health and well-being. Nationally designated Priority Habitat in the employment location is largely located to the north, north west and east, around and within the SSSI and CWS sites. This includes Lowland Fens, Lowland Calcareous Grassland, Deciduous Woodland, and Lowland Meadows Priority Habitat[156]. However, the land in the south of the allocation contains a block of Deciduous Woodland Priority Habitat. The employment area is within the South Totternhoe Link Biodiversity Network which also extends to the north, east and west, and the employment area is also within the Upper Lea River Valley Green Infrastructure Network[157]. Due to the allocations proximity to a SSSI site, areas of Priority Habitat and CWS sites, there is the potential for minor negative effects. Negative effects could arise from an increase in noise and light pollution, an increase in recreational pressures and an increase in atmospheric pollutants, both during and after the construction phase. This could affect wildlife in the local area, as well as have harmful effects on local habitats. However, it is considered that there is mitigation provided through draft Local Plan policy (Nature Conservation) which seeks to ensure that development does not adversely affect designated sites, and draft Local Plan policy (Enhancing Ecological Networks) further seeks to ensure that development positively contributes to biodiversity. This mitigation should ensure local biodiversity is not negatively affected by the allocation, with a likely neutral effect. The employment area has the potential to provide enhancements to the local biodiversity. New areas of habitat could be created, and the creation of ecological corridors could be used to link isolated areas of Priority Habitat to the south and east, with benefits for local wildlife movement. There is also the potential to enhance and protect undesignated biodiversity features in the local	

[153] https://necmsi.esdm.co.uk/PDFsForWeb/Citation/1005586.pdf
[154] https://necmsi.esdm.co.uk/PDFsForWeb/Citation/1000520.pdf
[155] Stratford Council GIS layers (2017) measured using GIS distances from site edge
[156] DEFRA (2017) Magic Map Application
[157] http://www.centralbedfordshire.gov.uk/Images/environmental-framwork-v4_tcm3-14493.pdf

	area, and link them to the South Totternhoe Link biodiversity network. Overall potential for the employment site to have a minor positive effect on biodiversity, through providing ecological enhancements beneficial to local biodiversity.	
13. Landscape Protect and enhance the landscape and townscape	The employment allocation is in close proximity to the designated AONB landscape. Development at this scale has potential to negatively affect the AONB setting through urbanisation in a previously undeveloped area. However, it is recognised that there is existing development between the location and the AONB providing a buffer to some extent (Upper and Lower Sundon). It is considered therefore that there is the potential for minor long-term negative effects against SA Objective 13 with an element of uncertainty until site level details arise. The allocation is within the Chilterns National Character Area, and the statements of environmental opportunity identify the need to conserve the Chilterns' groundwater resource and secure sustainable water use (discussed further in SA Objective 9) and to create or enhance green infrastructure in relation to the urban fringe and growth areas such as Luton (discussed in SA Objective 5) to support the objectives of this landscape area. The Central Bedfordshire Landscape Character Assessment[158] identifies the site allocation as being located within the Houghton Regis-North Luton Rolling Chalk Farmland area. The landscape has a high visual sensitivity and has a range of positive landscape features which includes the fields within the site allocation which are an important survival of relict landscape and hedgerows providing landscape patterning. The strategy for the landscape area includes conserving and enhancing positive features (opportunities for hedgerow strengthening in relation to transport corridors)[159].	**-?**
14. Historic Environment To ensure the protection and enhancement of heritage assets, the historic	The allocation does not contain any designated heritage assets. To the west of the employment allocation (approximately 500m away) there are a small number of Listed Buildings in Chalton, on the opposite side of the M1, and to the east (approximately 800m away) there are a small number of Listed Buildings in Lower Sundon[160]. Although there is some screening present in the	**0**

[158] Central Bedfordshire Council (2015) Central Bedfordshire Landscape Character Assessment
[159] Ibid.
[160] Stratford Council GIS layers (2017) measured using GIS distances from heritage asset

environment and its setting	form of trees and hedges, mitigation is provided through draft Local Plan policy (Built Heritage) which should ensure development does not lead to any significant effects. The employment allocation does not contain any Archaeological Notification Areas. Overall likely neutral effect.	

SUMMARY:

Key Positive Effects:

- Development will have long-term major positive effects on employment through the strategic provision of new employment land.
- Development can provide enhancements to Green Infrastructure at a strategic level, with a major positive effect on health.
- The allocation is on the railway line, and bus services can be extended to serve this location, with a potential major positive effect on sustainable transport.
- The allocation is in close proximity to areas of deprivation within Luton, and the delivery of employment land can result in a long-term minor positive effect on helping address deprivation.
- The site allocation is expected to be able to incorporate energy efficiency measures with positive effects on energy and climate change.
- The site allocation can achieve an overall net gain for biodiversity in the area, with a potential minor positive effect.

Key Negative Effects:

- The site allocation is entirely within the Green Belt and is considered to make a strategic contribution to the purposes of Green Belt, with a major negative effect.
- The site allocation will result in the loss of grade best and most versatile agricultural land (sub-grade 3a or 3b not known) with a potential long-term major negative effect on soil resources. Some uncertainty remains until sub-grade is known.
- The site allocation may have a negative effect on the AONB, with a potential minor negative effect, although some uncertainty remains until site level assessments and masterplanning is completed.

SA Recommendations for the Sundon Rail Freight Interchange Site-Specific Policy:

- Development should be required to provide enhancements to The Chalk Arc Green Infrastructure corridor. Enhancements could include the provision of new amenity greenspace and new public open spaces. Enhancements to existing habitats would have benefits for GI and the South Totternhoe Link biodiversity network. Potential for a cumulative positive effect on GI if enhancements are linked with those at the North Luton housing allocation.
- The allocation should ensure the employment land has good sustainable transport links with Luton and Dunstable, with a focus on providing new cycleways that connect with Luton and the national cycle route to the south.
- There should be sufficient access to the M1 from the employment land, and links to the proposed relief road to the north of Luton to prevent congestion.
- Ensure development makes appropriate contributions to biodiversity and achieves an overall net gain. There should be a net gain for

the Sundon Chalk Pits CWS and Sundon Chalk Quarry SSSI. Due to the potential effects on nearby designated sites, the local plan should ensure that development at the site allocation will mitigate these effects through avoidance using design and masterplanning, and set out the specific requirements for biodiversity including linkages with habitats and in accordance with the Chalk Arc GI Strategy.

- Masterplanning should protect the setting of the AONB and be in line with GI aspirations for The Chalk Arc Green Infrastructure corridor

Employment allocation: Biggleswade, West of A1 **Employment Land/Jobs: up to 40 hectares of new employment land with up to 2000 new jobs**		
SA Objective	**Assessment of Effects** **Nature of the likely sustainability effect (including positive/negative, short - medium term (5-10 years)/long term (10 - 20 years plus), permanent/temporary, secondary, cumulative and synergistic); Uncertainty**	
1. Housing To ensure that the housing needs of all residents and communities are met	No housing is being proposed as part of this employment allocation. Likely neutral effect.	**0**
2. Communities To maintain and enhance community and settlement identities	The employment allocation is not located in the Green Belt. The development of employment land is unlikely to significantly affect the identity of Biggleswade. Further employment development to the west of the A1 however could affect the identity of the small hamlet of Holme with the potential for minor negative effects. The red line boundary for the site allocation shows that development would be located to the south and west of Holme, essentially surrounding the small hamlet. This will result in a loss of rural and separated character for the hamlet. It is recognised that this could be mitigated through appropriate landscape buffering, and the overall effects remain uncertain until masterplanning has been completed.	**0** **-?**

3. Services & Facilities To improve accessibility to services and facilities[161]	Given the scale of the employment allocation it is likely that sufficient services and facilities can be provided on site to satisfy the needs of the employees on site, without the need to travel offsite. Despite this, the allocation is in close proximity to the settlement of Biggleswade which offers a wide range of service and facility provisions. Development at the location is unlikely to lead to any significant effects against this SA Objective.	**0**
4. Employment To support the economy and ensure that there are suitable opportunities for employment	The allocation will deliver new employment land and jobs to support the economy with the potential for major long term positive effects. The location is adjacent to the settlement of Biggleswade within contains a railway station allowing for increased access. Potential for major long term cumulative positive effects. Also, opportunities for supporting and enhancing the vitality and viability of the town centre with further positive effects.	**++** **++**
5. Health & Equality To improve the health and wellbeing of communities and reduce inequalities	The employment allocation is not in an area of higher deprivation and therefore, no significant effects. The Environmental Framework[162] identifies this employment allocation as within the Ivel River Valley, a priority corridor of the strategic green infrastructure network. Opportunities for this area include creating a Green Wheel around Biggleswade, the proposed creation of the Great North Cycle Route, and potential GI linkages relating to Biggleswade Common. The priority corridor is identified as an area where investment and project delivery can make most impact in securing multi-functional green infrastructure. This will also support the objectives of the Bedfordshire and Cambridgeshire Claylands National Character Area (see SA Objective 13). It is considered therefore that development in this area has the potential to support green infrastructure priorities and have major long-term positive effects against SA Objective 5.	**0** **++**
6. Highways & Air Quality To maintain and improve the existing highway	Though development of new employment land may generate increased traffic in this area and early transport modelling[163] identifies that all new potential growth in this area is likely to have an impact on the A1, cause further congestion and require infrastructure improvements, this is	**0?**

[161] This relates to the provision of services and facilities, such as schools, healthcare centres, shops, and hospitality (café, restaurant, pub).
[162] http://www.centralbedfordshire.gov.uk/environment/natural/environmental-framework.aspx
[163] Aecom (2016) for Central Bedfordshire Council. Technical Note Stage 1A Growth Area Analysis

network and reduce associated indirect impacts on air quality and greenhouse gas emissions	mitigated to a large degree by its location in close proximity to Biggleswade railway station, and potential for sustainable transport connections in this respect. Further mitigation is provided through draft Local Plan policies Strategic Transport Improvements, Mitigation of Transport Impacts on the Network, Connectivity and Accessibility, Development and Public Transport Interchanges and Low Emission Vehicles. Potential overall for a residual neutral effect. However, the precise likely impacts and effectiveness of mitigation measures are uncertain until further transport modelling studies are completed for the Council later in 2017. There is an AQMA in Sandy[164]. However, the employment allocation is located some distance from this such that mitigation measures should be effective with likely neutral effects. It had been assumed that long-term air quality is likely to improve as a result of stringent emissions controls on new vehicles via European standards[165]. In 15 to 20 years' time low emission vehicles will make up the majority of cars on the roads in the UK. It is also likely that there will be reductions in various contributing sectors that will also result in reductions in background concentrations of atmospheric pollutants. However, whilst there have been very significant drops in exhaust emissions, the NO_2 emissions from road transport have not been reduced as much as expected because emissions during real world driving conditions are often higher than those measured during the type approval test, especially for diesel vehicles. The EU Commission has changed the test procedures (2017) and this discrepancy should resolve the predicted improvements in air quality in time. However, this is uncertain at this stage.	
7. Sustainable Transport To encourage a demonstrable modal shift and reduce the need to travel	The employment allocation is located in close proximity to Biggleswade railway station with the potential for long term positive effects. Development has the potential to extend existing bus services to enhance sustainable transport connections between the site and railway station thus encouraging a modal shift and enhancing the potential positive effects. The unfinished national cycle route 12 is adjacent to the north of the site allocation. Development can contribute to the cycle route, which connects with Biggleswade railway station, and have cumulative positive effects on sustainable transport. There are also opportunities to retain and enhance existing PRoW routes within the site allocation, with associate positive effects. The location adjacent to a major settlement in the Plan area also reduces the need to travel for	**++?**

[164] https://uk-air.defra.gov.uk/aqma/maps
[165] http://ec.europa.eu/environment/air/transport/road.htm

	many potential employees. However, the location is separated by the A1 and would require infrastructure in the form of a bridge or underpass to access the town and railway station, so uncertainty at this stage.	
8. Energy & Climate Change To maximise the potential for energy efficiency, reduce greenhouse gas emission and ensure that the built and natural environment and its communities withstand the effects of climate change[166]	Given the potential sustainable transport connections identified against SA Objective 7 it is anticipated that development in this employment allocation can support a continued reduction in GHG emissions, this is further supported by draft Local Plan policy (Connectivity and Accessibility). It is further anticipated that through compliance with draft Local Plan policy (Successful and Sustainable Places), development could achieve policy targets for energy efficiency, high quality design standards that ensure resilience to the effects of climate change and offer potential opportunities for renewable energy production. Potential for a long-term minor positive effect but some uncertainty at this stage.	**+?**
9. Water Resources & Quality To minimise the demand for water and maintain or improve water quality	The Water Cycle Study identifies that this location lies within the Upper Bedford and Ouse catchment, where the main pressure on water resources is the abstraction of water for public supply. Abstraction for consumption is only available for up to 32% of the time and 25% of licenses in the area are time limited and tied to a Common End Date (CED) of March 2028. It is also recognised[167] that one of the most likely effects of climate change to impact upon Central Bedfordshire will be a shortage of water resources. The Ruthamford South Water Resource Zone (WRZ) is predicted to be in supply-demand deficit by 2026/27 as a result of growth and reduced yield. There are no strategic limitations on development growth as Water Companies have a statutory duty to supply water; however, capacity for providing additional supply varies & any new infrastructure requirements have to be aligned with Water Resources Management Plans. The addition of new employment land in this area is therefore considered to have the potential for cumulative effects on water resources but uncertainty until the scale & location is identified and the Water Cycle Study Phase 2 is undertaken. Rivers in the vicinity of the employment allocation are considered to be in a moderate overall	**0?**

[166] Please note that Flood Risk is considered by the SA within objective number 10
[167] LDA Design (2012) Central Bedfordshire Climate Change Adaptation Evidence Base Final Report

	water body class. The majority of watercourses in the Plan area are not currently meeting 'good' classification and the most common reason for this is 'pollution from waste water'. The Water Cycle Study identifies that all WwTWs have some capacity within their existing quality permits to accommodate future development without causing a class of 10% deterioration, however in some settlements the available capacity is quite small, and in some cases development may also require WwTW upgrades. With draft Local Plan Policies on Climate Change & Sustainability, Water Quality and Pollution, strong mitigation measures are in place to ensure at least neutral effects on water quality, and ensure that development supports local WRMPs with high water efficiency targets.	
10. Flood Risk To reduce the risk of flooding from all sources	The employment allocation is not in an area at risk of flooding from rivers or the sea[168]. Draft Local Plan policy (Successful and Sustainable Places) requires development to maximise opportunities for Sustainable Drainage Systems, where applicable, with the potential for some positive effects. Likely residual neutral effects.	**0**
11. Soil To protect and conserve soil	Development in this employment allocation will predominantly result in the loss of greenfield land with the potential for minor long-term negative effects. The allocation contains Grade 1 and Grade 2 best and most versatile agricultural land[169]. Therefore, it is considered there is the potential for a long-term major negative effect on soil resources. Given that the location is greenfield land, development is unlikely to contain or require remediation for any contaminated land, and will not redevelop brownfield land with a residual neutral effect.	**--** **0**
12. Biodiversity & Geodiversity To protect, enhance and	There are no internationally designated biodiversity sites in the employment allocation, with no likely significant effects.	**+**

[168] Environment Agency (2016) Flood Map for Planning
[169] Central Bedfordshire Council GIS layers (2017)

manage biodiversity & geodiversity	Southill Lake and Woods SSSI, designated for the presence of Broadleaved, Mixed and Yew woodland[170], is located approximately 4km to the west of the employment allocation[171]. Henlow Common and Langford Meadows Local Nature Reserve (LNR) is approximately 1.5km south west of the employment allocation[172]. The Rivers Ivel and Hiz County Wildlife Site is directly adjacent to Biggleswade[173]. Priority Habitat in the employment allocation is limited to the small individual blocks of Deciduous Woodland[174]. The Greensand Ridge Nature Improvement Area (NIA) is located a short distance to the north and west of the employment allocation. The Ivel Valley Biodiversity Network is located to the west of the employment allocation, and the employment allocation is within the Ivel River Valley Green Infrastructure (GI) network[175]. Any areas of Priority Habitat and the CWS and LNR sites in the local area should be protected from development. The use of ecological barriers and buffer zones can achieve this and there is mitigation provided through draft Local Plan policy (Nature Conservation) which seeks to ensure that development does not adversely affect designated sites, and draft Local Plan policy (Enhancing Ecological Networks) further seeks to ensure that development positively contributes to biodiversity. Any development in the area could provide enhancements to local biodiversity by creating new areas of habitat and enhancing existing areas. Linking individual areas of Priority Habitat, and undesignated areas of habitat, via ecological corridors with the biodiversity network in the area will promote wildlife movement and improve local biodiversity. The NIA, which is situated to the north and west, could be linked with the GI network and biodiversity network, with benefits for local greenspace and wildlife movement. Overall potential for the employment site to have a minor positive effect on biodiversity, through providing ecological enhancements beneficial to local biodiversity.	

[170] https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1001492
[171] DEFRA (2016) Magic Map Application- Measured from the growth locations edge to the designated sites edge
[172] Ibid.
[173] Central Bedfordshire GIS Layers (2017)
[174] DEFRA (2016) Magic Map Application
[175] http://www.centralbedfordshire.gov.uk/Images/environmental-framwork-v4_tcm3-14493.pdf

13. Landscape Protect and enhance the landscape and townscape	This employment allocation is not located adjacent to or within the designated AONB landscape. The employment allocation is within the Bedfordshire and Cambridgeshire Claylands National Character Area, and the statements of environmental opportunity identify the potential to create high quality green infrastructure (identified against SA Objective 5) and landscape regeneration in new development and the need to protect the aquifers and quality of the River Great Ouse (SA Objective 9 outlines the available mitigation for such effects). Development in the allocation is considered overall to support these objectives with the potential for minor long term positive effects against SA Objective 13. The site allocation is within the Lower Ivel Clay Valley Landscape Character Area. The visual sensitivities of this area include views to the Greensand Ridge, views towards the river corridors and the historic value of Biggleswade Common[176]. The landscape strategy focuses on renewing degraded elements and creating new features. Development at this location can contribute t the landscape strategy for the Lower Ivel Clay Valley. Some uncertainty until masterplanning is completed.	**+?**
14. Historic Environment To ensure the protection and enhancement of heritage assets, the historic environment and its setting	Heritage Assets in the employment allocation are limited. Biggleswade has a Conservation Area and Listed Buildings, however these are unlikely to be affected by development due to their location 2km north of the employment allocation[177], and the residential development located in between. Stratton Park Moated Enclosure Scheduled Monument is a short distance to the east of the employment allocation[178], but with existing development located in between, development will not affect the setting of the Scheduled Monument. A Listed Building is in the employment allocation area, and therefore there is the potential for development to affect the setting of the heritage asset. Mitigation may be required to protect the Listed Building and its setting. Draft Local Plan policy (Built Heritage) should ensure development does not lead to any significant effects. There are several Archaeological Notification Areas in the employment allocation. Development could investigate and record heritage assets of archaeological significance (according with draft Local Plan Policy Archaeology), resulting in increased archaeological knowledge of the local area, however likely neutral effects with some uncertainty at this stage.	**0?**

[176] Central Bedfordshire Council (2015) Central Bedfordshire Landscape Character Assessment
[177] Stratford Council GIS layers (2017) measured using GIS distances from heritage asset
[178] Stratford Council GIS layers (2017)

SUMMARY:

Key Positive Effects:

- Development will have long-term major positive effects on employment through the strategic provision of new employment land.
- Development can provide enhancements to Green Infrastructure at a strategic level, with a major positive effect on health.
- The allocation is in close proximity to Biggleswade railway station, and bus services can be extended to serve this location, with a potential major positive effect on sustainable transport. Some uncertainty until masterplanning completed.
- The site allocation is expected to be able to incorporate energy efficiency measures with positive effects on energy and climate change.
- The site allocation can achieve an overall net gain for biodiversity in the area, with a potential minor positive effect.
- The site allocation can contribute to the local landscape strategy and environmental opportunities, with a potential minor positive effect. Some uncertainty until masterplanning completed.

Key Negative Effects:

- The site allocation will result in the loss of Grade 1 and 2 best and most versatile agricultural land with a potential long-term major negative effect on soil resources.
- The site allocation may have a minor negative effect on the identity of the hamlet of Holme. Some uncertainty until masterplanning completed.

SA Recommendations for the Biggleswade, West of A1 Site-Specific Policy:

- Landscaping should protect the identity of the small hamlet of Holme. Where possible landscaping should also provide benefits for biodiversity and for the Ivel River Valley GI strategy.
- Development should be required to provide enhancements to Ivel River Valley GI corridor. Enhancements could include progressing the Green Wheel around Biggleswade, and providing access to the Ivel River which is an identified priority for the GI corridor.
- The allocation should ensure the employment land has good sustainable transport links with the centre of Biggleswade and Biggleswade Railway Station. Potential for the provision of a footbridge over the A1, and enhancements to the cycle network in line with the aims of the GI corridor.
- Ensure development makes appropriate contributions to biodiversity and achieves an overall net gain. Biodiversity enhancements should include the provision of new Priority Habitat and linkages with Langford Common CWS. Enhancements should link with the Ivel Valley biodiversity network to the west, which will have cumulative positive effects on the Ivel River Valley GI corridor.
- Development should contribute to the landscape strategy and environmental opportunities for the area, and where possible link these with the aspirations of the Ivel River Valley GI corridor.

Employment allocation: Ridgmont, M1 Junction 13 **Employment Land/Jobs: up to 35ha of employment land with up to 2000 new jobs**			
SA Objective	**Assessment of Effects** **Nature of the likely sustainability effect (including positive/negative, short - medium term (5-10 years)/long term (10 - 20 years plus), permanent/temporary, secondary, cumulative and synergistic); Uncertainty**		
1. Housing To ensure that the housing needs of all residents and communities are met	No housing is being proposed as part of this employment allocation. Likely neutral effect.	**0**	
2. Communities To maintain and enhance community and settlement	Green Belt land is located to the east and south of the allocation, but development will not result in the loss of Green Belt with a neutral effect.	**0**	**0**

identities	The development of employment land is unlikely to significantly affect the identity of any settlements in the local area. Potential for neutral effects on settlement identity.	
3. Services & Facilities To improve accessibility to services and facilities[179]	Given the scale of the employment allocation option it is likely that sufficient services and facilities can be provided on site to satisfy the needs of the employees on site, without the need to travel offsite. Despite this, the option is in close proximity to the major settlement of Milton Keynes and smaller settlements Woburn Sands and Aspley Guise which offer a wide range of service and facility provisions. Development at the location is unlikely to lead to any significant effects against this SA Objective.	**0**
4. Employment To support the economy and ensure that there are suitable opportunities for employment	The allocation will deliver new employment land and jobs to support the economy with the potential for major long term positive effects. The location is adjacent to Ridgmont railway station allowing for increased access. Potential for major long term cumulative positive effects but uncertainty of effects regarding opportunities for nearby town centres.	**++** **?**
5. Health & Equality To improve the health and wellbeing of communities and reduce inequalities	The employment allocation is not within or adjacent to an area of higher deprivation and thus unlikely to lead to any significant effects. The Environmental Framework[180] identifies this area as located within Marston Vale, a priority corridor of the strategic green infrastructure network. The priority corridor is identified as an area where investment and project delivery can make most impact in securing multi-functional green infrastructure. Development in this area can also support the objectives of the Community Forest of Marston Vale, which has been identified as a strategic area for landscape improvements, and support increased connectivity and regenerate land marred by industrialisation (from the brick making industry). There is also the potential for enhancements to blue infrastructure through the delivery of the Bedford to Milton Keynes Waterway Park within the GI corridor. It is considered therefore that development in this area has the potential to support green infrastructure priorities and have major long-term positive effects against SA Objective 5.	**0** **++**

[179] This relates to the provision of services and facilities, such as schools, healthcare centres, shops, and hospitality (café, restaurant, pub).
[180] http://www.centralbedfordshire.gov.uk/environment/natural/environmental-framework.aspx

6. Highways & Air Quality To maintain and improve the existing highway network and reduce associated indirect impacts on air quality and greenhouse gas emissions	Though development of new employment land may generate increased traffic in this area and early transport modelling[181] identifies that infrastructure improvements would be crucial given the level of stress on the strategic routes in this area, this is mitigated to a large degree by its location alongside the railway line, and potential for sustainable transport connections in this respect. Further mitigation is provided through draft Local Plan Policies Strategic Transport Improvements, Mitigation of Transport Impacts on the Network, Connectivity and Accessibility, Development and Public Transport Interchanges and Low Emission Vehicles. Potential overall for a residual neutral effect. However, the precise likely impacts and effectiveness of mitigation measures are uncertain until further transport modelling studies are completed for the Council later in 2017. There is no designated AQMA in close distance and therefore, no significant effects on air quality from traffic indicated at this stage. It had been assumed that long-term air quality is likely to improve as a result of stringent emissions controls on new vehicles via European standards[182]. In 15 to 20 years' time low emission vehicles will make up the majority of cars on the roads in the UK. It is also likely that there will be reductions in various contributing sectors that will also result in reductions in background concentrations of atmospheric pollutants. However, whilst there have been very significant drops in exhaust emissions, the NO_2 emissions from road transport have not been reduced as much as expected because emissions during real world driving conditions are often higher than those measured during the type approval test, especially for diesel vehicles. The EU Commission has changed the test procedures (2017) and this discrepancy should resolve the predicted improvements in air quality in time. However, this is uncertain at this stage.	**0?**
7. Sustainable Transport To encourage a demonstrable modal shift	The employment allocation is located adjacent to a railway line and Ridgmont railway station. Furthermore, the location will benefit from the East West Rail Link (EWR), with improved rail connections and access to services/facilities and employment. There is significant potential for	**++**

[181] Aecom (2016) for Central Bedfordshire Council. Technical Note Stage 1A Growth Area Analysis
[182] http://ec.europa.eu/environment/air/transport/road.htm

and reduce the need to travel	the creation of sustainable transport connections and to encourage a modal shift with long term positive effects.	
8. Energy & Climate Change To maximise the potential for energy efficiency, reduce greenhouse gas emission and ensure that the built and natural environment and its communities withstand the effects of climate change[183]	Given the potential sustainable transport connections identified against SA Objective 7 it is anticipated that development in this employment allocation can support a continued reduction in GHG emissions, this is further supported by draft Local Plan policy (Connectivity and Accessibility). It is further anticipated that through compliance with draft Local Plan policy (Successful and Sustainable Places), development could achieve policy targets for energy efficiency, high quality design standards that ensure resilience to the effects of climate change and offer potential opportunities for renewable energy production. Potential for a long term minor positive effect but some uncertainty at this stage.	**+?**
9. Water Resources & Quality To minimise the demand for water and maintain or improve water quality	The Water Cycle Study identifies that this location lies within the Upper Bedford and Ouse catchment, where the main pressure on water resources is the abstraction of water for public supply. Abstraction for consumption is only available for up to 32% of the time and 25% of licenses in the area are time limited and tied to a Common End Date (CED) of March 2028. It is also recognised[184] that one of the most likely effects of climate change to impact upon Central Bedfordshire will be a shortage of water resources. The Ruthamford South Water Resource Zone (WRZ) is predicted to be in supply-demand deficit by 2026/27 as a result of growth and reduced yield. There are no strategic limitations on development growth as Water Companies have a statutory duty to supply water; however, capacity for providing additional supply varies & any new infrastructure requirements have to be aligned with Water Resources Management Plans. The addition of new employment land in this area is therefore considered to have the potential for cumulative effects on water resources but uncertainty until the scale & location is identified and the Water Cycle Study Phase 2 is undertaken. Rivers in the vicinity of the employment allocation are considered to be in a moderate overall water body class. The majority of watercourses in the Plan area are not currently meeting 'good'	**0?**

[183] Please note that Flood Risk is considered by the SA within objective number 10
[184] LDA Design (2012) Central Bedfordshire Climate Change Adaptation Evidence Base Final Report

	classification and the most common reason for this is 'pollution from waste water'. The Water Cycle Study identifies that all WwTWs have some capacity within their existing quality permits to accommodate future development without causing a class of 10% deterioration, however in some settlements the available capacity is quite small, and in some cases development may also require WwTW upgrades. With draft Local Plan Policies on Climate Change & Sustainability, Water Quality and Pollution, strong mitigation measures are in place to ensure at least neutral effects on water quality, and ensure that development supports local WRMPs with high water efficiency targets.	
10. Flood Risk To reduce the risk of flooding from all sources	The employment allocation is not in an area at risk of flooding from rivers or the sea[185]. Draft Local Plan policy (Successful and Sustainable Places) requires development to maximise opportunities for Sustainable Drainage Systems, where applicable, with the potential for some positive effects. Likely residual neutral effects.	**0**
11. Soil To protect and conserve soil	Development in this allocation will predominantly result in the loss of greenfield land with the potential for minor long-term negative effects. Some Grade 3 best and most versatile agricultural land (sub-grade 3a or 3b is not known)[186] has been identified within the allocation[187]. It is considered there is the potential for the loss of best and most versatile agricultural land with a major negative effect, however, it is recognised that there remains an element of uncertainty in the agricultural land classification until lower level site assessments have been completed. Given that the location is greenfield land, development is unlikely to contain or require remediation for any contaminated land, however as it is in close proximity to the motorway and potentially subject to contaminated water runoff this remains uncertain at this stage until lower level assessments have been completed and the precise location is determined. There will be no regeneration of brownfield land.	**--?** **0?**

[185] Environment Agency (2016) Flood Map for Planning
[186] Central Bedfordshire Council GIS layers (2017)
[187] DEFRA (2016) Magic Map Application

12. Biodiversity & Geodiversity To protect, enhance and manage biodiversity & geodiversity	There are no internationally designated biodiversity sites in the employment allocation, and no SSSIs, with no significant negative effects likely. There is no Priority Habitat within the site allocation[188]. Boughton End Grasslands County Wildlife Site (CWS) is north of the employment allocation[189]. The Greensand Ridge Nature Improvement Area (NIA) is a short distance to the east and south of the employment allocation. There are several Biodiversity Networks in the area, including the Greensand Scarp Slope to the north and the Milton Keynes Corridor to the south. The employment allocation is also within the Bedford to Milton Keynes (Marston Vale) Green Infrastructure (GI) Network[190]. The area does not have a high number of biodiversity assets. However, development may have an effect on the local Priority Habitat and CWS through increased recreational use and loss or fragmentation of key habitat. Ecological buffers could be implemented to protect local biodiversity and Priority Habitats, and there is mitigation provided through draft Local Plan policy (Nature Conservation) which seeks to ensure that development does not adversely affect designated sites, and draft Local Plan policy (Enhancing Ecological Networks) further seeks to ensure that development positively contributes to biodiversity. There are a range of opportunities for development at the employment allocation to provide benefits for local biodiversity. The employment allocation is within the planned route for the Milton Keynes to Bedford Waterway, which will provide a range of biodiversity benefits for the local area by creating new green and blue corridors and creating new areas of habitat[191]. The employment allocation is also within the Forest of Marston Vale[192], an environmental regeneration project covering 61 square miles between Milton Keynes and Bedford. Development could link existing habitat areas in the employment allocation with the local biodiversity networks, the NIA and the proposed Waterway area. This would provide major benefits for the local biodiversity network, and ecological benefits for the NIA and waterway network. There is also the opportunity to create ecological corridors linking undesignated habitats with the biodiversity networks. Overall potential for the employment site to have a minor positive effect on biodiversity, through providing ecological enhancements beneficial to local biodiversity.	+

[188] DEFRA (2017) Magic Map Application
[189] Ibid.
[190] http://www.centralbedfordshire.gov.uk/Images/environmental-framwork-v4_tcm3-14493.pdf
[191] http://www.b-mkwaterway.org.uk/vision/
[192] http://marstonvale.org/

13. Landscape Protect and enhance the landscape and townscape	This employment allocation is not located adjacent to or within the designated AONB landscape. The allocation is within the Bedfordshire and Cambridgeshire Claylands National Character Area, and the statements of environmental opportunity identify the potential to create high quality green infrastructure (identified against SA Objective 5) and landscape regeneration in new development and the need to protect the aquifers and quality of the River Great Ouse. Development in this allocation is considered overall to support these objectives with the potential for minor long term positive effects against SA Objective 13. The site allocation is within the Salford-Aspley Clay Vale Landscape Character Type. Visually sensitive feature sin this area includes the views to the Greensand Ridge and Woburn, and landscape sensitive features include hedgerow patterns and remnant areas of deciduous woodland[193]. The landscape strategy for the area focuses on conserving the subtle tributary valleys associated with the Great Ouse and enhancement/renewal of the landscape. Development at the site allocation can contribute to the landscape strategy where applicable, with a positive effect. Some uncertainty until masterplanning completed.	**+?**
14. Historic Environment To ensure the protection and enhancement of heritage assets, the historic environment and its setting	There are limited heritage assets in the employment allocation area. The nearest Conservation Areas and Listed Buildings to the south of the junction are approximately 1km away[194].There is a Listed Building adjacent to the south of the allocation[195]. Approximately 1.5km north of the motorway there is also a Scheduled Monument[196]. Development at the employment allocation may have an effect on the setting of the heritage assets, and therefore mitigation measures may be required. Mitigation is provided through draft Local Plan policy (Built Heritage) which should ensure development does not lead to any significant effects. There are several, small Archaeological Notification Areas in the employment allocation. Development could investigate and record heritage assets of archaeological significance (according with draft Local Plan Policy Archaeology), resulting in increased archaeological knowledge of the local area, however likely neutral effects with some uncertainty at this stage.	**0?**

[193] Central Bedfordshire Council (2015) Central Bedfordshire Landscape Character Assessment
[194] Central Bedfordshire Council GIS Map Layers-Measured form the motorway to the heritage asset
[195] Ibid.
[196] Ibid.

SUMMARY:

Key Positive Effects:

- Development will have long-term major positive effects on employment through the strategic provision of new employment land.
- Development can provide enhancements to Green Infrastructure at a strategic level, with a major positive effect on health.
- The allocation is in close proximity to Ridgmont railway station which offers a EWR connections, and bus services can be extended to serve this location, with a potential major positive effect on sustainable transport.
- The site allocation is expected to be able to incorporate energy efficiency measures with positive effects on energy and climate change.
- The site allocation can achieve an overall net gain for biodiversity in the area, with a potential minor positive effect.
- The site allocation can contribute to the local landscape strategy and environmental opportunities, with a potential minor positive effect. Some uncertainty until masterplanning completed.

Key Negative Effects:

- The site allocation will result in the loss of Grade 3 best and most versatile agricultural land with a potential long-term major negative effect on soil resources. Some uncertainty remains until sub-grade (3a or 3b) is known.

SA Recommendations for the Ridgmont, M1 Junction 13 Site-Specific Policy:

- The site allocation is well located to provide strategic blue and green infrastructure benefits, and support the objectives of the Marston Vale priority GI corridor. Specifically, development should be required to contribute to both the Marston Vale Community Forest and the Bedford to Milton Keynes Waterway Park. Smaller scale GI improvements should also be required for synergistic positive effects.
- Development should be required to contribute to local transport infrastructure improvements, specifically junction 13 of the M1 which has been identified as a requirement by initial transport assessments.
- Enhancements to existing bus services and contributions to meet the aims of the Marston Vale Community Rail Partnership should be necessary as part of development. Enhancements to PRoW and cycle networks should be in line with the Marston Vale GI strategy for the area, and if possible should be integrated with the Marston Vale Community Forest and the Bedford to Milton Keynes Waterway Park.
- Development should achieve for a net gain for biodiversity. Existing sensitive biodiversity features should be retained and integrated with the Marston Vale GI network. This includes the potential for biodiversity improvements as part of the Milton Keynes to Bedford Waterpark. Development should contribute towards the aims of the Forest of Marston Vale, and provide linkages with the Greensand Ridge Nature Improvement Area to ensure biodiversity benefits are wide reaching. The populations of Great Crested Newts should be protected, as should the re-colonisation area. Developers should also consult with Bedfordshire Local Nature Partnership who are developing a Natural Capital Investment Plan for the Oxford-Cambridge Growth Corridor, to asses show development could

contribute towards this.

- Development should be environmentally-led to meet the landscape strategy for the area, and landscaping should be appropriate to ensure the visual sensitives of the area are retained and protected. Enhancements to the existing landscape should be in line with the Marston Vale GI strategy and positively contribute to the Forest of Marston Vale.