



Centre for Sustainability

Dacorum Borough Council

Sustainability Appraisal (incorporating Strategic
Environmental Assessment) Working Note

Emerging Core Strategy: Housing Growth Options at
Hemel Hempstead

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Report Number: CPR473

Authors: Clare Harmer and Rob Gardner

Quality reviewed: Rob Gardner and Catherine Ferris

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CONTENTS

1	INTRODUCTION.....	1
1.1	BACKGROUND.....	1
1.2	SUSTAINABILITY APPRAISAL AND STRATEGIC ENVIRONMENTAL ASSESSMENT	1
2	REVIEW OF DBC’S ASSESSMENT METHODOLOGY.....	3
3	SA ASSESSMENT METHODOLOGY.....	7
4	SA ASSESSMENT RESULTS.....	8
4.1	COMMON FEATURES FOR ALL OF THE GROWTH OPTIONS.....	8
4.2	HOUSING GROWTH OPTIONS.....	14
5	CONCLUSIONS AND RECOMMENDATIONS	29
6	NEXT STEPS	31

SEPARATE APPENDICES

APPENDIX A – SA FRAMEWORK

APPENDIX B – HOUSING OPTIONS ASSESSMENT TABLES

APPENDIX C – ANALYSIS OF INDICES OF MULTIPLE DEPRIVATION

1 Introduction

1.1 Background

As part of their Local Development Framework Core Strategies, Dacorum Borough Council (DBC) and St Albans City and District Council (SADC) jointly produced and consulted upon a Supplementary Issues and Options Paper – Growth at Hemel Hempstead (November 2006). This Supplementary Document outlined options for achieving the significant levels of housing growth for Hemel Hempstead that would be required following the town's designation as a 'Key Centre for Development and Change' in the East of England Plan. The level of growth proposed would require the expansion of East Hemel Hempstead into St Albans District, hence the joint planning and consultation. The views expressed in this consultation helped to inform further development of the Housing Growth Options at Hemel Hempstead.

On publication of the East of England Plan in May 2008, Hertfordshire County Council launched a legal challenge to parts of the Plan, which proposed building another 83,200 houses in the County before 2021, including strategic housing and Green Belt releases at Hemel Hempstead, Hatfield and Welwyn Garden City. The Council challenge was principally on the basis that the Strategic Environmental Assessment (SEA) of the Plan did not properly consider alternatives to the proposals for Hemel Hempstead, Hatfield, Welwyn Garden City and Harlow North. St Albans City and District Council also submitted an almost identical legal challenge in relation to Hemel Hempstead and Hatfield/Welwyn Garden City.

The case was heard at the High Court in May 2009 and the challenge was successful. The judge agreed with the County and St Albans Councils on the proposed growth at Hemel Hempstead, Hatfield and Welwyn Garden City. While the Government decides whether it will appeal the decision, DBC and SADC have put formal planning of Growth at Hemel Hempstead on hold. DBC are, however, continuing to develop their evidence base in preparation for potential future discussions on the issues surrounding growth at Hemel Hempstead. Therefore C4S is currently undertaking further SA/SEA work on the Housing Growth Options at Hemel Hempstead for Dacorum Borough Council.

1.2 Sustainability Appraisal and Strategic Environmental Assessment

Local Development Frameworks must be subject to both Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) under the Planning and Compulsory Purchase Act (2004) and The Environmental Assessment of Plans and Programmes Regulations

(2004) which implement European Directive 2001/42/EC, known as the Strategic Environmental Assessment (SEA) Directive. Although the requirement to carry out both an SA and SEA is mandatory, it is possible to satisfy the requirements of both pieces of legislation through a single assessment process. Government guidance for undertaking SEA¹ and SA of Development Plan Documents² in particular details how the SA and SEA should be integrated into one process.

The SA/SEA process helps planning authorities to fulfil their objective of contributing to the achievement of sustainable development by providing a structured assessment of the objectives and strategies against key sustainability issues as a basis for plans.

This working note summarises the findings of an assessment of the Housing Growth Options which have been developed as part of the Emerging Core Strategy, but which due to the successful legal challenge described above have not been issued for consultation. The working note does not form a formal part of the SA/SEA reporting process. It has been produced to contribute to the ongoing plan-making process, by providing an independent assessment of the Growth Options. Sustainability Appraisal is a decision aiding tool rather than a decision making one and the contents of this report should therefore be considered in this light.

This working note should be read in conjunction with the Emerging Core Strategies - Housing Growth Options report (June 2009).

The format of this working note is as follows:

- Section 1: Introduction;
- Section 2: Review of DBC's methodology for assessing for the growth strategies;
- Section 3: Description of the SA appraisal approach taken;
- Section 4: Discussion of the sustainability of the Housing Growth Options;
- Section 5: Recommendations have been made related to identified sustainability issues for consideration by DBC;
- Appendix A: The Sustainability Appraisal Framework;
- Appendix B: Sustainability Appraisal assessment tables for the Housing Growth Options at Hemel Hempstead; and

¹ A Practical Guide to the Strategic Environmental Assessment Directive (ODPM, 2005)

² Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents (ODPM, 2005)

- Appendix C: Analysis of the Indices of Multiple Deprivation in the areas within and around the proposed areas for growth.

2 Review of DBC's Assessment Methodology

In order to support the development of their Core Strategy, including the Housing Growth Options at Hemel Hempstead, Dacorum Borough Council is developing its evidence base. In March 2009, DBC developed and consulted upon a methodology for assessing the alternative growth scenarios for Hemel Hempstead. The approach aimed to assess the relative strengths and weaknesses of the growth options currently being considered.

The methodology was developed in consultation with:

- The Statutory Bodies, including Hertfordshire County Council, in their capacity as local Highway Authority, Local Education Authority and Dacorum Borough Council's ecological and archaeological consultants and St Albans City and District Council. The responses of the statutory consultees, such as the Highway Agency and Environment Agency, to previous Core Strategy consultation were also incorporated.
- Landowners, who attended a meeting with the Council to be briefed on the approach.

C4S also provided input at various stages during the development of the methodology to ensure that it was compatible with the SA process being undertaken alongside the work being undertaken by DBC. The key suggestions made by C4S on the draft prepared by DBC were to consider additional constraints relating:

- | | |
|---------------------------------|--------------------------------------|
| • Topography; | • Special Landscape Areas; |
| • Overhead power lines; | • RIGS; |
| • Groundwater protection zones; | • Listed Buildings; and |
| • Source protection zones; | • Conformity with the Core Strategy. |

The majority of these suggestions were taken on board by DBC. A comparison between the SA objectives and DBC final assessment criteria (Table 1) has highlighted that three of the SA objectives are not covered by the DBC methodology. These are:

- Climate change proof;
- Good quality housing; and
- Crime and fear of crime.

However, given the nature of these SA objectives it would be difficult for the assessment methodology to cover them. This is because the objectives don't have a site or area specific focus, and it would be anticipated that all three of the growth options would be able to promote developments that are able to withstand and accommodate the likely effects of climate change; achieve good quality housing; and provide safe environments. This is in contrast to the other 17 SA objectives where some differentiation between the strengths and weaknesses of the different areas and strategies for proposed growth should be identifiable and which are therefore covered in DBC's.

Table 1: SA Objectives vs. DBC Assessment Criteria

SA Objective	Biodiversity	Water quality / quantity	Flood risk	Soils	Greenhouse gas emissions	Climate change proof	Air quality	Use of brownfield sites	Resource efficiency	Historic & cultural assets	Landscape & townscape	Health	Sustainable locations	Equality & social exclusion	Good quality housing	Community identity & participation	Crime & fear of crime	Sustainable prosperity & growth	Fairer access to services	Revitalise town centres
Assessment Criteria																				
Sieve Mapping																				
Flood risk	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statutory environmental designations	✓	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
Non-statutory environmental designations	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heritage designations	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-
Agricultural land classifications	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pipelines	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Overhead power lines	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
Location in relation to H&S consultation zones	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-
Impact upon key environmental designations	✓	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
Infrastructure and Deliverability																				
Infrastructure	✓	-	-	-	-	-	-	-	-	-	✓	✓	-	✓	-	-	-	-	-	-
Deliverability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Geological Considerations																				
Minerals protection areas and/or areas of search	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-
Land contamination	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
Ground stability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Landfilling records	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
Hydrogeological sensitivity	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transport and Accessibility																				
Results from Paramics Model	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wider transport assessment	-	-	-	-	✓	-	✓	-	-	-	-	-	✓	✓	-	-	-	-	✓	-
Economic Development and Regeneration Potential																				
Proximity to existing employment opportunities	-	-	-	-	✓	-	✓	-	-	-	-	-	✓	✓	-	-	-	-	✓	-
The adjacency principle	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-
Scope to support Hemel 2020 Vision	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	✓	✓	✓
Green Belt and Landscape Character																				
Conformity with PPG2 criteria	✓	-	-	-	-	-	-	✓	-	✓	✓	-	-	-	-	✓	-	-	-	-
Ability to promote sustainable patterns of development	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-
Ability to support Core Strategy objectives	✓	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
Landscape Character Assessments	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
Historic Landscape Characterisation	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-
Topography considerations	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-

SA Objective Assessment Criteria	Biodiversity	Water quality / quantity	Flood risk	Soils	Greenhouse gas emissions	Climate change proof	Air quality	Use of brownfield sites	Resource efficiency	Historic & cultural assets	Landscape & townscape	Health	Sustainable locations	Equality & social exclusion	Good quality housing	Community identity & participation	Crime & fear of crime	Sustainable prosperity & growth	Fairer access to services	Revitalise town centres
Conformity with established New Town Principles																				
Enable sensitive recognition of natural and historic features and landform in new layouts	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-
Capacity to overcome features which would be damaging to the occupiers	-	-	-	-	-	-	✓	-	-	-	-	✓	-	-	-	-	-	-	-	-
Ability to ensure local neighbourhood's needs are met	-	-	-	-	-	-	-	-	-	-	-	✓	-	✓	-	-	-	-	✓	-
Ability to provide access to services (which are not part of the neighbourhood)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ability to help achieve the future vision of the town	✓	-	-	-	-	-	-	-	-	-	-	✓	-	✓	-	✓	-	✓	-	✓

3 SA Assessment Methodology

As noted in Section 2, DBC have previously undertaken a comprehensive assessment of the three alternative growth options and this assessment covered many of the issues within the SA framework. In order for the SA to add value to the evidence base, rather than repeating the assessment already undertaken, the SA has assessed broader overarching issues relating to the three options, i.e. dispersed vs. concentrated and east vs. north. The SA provides a comparative assessment between the options. The SA also completed an assessment of the 'common features' for all of the growth options against the SA objectives.

The appraisal approach taken within this working paper utilises the SA/SEA Framework Objectives that were developed for the Sustainability Appraisal Scoping Report for Dacorum Borough Council. This SA Framework has been updated as a result of consultation comments received on the Scoping Report. The SA Framework is provided in Appendix A.

The Housing Growth Options have been assessed against the SA framework objectives in terms of their overall performance ranked from 'very sustainable' through to 'very unsustainable', using the scoring criteria outlined below.

Significance Assessment	Description
✓✓	Very sustainable - Option is likely to contribute significantly to the SA/SEA objective
✓	Sustainable - Option is likely to contribute in some way to the SA/SEA objective
?	Uncertain – It is uncertain how or if the Option impacts on the SA/SEA objective
–	Neutral – Option is unlikely to impact on the SA/SEA objective
x	Unsustainable – Option is likely to have minor adverse impacts on the SA/SEA objective
xx	Very unsustainable – Option is likely to have significant adverse impacts on the SA/SEA objective

The effects have also been forecast in terms of their:

- Permanence: permanent or temporary;
- Scale: local (within Hemel Hempstead and its immediate vicinity), regional (affecting other areas of Dacorum Borough/St Albans District and their neighbouring authorities), national/international (UK or a wider global impact); and
- Timescale: in the short term (0-10 years), medium term (10-20 years) or long term (after the life of the plan).

4 SA Assessment Results

The following section provides the assessment findings for the different elements of the Emerging Strategy. For those elements where it has been appropriate to utilise assessment matrices to document the assessment, the full assessment tables providing more detailed information can be found in Appendix B.

4.1 Common features for all of the growth options

Several features of the growth at Hemel Hempstead will be common to all of the alternative options regardless of which sites are taken forward, for example the number of homes to be built and the town wide facilities to be provided. The forecast potential effects of these features on the SA objectives have been assessed and are summarised below. The detailed assessment table is provided in Appendix B.

This part of the assessment has focused on the general issues related to the proposed growth. The assessment of the alternative growth strategies is provided in Section 4.2, this supporting the detailed assessments of the three different growth strategies that have been undertaken by DBC. Wherever possible the assessment in Section 4.2 aims to provide relative comparisons of the options rather than providing individual independent assessments against the SA objectives.

Table 2: Summary of Effects (in the medium term)

Features for all options	SA Objectives (Abridged)																			
	1. Biodiversity	2. Water quality/quantity	3. Flood risk	4. Soils	5. GHG Emissions	6. Climate Change Proof	7. Air Quality	8. Use of brownfield sites	9. Resource Efficiency	10. Historic & Cultural Assets	11. Landscape & Townscape	12. Health	13. Sustainable Locations	14. Equality/ Social Inclusion	15. Good Quality Housing	16. Community Identity and Participation	17. Crime and Fear of Crime	18. Sustainable Prosperity and Growth	19. Fairer Access to Services	20. Revitalise Town Centres
✓	*	*	*	*	✓	✓	✓	xx	✓	*	✓	✓	✓	✓	✓✓	?	✓	✓✓	✓✓	✓
✓	*	*	*	*	✓	✓	✓	xx	✓	*	xx	✓	*	✓	✓✓	✓	✓	✓✓	✓✓	*
✓	*	*	*	*	✓	✓	✓	xx	✓	*	xx	✓	*	✓	✓✓	✓	✓	✓✓	✓✓	✓

4.1.1 SA Objective 1: Biodiversity

The development of 7,000 new homes and new employment on the Greenbelt surrounding Hemel Hempstead is likely have a negative effect on habitats and species found locally within the areas affected. The significance of the effect will be dependent on the biodiversity value of the land to be developed. Loss of this greenbelt land could also have a negative effect on habitats and species more widely due to increased traffic and transport and increased numbers of visitors putting pressure on local wildlife sites, for example the Chilterns Beechwoods SAC and Shrubhill Common LNR.

Providing new open spaces, woodlands and other green infrastructure within the new neighbourhoods could have a positive effect on this SA objective. In addition, requiring the new developments to meet the national minimum standard for Code for Sustainable Homes could also help to mitigate adverse effects. The standards discourage development on ecologically valuable sites, require that existing ecological features are protected from damage and encourage ecological enhancement.

4.1.2 SA Objective 2: Water quality/quantity

Dacorum Borough is within an area already identified as 'over-abstracted' (Colne CAMS, EA). Providing 7,000 new homes and new employment will put direct pressure on these already under pressure water resources therefore having a negative effect on this SA objective. The effect is likely to become more significant over time as more dwellings are built and risk of periodic water shortages increase. In addition, new development on greenbelt sites will inevitably increase impermeable surfaces resulting in increased water run-off and potential pollution to water courses.

Requiring the new developments to meet the national minimum standard for Code for Sustainable Homes could help to mitigate these negative effects. Level 3 requires maximum average water consumption to be 105 litres per capita per day. The Code also encourages the recycling of rainwater and reducing the amount of mains potable water used for external water uses, i.e. through the use of rainwater butts and central rainwater collection systems. In addition, the Code for Sustainable Homes requires that peak rates of run-off into watercourses are no greater for the developed site than they were for the pre-development site and this could reduce the risk of run-off polluting water courses.

4.1.3 SA Objective 3: Flood risk

New development on greenbelt sites will inevitably increase impermeable surfaces resulting in increased water run-off and potential flood risk, therefore resulting in negative effects on this SA objective. Requiring the new developments to meet the national minimum standard for Code for Sustainable Homes could help to mitigate these negative effects. The code for sustainable homes requires that peak rates of run-off into watercourses are no greater for the developed site than they were for the pre-development site. This should help to reduce the risk of localised flooding.

4.1.4 SA Objective 4: Soils

The development of 7,000 new homes and new employment on the Greenbelt surrounding Hemel Hempstead will have negative impacts on this SA objective through soil sealing and potentially soil degradation.

4.1.5 SA Objective 5: Greenhouse gas emissions

Housing development will result in an increase in greenhouse gas emissions from new housing and associated activities. Building 7,000 new homes could lead to an increase in greenhouse gas emissions of approximately 41,160 tonnes of carbon per annum. This is based upon estimated per capita domestic CO₂ emissions of 2.4 tonnes multiplied by the average number of occupants per household in the boroughs of 2.45 [Source: Audit Commission Local Area Profile]. The development of employment land will also result in an increase in greenhouse gas emissions from the buildings and associated activities particularly transport. Requiring new developments to meet very high standards of energy efficiency and incorporating renewable energy production on-site should help to mitigate these negative effects.

Providing key neighbourhood facilities within the new developments could reduce the need to travel and also encourage use of more sustainable modes of transport thereby reducing growth in greenhouse gas emissions and therefore resulting in a positive effect on this SA objective.

4.1.6 SA Objective 6: Climate change adaptation

The strategy does not outline measures which would require housing developments to withstand and accommodate the likely impacts and results of climate change. Therefore neutral effects are forecast on this SA objective.

4.1.7 SA Objective 7: Air quality

Building 7,000 new homes and creating new employment will contribute to background emissions through an increase in vehicles on the road. Therefore negative effects are forecast for this SA objective. In addition, during construction there could be negative effects on local air quality close to the development sites (e.g. from dust and fumes).

Providing key neighbourhood facilities within the new developments could reduce the need to travel and encourage use of more sustainable modes of transport thereby minimising emissions to air. Providing a park and ride could also reduce traffic congestion within the Maylands Business Area thereby improving local air quality in this area. These measures are both forecast as likely to have positive effects on this SA objective.

4.1.8 SA Objective 8: Use of brownfield sites

The strategy to build 7,000 new homes and new employment on the Greenbelt is forecast as likely to have significant negative effects on this SA objective.

4.1.9 SA Objective 9: Resource efficiency

Housing and employment growth will increase demands on natural resources and will result in increased waste generation therefore negative effects are forecast for this SA objective.

Requiring developments to use the most up-to-date construction techniques and materials and incorporate renewable energy production on-site could help to mitigate these effects and have a positive effect on this SA objective. During construction the Code for Sustainable Homes encourages the use of materials with lower environmental impacts over their lifecycle, responsible sourcing of materials and the reduction and effective management of construction waste. The Code for Sustainable Homes also encourages developments to include storage areas for recyclable waste and facilities for composting.

4.1.10 SA Objective 10: Historic & cultural assets

Negative effects are forecast for this SA objective as housing and employment development could involve the redevelopment of known or undiscovered cultural heritage resources.

4.1.11 SA Objective 11: Landscape & townscape

Constructing 7,000 new homes and new employment opportunities in the Greenbelt around Hemel Hempstead will have significant negative effects on this objective. However, providing public open space, woodlands and other green infrastructure could help to

mitigate these adverse effects. Also requiring all new development to meet very high standards of design could also reduce the negative effects.

4.1.12 SA Objective 12: Health

Positive effects are forecast for this SA objective. Ensuring all residents have access to high quality open space for informal recreation and leisure activities through the provision of open space and woodlands should help to encourage healthier lifestyles.

Providing key neighbourhood facilities within the new developments could encourage walking and cycling. Providing appropriate bus connections and high quality, well located pedestrian and cycle routes will help to connect the new development to existing services and facilities elsewhere within the town. This could help to improve access to healthcare facilities and encourage active and healthy lifestyles.

Requiring developments to meet the national standards for the Code for Sustainable Homes should also have positive effects on this SA objective. The Code includes standards for ensuring the provision of improved sound insulation to reduce the likelihood of noise complaints from neighbours. It also contains other standards aimed at improving health and well-being, such as improving the quality of life in homes through good daylighting and provision of private open space.

4.1.13 SA Objective 13: Sustainable locations

Developing new homes on the Greenbelt around Hemel Hempstead will not generally reduce the need to travel through closer integration of housing, jobs and services as the Greenbelt is located some distance from the town centre and therefore negative effects are forecast for this SA objective.

Providing key neighbourhood facilities within the new developments, including a primary school and a local convenience store could help to mitigate some of these effects. In addition, providing appropriate bus connections and high quality, well located pedestrian and cycle routes will help to connect the new development to existing services and facilities elsewhere within the town.

4.1.14 SA Objective 14: Equality & social exclusions

Positive effects are forecast for this SA objective. Providing key neighbourhood facilities, including primary schools, local convenience stores, public open space and community halls, within the new developments should progress this objective by providing access to services

for the new and existing neighbouring communities. Allocating land for a new secondary school should provide for education opportunities for the new neighbourhoods as well as improving provision for the town in general.

Providing town-wide facilities, including a town stadium, open space and woodlands, could improve access to facilities and services for new and existing communities. Specifically, replacing the existing hospital in Hemel Hempstead with a General Hospital with an Urgent Care Centre could improve access to health care. In addition, the Waterhouse Square development should improve town centre shopping facilities benefitting both existing and new communities. Providing additional job opportunities in Hemel Hempstead should improve access to employment.

4.1.15 SA Objective 15: Good quality housing

Significant positive effects are forecast for this SA objective. All new development will be required to meet very high standards of design and this should provide for good quality housing developments. Each neighbourhood will be expected to deliver a high level of affordable housing and this should significantly progress this objective.

4.1.16 SA Objective 16: Community identity & participation

All new development will be required to meet very high standards of design and this should have a positive effect on this SA objective. The Waterhouse Square development should improve town centre shopping facilities in Hemel Hempstead and therefore this could make the town a more attractive place to live, work and visit. In addition, ensuring all residents have access to high quality open space should help to improve the quality of life in urban areas.

Providing 7,000 new homes may affect the identity of existing neighbourhoods depending on how they relate and fit with the local communities. For example, local communities which were used to be being located adjacent to the Green Belt may lose their identity of being a more rural area.

4.1.17 SA Objective 17: Crime and fear of crime

The Code for Sustainable Homes encourages the design of developments where people feel safe and secure; where crime and disorder, or the fear of crime, does not undermine quality of life or community cohesion. This should help to progress this SA objective.

4.1.18 SA Objective 18: Sustainable prosperity and growth

Significant positive effects are forecast for this SA objective. Providing additional land for employment in the Maylands Business Area should allow for the provision of job opportunities for the new and existing communities.

Providing 7,000 new homes and key community facilities will support the economy by providing necessary infrastructure and producing a high quality environment in which people will want to live and work. It should also result in a larger potential workforce which should benefit the local economy.

4.1.19 SA Objective 19: Fairer access to services

Significant positive effects are forecast for this SA objective. Providing additional land for employment in the Maylands Business Area should allow for the provision of local job opportunities for the new and existing communities.

4.1.20 SA Objective 20: Revitalise town centres

By developing new homes on the Greenbelt around Hemel Hempstead the strategy is not encouraging development in the centre of urban areas. Thereby this strategy will not help to revitalise the town centre and could have negative effects on this SA objective.

However, the Waterhouse Square development should provide for improved town centre shopping facilities whilst the Park and Ride could help to reduce traffic in the town centre, thereby improving the quality of the centre.

4.2 Housing Growth Options

DBC are considering three broad alternative 'packages' of development sites. These options are made up of different combinations of the 'Blue Blobs' sites that were put forward for initial consideration in November 2006, with the addition of land at Fields End Farm which connects Gadebridge North (Blue Blob 7) and Pouchen End (Blue Blob 6). It should be noted that although the Blue Blobs that are being taken forward are within broadly the same location as before the majority cover slightly different footprints to those put forward previously, for example the Blue Blobs may be larger or the boundaries changed. Details of the three alternative strategies are outlined below.

Option 1 – Eastern Growth Strategy

Based on development between the town and the M1 motorway – the majority of which falls within St Albans. To provide the required level of housing an additional new neighbourhood would also be required and this is proposed to the west of the town.

This option has been chosen as it focuses development to the east of Hemel Hempstead, using the M1 motorway as a key boundary to mark the edge of the expanded town.

It comprises new neighbourhoods at:

- Wood End Farm and Leverstock Green (Blue Blobs 12a, 12b, 14a, 14b and 14c), providing about 5,300 new homes; and
- West Hemel Hempstead (Blue Blob 6), providing about 1,200 new homes.

This option will also involve an extension to the existing neighbourhood of Grovehill through the development of land at Marchmont Farm (Blue Blob 9), providing about 300 new homes.

Option 2 – Northern Growth Strategy

Focussing development to the north and west of the town. This option would require the construction of a northern bypass for the town, running from Bourne End to Holtsmere End.

This option has been chosen as it focuses development in an arc around the west and north of Hemel Hempstead. It could help bring forward a new bypass and use this to mark the edge of the expanded town.

It comprises new neighbourhoods at:

- West Hemel Hempstead (Blue Blob 6), providing about 1,500 new homes;
- North of Gadebridge (Blue Blob 7), providing about 1,700 new homes;
- Grovehill and Woodhall Farm (Blue Blob 10), providing about 2,400 new homes; and
- Holtsmere End (Blue Blob 11), providing about 1,200 new homes.

Option 3 – Dispersed Growth Strategy

Based on a dispersed pattern of new neighbourhoods, providing a geographical spread around the edge of the town.

This option has been chosen as it looks to spread the impact of new development around the town.

It comprises new neighbourhoods at:

- Shendish (Blue Blob 3), providing about 1,100 new homes;
- West Hemel Hempstead, plus additional land at Fields End Farm (Blue Blob 6 plus adjacent land); and
- Wood End Farm (Blue Blobs 12a and 12b) and Leverstock Green (Blue Blobs 14a and part of 14b), providing about 4,000 new homes.

This option will also involve an extension to the existing neighbourhood of Grovehill through the development of land at Marchmont Farm (Blue Blob 9), providing about 300 new homes.

4.2.1 Constraints for the Blue Blobs

In 2006, an assessment of the potential 'Blue Blobs' was undertaken. This assessment reviewed the constraints and opportunities of the proposed sites. As stated above a number of these 'Blue Blobs' have now been taken forward as part of the three growth options. The footprints of the majority of these blue blobs have been amended since the 2006 assessment and therefore an updated assessment of the constraints and opportunities has been undertaken (Table 3). Constraints relating to the proximity of the sites to community services and facilities have not been considered in this assessment, as it has been assumed that these will be provided within new developments as part of the 'Neighbourhood' approach to growth that is proposed.

Table 3: Key Environmental Constraints

		Ancient Woodland	Area of Outstanding Natural Beauty	Floodzone 2	Floodzone 3	Historic Parks and Gardens	Scheduled Ancient Monuments	Site of Special Scientific Interest	Special Areas of Conservation	Areas of Archaeological Significance	Conservation Area	Regionally Important Geological/Geomorphological Site	Wildlife Site	Listed Buildings	Green Belt	Common Land	BPA Line	Buncefield 2km buffer	
Northern Option	West Hemel Hempstead	N	N	N	N	N	N	N	N	N	Y	N	N	N	Y	N	N	N	
	North of Gadebridge	Y	N	N	N	N	N	N	N	N	N	N	Y	N	Y	N	N	N	
	Grovehill and Woodall	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	
	Holtsmere End	N	N	N	N	N	N	N	N	-	-	-	-	-	Y	-	Y	Y	
Eastern Option	West Hemel Hempstead	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	
	Marchmont Farm	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	
	Wood End Farm	N	N	N	N	N	N	N	N	-	-	-	Y	-	N	Y*	-	Y	Y
	Leverstock Green	N	N	N	N	N	N	N	N	-	-	-	-	-	Y	-	Y	Y	
Dispersed Option	West Hemel Hempstead	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	
	Marchmont Farm	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	
	Wood End Farm	N	N	N	N	N	N	N	N	-	-	-	-	-	Y	-	Y	Y	
	Leverstock Green	N	N	N	N	N	N	N	N	-	-	-	-	-	Y	-	Y	Y	
	Shendish	N	N	N	N	N	N	N	N	A	N	N	N	N	Y	N	N	N	

Key

Y	Present	N	Not present	A	Adjacent	-	No information
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* DBC: Not in Green Belt. SADC: Within Metropolitan Green Belt.

4.2.2 Summary of Assessment

The following section provides an assessment of three growth strategies. This assessment focuses on strategy and site specific issues. An assessment of the general issues related to growth was provided in the assessment of the features common to all of the growth options (see Section 4.1).

The assessment draws heavily on information provided in the detailed assessments of the three different growth strategies undertaken by DBC. It was also supported by use of GIS mapping to identify potential constraints, as well as an analysis of the Index of Multiple Deprivation (IMD) from 2007 which provides local level analysis relating to a range of economic, social and housing issues and ranks areas relative to one another according to their level of deprivation. For detail of the IMD analysis for the local areas in and around the potential growth areas please see Appendix C.

The following table summarises the assessment. NB: This assessment takes more of a comparative approach to considering the effects of the alternative growth strategies.

Housing Options	SA Objectives (Abridged)																			
	1. Biodiversity	2. Water quality/quantity	3. Flood risk	4. Soils	5. GHG Emissions	6. Climate Change Proof	7. Air Quality	8. Use of brownfield sites	9. Resource Efficiency	10. Historic & Cultural Assets	11. Landscape & Townscape	12. Health	13. Sustainable Locations	14. Equality/ Social Inclusion	15. Good Quality Housing	16. Community Identity & Participation	17. Crime & Fear of Crime	18. Sustainable Prosperity & Growth	19. Fairer Access to Services	20. Revitalise Town Centres
1	*	-	-	*	✓ ?	-	✓	**	✓	*	*	✓	✓	✓	-	✓ *	-	-	✓ ?	✓
2	** ✓	-	*	*	✓ ?	-	✓	**	✓	*	** ?	✓ ?	✓	✓	-	✓ *	-	✓		✓
3	*	*	-	*	✓ ?	-	✓ ?	**	*	*	*	✓	✓	-	-	* ✓	-	-	✓ ?	-

4.2.3 SA Objective 1: Biodiversity

Option 1 – Eastern Growth Strategy	*
Option 2 – Northern Growth Strategy	** ✓
Option 3 – Dispersed Growth Strategy	*

All three of the growth options are forecast as likely to have an adverse effect on biodiversity due to the proposed development on Green Belt land. None of the proposed sites should directly effect any statutory environmental designations, such as SACs or SSSIs, although some could impact upon local designations. All of the growth strategies involve the development of Blue Blob 6 to the West of Hemel Hempstead and part of Shrubhill Common, adjacent to the site, is designated as a Local Nature Reserve. In addition, the eastern, northern and dispersed strategies could have an adverse effect on several other Nature Reserves, Wildlife Sites and Ancient Semi-Natural Woodlands.

The northern growth strategy is forecast as more likely to result in greater adverse effects on biodiversity than the eastern and dispersed strategies as it will require the construction of a bypass. The proposed bypass would result in greater landtake and habitat fragmentation and therefore potentially result in significant adverse effects on habitats and species. In addition, although the northern option would not result in any direct effects on the Chilterns Beechwoods SAC at Ashridge, the Appropriate Assessment Screening considered that any significant development to the west/northwest of Hemel Hempstead, which requires significant new road infrastructure, i.e. a bypass, would potentially have a detrimental effect on the SAC. Therefore progressing with the northern growth strategy would trigger the need for a full Appropriate Assessment. The bypass could also have adverse effects on two local wildlife sites located close to the potential route.

All of the options provide for the development of open space which could have a positive effect on this SA objective. The more concentrated northern growth strategy may allow for the provision of larger open spaces. This could lead to positive effects on biodiversity as larger open spaces could provide more habitats for biodiversity.

4.2.4 SA Objective 2: Water quality/quantity

Option 1 – Eastern Growth Strategy	-
Option 2 – Northern Growth Strategy	-
Option 3 – Dispersed Growth Strategy	*

Development of the eastern and northern strategies will have neutral effects on this SA objective. All of the proposed sites within these packages fall within Zone 3 (Total Catchment Zone) of the Source Groundwater Protection Zones. However, for the dispersed strategy the Shendish site (Blue Blob 3) falls within Zone 2 (Outer Protection Zone). Zone 2 is a higher risk area in terms of groundwater protection and would therefore require

additional mitigation to ensure pollution is prevented from entering the groundwater. Therefore potential adverse effects have been forecast for the dispersed strategy.

4.2.5 SA Objective 3: Flood risk

Option 1 – Eastern Growth Strategy	-
Option 2 – Northern Growth Strategy	*
Option 3 – Dispersed Growth Strategy	-

As the growth strategies require the development of similar areas of Green Belt land the effects of these strategies on flood risk as a result of increased areas of impermeable surfaces are considered to be similar, although the development of the bypass as part of the northern strategy would result in additional impermeable surfaces compared with the eastern and dispersed strategies.

All of the development sites within the proposed growth packages fall within Flood Zone 1, denoting the lowest flood risk. Therefore the effects are forecast to be neutral. However, the northern strategy may result in adverse effects on this SA objective as the route of the proposed bypass passes through flood zones relating to the River Bulbourne and the River Gade.

4.2.6 SA Objective 4: Soils

Option 1 – Eastern Growth Strategy	*
Option 2 – Northern Growth Strategy	*
Option 3 – Dispersed Growth Strategy	*

As all of the growth strategies require the development of similar areas of Green Belt land the effects of these strategies on soils are considered to be the same. However, the development of the bypass as part of the northern strategy would result in some additional soil sealing/degradation and loss compared with the eastern and dispersed strategies.

All of the proposed sites within each of the three growth options are currently used for agricultural purposes. The northern strategy could result in some loss of Grade 2 agricultural land at Holtsmere End (Blue Blob 11), while the eastern and dispersed strategies could result in some loss of Grade 2 agricultural land at Wood End Farm (Blue Blob 12a). Therefore development of either of the packages would result in some loss of best and most versatile agricultural land.

4.2.7 SA Objective 5: Greenhouse gas emissions

Option 1 – Eastern Growth Strategy	✓	?
Option 2 – Northern Growth Strategy	✓	?
Option 3 – Dispersed Growth Strategy	✓	?

The eastern and dispersed growth strategies which provide housing in closest proximity to the Maylands Business Area could have a more positive effect on this SA objective than the northern strategy as they should help to reduce the need to travel to this major employment area and could encourage walking and cycling. This could help to reduce the growth in greenhouse gas emissions. However, providing housing to the east of Hemel Hempstead close to the M1 junction may increase out-commuting as the new residents may choose to live here based on the fact that there is easy access to the motorway network.

The slightly more concentrated eastern and northern strategies may allow for the development of a greater range of neighbourhood services and facilities which could help to reduce the need to travel and encourage use of more sustainable modes of transport within the neighbourhoods, such as walking and cycling, thereby helping to reduce growth in greenhouse gas emissions. Also by concentrating housing development, this may allow for a large enough population to support the provision of more frequent high quality bus services which could encourage people out of their cars.

Development at Shendish as part of the dispersed strategy would result in the new community being located close to a railway station. This could help to reduce the need to travel and encourage use of public transport. None of the other proposed sites are located within a short distance to railway station.

Constructing the bypass as part of the northern strategy is forecast as having uncertain effects on greenhouse gas emissions as although the new road could reduce congestion in the town centre, thereby supporting a reduction in emissions, it could also result in induced traffic which would have the opposite effect.

4.2.8 SA Objective 6: Climate change adaptation

Option 1 – Eastern Growth Strategy	-
Option 2 – Northern Growth Strategy	-
Option 3 – Dispersed Growth Strategy	-

There is no differentiation between the effects of the different growth strategies on this SA objective. Therefore the effects are considered to be neutral.

4.2.9 SA Objective 7: Air quality

Option 1 – Eastern Growth Strategy	✓	
Option 2 – Northern Growth Strategy	✓	
Option 3 – Dispersed Growth Strategy	✓	?

The eastern and dispersed growth strategies which provide housing in closest proximity to the Maylands Business Area could have a more positive effect on this SA objective than the northern strategy as they should help to reduce the need to travel to this major employment area and could encourage walking and cycling. This could help to reduce the growth in emissions to air and improve local air quality.

The slightly more concentrated eastern and northern strategies may allow for the development of a greater range of neighbourhood services and facilities which could help to reduce the need to travel and encourage use of more sustainable modes of transport, such as walking and cycling, thereby helping to reduce emissions to air. Also by concentrating housing development this may allow for a large enough population to support the provision of more frequent high quality bus services which could encourage people out of their cars.

Development at Shendish as part of the dispersed strategy would result in the new community being located close to a railway station. This could help to reduce the need to travel and encourage use of public transport. None of the other proposed sites are located within a short distance to railway station.

Constructing the bypass as part of the northern strategy is forecast as having uncertain effects on air quality as although the new road could reduce congestion and therefore improve air quality in the town centre it could also result in induced traffic and poorer air quality along the route of the bypass.

4.2.10 SA Objective 8: Use of brownfield sites

Option 1 – Eastern Growth Strategy	**	
Option 2 – Northern Growth Strategy	**	
Option 3 – Dispersed Growth Strategy	**	

The SA considers the effect of the development of each strategy on this SA objective to be the same. Development of each of the growth strategies will result in development of Green Belt and therefore significant adverse effects are forecast for this SA objective.

4.2.11 SA Objective 9: Resource efficiency

Option 1 – Eastern Growth Strategy	✓
Option 2 – Northern Growth Strategy	✓
Option 3 – Dispersed Growth Strategy	*

The more concentrated eastern and in particular northern strategies provide increased opportunities for the use of measures to reduce use of natural resources, for example through the provision of on site renewable energy sources and district heating systems. More concentrated developments also allow for more efficient resource use as the provision of infrastructure and services should be less expensive and complex than for more dispersed developments.

4.2.12 SA Objective 10: Historic & cultural assets

Option 1 – Eastern Growth Strategy	*
Option 2 – Northern Growth Strategy	*
Option 3 – Dispersed Growth Strategy	*

All of the growth strategies are forecast as likely to have an adverse effect on this SA objective. Two of the Blue Blobs within the eastern strategy are close to Conservation Areas and Areas of Archaeological significance, while the other two contain Grade II Listed Buildings and also contain or are adjacent to Areas of Archaeological Significance.

The northern strategy could have an adverse effect on two Conservation Areas and a Grade II Listed Building. The route of the bypass could also have an adverse effect on a Scheduled Ancient Monument and Area Subject to Recording Condition, both at Aubreys Fort in St Albans District.

The dispersed strategy could have an adverse effect on two Conservation Areas, a number of Grade II Listed Buildings and various Areas of Archaeological Significance. In particular, there could be adverse effects relating to the development of Shendish Manor (Blue Blob 3).

All of the growth strategies would result in development at West Hemel Hempstead (Blue Blob 6). Approximately 60% of the footprint of Blue Blob 6 for the northern and dispersed

strategies is classified as “pre 18th century enclosure” (Historic Landscape Characterisation), and this rises to approximately 75% of the footprint of the eastern strategy. Therefore development of this site could have an adverse effect on historic landscape.

4.2.13 SA Objective 11: Landscape & townscape

Option 1 – Eastern Growth Strategy	*	
Option 2 – Northern Growth Strategy	**	?
Option 3 – Dispersed Growth Strategy	*	

None of the options lie within the Chilterns AONB, although some lie close to its boundaries. All of the options will result in developing land to the West of Hemel Hempstead (Blue Blob 6) thereby bringing the town closer to the AONB boundary and therefore having a potential adverse effect on this SA objective. However, the northern strategy will involve building more new housing, to the west and north of Hemel Hempstead, in proximity to the boundary of the AONB than the other two growth options and therefore could result in more significant adverse effects than the other two strategies. Development of the North of Gadebridge site (Blue Blob 7) would also significantly reduce the green wedge between Hemel Hempstead and Potten End. This could result in adverse effects on the character of the village.

Focusing housing development to the east of Hemel Hempstead (i.e. eastern strategy) between the existing town boundary and the M1 is likely to result in fewer adverse effects on landscape and tranquillity than developments to the west and north as the quality of the landscape to the east of the town is already affected by the presence of the motorway.

The proposed new bypass as part of the northern strategy would also be located close to the AONB boundary and therefore could also have an adverse effect on landscape. Constructing the northern bypass may also lead to future infill development up to the road boundary and this could result in further development of Green Belt land in the longer term and further potential impacts upon the AONB. However, the bypass may have a positive effect on townscape within Hemel Hempstead if it helps to reduce traffic congestion, although demand management measures would be required in the town centre in order to ‘lock-in’ any such benefits.

4.2.14 SA Objective 12: Health

Option 1 – Eastern Growth Strategy	✓	
Option 2 – Northern Growth Strategy	✓	?
Option 3 – Dispersed Growth Strategy	✓	

The more concentrated eastern and in particular northern strategies could provide increased opportunities for developing larger scale health facilities and open spaces which could have a positive effect on this SA objective.

The eastern and dispersed growth strategies which provide housing in closest proximity to the Maylands Business Area could have a more positive effect on this SA objective by encouraging more active travel to work, such as walking and cycling. In addition, the slightly more concentrated eastern and northern strategies may allow for the development of a greater range of neighbourhood services and facilities again encouraging the more active travel which should result in healthier lifestyles.

Development at Shendish as part of the dispersed strategy would result in the new community being located close to a railway station. This could help to encourage active travel.

Constructing the bypass as part of the northern strategy is forecast as having uncertain effects on air quality and subsequently public health as although the new road could reduce congestion and therefore improve air quality in the town centre, it could also result in induced traffic and poorer air quality along the route of the bypass.

Housing built to the east of Hemel Hempstead, as part of the eastern and dispersed strategies could suffer from noise pollution as a result of their proximity to the motorway. Mitigation measures, such as triple glazing, noise barriers or low noise surfaces along the M1, may help to reduce these adverse effects.

Housing to the east (eastern and dispersed strategies) and north east (northern strategy) of the town would be located within 2km of Buncefield and although the Blue Blobs are not currently located within any of the Health and Safety Executive’s potential consultation boundaries health and safety issues will need to be considered. A number of the Blue Blobs do however contain high pressure fuel pipelines related to the Buncefield site (Holtsmere End (Blue Blob 11), Wood End Farm (12a/b) and Leverstock Green (14a/b)).

4.2.15 SA Objective 13: Sustainable locations

Option 1 – Eastern Growth Strategy	✓
Option 2 – Northern Growth Strategy	✓
Option 3 – Dispersed Growth Strategy	✓

The more concentrated eastern and in particular northern strategies could provide increased opportunities for developing larger scale health facilities which could have a positive effect on this SA objective by promoting improved access to these facilities.

The eastern and dispersed growth strategies which provide housing in closest proximity to the Maylands Business Area could have a more positive effect on this SA objective by reducing the need to travel to employment. In addition, the slightly more concentrated eastern and northern strategies may allow for the development of a greater range of neighbourhood services and facilities again reducing the need to travel.

Development at Shendish as part of the dispersed strategy would result in the new community being located close to a railway station which could reduce the need to travel by private car.

4.2.16 SA Objective 14: Equality & social exclusion

Option 1 – Eastern Growth Strategy	✓
Option 2 – Northern Growth Strategy	✓
Option 3 – Dispersed Growth Strategy	-

The more concentrated eastern and in particular northern strategies could provide increased opportunities for developing larger scale neighbourhood services and facilities. This could have a positive effect on this SA objective by improving access to health, education, and recreation facilities, particularly for those without a private car.

A number of the LSOAs within close proximity to Blue Blobs 9 and 12a/12b, in the north and east of the town, fall into the most deprived quartile for education, training and skills when compared with all other English LSOAs. Therefore providing new education facilities within these new neighbourhoods could help to reduce the deprivation in these neighbouring areas thereby having a positive effect on this SA objective. For further detail on the IMD see Appendix C.

4.2.17 SA Objective 15: Good quality housing

Option 1 – Eastern Growth Strategy	-
Option 2 – Northern Growth Strategy	-
Option 3 – Dispersed Growth Strategy	-

There is no differentiation between the effects of the different growth strategies on this SA objective. Therefore the effects are considered to be neutral.

4.2.18 SA Objective 16: Community identity & participation

Option 1 – Eastern Growth Strategy	✓	✗
Option 2 – Northern Growth Strategy	✓	✗
Option 3 – Dispersed Growth Strategy	✗	✓

Concentrating development should allow for a critical mass of activity to be created and service thresholds to meet. Therefore the more concentrated eastern and in particular northern strategies could provide increased opportunities for developing larger scale community facilities which could then encourage increased community participation for both the new and adjacent existing communities.

However, constructing new large housing sites on the edge of existing neighbourhoods could have adverse effects on the identity of existing communities, whilst distributing growth could help to ensure that various local communities and services remain viable. Therefore the effect on the dispersed growth strategy could also be positive.

4.2.19 SA Objective 17: Crime and fear of crime

Option 1 – Eastern Growth Strategy	-
Option 2 – Northern Growth Strategy	-
Option 3 – Dispersed Growth Strategy	-

There is no differentiation between the effects of the different growth strategies on this SA objective. Therefore the effects are considered to be neutral.

4.2.20 SA Objective 18: Sustainable prosperity and growth

Option 1 – Eastern Growth Strategy	-
Option 2 – Northern Growth Strategy	✓
Option 3 – Dispersed Growth Strategy	-

The three growth strategies are forecast as likely to have similar effects on this SA objective as they should all provide Hemel Hempstead with the necessary high quality housing infrastructure to attract people to the town. However, the northern bypass, as part of the northern strategy, is forecast as having a positive effect on local businesses, for example it could improve access to industrial areas. In addition, should the bypass reduce traffic within the town centre, improved environmental conditions could encourage more trade.

4.2.21 SA Objective 19: Fairer access to services

Option 1 – Eastern Growth Strategy	✓	?
Option 2 – Northern Growth Strategy	-	
Option 3 – Dispersed Growth Strategy	✓	?

The proposed development to the east of Hemel Hempstead, as part of the eastern and dispersed strategies, will provide housing closer to the major employment area at Maylands than the northern strategy. Therefore development of these strategies could have a positive effect on this SA objective as access to employment for those people living within these new communities should be quick and easy, particularly for those people without access to a private car. However, providing housing to the east of Hemel Hempstead close to the M1 junction may increase out-commuting as the residents will have easy access to the motorway network.

Development at Shendish as part of the dispersed strategy would result in the new community being located close to a railway station which could also encourage out-commuting.

4.2.22 SA Objective 20: Revitalise town centres

Option 1 – Eastern Growth Strategy	✓
Option 2 – Northern Growth Strategy	✓
Option 3 – Dispersed Growth Strategy	-

The more concentrated eastern and particularly northern strategies could help to support the local centres created as part of these developments as they will have larger populations. The bypass as part of the northern strategy may improve the quality of the town centre if it leads to a reduction in traffic and congestion.

5 Conclusions and Recommendations

The features common to all of the growth options have been forecast as likely to have a variety of positive and negative effects on the SA objectives. Negative effects on the environmental objectives are forecast as a result of the impact of constructing 7,000 new homes and employment within Green Belt land. In particular, significant negative effects have been forecast on two of the SA objectives: use of brownfield sites and landscape & townscape. However, some of the common features, such as those requiring developers to meet the national standards for the Code for Sustainable Homes, to provide new open spaces and provide neighbourhood facilities, could help to mitigate these adverse effects.

In order to reduce the need for the Green Belt development, which is forecast as having an adverse environmental effect, options for high density development within the town centre should be taken forward wherever possible particularly on areas of previously developed land. High density development may allow for a reduction of the number or size of new neighbourhoods that need to be developed, however pressure to maximise use of land within the town boundary should not be allowed to undermine the need to retain public open space within the town itself.

A number of positive effects have been forecast for the social and economic objectives. For example, ensuring all residents have access to high quality open space for informal recreation and leisure activities through the provision of open space and woodlands should help to encourage healthier lifestyles. Also, providing key neighbourhood facilities, including primary schools, local convenience stores, public open space and community halls, within the new developments should have a positive effect by providing access to services for new and existing neighbouring communities.

Significant positive effects are forecast for the housing SA objective as all new development will be required to meet very high standards of design. This should provide for good quality housing developments, and neighbourhoods will be expected to deliver a high level of affordable housing. In addition, significant positive effects are forecast for the 'sustainable prosperity' and 'access to services' objectives as providing additional land for employment in

the Maylands Business Area should allow for the provision of local job opportunities for new and existing communities.

Comparison of Options

As the three broad alternative 'packages' of development sites being taken forward have similar overall footprints, and in the main cover similar Blue Blobs albeit with slightly different individual footprints, the effects forecast for the different options on the SA objectives are fairly similar. In some cases it has not been possible to identify significant differences in how the alternative packages perform against the SA objectives.

In particular the effects of the eastern and dispersed options are considered to be very similar with the additional site at Shendish being the only real distinguishing difference between the two, although the eastern option does require more housing to the east of Hemel Hempstead. The northern strategy is somewhat different to the eastern and dispersed strategies as the growth is focused to the north of the town and would require the construction of a new bypass. As a result this option is therefore forecast to have more significant effects on some of the SA objectives than the eastern and dispersed options and would also result in indirect effects on other areas of the town.

The northern growth strategy is forecast as more likely to result in more significant adverse effects on biodiversity as it will require the construction of the bypass which would result in greater landtake and habitat fragmentation and therefore negative effects on habitats and species. The more concentrated northern strategy may however allow for the provision of larger open spaces than the eastern and dispersed strategies and this could lead to positive effects on biodiversity.

The northern growth strategy is also forecast more likely to have significant adverse effects on landscape than the other two strategies. Although all of the options will result in developing land to the West of Hemel Hempstead thereby bringing the town closer to the AONB boundary, the northern strategy will involve building more new housing and a bypass to the west and north of the town. Focusing housing development to the east of Hemel Hempstead between the existing town boundary and the M1 is likely to result in fewer adverse effects on landscape and tranquillity as the quality of the landscape to the east of the town is already affected by the presence of the motorway.

The eastern and dispersed growth strategies which provide housing in closest proximity to the Maylands Business Area could have a more positive effect on the 'greenhouse gas emissions' and 'air quality' objectives than the northern strategy as they should help to

reduce the need to travel to this major employment area and could encourage walking and cycling. However, providing housing to the east of Hemel Hempstead close to the M1 junction may increase out-commuting as the new residents may choose to live here as it provides easy access to the motorway network.

The slightly more concentrated eastern and northern growth strategies may allow for the development of a greater range of neighbourhood services and facilities which could have a positive effect on a number of the SA objectives, including 'greenhouse gas emissions', 'air quality', 'health' and 'equality and social exclusion' as a result of improving accessibility and encouraging the use of more sustainable and active modes of transport.

The eastern strategy in combination with the East Hemel Hempstead Area Action Plan (AAP), should they both proceed, could have cumulative positive effects on the economic and social objectives through the provision of employment, leisure and housing in close proximity, plus improvements to the transport infrastructure. There could also be positive effects on a number of the SA objectives, for example it could result in reducing the need to travel thereby helping to minimise the growth in greenhouse gas emissions and other air emissions.

6 Next Steps

The findings of this SA/SEA included in this Working Note, along with other technical work and evidence gathering, will influence how any future growth options around Hemel Hempstead are developed. The future steps to be taken in the SA process of the Hemel Growth Options are currently uncertain depending on the outcome of any potential appeal by the government. However, should further work be undertaken by DBC on developing the Growth Options this would require further SA/SEA.