



Centre for Sustainability

Dacorum Borough Council

Sustainability Appraisal (incorporating Strategic
Environmental Assessment)

Working Note for the Local Development Framework
Core Strategy Working Draft

September 2010

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1 Introduction

1.1 Background

As part of their Local Development Framework, Dacorum Borough Council has been developing their Core Strategy which sets out the overall vision for future development in the District.

In June 2006, the Council produced the first consultation document on the Issues and Options of the Core Strategy. Additions to these options were made and a Supplemental Issues and Options Core Strategy was produced in November 2006. These documents were subject to a sustainability assessment and a SA Working Note was produced in June 2006. An Additional Issues and Options SA Working Note was also produced in November 2006.

Subsequently, based on other stakeholder responses to consultations, recommendations from the SA Working Note and emerging information from other regional and national policies, an Emerging Core Strategy was produced in June 2009. This document was again subject to a sustainability appraisal and refined with additions relating to strategic and non-strategic sites. Based on the stakeholder responses, and other information from national, and regional policies, the Core Strategy DPD has been refined and is now being worked up into a consultation draft.

This SA Working Note has been undertaken on the Working Draft (July 2010) version of the Core Strategy which was circulated to a limited number of stakeholders. However the appraisal has also considered the sustainability implications of a third growth option which is based on meeting levels of natural growth in addition to the two options included in the Working Draft Core Strategy.

This SA Working Note does not form a formal part of the SA/SEA reporting process. It has been produced to provide Council Members with a summary of the findings of the SA assessment that has been undertaken on the Working Draft of the Core Strategy (July 2010). A full SA Report will be produced to accompany the final Consultation Draft version of the Core Strategy, which is due for publication in late October / early November 2010. There are expected to be some changes made to the text of the Core Strategy in the interim period, although these changes are expected to be small and related to detailed wording rather than policy direction.

1.2 Assessment Methodology

The appraisal approach taken within this Working Note utilises the SA/SEA Framework Objectives that were developed for the Sustainability Appraisal Scoping Report for Dacorum Borough Council. The SA/SEA Framework is provided in Appendix A.

The Core Strategy options and policies have been assessed against the SA/SEA framework objectives in terms of their overall performance ranked from 'very sustainable' 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 were also forecast in terms of their:

- Permanence (permanent or temporary);
- Scale (local (within the Borough), regional (affecting local neighbouring authorities), national/international (affecting UK or a wider global impact)); and
- Timescale (in the short term (1-5 years), medium term (5-10 years) or long term (10+ years)).

Where appropriate the assessment also identified cumulative/synergistic effects, cross-boundary effects and interrelationships between the SA objectives.

2 Assessment Results

2.1 Summary of the Assessment

Figure 1 provides a summary of the assessment of the Consultation Draft Core Strategy against the SA/SEA objectives. The following sections provide a summary of these assessment results and outlines proposed mitigation measures and recommendations. Full assessment tables providing detailed information can be found in Appendices B and C.

Figure 1: Summary of Assessment Results

Policies	Sustainability Appraisal Objectives																			
	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	Equity & social exclusion	Good quality housing	Community Identity	Crime & fear of crime	Sustainable prosperity	Fairer access to services	Revitalise town centres
CS1: Distribution of Development	✓	-	-	✓	✓	-	✓	?	-	✓	✓	✓	✓	✓	*	✓	-	✓	✓	✓
CS2: Location of Development	✓	-	-	?	✓	-	✓	?	✓	✓	?	✓	✓	✓	-	✓	-	✓	✓	✓
CS3: Land Use Division in Towns and Large Villages	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓
CS4 Green Belt; CS5: Selected Small villages in the Green Belt; CS6: Land Reserve; CS7: Rural Area	✓	-	-	✓	*	-	-	?	✓	✓	✓	-	✓	✓	✓	✓	-	✓	✓	✓
CS8: Sustainable Transport	✓	-	-	?	✓	-	✓	-	-	✓	?	✓	✓	✓	-	✓	✓	✓	✓	✓
CS9: Management of Roads	?	-	-	*	✓	-	✓	*	-	-	?	✓	-	✓	-	✓	-	✓	✓	?
CS10 Quality of Settlement Design; CS11: Quality of Neighbourhood Design; CS12: Quality of Site Design; CS13: Quality of the Public Realm	✓	-	✓	-	✓	✓	-	-	-	✓	✓	✓	-	-	✓	✓	✓	✓	-	✓
CS14 Economic Development; CS15: Offices, Research, Industry, Storage and Distribution; CS16: Shops and Commerce	?	-	-	*	✓	-	✓	✓	-	-	*	✓	✓	✓	-	✓	-	✓✓	✓	✓

CS17: Housing Programme																				
Option 1: 398 dpa (9,950 total)	?	*	-	*	*	-	-	-	-	?	-	-	-	*	*	?	-	*	*	?
	?	?	-	*	✓	-	-	-	-	?	-	*	-	✓	*	?	-	*	*	?
Option 2: 450 dpa (11,250 total)	?	*	-	*	*	-	*	*	*	?	*	?	✓	*	✓	?	?	✓	✓	✓
	?	?	-	*	✓	-	*	*	*	?	*	✓	*	✓	✓	?	?	✓	✓	✓
Option 3: Natural Growth: 500 dpa (12,500 total)	?	*	-	*	*	-	*	*	*	?	**	?	✓	*	✓✓	?	?	✓	✓	✓
	?	?	-	*	✓	-	*	*	*	?	**	✓	*	✓✓	✓✓	?	?	✓	✓	✓
CS18 Mix of Housing; CS19:Affordable Housing; CS20:Rural Exception Sites	?	-	-	-	✓	-	-	-	-	-	?	✓	✓	✓✓	✓✓	✓	-	✓	✓	-
CS21: Existing Accommodation for Travelling Communities; CS22: New Accommodation for Gypsies and Travellers	?	-	-	-	-	-	-	?	*	-	✓	✓	✓	✓✓	✓	✓	?	-	✓	-
CS23: Social Infrastructure	?	-	-	*	✓	✓	-	✓	-	✓	*	✓	✓	✓	-	✓✓	-	-	✓	✓
CS24: The Chilterns AONB; CS25: Landscape Character; CS26: Green Infrastructure; CS27: Quality of the Historic Environment	✓✓	✓	✓	✓	✓	✓	✓	-	-	✓✓	✓✓	✓	-	✓	-	✓	-	-	-	✓
CS28: Renewable Energy; CS29: Sustainable Design and Construction; CS30: Carbon Offset Fund; CS31: Water Management; CS32: Pollution Control	✓	✓✓	✓	✓	✓✓	✓	✓	✓✓	✓✓	?	?	✓	-	-	-	-	-	-	-	-
CS34: Infrastructure and Developer Contributions	✓	✓	-	-	-	-	-	-	✓	-	-	✓	✓	-	-	✓	-	✓	-	-
Spatial Strategy: Hemel Hempstead	?	?	?	*	*	-	*	*	*	✓	*	✓	✓	✓	✓	✓	-	✓	✓	✓
	*	*	?	*	?	-	✓	✓	*	?	✓	✓	*	✓	✓	✓	-	✓	✓	✓
CS33: Hemel Hempstead Town Centre Design Principles	-	-	-	-	✓	-	✓	-	-	✓	✓	✓	✓	✓	-	✓	?	✓	✓	✓
Spatial Strategy: Berkhamsted	?	✓	✓	*	*	-	?	*	*	-	?	✓	✓	✓	✓	✓	-	✓	✓	✓
	?	*	✓	*	?	-	?	*	*	-	?	✓	✓	✓	✓	✓	-	✓	✓	✓
Spatial Strategy: Tring	?	*	-	*	*	-	-	*	*	✓	?	✓	✓	✓	✓	✓	-	✓	✓	✓
	?	*	-	*	*	-	-	*	*	✓	?	✓	✓	✓	✓	✓	-	✓	✓	✓
Spatial Strategy: Kings Langley	?	✓	-	*	*	-	-	*	*	✓	?	✓	✓	✓	✓	✓	-	?	✓	✓
	✓	✓	-	*	*	-	-	*	*	✓	?	✓	✓	✓	✓	✓	-	?	✓	✓

Spatial Strategy: Bovingdon	?	x	-	x	x	-	-	x	x	-	?	✓	✓	✓	✓	✓	-	✓	✓	✓
Spatial Strategy: Markyate	?	✓	x	x	✓	-	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓
Spatial Strategy: Countryside	✓	✓	-	x	✓	-	-	-	-	✓	✓	✓	✓	✓	x	✓	-	?	?	-

2.2 Sustainable Development Strategy

2.2.1 Policy CS1: Distribution of Development

The policy should provide a good balance between focusing development in the key settlements whilst allowing for demonstrated local needs to be met in smaller settlements and rural areas. The growth in key settlements will help to support certain regeneration needs in the towns and improve levels of community vitality, with associated social and economic benefits. It will also help to service the needs of surrounding areas. By concentrating growth in Hemel Hempstead and the other larger settlements the impacts on the Borough's natural environment will be minimised.

2.2.2 Policy CS2: Location of Development

The policy is predicted to have mainly positive effects against the majority of SA objectives, although in the medium to long-term when the supply of previously developed land has diminished the effects are more uncertain against the environmental objectives. Ensuring that all development is well located and accessible will help to reduce the need to travel and help towards meeting objectives for greenhouse gas emissions, air quality, health, equality, economy and fairer access to services. It will also help to improve the vitality and viability of settlements, particularly the town centres.

2.2.3 Policy CS3: Land Use Division in Towns and Large Villages

The policy supports a mix of uses for new developments which should help to maintain or improve the vitality and viability of town centres and the large villages. The provision of appropriately scaled employment opportunities, services and facilities to meet the needs of the local population will help to reduce the need to travel to other areas for day to day needs, whilst at the same time protecting the areas from developments which are incompatible with the local landscapes and townscapes. By aiming to meet the needs of local communities the policy will help to reduce inequalities, particularly for those without access to the private car as well as supporting local economies.

2.2.4 Policies: CS4 Green Belt; CS5 Selected Small villages in the Green Belt; CS6 Land Reserve; CS7 Rural Area

Whilst allowing limited development in the villages/countryside could result in some adverse effects on soils, biodiversity and local landscapes the policies generally perform well against the majority of the SA objectives. The policies allow for an appropriate level of development

in the smaller settlements which should help to maintain community vitality and the viability of service provision as well as supporting local rural economies. The policies should also help reduce the need to travel to access local services as well as enabling access to everyday needs for those who do not have access to a private car. The policies also prevent the character of settlements from being adversely affected by an inappropriate scale of new development. If new employment development or countryside recreation activities result in an increase in vehicle use to travel into the area there would be adverse effects through increased greenhouse gas emissions.

2.2.5 Policy CS8: Sustainable Transport

The policy has been assessed as having positive effects against the majority of SA objectives. The policy aims to promote sustainable travel options which could contribute to a reduction in local air pollution and greenhouse gas emissions. The policy is also likely to bring health benefits through improving local air quality, reduced stress levels due to reduced congestion, and the promotion of walking and cycling leading to enhanced health and physical fitness benefits. Supporting alternative modes to the private car will increase the availability of alternatives for those without access to a private vehicle, increasing equality and reducing social exclusion, and fairer access to services. Providing efficient and accessible transport is essential in promoting economic growth and will therefore aid sustainable prosperity and growth. The promotion of walking, cycling and the use of public transport may enable greater interaction within communities and reduce severance associated with traffic, which could have positive effects for community identity and participation. Achieving a reduction in urban congestion will also help to make the town centre a more attractive place to visit, aiding the revitalisation of town centres.

2.2.6 Policy CS9: Management of Roads

The delivery of the north-eastern relief road has been predicted as having some uncertain and negative effects as it would require development of greenfield land and may result in increased traffic levels resulting from induced traffic. However other elements of the policy have been assessed as having positive effects, particularly in relation to the safe movement of all road users which should encourage take-up of walking and cycling with associated health benefits. Directing all new development to the appropriate category of road should help to reduce adverse effects of traffic on local communities.

2.2.7 Policies: CS10 Quality of Settlement Design; CS11 Quality of Neighbourhood Design; CS12 Quality of Site Design; CS13 Quality of the Public Realm

The design policies have been forecast as having positive effects against many of the environmental objectives, with the natural and built environmental improvements that would be linked to the implementation of the policy being predicted to have associated positive effects on social and economic objectives. Improving the public realm should make urban areas more attractive places to live and also help to increase community identity and participation.

Mitigation measures /Recommendations

- Policy CS2: The cross-reference to Policy CS6 is no longer valid.
- Policy CS3: Refer to strategic sites under the delivery section.
- Policy CS6: Consider rewording the title of the policy to make it clearer as to what the policy covers.
- Para 9.3: Add reference to reducing the need to travel (by both car and non-car modes).
- Policy CS8 (b): Consider whether the reference to CS29 is relevant in this policy. CS8 is about transport whereas CS29's ref to Lifetime Homes is about how disabled people could move within their homes.
- Policy CS8 (c): Check wording of clause (c) for clarity. This should relate to the linking of different transport modes.
- Policy CS8: the policy could place a requirement for the development of travel plans by large new developments.
- Policy CS8: Consideration should be given to how infrastructure for cycling can be incorporated into new development.
- Policy CS10 (g): The policy would be strengthened by a change to "protect **and enhance** identified wildlife corridors".
- Policy CS12: minor change to wording. Add "and" after bullet point (f).
- Policy CS12: consider addition of 'Secured by Design' to Policy CS12 to complement the similar principles included in CS11 and CS13.

2.3 Strengthening Economic prosperity

2.3.1 Policies: CS14 Economic Development; CS15 Offices, Research, Industry, Storage and Distribution; CS16 Shops and Commerce

The policies support the development of a sustainable economy within the area and should help to reduce the need to travel to access employment opportunities. The policies aim to concentrate new development in Hemel Hempstead but should also help to maintain the vitality of local communities by enabling employment opportunities appropriate to the size and character of the settlements to be provided. The protection of employment areas should help ensure that communities do not suffer from the loss of important employment opportunities. The provision of a supply of employment land from within the Green Belt is likely to have adverse effects on local landscapes, and any new greenfield or brownfield development could have impacts on biodiversity, dependent on the characteristics of the individual locations. By providing a range of employment opportunities and retail provision locally the needs of the local population are more likely to be met and this would have a positive effects in terms of reducing the need to travel (with associated greenhouse gas emissions) and providing fairer access to jobs and services.

Mitigation measures /Recommendations

- Consider the addition of text to explain how the provision of telecommunications, broadband etc. can contribute towards a low carbon economy.
- Policy CS14: Add text to justify the jobs target in the light of the lower levels of housing growth now proposed.
- Policy CS15: consider expanding on the “environmental improvements” wording as it is not clear from the preceding supporting text what is meant here. Is it the natural environment (trees, ponds etc) or more anthropogenic?
- Policy CS15: The element of Policy CS15 (second para) that relates to a supply of land being maintained could be clarified. As it is worded it is suggesting that the supply would be changed if there are not enough jobs available, whereas following the inference from the opening words it should be saying that the supply could be changed if there is an over-supply of jobs.
- Policy CS16: By locating retail in town centres it is assumed that it would be close to public transport routes. However the policy could be strengthened by making reference to good public transport accessibility as a requirement.

2.4 Providing Homes and Community Services

2.4.1 Policy CS17: Housing Programme

2.4.1.1 Option 1: 398 dpa (9,950 total)

Compared to Options 2 and 3 (see below), the lower levels of growth proposed under this option will result in less adverse effects on the environment that are inevitably associated with new development (e.g. effects on local landscapes, soil sealing, natural resource use, increased waste, and increased emissions to air).

However conversely, the lower level of growth will limit the success of meeting a number of the social and economic objectives. The needs of the local community for new housing, particularly affordable housing, will not be met which could result in increased levels of out-migration to neighbouring areas. This would in turn have implications for the viability of existing services and facilities in the Borough and reduce the vitality of the town and village centres. The lower level of growth would also not support the planned delivery of a significant number of new jobs which would hamper the economic regeneration of both Hemel Hempstead town centre and the Maylands Business District.

2.4.1.2 Option 2: 450 dpa (11,250 total)

Delivering Option 2 would result in the need for some development in the Greenbelt with associated adverse effects on some of the environmental objectives. Resource use will increase and there will be increased waste, increased emissions to air and some loss of tranquillity.

However the higher levels of new dwellings will go further towards supporting the planned job expansion in Maylands as well as the regeneration of Hemel Hempstead. The option will result in a greater provision of affordable housing than Option 1, and will help to maintain viability of existing services whilst also encouraging the provision of new and expanded facilities.

2.4.1.3 Option 3: Natural Growth 500 dpa (12,500 total)

Delivering Option 3 would result in the need for additional development in the Greenbelt over Option 2 with associated adverse effects on some of the environmental objectives. Resource use will increase and there will be increased waste, increased emissions to air and some loss of tranquillity.

However the higher levels of new dwellings will go further towards supporting the planned job expansion in Maylands as well as the regeneration of Hemel Hempstead. The option will result in a greater provision of affordable housing than Options 1 and 2, and will help to maintain viability of existing services whilst also encouraging the provision of new and expanded facilities.

By fully meeting the needs for new housing in the villages and countryside this option goes the furthest towards helping to sustain the rural communities of the Borough.

2.4.2 Policies: CS18 Mix of Housing; CS19 Affordable Housing; CS20 Rural Exception Sites

These policies are forecast to have some significant positive effects against the social objectives as the provision of an appropriate mix of housing, including affordable housing aims will help to promote equality and social inclusion. The provision of rural exceptions sites could have some adverse effects on biodiversity and local landscapes, however this will be dependent on the sites selected.

2.4.3 Policies: CS21 Existing Accommodation for Travelling Communities; CS22: New Accommodation for Gypsies and Travellers

The policy performs well in terms of its contribution to achieving social objectives and it is likely to encourage a more participatory society. As a result significant positive effects have been identified for equality and social exclusion. The policies place constraints on the size and location of sites which should help to support achievement of some of the environmental objectives, however there could be some adverse effects dependent on the location and characteristics of the sites selected.

2.4.4 Policy CS23: Social Infrastructure

The provision of social infrastructure that provides service and facilities for the local community, as well as the protection of existing facilities, will help towards the achievement of many of the social objectives, particularly that for enhancing community identity and participation. However the provision of new school facilities on greenfield sites could have adverse effects on several of the environmental objectives although the effects will be dependent on the sites that are selected.

Mitigation measures /Recommendations

- Table 7: Recommend providing greater clarity regarding the differences between the two housing options and their implications for different places.

- Para 16.7: Recommend the deletion of the wording “if they are not in the vicinity of new housing development”. These words make the meaning of the sentence ambiguous.

2.5 Looking after the Environment

2.5.1 Policies: CS24 The Chilterns Area of Outstanding Natural Beauty; CS25 Landscape Character; CS26 Green Infrastructure; CS27 Quality of the Historic Environment

The policies are forecast to have significant positive effects for biodiversity, cultural heritage and landscapes and other associated indirect positive effects, for example through green infrastructure helping to mitigate the effects of climate change. The protection and enhancement of the natural environment will also have positive effects on several of the social objectives, as creating a higher quality natural environment will encourage more people to use open spaces for recreation and will improve the attractiveness of local environments.

2.5.2 Policies: CS28 Renewable Energy; CS29 Sustainable Design and Construction; CS30 Carbon Offset Fund; CS31 Water Management; CS32 Pollution Control

Significant positive effects relating to efficient water use, greenhouse gas emissions, remediation of contaminated land, waste reduction, renewable energy generation and energy efficiency have been predicted for this suite of policies. Other positive effects have been predicted against the environmental objectives particularly as a result of the sustainable design and construction policy. There is uncertainty as to how the provision of renewable energy generating equipment will affect local landscapes & townscapes as well as the historic environment. Limited effects have been identified against the social and economic objectives.

Mitigation measures / Recommendations

- Para 17.14: Recommend deletion of the wording “and Habitat Regulations Assessment issues” as it is inappropriate in the context of the paragraph.
- Policy CS28: Questions whether there is sufficient evidence to support the policy as it stands.
- Policy CS29: Refer to ‘impermeable’ rather than ‘hard’ surfaces.
- Para 19.36: Refer to any strategic waste sites that may be planned. Refer to minerals and waste safeguarding areas.

- Policy CS31: Refer to 'impermeable' rather than 'hard' surfaces. Check that the text does not repeat national policy. Insert reference to Source Protection Zones in clause (e).
- Policy CS32: Consider also referring to areas that aren't AQMAs, but are borderline. Amend final paragraph to read 'Any development proposal which would cause harm from a significant increase in pollution.....' Check that supporting text covers hazardous substances.

2.6 Place Strategies

A series of Place Strategies have been developed for each of the Borough's towns and large villages, together with the wider countryside. The role of these strategies is to take forward the settlement hierarchy. Within these place strategies, a number of strategic sites and locations have also been identified and along with the overall strategies these have each been assessed against the SA Framework. A summary of the findings is provided below.

Mitigation measures /Recommendations

- Introduction to Place Strategies: Common local objectives – clarify tenth bullet point. Access to what? Explain how the indicative targets for each place have been derived for the two housing options and how they relate to the housing programme.

2.6.1 Hemel Hempstead

Spatial Strategy

The level of proposed housing and employment development in the town is forecast to have negative effects for biodiversity and landscape and townscape as a result of loss of Greenbelt; water as a result of putting pressure on already under pressure resources and soils and use of brownfield sites as a result of development on greenfield land. Negative effects are also forecast on greenhouse gas emissions, air quality, and resource efficiency. Uncertainty has been identified in relation to flood risk, as a number of the potential housing allocation sites are located within flood risk zones.

Positive effects have been forecast against the majority of the social and economic objectives. For example, delivery of 8,600 new homes will help to meet local housing need, and enhancing employment, retail and leisure opportunities could make the town a more attractive place to live, work and visit.

Policy CS33: Hemel Hempstead Town Centre Design Principles

Policy CS33 which outlines Town Centre Design Principles is forecast as likely to have positive effects on the majority of the objectives. For example, measures to secure an integrated public transport hub and improve pedestrian access and movement should help to reduce the reliance on private cars with associated reductions in greenhouse gas emissions and airbourne emissions. Also focusing retail development and other town centre uses within the town centre should help to support the local economy and improve the viability and vitality of the area.

West Hemel Hempstead (North)

This option is forecast as having adverse effects on greenhouse gas emissions and air quality, as the site is located at a distance from shops and facilities, which could increase the need to travel. Walking and cycling may be discouraged due to the topography of the area. Adverse effects have also been forecast for biodiversity, soils, and use of brownfield sites. The site is greenfield within the Greenbelt, and would therefore result in loss or damage of habitats, as well as soil sealing. The option would have a visual impact on the landscape of the Bulborne Valley.

In terms of health, The option is located at a distance from shops and facilities which could discourage walking and cycling, and the topography of the site may also discourage these modes. The local health facilities are at capacity, thereby having an adverse effect on health.

In terms of equality and social exclusion, the option is located at a distance from local facilities, and local health facilities are at capacity. However, there is potential capacity in local schools.

Positive effects have been forecast against the majority of the social and economic objectives, including housing, sustainable prosperity and growth, and fairer access to services objectives. The option will provide approximately 450 units of housing, including a proportion of affordable housing. The provision of additional housing means there will be more residents in the community, making facilities and shops more viable. This would help to support the local economy. However, this option could result in adverse effects on revitalising town centres, as by developing new homes in the Greenbelt around Hemel Hempstead this is not encouraging development in the centre of the urban area.

Housing Allocation: West Hemel Hempstead (South)

This option is forecast as having adverse effects on greenhouse gas emissions and air quality, as the site is located at a distance from shops and facilities, which could increase

the need to travel. Walking and cycling may be discouraged due to the topography of the area. Adverse effects have also been forecast for biodiversity, soils, and use of brownfield sites. The site is greenfield within the Greenbelt, and would therefore result in loss or damage of habitats, as well as soil sealing. The option would have a significant visual impact on the landscape of the Bulborne Valley and the nearby Chilterns AONB. The option could also impact on the existing green link between Shrubhill Common and the countryside.

The option is located at a distance from shops and facilities which could discourage walking and cycling, and the topography of the site may discourage these modes. The local health facilities are at capacity, thereby having an adverse effect on health. The option is located near A41 and the railway, which could result in noise levels that could also affect health and wellbeing. In terms of equality and social exclusion, the option is located at a distance from local facilities, and local health facilities are at capacity, resulting in adverse impacts on this objective.

Positive effects have been forecast against the majority of the social and economic objectives, including housing, sustainable prosperity and growth, and fairer access to services objectives. The option will provide approximately 450 units of housing, including a proportion of affordable housing. The provision of additional housing means there will be more residents in the community, making facilities and shops more viable. This would help support the local economy. However, this option would result in adverse effects on revitalising town centres, as by developing new homes in the Greenbelt around Hemel Hempstead this is not encouraging development in the centre of the urban area.

Housing Allocation: Marchmont Farm

This option is forecast as having positive effects on greenhouse gas emissions and air quality, as the site has good access to local facilities which could decrease the need to travel, reducing the level of growth in emissions.

Adverse effects have been forecast for biodiversity, soils, and use of brownfield sites. The site is greenfield within the Greenbelt, and would therefore result in loss or damage of habitats, as well as soil sealing. The option would have a visual impact on the landscape of the Gade Valley and Piccotts End, resulting in adverse impacts for landscape.

The option is located near local facilities, which could encourage walking and cycling, resulting in positive effects on health. This option is considered to be more sustainable than other greenfield sites due to the proximity to the existing link road, schools and local shops.

Positive effects have been forecast against the majority of the social and economic objectives, including housing, sustainable prosperity and growth, fairer access to services objectives. The option will provide approximately 300 units of housing, including a proportion of affordable housing. The provision of additional housing means there will be more residents in the community, making facilities and shops more viable. This would help support the local economy. However, this option would result in adverse effects on revitalise town centres, as by developing new homes in the Greenbelt around Hemel Hempstead this is not encouraging development in the centre of urban areas.

Housing Allocation: Old Town

This option is forecast as having positive effects on greenhouse gas emissions and air quality, as the site has good access to local facilities, however walking and cycling may be discouraged due to the topography of the area.

Adverse effects have been forecast for biodiversity, soils, and use of brownfield sites. The site is greenfield and would therefore result in loss or damage of some habitats, as well as soil sealing. The option is located adjacent to the Old Town Conservation Area, and development may have an impact on its setting, resulting in uncertainty of the impact on historic and cultural assets. Development in the Greenbelt at this location would result in some adverse effects on local landscapes and townscape.

The option is located near local facilities, which could encourage walking and cycling, thereby having a positive effect on health, although the topography of the site may discourage these modes.

Positive effects have been forecast against the majority of the social and economic objectives, including the housing, sustainable prosperity and growth, and fairer access to services objectives. The option will provide housing, including a proportion of some affordable housing. The provision of additional housing means there will be more residents in the community making local facilities and shops more viable. This would help support the local economy. Development at this location close to the town centre supports the objective to focus new development in the centre of urban areas.

Mitigation measures /Recommendations

- Hemel Hempstead Place Strategy: Check the vision for clarity i.e. who is it we are intending to entice? Visitors or new businesses? Clarify figures in the local objectives.
- Policy CS33: Consider measures to 'lock in' the benefits of reduced traffic, such as pedestrianisation, demand management measures (parking charges/reduction in

parking spaces, vehicle restrictions), etc.

2.6.2 Berkhamstead

Spatial Strategy

Negative or uncertain effects are predicted for a number of the environmental objectives, as a result of the level of new housing proposed. Development on greenfield land likely due to the extent of the proposed new housing could have adverse impacts on habitats and species, although the significance of the effect will be dependent on the biodiversity value of the sites to be developed. Housing development on greenfield land will also result in soil loss and soil sealing. New housing will adversely affect the capacity for the waste water treatment work with associated risks relating to poor water quality. In addition, housing development will result in an increase in greenhouse gas emissions, put demands on natural resources, and lead to increased waste generation.

Positive effects have been forecast against the majority of the social and economic objectives. Delivery of the spatial strategy should make the town a more attractive place to live and work by maintaining employment opportunities, providing housing, and protecting the key district shopping and service role of the town centre.

Housing Allocation: Land off New Road (Option 1) and Land Adjacent to Hanburys, Shootersway (Option 3)

In relation to the strategic housing allocations similar adverse effects have been forecast for biodiversity, soils, use of brownfield sites and landscape for the two options, as both of the sites are greenfield, within the Greenbelt and would therefore result in loss of landscape character, loss of habitats and soil sealing. Positive effects have been forecast for both options on the housing, sustainable prosperity and growth, fairer access to services and revitalise town centres objectives. Both of the options will provide housing, including affordable. The provision of additional housing means there will be more residents in the community making facilities and shops more viable and this would help to support the local economy.

With regard to greenhouse gas emissions and air quality, the options are located at a distance from the town centre, which could encourage greater car use thereby leading to increasing emissions. The location of the options and the topography of Berkhamstead has also lead to the options being forecast as likely to have adverse effects on health, as active travel such as walking and cycling would be discouraged. Option 3 is located near to the A41 which could result in noise levels that could affect adversely effect health. Combined

positive and adverse effects have been forecast on sustainable locations' and 'equality & social exclusion' for Option 1 as although it is located a distance from the town centre, the sites are close to schools or employment.

Adverse effects have been forecast for Option 1 on historic & cultural assets, as the site is located in an area of archaeological significance and development and could impact upon the setting of the Grand Union Canal. Uncertain effects have been forecast for this option on water quality/quantity, due to the proximity of the site to the canal and potential for polluted run-off entering the water course.

Housing Allocation: Egerton Rothesay School

Upgrading the existing school buildings and providing new homes is forecast as likely to result in a number of adverse environmental effects. The site is partly greenfield and therefore there would be loss of some habitats, as well as some soil sealing or loss. Although the school and housing development is located entirely outside of the Greenbelt, there could however be a visual impact, as it would result in the use of open space for development and playing pitches. The proposed new playing pitches would be located within the Greenbelt but this is an acceptable use under Greenbelt policy.

Providing 200-240 new homes will result in an increase in traffic and increased use of the car, especially due to the distance of the site from the town and the lack of easy access by public transport. These factors could result in an increase in the level of greenhouse gas emissions and could also result in adverse impacts on air quality.

Adverse effects have been forecast in relation to health, as the site is located at a distance from the town centre, which could discourage walking and cycling. The site is also located near the A41 which could result in noise levels that could affect health and wellbeing. In addition, although there are plans for enhanced sports facilities and playing pitches there are uncertainties with regard to whether local residents would be encouraged to use them.

In relation to the other social objectives, upgrading the school building should improve the quality of the education facility and providing new homes should help to meet local housing needs, including those for affordable housing.

Positive effects have been forecast in relation to the economic objectives. Providing housing means that there is potential for more residents to live in the town, making facilities and shops more viable and this would help to support the local economy and maintain community vibrancy and vitality.

Mitigation measures /Recommendations

- Berkhamsted Place Strategy: Strategic Allocation – refer to a 'School Travel Plan' rather than a 'school transport plan.' Add the New Road Strategic Allocation to the Key Diagram.

2.6.3 Tring

Spatial Strategy

Negative or uncertain effects are predicted for a number of the environmental objectives, as a result of the level of new housing proposed. Development on greenfield land likely due to the extent of the proposed new housing could have adverse impacts on habitats and species, although the significance of the effect will be dependent on the biodiversity value of the sites to be developed. Housing development on greenfield land will also result in soil loss and soil sealing. New housing will adversely affect the capacity for the waste water treatment work with associated risks relating to poor water quality. In addition, housing development will result in an increase in greenhouse gas emissions, put demands on natural resources, and lead to increased waste generation.

Although development on edge of town could have an adverse effect on local landscapes, leading to some uncertainty in relation to the landscape objective, safeguarding the setting and distinctive nature of Tring and views along the High Street is forecast to have a positive effect. Positive effects are also forecast for historic and cultural assets, as the unique uses of the Zoological Museum and the auction rooms will be safeguarded and the historic High Street will be protected.

Positive effects have been forecast against the majority of the social and economic objectives. Delivery of the spatial strategy should make the town a more attractive place to live and work by maintaining employment opportunities, providing housing, and protecting the key local shopping and service role of the town centre. In addition, extension of the secondary school will help to improve educational provision in the town, and delivery of new open spaces and playing fields could provide opportunities for people to adopt healthier lifestyles.

Housing Allocation: Land to the West of Tring, Icknield Way

As development of site would lead to development on greenfield land, within the Greenbelt and close to the Chilterns AONB, adverse effects have been forecast for the biodiversity, soils, use of brownfield sites and landscape & townscape SA objectives. This site is located near to a local centre and is adjacent to the town's main employment area. However it is

located 2km from the town centre. This could increase the use of the car to access town centre facilities and services, thereby increasing the growth of greenhouse gas emissions and other emission to air. There is also uncertainty around the level of out-commuting that may result from building the large number of houses on this site. If this is by car on the A41 there is the potential for increased levels of emissions.

Development of this site would provide for 380 dwellings with the potential for high levels of affordable housing. However, the site is close to the A41, which means noise disturbance could affect the health and well-being of the new residents. Development would allow for open space; however it would not be large enough to fulfil all of the town's leisure space aspirations. Development of this site could involve the provision of some employment space, thereby helping to support the local economy. Also, the new housing on the site should help to support the local services in the town, maintaining their viability and boosting the local economy.

2.6.4 Kings Langley

Spatial Strategy

Negative or uncertain effects are predicted for a number of the environmental objectives, as a result of the level of new housing proposed. Development on greenfield land likely due to the extent of the proposed new housing could have adverse impacts on habitats and species, although the significance of the effect will be dependent on the biodiversity value of the sites to be development. Housing development on greenfield land will also result in soil loss and soil sealing. The spatial strategy requires that new development be consistent with the distinctive character of the village and will respect the key views along the Gade Valley and along the Grand Union Canal. Open space and designated Open Land will be protected and enhanced. However, uncertain effects are forecast on landscape and townscape as a result of potential for development on greenfield land. In addition, housing development will result in an increase in greenhouse gas emissions, put demands on natural resources, and lead to increased waste generation.

As the strategy recognises that the canal is an important part of Kings Langley and that all future development must relate well to the canal corridor positive effects are forecast on water quality and should help to maintain the water dependent wildlife sites in the area.

Positive effects have been forecast against the majority of the social and economic objectives. The village has a relatively high provision of informal open space and this will be protected and possibly enhanced. This could mean that there will be an increase in access

for people to undertake recreational activities, thereby promoting healthier lifestyles. Delivery of the spatial strategy should make the village a more attractive place to live and work, by providing housing and maintaining the role shopping and service role of the village centre. However, a number of local businesses are located on potential sites for housing and should this housing proceed these businesses could be lost. Therefore there remains some uncertainty in relation to the sustainable growth and prosperity objective.

2.6.5 Bovingdon

Spatial Strategy

Negative or uncertain effects are predicted for a number of the environmental objectives as a result of the level of new housing proposed. Development on greenfield land likely due to the extent of the proposed new housing could have adverse impacts on habitats and species, although the significance of the effect will be dependent on the biodiversity value of the sites to be development. Housing development on greenfield land will also result in soil loss and soil sealing. New housing will adversely affect the capacity for the waste water treatment work with associated risks relating to poor water quality. In addition, housing development will result in an increase in greenhouse gas emissions, put demands on natural resources, and lead to increased waste generation. Development on the edge of the village could have an adverse effect on local landscapes; however the strategy is clear that views from the Well will be respected.

Positive effects have been forecast against the majority of the social and economic objectives. Delivery of the spatial strategy should make the village a more attractive place to live and work, by providing housing and maintaining the role shopping and service role of the village centre. Safeguarding Bovingdon Brickworks and HMP The Mount will help to protect local employment opportunities.

Housing Allocation: Rear of Green Lane

In relation to the strategic housing allocation at the 'Rear of Green Lane' adverse effects have been forecast for the biodiversity, soils, use of brownfield sites and landscape, as the site is greenfield, within the Greenbelt, and would therefore result in loss of landscape character, loss of valuable habitats and soil sealing. The site however is located within an area of biodiversity deficiency, so this option could provide opportunities for new habitat creation.

For greenhouse gas emissions and air quality, adverse effects have been identified, as there is an existing issue with traffic congestion in the village, which may increase with more

people locating to the area. However, potential positive effects which could help to mitigate these adverse effects have also been identified, as the option is located close to the village, which could encourage cycling and walking rather than use of the car.

In terms of the social and economic SA objectives, the option provides opportunities for the creation of open space. However, uncertainties have been forecast for health as a result of there being a busy road separating the site from the village centre which may pose an accident risk and could discourage the elderly, disabled people and children from moving around freely in the area. The option should help to make local facilities and services more viable, therefore helping to revitalise local centres and maintain community vibrancy and vitality.

2.6.6 Markyate

Spatial Strategy and Housing Allocation at Hicks Road

The level of new housing proposed in the village will require some development on greenfield land which could have adverse impacts on habitats and species due to landtake and habitat fragmentation. The significance of the effect will be dependent on the biodiversity value of the sites to be developed. However, the protection and enhancement of Cheverell's Green, as well as the protection of other small scale features of ecological importance, will help to progress the biodiversity objective.

Deculverting the River Ver could improve water quality and result in biodiversity enhancements. However, negative effects are also forecast in relation to water, as the provision of new housing will have capacity implications for the waste water treatment works with associated risks relating to poor water quality downstream of the works. A large area of the Hicks Road site is in flood zones 2 and 3 and there would therefore be flood risk for new developments.

Housing development on greenfield land will result in soil loss and soil sealing. However, development on the Hicks Road site could result in the remediation of any contaminated soils, thereby improving soil quality.

Housing development will result in an increase in greenhouse gas emissions from the new housing and associated activities. In addition, the poor public transport connections in Markyate may result in higher car use to access the regenerated Hicks Road area. However as the site is located in the centre of the village this could encourage cycling and walking rather than use of the car, which would help to reduce the growth in greenhouse gas emissions.

Positive effects have been forecast against the majority of the social and economic objectives. Delivery of the spatial strategy and redeveloping the Hicks Road site should make the village a more attractive place to live and work by providing a range of services, employment and housing. The provision of new public space in the Hicks Road area and an improved environment for pedestrians and cyclists should help to encourage more active lifestyles and a safer environment. It should be noted that the new housing on the Hicks Road site would be affected by noise from commercial operations, as well as from the nearby A5.

2.6.7 Countryside

Spatial Strategy

Positive effects have been forecast for a number of the environmental objectives as a result of the strategy's aim to protect and enhance biodiversity, tranquillity and key landscape features. The production of Conservation Area Appraisals and use of the Chilterns Buildings Design Guide will help to protect the character and setting of villages. In addition, supporting the retention of village services and facilities will help reduce the need to travel to access day to day needs, thereby having a positive effect on the greenhouse gas emissions objective.

However, the majority of development sites in the countryside will be in greenfield locations and development would therefore result in loss of some areas of habitat and impacts on species and some soil loss and sealing. Village developments could also result in some adverse effects on local landscapes.

A number of positive effects have been identified in relation to the social and economic objectives. The spatial strategy highlights the need for improved cycle routes and footpaths, which could encourage an increase in the number of cyclists. This could give opportunities for healthier lifestyles by providing access for recreational use. The potential for new community facilities and the support for farm diversification should strengthen the vitality of rural communities. Also the strategy recognises that there is a clear need to retain village facilities and services. This will help ensure that the village remains an attractive place in which to live and work and also contributes to providing a sense of community and identity.

Although the strategy allows for proposals which would go part of the way towards meeting local housing needs, particularly those for affordable housing, there will be fewer houses built than if the full housing need from natural population growth were to be

accommodated. As a result there is likely to be increased pressure on housing in sought after villages.

Several uncertainties have been identified in relation to the objectives on sustainable prosperity and growth and fairer access to services. Although the strategy supports the development of the rural economy, including farming and green tourism, which should help to provide a range of local employment opportunities, it could also result in those who work in rural areas having to move to towns in order to find suitable affordable housing. The smaller number of houses and the subsequent decrease in predicted overall population of settlements may also mean that local services are no longer viable and are forced to close.

Mitigation measures /Recommendations

- Countryside Strategy: Consider changing the term 'horseculture' to 'equine activities'

2.7 Implementation and Delivery

2.7.1 Policy: CS34 Infrastructure and Developer Contributions

By requiring the provision/contribution towards physical, social and green infrastructure, positive effects have been forecast for a range of objectives. There could be some environmental enhancements resulting from the provision of green infrastructure as well as benefits to the local communities. Ensuring that new physical infrastructure is provided will help to avoid overloading existing infrastructure such as waste water treatment works, both protecting material assets as well as helping to avoid adverse effects on the natural environment. The provision of social infrastructure will support social objectives, whilst new physical infrastructure will help support the local economy.

2.8 Assessment by SA/SEA Topic Areas

The following section summarises the assessment of the Core Strategy by SA/SEA objectives. This includes the consideration of cumulative, synergistic and secondary effects.

2.8.1 Biodiversity

Policies aimed at concentrating housing and employment development in the urban areas and away from greenfield sites should help to protect, maintain and enhance designated sites and their buffer zones. It should reduce the loss of agricultural land which may have biodiversity value. However, given the level of proposed housing there is likely to be some development of greenfield land which could have adverse impacts on habitats and species due to landtake, habitat fragmentation and urban pollution issues. The significance of the

effect will be dependent on the biodiversity value of the greenfield land to be developed. In addition, encouraging economic development and the proposed delivery of a new north-eastern relief route could mean additional land take, which could have adverse impacts on habitats and species. Cumulatively there could be adverse effects on biodiversity, depending on the level of housing and other development provided and the sites taken forward.

Significant positive effects on this objective have been forecast as a result of Policy CS26 which promotes the creation of a network of green infrastructure which should help to enhance biodiversity and could help to achieve BAP targets depending on the habitats created. This policy also supports the conservation and management of important habitats and species by protecting designated sites. Positive effects have also been forecast as a result of Policy CS10 which specifically aims to protect identified wildlife corridors and preserve and enhance green gateways. The objective is further supported by policy CS12 which requires new developments to ensure that important trees are retained, encourages the planting of trees and shrubs, and the incorporation of street trees, living walls and soft landscaping, all of which should all have positive effects on biodiversity.

2.8.2 Water, Flood Risk and Soil

Dacorum Borough is within an area already identified as 'over-abstracted' (Colne CAMS, EA). Providing additional housing will put direct pressure on scarce water resources with the effect is likely to become more significant over time as more dwellings are built and risk of periodic water shortages increase. There is also uncertainty whether the local waste water treatment works will be able to accommodate the levels of proposed growth with any overload of the sewerage system potentially resulting in adverse effects on water quality. Housing growth will also result in greater areas of impermeable surfaces with a corresponding increase in the risk of polluted run-off entering watercourses.

Significant positive effects on this SA objective have been identified as a result of two policies. Policy CS29 aims to safeguard water supplies, whilst Policy CS31 promotes the efficient use of water in both the construction of, and through the occupancy of, new developments which should also progress this objective and mitigate the potential adverse effects. In addition, minimising emissions of pollutants into the natural environment, i.e. into the ground, atmosphere or water, should have a positive effect on protecting and maintaining water quality.

In relation to flood risk, policies aimed at encouraging development that avoids Flood Zones 2 and 3 and requires Flood Risk Assessments to be submitted with planning applications in these areas should help to progress this SA objective. In addition the requirement for the

use of permeable surfaces within urban areas (Policy 29) should also help to reduce flood risk, as could the provision of street trees, living walls and soft landscaping (CS13). Requiring development to enhance green infrastructure could also help to reduce flood risk.

Policies aimed at protecting open spaces and limiting development in the countryside and on open land should help to preserve the natural environment and biodiversity. This could lead to indirect positive effects on soils. However, the level of proposed housing and economic development will result in some soil sealing and soil loss as a result of development on greenfield land.

2.8.3 Climatic Factors and Air Quality

Housing development will result in an increase in greenhouse gas emissions from energy used in new housing and associated activities including increases in traffic. Building a minimum of 9,950 new homes could lead to an increase in green house gas emissions of approximately 55,400 tonnes per annum¹. In addition, delivering the two higher growth options would require some development in the Greenbelt on the edge of settlements. This could result in increased car use to access town centre services with associated increases in CO₂ emissions, particularly if existing congestion is exacerbated.

Significant positive effects have been forecast as a result of Policy CS28 which encourages the generation of energy from renewable resources and Policy CS30 which provides funding for energy efficiency improvements in the existing housing stock which should progress this SA objective. In addition, together the various policies which reduce the need to travel, i.e. through focusing development in the main centres, ensuring that all development will be well located and accessible and supporting a mix of uses for new development should have positive effects on reducing the growth of greenhouse gas emissions from transport. Policies which aim to reduce private car use and encourage alternative forms of sustainable transport through creating better public transport links and interchanges, providing better pedestrian links and additional cycle lanes could also help to reduce green house gas emissions.

Transport is a key source of air pollution. Similar to greenhouse gas emissions focusing housing and economic development in the main settlements and making developments accessible should help to reduce the need to travel and the average distance travelled which should have a positive impact on reducing pollutants from transport. Also, encouraging the

¹ 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 Borough of 2.4 [Source: Audit Commission Local Area Profile].

use of more sustainable modes of transport such as walking, cycling and passenger transport over the use of private car which should have a positive effect on reducing pollutants from transport. Policies aimed at minimising emissions of pollutants should also have a positive effect on local air quality. However, allowing for housing and economic development will contribute to background emissions through an increase in vehicles on the road therefore having an adverse affect on air quality.

2.8.4 Cultural Heritage and Landscape

In the main, positive effects are forecast in relation to both the cultural heritage and landscape objectives. For example, the policies aiming to allow development that supports the existing character of a village and/or surrounding area and respects local character could encourage enhancement or protection of the historic environment. While the policies that protect and enhance the Green Belt, rural area and Chilterns AONB and are compatible with its surroundings should have a positive effect on safeguarding and enhancing landscapes and townscapes. In addition, focusing growth in Hemel Hempstead and restraining growth in the countryside should reduce impacts on the Borough's rural landscapes.

Several policies, especially CS10 and CS11, aim to protect or enhance the views and the landscape character of surroundings. Policy CS10 aims to preserve and enhance identified green gateways, having positive impacts on landscape, and policy CS14 should help to protect and enhance townscapes. The good design promoted through these policies should have overall positive effects on this objective.

However, constructing new dwellings is likely to result in some adverse effects on landscapes and townscapes. The effects will be more significant in the long term once brownfield sites have been used up and houses will have to be built on greenfield sites on the edge of settlements. Significant adverse effects have been forecast in relation to developing the largest housing growth option (Option 3 – Natural Growth), as this would require more greenfield sites and additional Greenbelt land to be released with associated adverse effects on local landscapes and the potential for coalescence of settlements. There would also be a loss of tranquillity and increased light pollution in the area affected by the new developments.

Policy CS15 encourages economic development in Employment Areas within the Green Belt which could have adverse impacts on landscape, whilst other economic developments could have a visual impact on the landscape. In addition, the proposed delivery of a new north-

eastern relief route could have negative implications on local landscape depending on the route/land take.

2.8.5 Population and Human Health

Although there is some uncertainty as a result of new housing development putting pressure on existing health care facilities, overall positive cumulative effects are forecast in relation to health. The policies aimed at focusing development in Hemel Hempstead and other market towns/large villages and making all development accessible could provide opportunities for physical activity by promoting access to recreation and by providing walkable and cyclable neighbourhoods, thereby encouraging healthy lifestyles. In addition, promoting more sustainable modes of transport and giving priority to healthy forms of transport over the private car should encourage more active travel such as walking and cycling and should also help to improve air quality with associated health benefits.

The housing programme, in particular options 2 and 3, should help to meet local housing need and could therefore help to reduce levels of housing related ill health and low levels of wellbeing (e.g. as a result of overcrowding). While, encouraging high quality development, such as development which considers protecting and enhancing significant views, protecting green gateways and promoting open spaces could help to progress the human health objective as it encourages people to walk and cycle, which has positive implications for this objective. In addition, encouraging services and facilities to be provided for the community, including recreational facilities, as well as health services, would have a positive impact on this objective.

In relation to population, a number of significant positive effects for the objective on equity and social exclusion have been forecast. Developing the largest housing growth option (Option 3 – Natural Growth) would result in approximately 570 new dwellings being provided in the villages and countryside of Dacorum which would meet the natural population growth needs. The higher levels of affordable housing under this option will allow a larger number of people to remain living in their local area. In addition, the larger number of houses should also help to make local facilities more viable, thereby preventing them from closing which would be particularly to the detriment of the more vulnerable members of the community (e.g. the elderly). It is important to note however that higher levels of growth will put pressure on local infrastructure, particularly schools, many of which are already under pressure.

Significant positive effects have also been forecast in relation to policies which promote a mix of housing types and also those that require a minimum of 75% of the affordable

housing units to be for social rent helping to meet the needs of the more disadvantaged sections of society and the provision of housing for those with special needs.

2.8.6 Social Factors

In general positive effects have been forecast in relation to the social factors, concerning housing, community identity and crime. Providing a minimum of 9,900 new homes should help to progress the housing objective by increasing the number of houses available and therefore meeting local housing needs, particularly the need for affordable homes and a mix of family homes. Significant positive effects have been forecast in relation to the largest housing growth option (Option 3 – Natural Growth), as this will provide the greatest opportunity for meeting local need, while adverse effects have been forecast for the smallest growth option. Significant positive effects have also been identified as a result of policies to provide a mix of different types of homes and to allow for proposals which would help meet local housing needs, particularly those for affordable housing, and help maintain the viability of rural communities.

Apart from a number of uncertainties in relation to the housing programme, resulting from the potential for pressure to be put on existing facilities, positive effects have been forecast in relation to the SA objective on community identity and participation. For example, enhancing neighbourhood service provision in local centres should help to improve access to community services thereby making areas more attractive places to live and development that respects local character should help maintain local identity. Policy CS23 Social Infrastructure encourages services and facilities to be provided for the community, which should enhance the community identity and thus have a significant positive impact on this objective.

2.8.7 Economic Factors

The strategy is forecast to have a positive cumulative effect on economic factors, including sustainable prosperity, fairer access to services and revitalise town centres. Providing for economic growth in Hemel Hempstead should help to develop the local economy, leading to the provision of employment opportunities close to the major residential areas in the Borough and should contribute to improving the viability and vitality of the town centre. Significant positive effects have been forecast for the sustainable prosperity and growth objective in relation to the set of policies on economic development. Limiting the level of development in the market towns and large villages will help to maintain Hemel Hempstead as the key centre in the Borough and not undermine its key service role. While, improving neighbourhood service provision should promote the role of local centres.

Providing efficient and accessible transport is essential in promoting economic growth and will therefore aid sustainable prosperity and growth. For example, the proposed delivery of a new north-eastern relief route could improve the access to services and facilities. Achieving a reduction in urban congestion will also help to make the town centre a more attractive place to visit, aiding the revitalisation of town centres. In addition, promoting the use of sustainable modes of transport could improve access to employment for those without access to a private vehicle.

The policies aimed at improving the public realm should attract people to the area, and thus help to improve the local economy. The high quality design of settlements could also have indirect positive effects on the local economy through the encouragement of new businesses to start up in these areas.

Two adverse effects have been forecast for option 1 of the housing programme. The lower levels of housing that would be delivered under this option could hamper the delivery of new jobs to the Borough. Also a lack of suitable housing for employees could result in potential incoming businesses seeking to locate elsewhere in the region where there is a better supply of new housing. This would affect the viability of plans to revitalise the Borough's economy, particularly in respect to the Maylands Gateway. In addition, the lower number of new dwellings provided under this option will limit the opportunities for people to stay living in the area and benefit from the planned expansion of jobs in the Borough and reduce the potential for new services and facilities to be developed that would be a benefit for all sectors of the community.

2.9 Cross Boundary Effects

Any housing and economic growth could have an effect on neighbouring areas through an increase in traffic and associated environmental and social impacts. Housing and employment development, particularly in the east of Hemel Hempstead could have an effect on St Albans. It should be noted that any housing development on the western edge of St Albans could have similar effects on Hemel Hempstead. It should be noted that any housing development proposed in St Albans District, on the eastern edge of Hemel Hempstead, will be formally assessed through the SA/SEA being undertaken on the St Albans LDF. The SA of the St Albans LDF is being undertaken using the same methodology as for the Dacorum LDF SA and as appropriate the findings of the SA on the St Albans LDF and any cross boundary effects will be considered within the SA of the Dacorum LDF.

Increasing employment opportunities, particularly in Hemel Hempstead, may provide jobs for communities located outside of the Borough.

Due to the inter-connected nature of the water environment with links many rivers, streams and groundwater, any negative effects on water resources could be felt in the surrounding areas.

Appendix A: SA Framework

Objective	Criteria
Biodiversity	
1. To protect, maintain and enhance biodiversity and geodiversity at all levels, including the maintenance and enhancement of Biodiversity Action Plan habitats and species in line with local targets	To protect, maintain and enhance designated wildlife and geological sites (international, national and local) and protected species to achieve favourable condition
	To restore characteristic habitats and species, to achieve BAP targets
	To support farming and countryside practices that enhance wider biodiversity and landscape quality by economically and socially valuable activities (e.g. grazing, coppicing, nature reserves) [not applicable to urban boroughs, such as Watford]
	To manage woodlands and other habitats of value for biodiversity in a sustainable manner and protect them against conversion to other uses
	To recognise the social/environmental value and increase access to woodlands, wildlife & geological sites and green spaces particularly near/in urban areas
	To encourage people to come into contact with, understand, and enjoy nature
Water	
2. To protect, maintain and enhance water resources (including water quality and quantity) while taking into account the impacts of climate change	To raise awareness and encourage higher water efficiency and conservation by for instance promoting water reuse in new and existing developments
	To ensure water consumption does not exceed levels which can be supported by natural processes and storage systems
	To improve chemical and biological quality and flow of rivers and encourage practices which reduce nitrate levels in groundwater
	To improve flow of rivers
	To reduce the number and severity of pollution incidents
	To maintain or restore the integrity of water dependent wildlife sites in the area
3. Ensure that new developments avoid areas which are at risk from flooding and natural flood storage areas	To avoid developments in areas being at risk from fluvial, sewer or groundwater flooding (for instance natural flood plains) while taking into account the impacts of climate change
	To ensure that developments, which are at risk from flooding or are likely to be at risk in future due to climate change, are sufficiently adapted
	To promote properly maintained sustainable urban drainage systems to reduce flood risk and run off in areas outside Source Protection Zones 1 (SPZ)

Objective	Criteria
Soil	
4. Minimise development of land with high quality soils and minimise the degradation/loss of soils due to new developments	To safeguard high quality soils, such as agricultural land grades 1, 2 and 3a) from development [Might not be applicable for urban boroughs, such as Watford]
	To limit contamination/degradation/loss of soils due to development
Climatic Factors	
5. Reduce the impacts of climate change, with a particular focus on reducing the consumption of fossil fuels and levels of CO ₂	To minimise greenhouse gas emissions (particularly CO ₂) for instance through more energy efficient design and reducing the need to travel
	To promote increased carbon sequestration e.g. through increases in woodland cover
	To adopt lifestyle changes which help to mitigate and adapt to climate change, such as promoting water and energy efficiency (through for instance higher levels of home insulation)
6. Ensure that developments are capable of withstanding the effects of climate change (adaptation to climate change)	To promote design measures which enable developments to withstand and accommodate the likely impacts and results of climate change (for instance through robust and weather resistant building structures)
Air Quality	
7. Achieve good air quality, especially in urban areas	To reduce the need to travel by car through planning settlement patterns and economic activity in a way that reduces dependence on the car and maintains access to work and essential services for non-car-owners
	To integrate land use and transport planning by for instance: <ul style="list-style-type: none"> ▪ Promoting Green Transport Plans, including car pools, car sharing as part of new developments ▪ Ensuring services and facilities are accessible by sustainable modes of transport
	To ensure that development proposals do not make existing air quality problems worse
	To address existing or potential air quality problems
Material Assets	
8. Maximise the use of previously developed land	To concentrate new developments on previously developed land (PDL)
	To avoid use of Greenfield sites for development

Objective	Criteria
and buildings, and the efficient use of land	To maximise the efficient use of land and existing buildings by measures such as higher densities and mixed use developments
	To encourage the remediation of contaminated and derelict land and buildings
9. To use natural resources, both finite and renewable, as efficiently as possible, and re-use finite resources or recycled alternatives wherever possible	To encourage maximum efficiency and appropriate use of materials, particularly from local and regional sources
	To require new developments to incorporate renewable, secondary, or sustainably sourced local materials in buildings and infrastructure
	To safeguard reserves of exploitable minerals from sterilisation by other developments
	To promote renewable energy sources as part of new or refurbished developments
	To increase recycling and composting rates and encourage easily accessible recycling systems as part of new developments
	To promote awareness regarding waste/recycling and renewable energy issues through education programmes in schools and the community
Cultural Heritage	
10. To identify, maintain and enhance the historic environment and cultural assets	To safeguard and enhance the historic environment and restore historic character where appropriate, based on sound historical evidence
	To promote local distinctiveness by maintaining and restoring historic buildings and areas, encouraging the re-use of valued buildings and thoughtful high quality design in housing and mixed use developments – to a density which respects the local context and townscape character, and includes enhancement of the public realm
	To promote public education, enjoyment and access of the built heritage and archaeology
Landscape	
11. To conserve and enhance landscape and townscape character and encourage local distinctiveness	To protect and enhance landscape and townscape character
	To evaluate the sensitivity of the landscape to new/inappropriate developments and avoid inappropriate developments in these areas
	To protect 'dark skies' from light pollution, and promote low energy and less invasive lighting sources while considering the balance between safety and environmental impacts
	To minimise the visual impact of new developments
Population and Human Health	

Objective	Criteria
12. To encourage healthier lifestyles and reduce adverse health impacts of new developments	To promote the health advantages of walking and cycling and community based activities
	To identify, protect and enhance open spaces, such as rivers and canals, parks and gardens, allotments and playing fields, and the links between them, for the benefit of people and wildlife
	To include specific design and amenity policies to minimise noise and odour pollution, particularly in residential areas
	To narrow the income gap between the poorest and wealthiest parts of the area and to reduce health differential
13. To deliver more sustainable patterns of location of development	To reduce the need to travel through closer integration of housing, jobs and services
	To promote better and more sustainable access to health facilities
Social Factors	
14. Promote equity & address social exclusion by closing the gap between the poorest communities and the rest	To include measures which will improve everyone's access to high quality health, education, recreation, community facilities and public transport
	To ensure facilities and services are accessible by people with disabilities and minority groups
	To encourage people to access the learning and skills they need for high quality of life
	To ensure that the LDF does not discriminate on the basis of disability, ethnic minority, or gender.
15. Ensure that everyone has access to good quality housing that meets their needs	Promote a range housing types and tenure, including high quality affordable and key worker housing
16. Enhance community identity and participation	To recognise the value of the multi-cultural/faith diversity of the peoples in the region
	To improve the quality of life in urban areas by making them more attractive places in which to live and work, and to visit
	To encourage high quality design in new developments, including mixed uses, to create local identity and encourage a sense of community pride
17. Reduce both crime and fear of crime	To reduce all levels of crime with particular focus on violent, drug related, environmental and racially motivated crime
	To plan new developments to help reducing crime and fear of crime through thoughtful design of the

Objective	Criteria
	<p>physical environment, and by promoting well-used streets and public spaces</p> <p>To support government-sponsored crime/safety initiatives, maximising the use of all tools available to police, local authorities and other agencies to tackle anti-social behaviour</p>
Economic Factors	
18. Achieve sustainable levels of prosperity and economic growth	<p>To support an economy in the Authority which draws on the knowledge base, creativity and enterprise of its people.</p> <p>To promote and support economic diversity, small and medium sized enterprises and community-based enterprises</p> <p>To support the economy with high quality infrastructure and a high quality environment</p>
19. Achieve a more equitable sharing of the benefits of prosperity across all sectors of society and fairer access to services, focusing on deprived areas in the region	<p>To encourage local provision of and access to jobs and services</p> <p>To improve the competitiveness of the rural economy [not applicable for urban boroughs, such as Watford]</p>
20. Revitalise town centres to promote a return to sustainable urban living	<p>To promote the role of local centres as centres for sustainable development providing services, housing and employment, drawing on the principles of urban renaissance</p> <p>To encourage well-designed mixed-use developments in the heart of urban areas, create viable and attractive town centres that have vitality and life, and discourage out-of-town developments</p>