

eco-towns

Sustainability Appraisal and Habitats Regulations
Assessment of the Eco-towns Programme

Marston Vale





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Prepared by Scott Wilson for Communities and Local Government

Marston Vale

November 2008

Scott Wilson Ltd

Department for Communities and Local Government

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The structure of the eco-towns SA/HRA publications

The Sustainability Appraisal (SA) and Habitats Regulations Assessment (HRA) of the draft Eco-towns Planning Policy Statement and Programme have been prepared by Scott Wilson Ltd for Communities and Local Government.

As the SA and HRA has been undertaken at a strategic level, it is necessarily broad in its assessment, conclusions, and recommendations. It takes a 'snapshot' of locations and proposals in September 2008, recognising that the proposals are continuing to be developed, and constitutes the first of a series of successive assessments that will be required as eco-town proposals are taken forward. Planning applications for eco-towns will also need to include a detailed Environmental Impact Assessment (EIA) and possibly HRA which may, in turn, also identify mitigation measures.

The SA and HRA should be read in four parts and an Annex:

- I) **The SA of the draft Eco-Towns PPS**
- II) **The SA/HRA of the Programme – Introduction**
- III) **The SA/HRA of the Programme – Locational chapters**
 - Pennbury
 - Middle Quinton
 - Whitehill-Bordon
 - Weston Otmoor and Cherwell
 - Ford
 - St Austell (China Clay Community)
 - Rossington
 - Hanley Grange and Cambridgeshire
 - Marston
 - North East Elsenham
 - Rushcliffe
 - Greater Norwich
 - Curborough
 - Manby
 - Leeds City Region
- IV) **The SA/HRA of the Programme – Conclusions**

Annex: Profile of European Sites

The sections above are accompanied by a Non-Technical Summary which summarises the findings of the SA and HRA of the draft Eco-towns PPS and Programme.

All documents are available on the Communities and Local Government website at www.communities.gov.uk/ecotowns

If you have comments on issues raised in the SA or HRA please respond as part of the consultation on the PPS, details of which are set out at www.communities.gov.uk/ecotown. If you would like further information on any of the above please contact the Eco-Towns Team at Zone 2/G9, Eland House, London, SW1E 5DU or by email to: ecotowns@communities.gsi.gov.uk

1 Introduction

1.1 This chapter

- 1.1.1 This chapter sets out the draft Sustainability Appraisal and Habitats Regulations Assessment of the shortlisted eco-town location and associated development proposal at **Marston Vale**. It should be noted that the scheme for New Marston, which overlapped with the Marston Vale proposal, has been withdrawn from the current eco-town process.
- 1.1.2 As this Sustainability Appraisal (SA) and Habitats Regulations Assessment (HRA) has been undertaken at a strategic level, it is therefore necessarily broad in its assessment, conclusions, and recommendations. It takes a 'snapshot' of locations and proposals in September 2008 recognising that the proposals are continuing to be developed, and constitutes the first of a series of successive assessments that will be required as eco-town proposals are taken forward. Planning applications for eco-towns will also need to include a detailed Environmental Impact Assessment (EIA) and possibly HRA which may, in turn, also identify mitigation measures.

1.2 Eco-towns Planning Policy Statement

- 1.2.1 Communities and Local Government has published for consultation a Draft **Eco-towns Planning Policy Statement** (PPS), accompanied by a Sustainability Appraisal and Habitats Regulations Assessment. According to the Draft PPS, eco-towns are new settlements which *"will have sustainability standards significantly above equivalent levels of development in existing towns and cities"*¹. The eco-towns concept is designed to assist in meeting the twin challenges of providing additional housing and mitigating and adapting to climate change. The aim of the Draft PPS is to promote the development of *"exemplar projects that encourage and enable residents to live within environmental limits"* and *"provide a showcase for sustainable living and allow government, business and communities to work together to develop greener, low carbon living"* thus providing inspiration for future development. With this in mind, the Draft PPS sets out a range of minimum standards which will be used to define an 'eco-town'. These cover a wide range of sustainability issues including biodiversity; climate change adaptation; employment; flood risk management; green infrastructure; homes; local services; transport; waste; water; and zero carbon.

1.3 Eco-towns Programme

- 1.3.1 The **Eco-towns Programme** has been developed with the aim of getting exemplar eco-towns off the ground with development underway by 2016.

¹ Communities and Local Government (2008). *Planning Policy Statement: Eco-Towns – Consultation document*

The Government has short listed a series of potential eco-town locations² – of which **Marston Vale** is one – following an initial call for proposals. Each location has been subject to a Sustainability Appraisal and Habitats Regulations Assessment to assess its suitability for an eco-town. The findings of the appraisal for Marston Vale are documented in this report. In a parallel exercise, the Government is deciding which of the schemes related to the short listed locations will get backing or financial support from Government through funding of associated infrastructure or partner public bodies.

1.4 SA and HRA

1.4.1 **Sustainability Appraisal (SA)** is generally not undertaken at the national level. In developing the Eco-towns PPS and the Eco-towns Programme, Communities and Local Government has decided to undertake SA, incorporating the requirements of the European Strategic Environmental Assessment Directive³, at a level proportionate to the PPS and the Programme. Scott Wilson was commissioned to undertake the SA as well as a **Habitats Regulations Assessment (HRA)** of the Draft Eco-towns PPS and the Eco-towns Programme. SA seeks to identify and evaluate the impacts of a proposal on the economy, the community and the environment – the three dimensions of sustainable development – and suggest measures for improving the proposal's sustainability performance. HRA tests the impacts of a proposal on nature conservation sites of European importance – Special Areas of Conservation and Special Protection Areas, and, as a matter of Government policy, Ramsar sites – and is also a requirement under EU legislation⁴. An accompanying report sets out the SA and HRA of the Draft Eco-towns PPS.

1.5 SA methodology

1.5.1 Part I of this report describes the SA methodology in full. The SA for each of the shortlisted locations and any reasonable alternatives is based on a series of questions:

- What's the objective of the proposal?
- What's the policy context?
- What are the key sustainability objectives we need to consider?
- What's the situation now? (including any existing problems)
- What will be the situation *without* the eco-town? (the 'business-as-usual' option)

² Communities and Local Government (2008). *Eco-towns: Living a greener future* [online] available at: <http://www.communities.gov.uk/publications/housing/ecotownsgreenerfuture> (accessed 4 July 2008)

³ Directive 2001/42/EC on the assessment of the effects of certain plans and Programmes on the environment (the 'SEA Directive') implemented through The Environmental Assessment of Plans and Programmes Regulations 2004

⁴ Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive') implemented through The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007

- What will be the situation *with* the eco-town?
- How can we mitigate/enhance effects? (Scott Wilson’s recommendations)
- How should we monitor sustainability impacts?

1.5.2 These questions correspond to the key requirements of the SEA Directive, as set out in Annex I to the Directive – see Table 1.

1.5.3 In undertaking the appraisal for each location, we drew on a wide range of information including the Scoping Report; the developer’s proposal; discussions with the developer; discussions with the relevant local planning authority and, in some cases, the Government Office; the comments of the statutory consultees (the Environment Agency, Natural England etc.); and discussions with Communities and Local Government. We also visited each of the shortlisted locations.

Table 1: Meeting the requirements of the SEA Directive

Questions for each shortlisted location and associated development proposal	Key requirement of the SEA Directive (the ‘environmental report’ must include...)
What’s the objective of the proposal?	“an outline of the contents, main objectives of the plan or Programme and relationship with other relevant plans and Programmes” (Annex I(a))
What’s the policy context?	“an outline of the contents, main objectives of the plan or Programme and relationship with other relevant plans and Programmes” (Annex I(a))
What are the key sustainability objectives we need to consider?	“the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or Programme and the way those objectives and any environmental considerations have been taken into account during its preparation” (Annex I(e)) ⁵
What’s the situation now? (including any existing problems)	“the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or Programme” (Annex 1(b)) “the environmental characteristics of areas likely to be significantly affected” (Annex I(c)) “any existing environmental problems which are relevant to the plan or Programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC” [NB problems relating to European sites are addressed through the HRA] (Annex I(d))

⁵ Note that “the way those objectives and any environmental considerations have been taken into account during its preparation” is addressed in Section 3 for the Draft PPS and in each locational chapter

Table 1: Meeting the requirements of the SEA Directive (continued)

Questions for each shortlisted location and associated development proposal	Key requirement of the SEA Directive (the 'environmental report' must include...)
What will be the situation <i>without</i> the eco-town? (the 'business-as-usual' option)	<i>"the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or Programme"</i> (Annex I(b))
What will be the situation <i>with</i> the eco-town?	<i>"the likely significant effects (1) on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors</i> [our emphasis] <i>(1) These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects"</i> (Annex I(f))
How can we mitigate/enhance effects? (Scott Wilson's recommendations)	<i>"the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or Programme"</i> (Annex I(g))
How should we monitor sustainability impacts?	<i>"a description of the measures envisaged concerning monitoring..."</i> (Annex I(i))

- 1.5.4 It should be noted that the SA focused primarily on the merits of the proposed *location* as a suitable place to situate an eco-town since the location is fixed (notwithstanding the need to ultimately settle on a precise boundary for the development). However, we have also referred to the actual *development* proposed for that location (recognising that the current proposals for development at the various locations can obviously be modified and doubtless will be as time goes on). Reference to the development itself was considered important in gauging sustainability impacts particularly since the development could potentially mitigate impacts associated with the location and also make the most of any locational opportunities.
- 1.5.5 The aim of this SA was not to determine whether an eco-town location and proposal was either acceptable – ie 'sustainable' – or unacceptable – ie 'unsustainable' – and determine which locations progressed on this basis. The purpose of this SA was, rather, to explore the benefits and disadvantages associated with each of the locations and development proposals as an input to the Eco-towns Programme, and suggest ways in which their impact could be rendered more sustainable.

1.6 HRA methodology

- 1.6.1 Part II of this report describes the HRA methodology in full. The requirement to undertake HRA arises from the Habitats Directive⁶ which requires that plans and projects are subject to 'Appropriate Assessment' (AA) where they might have a significant effect on a European wildlife site. European sites include Special Areas of Conservation, Special Protection Areas and, as a matter of Government policy, Ramsar Sites. In order to establish whether or not an AA is necessary, plans and projects with potential effects must be 'screened' to determine the likelihood of their giving rise to significant effects – a so called HRA. All the proposed eco-town locations were screened and determined to have potential impacts on European sites. A full AA was therefore undertaken for each location and the assessment for Marston Vale is documented in Section 3. The assessment involved identifying the European sites which could conceivably be impacted upon by development at the proposed location; establishing the environmental conditions needed to maintain the integrity of these sites (eg minimum air pollution or minimal recreational pressure); and assessing whether or not development at the location would adversely impact on these environmental conditions and therefore site integrity. Details of the ecological features of the European sites covered within the assessment, the reasons for their designation, their condition and the environmental conditions necessary to maintain their integrity are set out in the Annex, *Profile of European Sites*.
- 1.6.2 It should be noted that the objective of the HRA of the Eco-towns Programme was not to devise detailed site-specific measures for each of the current proposed eco-towns, but rather to use an appraisal of the current proposed eco-towns as a tool to determine whether the policies and standards in the Draft PPS provide sufficient direction (in terms of both scope and detail) to enable eco-towns to deliver the detailed site-specific measures necessary to avoid or mitigate an adverse effect.

⁶ Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora implemented in England through The Conservation (Natural Habitats &c. Regulations) 1994 (as amended)

2 Sustainability Appraisal

2.1 Introduction

2.1.1 This section sets out the **Sustainability Appraisal (SA)** of the shortlisted eco-town location and associated development proposal at **Marston Vale**.

2.2 What's the objective of the proposal?

2.2.1 O & H Group is proposing the development of an eco-town on a 610ha site between Bedford and Milton Keynes in Bedfordshire (see Figure 1). The current proposal, which is the subject of this appraisal, is for a town comprising 15,400 dwellings with related employment facilities and community infrastructure. The proposed area falls within the administrative boundaries of two local authorities: Bedford Borough Council and Mid Bedfordshire District Council. Both local authorities have stated that they are unable to support the proposal for an eco-town in this location at the current time.

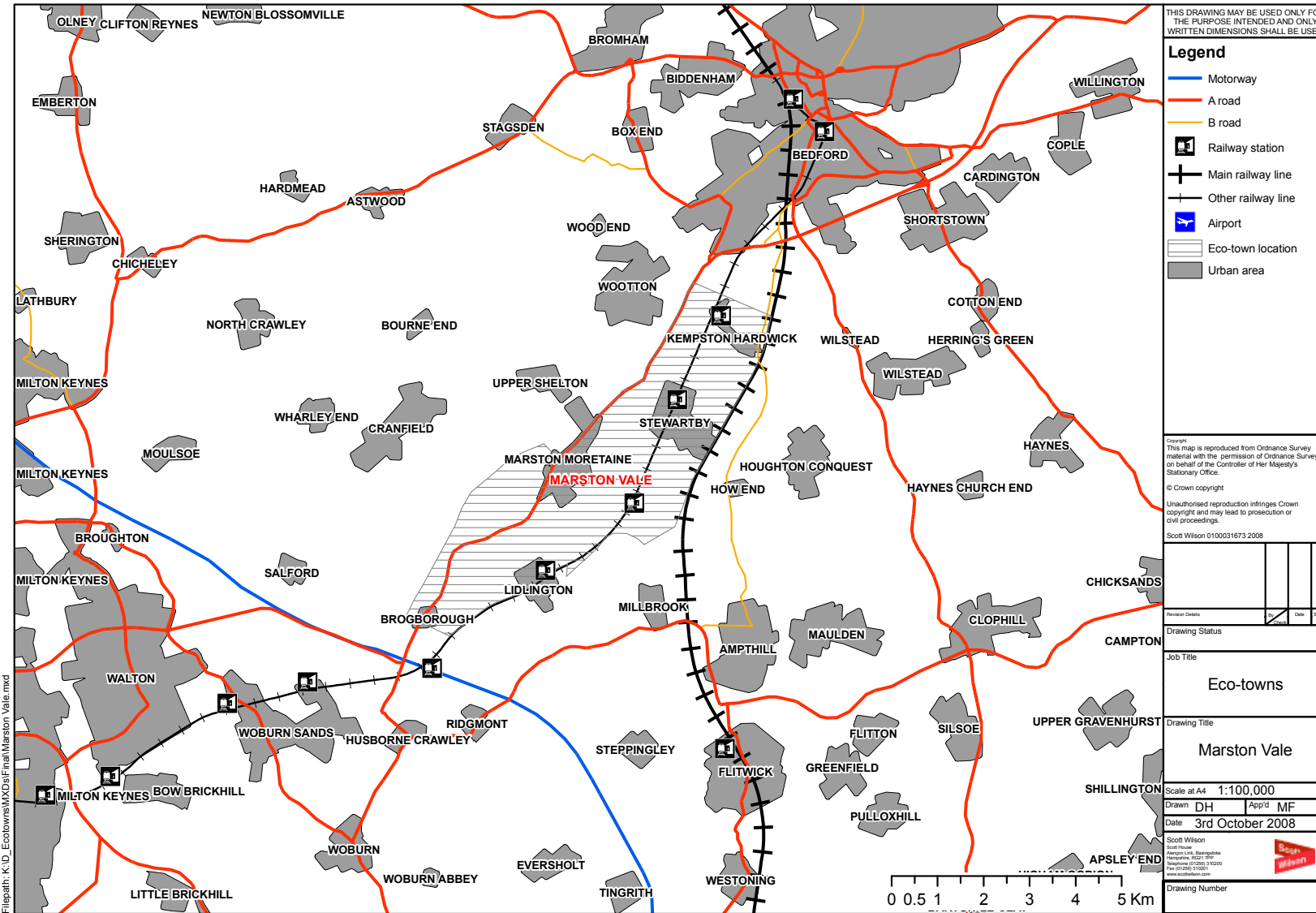
2.2.2 The proposed location is close to junction 13 of the M1. It is within the Milton Keynes and South Midlands Growth Area and is located in a central position in the Oxford to Cambridge (O2C) 'arc' of technology; it is also close to Cranfield University.

2.2.3 We understand that the Marston Vale proposal is designed to meet housing needs in a growth area and to achieve a major advance in the eco-footprint of new settlements.

Have any further local alternatives been proposed?

2.2.4 No alternatives to the Marston Vale eco-town location have been formally proposed by the local planning authorities (Bedford Borough Council and Mid Bedfordshire District Council).

Figure 1: Marston Vale eco-town – settlement pattern and transport infrastructure



2.3 What's the policy context?

- 2.3.1 The national policy context in relation to housing provision, climate change and other relevant issues is set out in Part 1 of this report. This section considers the policy context at regional and local level relevant to the shortlisted location and proposed development.
- 2.3.2 The East of England Plan – the Revision to the Regional Spatial Strategy for the East of England – sets a minimum regional housing target for the period 2006 to 2021 of 402,540 net additional dwellings. However, the Plan states that while this figure (which equates to at least 26,830 dwellings per annum) represents a significant step towards a more adequate rate of housing provision, it is less than forecast household growth and less than the National Housing and Planning Advice Unit (NHPAU) suggests is needed to avoid further deterioration in affordability⁷. In light of this, the East of England Plan points to the role of eco-towns in further increasing housing provision.
- 2.3.3 The East of England Plan refers to Bedford/Kempston/NorthernMarston Vale as a location in which new development should be concentrated (Policy SS3).
- 2.3.4 Development within this location has been identified as a preferred option for the Core Strategy for the Mid Bedfordshire Local Development Framework. The adopted Bedford Development Framework Core Strategy and Rural Issues Plan states that, within the growth area, locations for growth will be within the urban area boundary or within the defined limits of Growth Area key service centres (Stewartby, Wootton, Wixams).

2.4 What are the key sustainability objectives we need to consider?

- 2.4.1 Preliminary scoping work undertaken by Faber Maunsell on behalf of Communities and Local Government identified a significant number of potentially relevant sustainability objectives to inform the appraisal. Taking into account this initial work, Scott Wilson has identified 12 core sustainability issues which will provide the basis for the SA of the locations and associated development proposals (no priority should be inferred from the ordering):

Environment

- biodiversity and green infrastructure
- climate change adaptation and flood risk
- climate change mitigation

⁷ National Housing and Planning Advice Unit (2007). *Developing a target range for the supply of new homes across England* [online] available at <http://www.communities.gov.uk/nhpau/keypublications/reports/supplynewhomes/>

- landscape and historic environment
- waste
- water resources and water quality

Socio-economic

- community infrastructure
- community wellbeing
- decent and affordable homes
- transport and accessibility
- employment and economy

Spatial issues

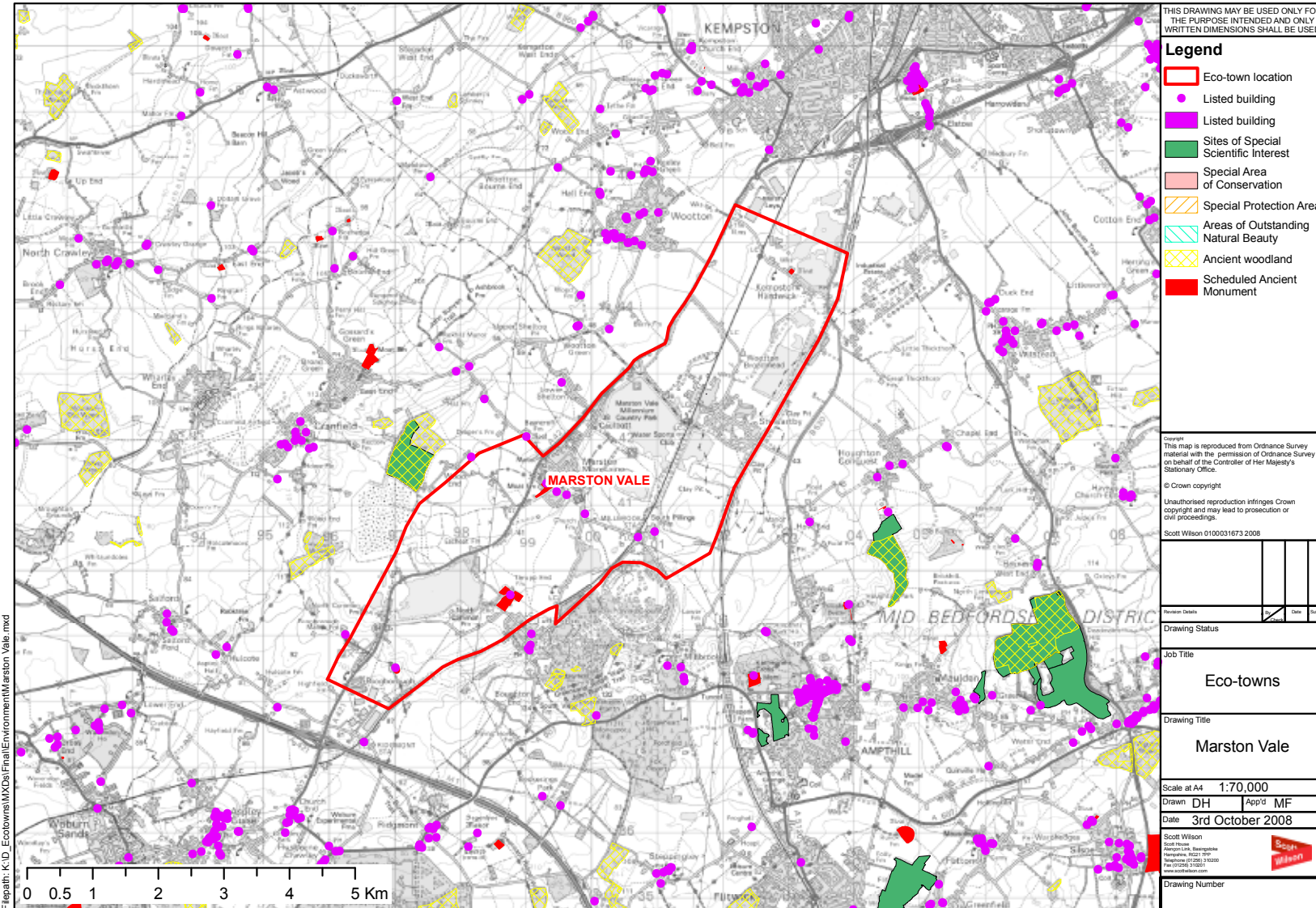
- spatial issues

2.5 What's the situation now? (including any existing problems)

Biodiversity and green infrastructure

- 2.5.1 The HRA is set out in detail in Section 3 of this chapter. In summary, four Natura 2000 sites (Eversden & Wimpole Woods SAC, Portholme SAC, the Ouse Washes SAC/SPA and The Wash & North Norfolk Coast SAC/SPA) were scoped into the assessment. It did not prove possible to say with confidence that the development that may be delivered at Marston under the Draft PPS will not lead to material adverse effects on The Ouse Washes SAC/SPA & Ramsar site and The Wash & North Norfolk Coast SAC/SPA & Ramsar site as a result of increased abstraction or deteriorating water quality, without further amendments to the Draft PPS and these are detailed in Section 3.
- 2.5.2 Figure 2 illustrates the Marston Vale eco-town location and environmental constraints in the area.

Figure 2: Marston Vale eco-town location and environmental constraints



2.5.3 Within Bedford Borough and Mid Bedfordshire District there are 22 Sites of Special Scientific Interest (SSSIs) covering an area of 658.41 hectares. Around 90 per cent of the total area of SSSIs is considered to be in favourable condition⁸.

2.5.4 Habitats identified in the Bedfordshire and Luton Biodiversity Action Plan (BAP) that require consideration include the following:

- Farmland Habitats
- Woodland Habitats
- Lowland Heathland
- Lowland Dry Acid Grassland
- Calcareous Grassland
- Urban Habitats
- Waterways and Wetlands

2.5.5 The Eastern Region has a relatively low proportion of woodland cover when compared with the rest of the country. The combined area of woodland within Bedford Borough and Mid Bedfordshire District is 6,722 hectares, which equates to 13.62 per cent of the total area. Bedfordshire is home to the Forest of Marston Vale, one of twelve Community Forests set up around towns and cities in the early 1990s. The Forest of Marston Vale covers 61 square miles of Bedfordshire between Ampthill, Milton Keynes and Bedford. The Forest has a planned life of 40 years and in the first 17 years⁹:

- over a million trees have been planted
- over 50km of hedgerow have been planted or restored
- 75km of conservation field margins have been created to benefit farm wildlife
- 6 Forest Trails have been launched
- 300 hectares of existing woodland has been brought into management
- village environments have been enhanced

2.5.6 The area has a number of SSSIs in the vicinity including Marston Thrift, Kings Wood, Glebe Meadows, Maulden Wood and Coopers Hill. The site of the proposed eco-town consists of a network of community wildlife sites comprising water bodies which are former clay pits. The area is

⁸ Mid Beds District Council, State of the Environment Report, September 2007

⁹ <http://www.marstonvale.org/communityforest/past.html>

rich in wildlife both in terms of protected species and biodiversity action plan species and habitats, including rare butterflies, diverse grassland communities, ancient woodland and habitats associated with brick pits¹⁰.

Climate change adaptation and flood risk

- 2.5.7 The nature of the area with its clay pits and landfill sites, its identification as part of a growth area and designation as a Community Forest present particular drainage and environmental challenges and opportunities.
- 2.5.8 The Marston Vale Surface Waters Plan (2001 and now under revision) identified that development in the Marston Vale would represent a substantial increase in impermeable surface within the catchment of Elstow Brook with the potential to increase flood flows. It states that it is essential to protect and enhance the existing functions of Elstow Brook and its tributaries, including its flood plains.
- 2.5.9 The Strategic Flood Risk Assessment (SFRA) for Mid Bedfordshire District Council (2007) indicates that the area around Wixams and Marston Moretaine falls within Flood Zones 2 and 3a. A Level 1 SFRA has been completed for Bedford Borough.
- 2.5.10 It highlights that, in addition to a risk of flooding from rivers, there is also a potential risk of flooding from localised sources, including sewers, blocked gullies and culverts, and surface water runoff. Within more intensely urbanised areas this may occur at any location and/or point in time. The SFRA states that it is essential that all future development is designed to minimise the potential impacts of localised flooding (eg through the provision of Sustainable Urban Drainage Systems (SUDS), overland flood flow routing, and careful location of on-site flood detention areas). The Environment Agency (EA), working with the local authorities, Water Companies and the Internal Drainage Board have recognised the need for a strategic form of SUDS.

Climate change mitigation

- 2.5.11 The East of England Plan (2008) identified potential sources for the generation of renewable energy within the region. The sources listed include photovoltaic energy, solar-powered and geothermal water heating, wind, energy crops and biomass (such as wood from existing woodlands, sawmill co-products and organic waste products that might otherwise be destined for landfill) and energy from agricultural, plant and animal, domestic and industrial waste. It includes energy generated as a product of anaerobic digestion and energy gained on site and/or from a decentralised supply, including power from combined heat and power (but excluding renewable heat).

¹⁰ East of England Regional Assembly (2008) Consultation response to Eco-towns: living a green future

Landscape and historic environment

2.5.12 A 2007 Mid Bedfordshire District Landscape Character Assessment has classified the Northern Marston Vale area as being associated with the 'North Marston Clay Vale' Landscape Character Area (LCA). Key characteristics of this landscape character are:

- an agricultural landscape fragmented by current and former industrial activity including brick works, open cast clay pits, landfill, distribution centres and industrial estates
- a legacy of clay extraction (for brick making) has resulted in a disturbed landscape, currently subject to large scale restoration – evoking a landscape in transition
- the establishment of Country Parks and the Forest of Marston Vale with its Forest Centre provides valuable ecological, recreational and landscape resources
- flooded clay pits form a series of lakes throughout the vale such as at Stewartby Country Park. These have created significant recreational value and ecological interest
- mature woodland is relatively scarce – the area does contain Marston Thrift SSSI – a nationally important ancient ash/maple woodland site and other areas of ancient woodland eg Wootton Wood, forming the heart of The Forest of Marston Vale
- Arable farming is the predominant land use of the area typically occurring in large, open fields with short-flailed, sparse hedgerow boundaries and drainage channels
- Bedford, on the northern boundary, brings strong urban fringe characteristics to the landscape – large scale industrial estates/retail parks south of Kempston typifying views to the town
- a number of busy transport routes cut north south through the landscape, including the A421(T) the A6 (forming the eastern boundary of the area) and the main railway lines running from Bedford to London and Milton Keynes
- settlement occurs across the Vale, often associated with minor tributary valley, characterised by a mix of building age, style and materials. Significant late 20th century development has resulted in the coalescence of settlement at Wootton and Marston Moretaine
- Stewartby – a model village begun in 1926 by the Stewart family, owners of the London Brick Company. Characterised by consistent red-brick houses set around large areas of green space

- a number of restored landfill sites (creating domed landforms), active landfill sites and sewage treatment works occur within the area and are frequently bounded by harsh, industrial boundary fencing
- settlement is generally concentrated on the flattest areas of the vale. The more undulating land is characterised by occasional individual farmsteads

2.5.13 Overall, the sensitivity of the North Marston Vale Clay Vale is considered to be moderate. The landscape is highly disturbed as a consequence of mass clay extraction. Nevertheless, the area does contain a number of individual sensitive features. The overall process of landscape restoration, in particular establishment of the Forest of Marston Vale, is also critically important.

2.5.14 In visual terms, the landscape is considered to be moderately sensitive. Visual sensitivity in the vale is likely to reduce, in time, as newly planted woodland matures to reduce the extent of views¹¹.

2.5.15 The proposed site has significant industrial heritage and a complex area with a number of heritage constraints including listed buildings, conservation areas and several ancient monuments. There are two Registered Parks/ Gardens close to the proposed development location: one to the east of Lidlington and one to the south-west, as illustrated in Figure 1 above. The recently designated Grade II Listed Stewartby Brickworks is important and would need to be protected. The listed chimney and kilns at the Stewartby Brickworks factory provide a dominant and highly distinctive feature within the surrounding landscape. The adjoining factory village is a relatively rare form of residential development for this region¹².

2.5.16 The surrounding area contains two important medieval churches (Houghton Conquest and Marston Moretaine)¹³.

Waste

2.5.17 The proportion of waste recycled or composted in 2005/06 in Mid Bedfordshire District was just less than 30 per cent. There has been a steady increase in the proportion since 2001/02 when the figure stood at just 7 per cent.

2.5.18 In relation to the amount of waste collected per head within the District there has been no identifiable trend since 2001/02; the amount has oscillated annually from 408kg in 2001/02 to 466kg in 2002/03 and from 437kg in 2003/04 to 443kg in 2004/05 and 405kg in 2005/06¹⁴.

¹¹ Mid Bedfordshire Landscape Character Assessment, August 2007

¹² English Heritage (2008) Consultation response to Eco-towns: living a greener future

¹³ English Heritage (2008) Consultation response to Eco-towns: living a greener future

¹⁴ www.audit-commission.gov.uk – Area Profiles for Mid Bedfordshire District Council

Water resources and water quality

- 2.5.19 River water quality is measured using the Environment Agency's General Quality Assessment. This scheme monitors the chemical quality, which is assessed using various indicators. Within Mid Bedfordshire District the quality of water is such that almost 99 per cent of rivers and canals are classed as being of 'Good' or 'Fair' quality and just over 60 per cent are classed as being of 'Good' quality¹⁵.
- 2.5.20 Water resources in the Upper Ouse and Bedford Ouse Catchment are such that the area is classed as having no water available with some areas falling into the categories of being over-licensed or over-abstracted¹⁶.

Community infrastructure

- 2.5.21 Mid Bedfordshire is considered an affluent area and most residents enjoy a high quality of life. In the Index of Multiple Deprivation 2004, Mid Bedfordshire ranked 45 out of 48 local authority areas across the East of England and 334 out of 354 local authority areas in England (1 being the most deprived). However, all of the major population centres in the area have some 'pockets of deprivation'. Such pockets of deprivation can be identified as specific wards or restricted to just a few streets; rural areas are particularly susceptible. Deprivation can be masked because it is dispersed and often adjacent to affluent households. Escalating house prices, partly due to the influence of London, puts home ownership beyond the means of many residents and this adds to problems of deprivation¹⁷.
- 2.5.22 Across the district, many private and public facilities exist providing opportunities to participate in sport and physical activity. This includes four public leisure centres. Growth of population means that two of these centres are operating at capacity and expansions are planned. Opportunities for outdoor recreation, walking and cycling and horse-riding are plentiful. There are almost 1000 kilometres of public rights of way in Mid Bedfordshire. In addition to being a recreational resource, the rights of way network forms an essential part of an integrated transport system.

Community wellbeing

- 2.5.23 On average people in Bedfordshire live longer than men and women in England. However, life expectancy in the County is not better than that for the wider Eastern Region. This is despite the fact that Bedfordshire experiences less deprivation than the Eastern Region as a whole. The biggest causes of early deaths are cancer and heart disease/stroke¹⁸.

¹⁵ Mid Bedfordshire District Council State of the Environment Report, September 2007

¹⁶ Environment Agency (2005) Upper Ouse and Bedford Ouse Catchment Area Management Strategy

¹⁷ Mid Bedfordshire Community Plan, Planning for a Sustainable Community – People, Place & Lifestyle, 2008-11

¹⁸ Bedfordshire Primary Care Trust, Public Health Report: Improving Life Expectancy, Issue 1, March 2007

2.5.24 There is a general disparity in Mid Bedfordshire in relation to the perception and fear of crime and actual offences committed. The general trend in relation to crime is such that levels of crime per 1,000 population are falling. However, the proportion of people who worry about crime is increasing¹⁹

Decent and affordable homes

2.5.25 Mid Bedfordshire District contains a high proportion of owner occupied households with around 79 per cent of households falling into this category in 2006. This compares with 14 per cent of households renting through Housing Associations or Registered Social Landlords and 7 per cent renting in the private sector. In September 2006 there were almost 3,000 households on the Housing Register²⁰. The average household size of 2.45 persons is high when compared with the average for the East of England of 2.36 persons. However, the rate of overcrowding in 2001 was 3.4 per cent, which is more than 50 per cent less than the average rate for England and Wales of 7 per cent²¹.

2.5.26 The general condition of dwellings in the District is good with one of the lowest proportions in the region of households without central heating at 4.2 per cent (compared with a national average of 8.5 per cent). Similarly, the proportion of households without a bath/shower and toilet in 2001 was 0.2 per cent, compared with a national average of 0.5 per cent²².

2.5.27 The number of additional affordable dwellings provided within the District was 61 dwellings in 2004/05, 69 dwellings in 2005/06 and 91 dwellings in 2006/07.

Transport and accessibility

2.5.28 In terms of movements within the County the major corridors are the M1, other trunk roads (A1, A421, A5) and other routes within the primary and strategic road network (A422, A600, A603, A6, A428, A4146, A418, A1081, A505, A507)²³.

2.5.29 Traffic levels on Bedfordshire's roads are expected to increase. Planned infrastructure will meet current and short term demands but will not keep pace with the increasing numbers of road users. Increases in population and vehicle movements will result in pressure on the strategic and local networks²⁴.

¹⁹ Audit Commission Area Profiles – Mid Bedfordshire District 2005/06 – www.audit-commission.gov.uk

²⁰ Mid Bedfordshire Community Plan, Planning for a Sustainable Community – People, Place & Lifestyle, 2008-11

²¹ www.midbeds.gov.uk – Mid Beds Area Profile

²² www.midbeds.gov.uk – Mid Beds Area Profile

²³ Bedford County Council Bedfordshire Local Transport Plan 2006/07 – 2010/11 <http://85.12.98.34/ltp/index.html>

²⁴ Bedford County Council Bedfordshire Local Transport Plan 2006/07 – 2010/11 <http://85.12.98.34/ltp/index.html>

- 2.5.30 The Bedford/Kempston/Northern Marston Growth Area is located in a road transport corridor that comprises junction 13 of the M1 and the A421. The existing A421 between Junction 13 and Bedford is single carriageway and suffers from congestion throughout the working day. It is expected that a scheme to improve this section to dual carriageway standard and also to improve the M1 Junction 13 will start in late 2008 and be completed by late 2010.
- 2.5.31 Based on current projections of population growth it is predicted that by 2016 conditions on the A421 will improve as a result of the Great Barford Bypass and A421 improvement scheme. However, Highways Agency assessments indicate that the enhanced status of the A421 as a strategic east-west route will attract long-distance traffic, placing greater pressure on the remaining section of single carriageway²⁵.
- 2.5.32 The town of Bedford contains two railway stations: Bedford Station and Bedford St. Johns. Bedford Station is located on the Midland Main Line from London St Pancras to the East Midlands. It is also the terminus of the Marston Vale line from Bletchley through Bedford St. Johns, which incorporates stations at Kempston Hardwick, Stewartby, Lidlington and Ridgmont. The Marston Vale line is operated by Silverlink. Route utilisation is less than 30 per cent of available capacity in use²⁶.

²⁵ Bedford County Council Bedfordshire Local Transport Plan 2006/07 – 2010/11 <http://85.12.98.34/ltp/index.html>

²⁶ Bedford County Council Bedfordshire Local Transport Plan 2006/07 – 2010/11 <http://85.12.98.34/ltp/index.html>

Employment and economy

2.5.33 The economy in Bedfordshire is generally strong when compared with the Eastern region and the rest of the UK with the level of unemployment being 3.1 per cent in 2006/07 compared with 4.5 per cent and 5.3 per cent respectively²⁷. The vast majority of jobs are within the service sector and average workplace-based income levels are generally in line with those in the rest of the region and the UK. However, residence-based earnings are slightly higher than those of the region and the UK, which suggests that people commute out of the area to access higher paid jobs.

Spatial issues

2.5.34 The following spatial issues have been identified:

- the Regional Spatial Strategy²⁸ identifies the Bedford/Kempston/Marston Vale growth area as an area where there may be conflict between waste management and other development. It may be necessary to accommodate both strategic growth and landfill activity in the Marston Vale
- the Milton Keynes and South Midlands Sub-Regional Strategy²⁹ identifies Bedford/Kempston/Northern Marston Vale as a location for growth. The strategy provides for urban renaissance at Bedford/Kempston coupled with significantly increased delivery of new housing, economic development and new jobs, and the continued regeneration of the Marston Vale
- the Regional Economic Strategy for the East of England³⁰ identifies that the main location for development in Bedfordshire will be the main urban areas of Bedford/ Kempston and the northern part of Marston Vale

2.6 What will be the situation *without* the eco-town? (the 'business-as-usual' option)

2.6.1 If the eco-town does not progress two things may happen. The area falls within the Milton Keynes and South Midlands Growth Area and, as such, has been identified as an area suitable for growth and development. On this basis it is likely that smaller development proposals will come forward. Alternately, there may be no development and the area will remain as an agricultural landscape, fragmented by current and former industrial activity including brick works, open cast clay pits, landfill, distribution centres and industrial estates.

²⁷ Nomis Labour Market Profile for Bedfordshire – www.nomisweb.co.uk

²⁸ East of England Regional Assembly (2004) Draft East of England Plan – www.eera.gov.uk/category.asp?cat=120

²⁹ Government Office for the South East, East Midlands, East of England (2005) Milton Keynes and South Midland Sub-Regional Strategy – www.go-se.gov.uk/gose/news/newsarchive/mksmSRS/

³⁰ East of England Development Agency (2004) A Shared Vision: The Regional Economic Strategy for the East of England http://www.eastofenglandobservatory.org.uk/WebDocuments/Public/approved/user_9/full%20RES.pdf

2.6.2 The implication of the first scenario is that there will still be significant development within the area but this will come forward in a more piecemeal manner. On the basis that there could be the potential for several smaller development proposals, possibly associated with different settlements in the Marston Vale, it is unlikely that a holistic, integrated form of development would occur. The smaller scale of development would mean different and perhaps lesser impacts on the local communities and the surroundings. However, several smaller-scale developments might not facilitate significant community benefits through economies of scale, such as improved access to facilities and amenities. Smaller-scale development proposals could also be considered less likely to provide significant economic development through retail, commercial and leisure-related development.

2.6.3 In the latter scenario there will be few changes. Climate change might have an impact on the type of agricultural activity pursued in the area or the type of crops grown but the area will remain substantially as now. The housing needs that would have been satisfied in Marston Vale will be satisfied in another part of Mid Bedfordshire.

2.7 What will be the situation with the eco-town?

Introduction

2.7.1 In this section we consider the sustainability of the proposed location and development at Marston Vale. The discussion is structured around the sustainability issues derived from the earlier scoping work.

2.7.2 The appraisal draws on information derived from:

- the Faber Maunsell scoping studies
- the developer's proposal
- discussions with O & H Properties Ltd
- discussions with Mid Bedfordshire District Council, Bedford Borough Council and Bedfordshire County Council
- a site visit
- the comments of statutory agencies (eg English Heritage, the Environment Agency, Natural England, the Department of Transport)
- discussions with Communities and Local Government

Biodiversity and green infrastructure

2.7.3 The area principally comprises significant areas of arable farming interspersed with areas of settlements and former brickworks. A Phase 1 habitat survey has been undertaken by the developer's agents and a series

of species surveys are under way. No major constraints have so far been identified.

- 2.7.4 Woodland SSSIs are located close to the proposed development site and these, along with planned additional planting, will form an important component in the strategic green infrastructure. In addition to this there are a number of County Wildlife Sites across the area that have been designated for their woodland, grassland or wetland interest. There is the potential for increased recreational pressure to effect the nature conservation interests of the designated sites.
- 2.7.5 The proposals seek to enhance the ecological functionality of existing wildlife corridors and create substantial new green and blue corridors throughout the site and into the wider area. The vision is to create a landscape of woodland and water that create a series of blue and green spaces complemented by productive land uses including agriculture, biomass and local food production, commercial forestry, allotments and small orchards. The aim is to consolidate existing areas of woodland planting by contributing to the community forest and supporting the work being undertaken by the Forest of the Marston Vale. A significant feature of the valley floor is the large expanse of water – large lakes left as a legacy of clay extraction and brick-making in the Vale. The lakes have the potential to be used for biodiversity, sport and recreation and be linked by canals and other waterways for both movement and leisure purposes.
- 2.7.6 It is anticipated that the new settlement will meet the requirement for 40 per cent of the eco-town to comprise green space, although it should be acknowledged that the Marston Vale possesses a large amount of water or “blue” space for amenity, open space, sport and recreation.

Climate change adaptation and flood risk

- 2.7.7 The proposed development is located across a strategic area containing Flood Zones 1, 2 and 3. The Environment Agency has identified that there appears to be land available in areas of lesser flood risk to accommodate growth proposals and it is expected that built-up areas would be located within Flood Zone 1, with open space and informal recreation areas only in Flood Zone 2 and no built development in Flood Zone 3. Climate change and flooding will be taken into consideration in the design of the scheme and it is anticipated that plot and floor levels will be based on current guidance, with plot levels higher than the current minimum requirements.

Climate change mitigation

- 2.7.8 The developers are aiming for the site to be exemplar in terms of achieving zero carbon and they have started to identify how this could be achieved in relation to the characteristics of the Marston Vale. Potential opportunities have been identified in relation to linking with the forest as a source of bio

fuels for wood-burning stoves (both at the scale of an individual house or as part of a community scale Combined Heat and Power (CHP)) and community scale wind turbines to support the development; maximising the efficiency of buildings would reduce the energy requirement. There is the potential for the community to be involved in the energy strategy through an Energy Services Company (ESCO) if CHP were developed; wind turbines could be the subject of community investment.

2.7.9 The developers propose an energy park that would be based around a state-of-the-art energy-from-waste plant to provide benefits to the local area in terms of heat and power. It would also have the potential to provide other developments with heat and power, thus reducing carbon emissions in the wider area. The energy park would be co-located with a business park which would show-case the latest environmental technologies.

2.7.10 The transport strategy for the Marston Vale eco-town aspires to reduce carbon dioxide emissions by 80 per cent compared with a similar but traditional car-based development.

Landscape and historic environment

2.7.11 There are several Scheduled Ancient Monuments within the site boundaries and in the wider area. There are various Listed Buildings within the proposed site, including chimneys and kilns at Stewartby Brickworks, and any development should ensure that these buildings are repaired and brought into active use.

2.7.12 Historic landscape characterisation and historic area assessments are central to understanding what exists in an area to maximise the benefits of development in a chosen location and to ensure the creation of a distinctive place. Development proposals should be informed by a historic landscape characterisation exercise³¹.

Waste

2.7.13 A Waste Feasibility Study has been produced for the proposed development and the overall aim is to reduce waste to a minimum through recycling, composting (including anaerobic digestion) and through energy generation (energy from waste). It is proposed, as a minimum, to seek to achieve all the points for waste required for Level 4 of the Code for Sustainable Homes.

Water resources and water quality

2.7.14 The developers have produced a Water Demand Management and Wastewater Treatment Feasibility Study, setting out how 80 litres per person per day could be achieved and the costs and delivery implications of so doing. The Environment Agency has indicated the need for a water cycle

³¹ English Heritage (2008) Consultation response Eco-towns – living a greener future

study and for appropriate investigations to be undertaken to ascertain any contaminants that may be present.

Community infrastructure

2.7.15 Current proposals for service provision include:

- primary and secondary schools to meet the number and standard required by the local education authority, with primary schools forming the nucleus of local neighbourhood centres and secondary schools being located in easily accessible locations. It is likely that education facilities will cater for 3+ education and statutory education age children with “extended schools” following a “campus” style approach, where larger education allocation could be sub-divided appropriately at the time of delivery. At secondary school level there is the potential for facilities to form the basis of a “sports hub”
- a variety of open spaces with formal facilities; informal open space will be generous in its provision
- local health care provision
- leisure, arts and cultural facilities, including public art
- commercial and retail uses located in a town centre at the eastern end of Brogborough Lake.
- allotments and orchards

2.7.16 The developers state that, as far as possible, the proposal for the Marston Vale should be a self-sustaining community where residents can choose to live, work and enjoy their leisure time in close proximity.

Community wellbeing

2.7.17 The location of the proposed eco-town and its relationship with the existing communities of Brogborough, Lidlington, Millbrook, Marston Moretaine, Stewartby and Kempston Hardwick poses problems and opportunities. There is clearly local concern about the impact of the development on existing facilities and infrastructure and on the character of the area and the communities. However, the eco-town could also provide access to new and different employment opportunities, services and facilities.

2.7.18 Within the existing settlements of the Marston Vale there are established patterns of social interaction and engagement. It is the intention of the developer to ensure that the needs of these existing communities are taken into account in the development of the new community.

2.7.19 The vision for the eco-town will be 'owned' by the Marston Vale Development Company (MVDC), a free-standing property development company established by O & H Properties. MVDC will perform the role of 'town developer', putting in place a dedicated team whose purpose it is to deliver the agreed master plan. MVDC will create an advisory panel comprising both experts and local people to comment upon the compliance with the original concept; the panel will report to the Board of MVDC. As the development proceeds there will be a transfer of assets from MVDC to a variety of stakeholders including investors and community trusts along with a transfer of responsibilities for management and maintenance. The intention is that at the end of the development 100 per cent of the assets will be privately or community owned and appropriate arrangements will be put in place for Local Trusts, service suppliers, etc. to assume control.

Decent and affordable homes

2.7.20 The developers are proposing that all new housing will adhere initially to Code for Sustainable Homes Level 4 and rise to Level 6, with zero net emissions of carbon dioxide from all energy use in the home. A "Passivhaus" approach to construction will be taken with high insulation, high air tightness, passive solar orientation, modern methods of construction undertaken off site and micro-renewable energy sources. The scale of the development will allow at least 35 per cent of the proposed dwellings to be affordable. This would deliver over 5,000 affordable housing units in the Marston Vale.

Transport and accessibility

2.7.21 A key objective of eco-towns is to achieve a significant reduction in need to use private cars. The proposal seeks to realise this objective by maximising use of the existing railway stations and providing an integrated public transport system with much-improved bus services. It is proposed that more than 50 per cent of trips originating in the Marston Vale eco-town will be by sustainable modes of transport. There will be a town centre created around a series of canals and a car-free environment with cars parked on the edge. The aim is to have 27 per cent of dwellings in car-free central areas.

2.7.22 A major strength of this location is the existing train stations on the Marston Vale line between Bletchley and Bedford, which connects to the Midland Main Line with services between London St. Pancras and the East Midlands. It is proposed to enhance the existing rail services and provide a new rail hub at Lillington. In addition to this it is proposed to provide a Bus Rapid Transit system through the Marston Vale and extending to Milton Keynes and Bedford, which would connect with the West Coast Main Line and Midland Main Line.

2.7.23 Walking and cycling will be encouraged by providing space for cyclists on every street. Cycle and pedestrian routes will be fundamentally linked with the location of key services and facilities. There is the potential for water taxis to utilise the network of lakes, canals and wetland areas. The aim is to facilitate at least a five-fold increase in walking and cycling.

2.7.24 Road access to the proposed location is primarily via the A421 Trunk Road. The great majority of movement from an eco-town in the Marston Vale is likely to be north east to Bedford, west to Milton Keynes and south west to the M1 motorway. The capacity of local road infrastructure to support existing planned growth is reported by the Mid Bedfordshire District Council, Bedford Borough Council and Bedfordshire County Council as a major concern. Any further planned growth, such as an eco-town at Marston Vale, would place extra demands on existing road transport infrastructure.

2.7.25 The developers propose to produce an area-wide travel plan setting out how the settlement will achieve a significantly higher proportion of journeys on foot, by cycle and by public transport than comparable settlements.

Employment and economy

2.7.26 The aim is for Marston Vale to be complementary to existing employment patterns in the area with most of the jobs created in the industry, office and warehousing sectors (circa 10,000) and further jobs created in commercial leisure, tourism, energy park, construction, forestry, market gardening, agriculture and local shops and services. Large footprint employment uses, such as logistics and manufacturing, are able to exploit the flat topography and good accessibility to the motorway network. The focus will be on creating a vibrant business and residential community with severe restraint on car use; bus services and water taxis will be channelled through this area. Opportunities for home-working will be built into all new residential areas and local resource centres and high technology virtual networks will be standard provision throughout the settlement.

2.7.27 Key aspirations are:

- developing the “Made in the Vale” brand
- synergy with Millbrook Proving Ground (eg sustainable transport)
- energy from waste
- sustainable construction
- environmental technology companies (Oxford-Cambridge Arc)

Spatial issues

2.7.28 The landscape character is highly disturbed as a consequence of mass clay extraction, brick-making, landfill and mineral extraction. It is unclear at the current time what proportion of the proposed site constitutes previously-developed land.

2.7.29 The productive land in the Marston Vale area is of good/fair quality and is classed as either Grade 3 or Grade 4. It is the aspiration of the developer to maximise the opportunities on existing agricultural land where possible in order to support local food production.

2.8 How can we mitigate effects?

2.8.1 The **key strengths** of the location from a sustainability viewpoint are:

- the limited landscape interest of the site
- the potential to create ecological gain
- the potential to retain and conserve features of historic interest
- the proximity to Marston Vale Community Forest for leisure and recreation pursuits
- the proximity of the railway stations
- the potential to locate development away from areas at risk of flooding

2.8.2 The **key weaknesses** of the location from a sustainability viewpoint are that:

- the proportion of previously developed land is not known as some of the land may have been restored and is not therefore strictly previously developed land. Some land has been reclaimed and is now under recreational use³²
- there are features of historic interest within the site that potentially require investment and conservation
- there may be a loss of productive arable land³³

³² Eco-towns: living a greener future, draft report on consultation

³³ Eco-towns: living a greener future, draft report on consultation

2.8.3 The sustainability of Marston as a potential eco-town location is further assessed in Table 2. The table uses a series of 23 indicators, derived from the appraisal criteria, to provide an objective summary of the strengths and weaknesses of the location from a sustainability viewpoint. On this basis, Marston has been assessed in accordance with the key at the end of Table 2 as:

B. Might be suitable for an eco-town subject to meeting specific planning and design objectives.

Table 2: Sustainability of Marston Vale as an eco-town location

SA Issue	Site Specific Issues	Indicators	Comment
Biodiversity and green infrastructure	Conserve and enhance biodiversity	SSSIs within or adjacent to the site	No, but in the vicinity of the site: Marston Thrift (200m), Kings Wood and Glebe Meadows (2.25km (1.5 miles)), Maulden Wood and Pennyfather's Hills (4.6km (3 miles)) and Cooper's Hill (2.4km (1.5 miles))
	Protect and enhance priority habitats and species		
	Increase and enhance green infrastructure	Presence of priority habitats/species	Yes – the area is rich in wildlife both in terms of protected and biodiversity action plan species including rare butterflies, diverse grassland communities, ancient woodland and habitats associated with brick pits ³⁴
Climate change adaptation and flood risk	Avoid development in areas of high flood risk	Area of flood risk 3 within site	Yes, but limited
	Avoid exacerbating flooding in the vicinity of the site	Area of flood risk 3 adjacent to the site	Yes, but limited
Climate change mitigation	Maximise use of renewable energy	Potential of the site for renewable energy	Not known

³⁴ East of England Regional Assembly (2008) Consultation response to Eco-towns: living a green future

Table 2: Sustainability of Marston Vale as an eco-town location
(continued)

SA Issue	Site Specific Issues	Indicators	Comment
Landscape and historic environment	Protect and enhance the landscape Protect and enhance heritage assets and their settings	Designated landscapes across or adjacent to the site	No
		Listed buildings/ ancient monuments within or adjacent to the site	Yes – 9 listed buildings within the site and 11 within 1km (0.6 miles) of the site boundary 4 listed monuments within the site
Landscape and historic environment	Protect and enhance the landscape Protect and enhance heritage assets and their settings	Designated landscapes across or adjacent to the site	No
		Listed buildings/ ancient monuments within or adjacent to the site	Yes – 9 listed buildings within the site and 11 within 1km (0.6 miles) of the site boundary 4 listed monuments within the site
Water resources and water quality	Minimise impacts on water resources and water quality	Water supply status	The Upper Ouse and Bedford Ouse catchment are classed as having no water available with some areas falling into the categories of being over-licensed or over-abstracted ³⁵
		STW capacity	Not known

³⁵ Environment Agency (2005) Upper Ouse and Bedford Ouse Catchment Area Management Strategy

Table 2: Sustainability of Marston Vale as an eco-town location
(continued)

SA Issue	Site Specific Issues	Indicators	Comment
Community infrastructure/ wellbeing	Utilise existing infrastructure within its capacity	Will contribute to retaining character of higher order centre	No
	Complement broader planning policies/ objectives	Will facilitate regeneration	Yes – site and surroundings
		Within or adjacent to Air Quality management Area (AQMA)	SO ₂ AQMA encompassing in whole, or part the parishes of Elstow, Stewartby, Wilstead and Wooton and also Lower Shelton, Marston Moretaine, Houghton Conquest, Chapel End and How End – SO ₂ due to the Stewartby Brickworks which closed in February 2008 3 localised NO ₂ AQMAs within Bedford
Decent and affordable homes	Meet housing need	Demand for housing	Yes – Housing Affordability Pressure is High
		Demand for affordable housing	Yes – Current households on waiting list – 2,598 in Bedford and 2,937 in mid Beds ³⁶
Transport and accessibility	Provide easy access to a higher order centre	Proximity to higher order centre (distance)	Bedford c.5km (3 miles)
	Provide easy access to a railway station	Proximity to railway station (distance)	Within the site there are 4 stations on the Marston Vale line – Kempston Hardwick, Stewartby, Millbrook and Lidlington
	Discourage long distance commuting		
	Proximity to area of poor air quality	Proximity to existing sources of employment (scale/ distance)	Bedford c.5km (3 miles) and Milton Keynes c.9.5km (6 miles)
		Proximity to motorway/strategic road network (distance)	M1 J14 c.1km (0.6 miles) from the southern boundary of the site

³⁶ Communities and Local Government (2008) Eco-towns: Living a greener future

Table 2: Sustainability of Marston Vale as an eco-town location
(continued)

SA Issue	Site Specific Issues	Indicators	Comment
Spatial issues	Use brownfield land wherever possible Reduce the loss of and damage to the most versatile agricultural land Reduce the quantity of contaminated land	Area of previously developed land within the site	The landscape character is highly disturbed as a consequence of mass clay extraction, brick-making, landfill and mineral extraction. It is unclear at the current time what proportion of the proposed site constitutes previously-developed land
		Area of grade 1/2 agricultural land within the site	No
		Area of contaminated land	A proportion of the site is likely to be contaminated due to previous landfilling and mineral extraction -area currently unknown
		Part or all of site within Green Belt	No
Spatial issues (continued)	Use brownfield land wherever possible Reduce the loss of and damage to the most versatile agricultural land Reduce the quantity of contaminated land (continued)	Within growth area	The Milton Keynes and South Midlands Sub-Regional Strategy ³⁷ identifies Bedford/Kempston/ Northern Marston Vale as a location for growth

Key:

Positive

Not known

Potential Negative

Negative

³⁷ Government Office s for the South East, East Midland, East of England (2005) Milton Keynes and South Midland Sub-Regional Strategy <http://www.go-se.gov.uk/gose/news/newsarchive/mksmSRS/> [accessed 29.08.08]

2.8.4 The key strengths of the development from a sustainability viewpoint would be, subject to verification of their feasibility and further development:

- the potential for some level of self-containment as a result of the scale of development
- the potential for wider community benefits in the surrounding area through improved access to services and facilities
- the proposals for an energy park with a waste-to-energy plant
- the potential for local food production on productive land

2.8.5 Issues which require further consideration and elaboration are:

- the traffic impacts on existing road infrastructure
- an energy strategy – an energy feasibility study is currently being prepared in relation to wind, biomass combined heat and power, micro-renewables and district heating. A further understanding of the feasibility of delivering these options is required to assess the potential benefits for the proposed development and how such technologies might be incorporated
- a water strategy – a water demand management and wastewater treatment feasibility study is currently being prepared to explore how the demand for water for both residential and non-residential uses could be reduced. A further understanding of the measures proposed to reduce overall water demand is required, especially in relation to the potential for achieving water neutrality through improvements in water efficiency within existing communities. There is also a need, within an overall Water Cycle Strategy, to consider wastewater treatment as an issue
- a waste strategy – a waste feasibility study is currently being prepared that covers all aspects of waste reduction in the Marston Vale. A further understanding is required of how the aim to re-use everything through recycling, composting and energy generation will be achieved for both residential and commercial waste. The implications of energy-from-waste in relation to carbon emissions should be explored further
- proposals to minimise the adverse effects and maximise the positive effects on the existing communities
- community management arrangements
- an employment strategy to demonstrate that Marston Vale is a viable location to deliver the level, variety and quality of jobs required by local residents to ensure that commuting out of town for work is reduced³⁸

³⁸ Mid Beds District Council (2008) Consultation response Eco-towns – living a greener future

- making green links – linking together development proposals in the area would provide a landscape scale enhancement for wildlife. The area has features which could be buffered to provide linkages north and south of the proposal as well as making links to other off site proposals eg Forest of Marston Vale and Brogborough Landfill Restoration Scheme
- proposed density – stretched, linear development would destroy significant tracks of farmland and lead to a loss of landscape.³⁹

2.8.6 Table 5 compares the development with the draft standards for eco-towns set out in the Progress Report published in July (which were available to the proponents prior to their final submissions at the end of August).

Table 3: Marston Vale and eco-town criteria

Progress Report Draft Eco-Towns Criteria	Indicators	Performance of Marston Vale Development
Master planning and Sustainability Action Plans	<p>All eco-towns proposals must be accompanied by a detailed master-plan and a sustainability action plan that will show how the overall target to reduce CO₂ emissions by 80% and any other targets such as those on transport and jobs will be achieved and sustained.</p> <p>Core services that underpin the delivery of CO₂ targets such as public transport infrastructure and services must be delivered and be operational when the first residents move in.</p>	<p>The proposal outlines the energy strategy but does not provide detail on how the 80% reduction target will be achieved.</p> <p>Details of the energy strategy include:</p> <ul style="list-style-type: none"> • development to include an energy park with energy-from-waste plant to provide heat and power to the surrounding area • houses built to CSH Level 6 and Passivhaus • technologies being considered include locally grown bio-fuels for household level wood burning stoves or community scale CHP and wind turbines <p>The Marston Vale railway line runs through the site. New infrastructure proposed would include a segregated public transport route through the Marston Vale between Milton Keynes and Bedford. There would be a demand responsive bus service, taxis, car clubs, water taxis, cycle and walking routes.</p> <p>No commitment is made in the proposal to ensure that public transport infrastructure and services are delivered and operational when the first residents move in.</p>

Table 3: Marston Vale and eco-town criteria (*continued*)

Progress Report Draft Eco-Towns Criteria	Indicators	Performance of Marston Vale Development
Governance	<p>Proposals must be accompanied by long term governance proposals for the development to ensure that:</p> <ul style="list-style-type: none"> • there is engagement and consultation with existing neighbouring communities • targets are met and maintained • future development continues to meet the minimum criteria • there is continued community involvement and engagement • community assets are maintained 	<p>The need to consider long term governance arrangements is identified in the proposals but no details are provided as to how this would be achieved.</p> <p>The Bid Update describes how the development company will transfer responsibility for management and maintenance to a variety of stakeholders. It states that an advisory panel will be created, comprising experts and local people, to comment upon compliance with the original concept.</p>
Zero Carbon	<p>Proposals must demonstrate that over a year the net carbon dioxide emissions from all energy use within the buildings on the development are zero or below (excludes embodied carbon and emissions from transport)</p>	<p>The proposals outline ways in which zero carbon emissions could be achieved but they do not demonstrate that such technologies are viable for the proposed development.</p>
Transport	<p>Proposals must demonstrate that they will achieve significant reduction in the need to use private cars and that modal share should reflect the very best European examples where over 50% of trips are by other modes.</p> <p>All homes should be within a 10/15 minutes walk of core services (such as schools, local shops, health services and sports facilities) and of a frequent and high quality public transport service linking business and residential areas and the wider transport network.</p>	<p>An area-wide travel plan is proposed to be provided that sets out how the settlement will achieve a significantly higher proportion of journeys by modes other than the private car. However, no other details are included.</p> <p>The proposals state that the site will be organised so that no front door is more than 250 metres from a bus stop and that bus services will be planned flexibly to meet evening, weekend and leisure demands; no mention is made of meeting the demands for access to employment areas.</p> <p>No details are included within the proposals as to the distance anticipated between residential areas and core services.</p>

Table 3: Marston Vale and eco-town criteria (*continued*)

Progress Report Draft Eco-Towns Criteria	Indicators	Performance of Marston Vale Development
Homes	<p>As well as being zero carbon, homes in eco town proposals:</p> <ul style="list-style-type: none"> • must all achieve Building for Life Silver Standard and Level 4 of the Code for Sustainable Homes at a minimum (unless higher standard set elsewhere) • must all meet lifetime homes standards and English Partnerships space standards • must all have real time energy monitoring and high speed broadband access with real time public transport information • at least 30% must be affordable (which includes social rented and intermediate housing) 	<p>The Bid Update states that housing will initially adhere to Code for Sustainable Homes Level 4 and rise to Level 6 and that a Passivhaus approach to construction will be taken... No mention is made of Building for Life standards or Lifetime Homes standards.</p> <p>The proposals do not include information relating to the inclusion of real time energy monitoring, high speed broadband access or real time public transport information.</p> <p>The scale of the development will allow at least 35% of the proposed dwellings to be affordable.</p>
Employment	<p>It is important to ensure that eco towns are genuine mixed use communities and that unsustainable commuter trips are kept to a minimum. Therefore proposals must ensure that there is significant provision for the creation of employment opportunities within the town. In addition proposals must be accompanied by an economic strategy that demonstrates how targets for access to jobs will be achieved. As a minimum this should be:</p> <ul style="list-style-type: none"> • the provision of one job or employment opportunity per new dwelling that is easily accessible by foot, cycling or public transport 	<p>The proposals state that Marston Vale will provide a portfolio of employment locations within the development. Large footprint employment uses are catered for in locations close to accessible transport infrastructure. The commercial core of mixed use development is proposed to contain business, residential, retail, leisure and community uses.</p> <p>The proposals state that most residents will be able to live and work within the development and that more than 10,000 jobs will be created.</p>

Table 3: Marston Vale and eco-town criteria (*continued*)

Progress Report Draft Eco-Towns Criteria	Indicators	Performance of Marston Vale Development
Service Provision	Proposals must include a good level of provision of services within the eco town that is proportionate to the size of the development. This must include facilities for retail, leisure, health, education, arts and culture, sport, play etc. [The provision of services within the eco-town should enable those who choose to live as part of a community with a degree of self-containment to do so.]	Reference is made as to the provision of such facilities but no details are provided with regard to the level of such provision.
Water efficiency and drainage	Eco-town proposals should aspire to achieve water neutrality for the wider area around them and in particular they must: <ul style="list-style-type: none"> • achieve level 6 of the water element of the Code for Sustainable Homes; • have Sustainable Drainage Systems (SUDS) 	The proposals aspire to achieving water neutrality and include reference to the consideration of SUDS. However, they do not make mention of achieving Level 6 of the water element for the CSH.
Green Infrastructure and Biodiversity	40% of the town's total area must be allocated to green infrastructure of which at least 20% must be public and consist of a network of well managed, high quality green/open spaces which is linked to the wider countryside.	No details are included as to the amount of open space/green infrastructure to be provided. However, the proposals state that a variety of open spaces will be provided and that informal open space will be generous in its provision.
Waste	Eco-town proposals must set out how they will surpass the 2007 National Waste Strategy targets for 2020 and in particular: <ul style="list-style-type: none"> • all homes must achieve the maximum 4 points in the Code for Sustainable homes for storage of non-recyclable waste and recyclable household waste. • all non-residential buildings to achieve BREEAM/CEEQUAL standards 	No information is provided as to how the targets will be achieved. It is proposed, as a minimum, to seek to achieve all the points for waste required for CSH Level 4. No reference is made to achieving BREEAM/ CEEQUAL standards in non-residential buildings.

2.9 How should we monitor sustainability impacts?

- 2.9.1 The sustainability impacts of eco-towns could be monitored partly through regional and local monitoring frameworks. Both the Regional Planning Body and Local Planning Authorities are required to monitor the implementation of their spatial policies – as set out in RSSs and LDFs – and report their findings in an annual monitoring report (AMR). Both RPBs and LPAs could therefore include indicators for monitoring the sustainability performance of eco-towns in their region/district or borough within their AMRs. In light of the appraisal, we consider that indicators should include a particular focus on transport and employment – two of the most challenging issues associated with eco-towns and two of the most important determinants of their overall sustainability. Indicators could include, for example, the proportion of the resident eco-town population who travel to work by public transport, walking and cycling and the number of eco-town residents employed within the town itself.
- 2.9.2 However, it will also be important that the wider ‘lessons learned’ in the planning, development and occupancy of eco-towns are effectively captured and disseminated. This will require gathering a wider range of information including on issues such as funding and partnership working and essentially telling the story of how the town was developed, the obstacles encountered and how these were negotiated. Inspiration could be taken from the Lessons from Cambourne, an evaluation of a new settlement 10 miles west of Cambridge and the insights this provides.⁴⁰

⁴⁰ Platt, S. (2007). Lessons from Cambourne [online] available at: <http://www.inspire-east.org.uk/FileAccess.aspx?id=744> (accessed 15 August 2008)

3 Habitats Regulations Assessment

3.1 Introduction

- 3.1.1 This section sets out the Appropriate Assessment component of the Habitats Regulations Assessment (HRA) of the shortlisted eco-town location and associated development proposal at **Marston Vale**. Part I should be referred to for details of the assumptions and principles underlying this assessment.
- 3.1.2 European sites were scoped in each Appropriate Assessment using the distance criteria set out in the Introduction to the Draft PPS or (particularly when considering water resource and quality issues) as a result of the identification of a pathway linking the eco-town with a European site.
- 3.1.3 The nearest European sites to this eco-town are:
- Eversden & Wimpole Woods SAC, approximately 35km to the east
 - Portholme SAC, approximately 35km to the northeast, and
 - Chiltern Beechwoods SAC, approximately 35km to the south.
- 3.1.4 In addition, the Upper Nene Valley Gravel Pits SSSI (which has been proposed as a future SPA by Natural England) lies approximately 40km to the northwest. However, all of these sites lie well outside the distance criteria used to scope sites into this assessment (see the Introduction to the SA/HRA of the eco-town Programme) and no other impact pathway linking them to the eco-town has been identified.
- 3.1.5 There is also a long distance hydraulic connection to Portholme SAC, the Ouse Washes SAC/SPA and The Wash & North Norfolk Coast SAC/SPA via the River Great Ouse, such that these European sites must also be considered within this assessment.

3.2 Assessment

Urbanisation

- 3.2.1 Given that the Marston Vale site lies 35km from the nearest European site, it can be said that the settlement will not lead to adverse effects upon European sites as a result of the general 'urbanisation' impacts (eg arson, fly-tipping, car dumping etc) that can be suffered by those sites that lie very close to substantial settlements.

Recreational pressure

- 3.2.2 There are no European sites within the 'typical' distances that people travel to visit countryside, woodland or coastal sites for the day, according to the most recent England Day Visits Survey (see Chapter 4). Therefore there is no reason to assume that the population of Marston Vale would add materially to recreational pressure on any European sites.

Local air quality

- 3.2.3 As discussed in the Introduction to the SA/HRA of the Programme, this section confines itself to consideration of local air quality effects on European sites that lie within 200m of those local roads (defined for the purposes of this assessment as being those within 2km of the eco-town) that can reasonably be expected to experience a substantial increase in regular vehicle movements as a result of the general movements of the population. Since the nearest European site is 35km distant both from the eco-town it can be concluded that there will be no such issues associated with Marston Vale. The cumulative contribution of the eco-towns to diffuse pollution and local deposition on European sites elsewhere in the region/country are dealt with as a separate pan-regional issue within the Introduction to the SA/HRA of the Programme.

Water resources

- 3.2.4 The Marston site lies within the Upper Ouse & Bedford Ouse Catchment Abstraction Management Strategies (CAMS) area and Anglian Water's Ruthamford Water Resource Zone. The Ruthamford WRZ is named after the integrated water resources and supply system formed by the use of Rutland Water, Grafham Water and Pitsford reservoir. The strategic operation of these reservoirs allows Anglian Water a flexible and robust means of providing a secure water supply to major urban areas within the catchment. However, it is understood that Bedford is mainly supplied from a direct abstraction from the River Ouse at Clapham. As such, Marston will most likely be serviced by additional abstraction from the River Ouse.
- 3.2.5 Reduced flows are likely to have an adverse effect on The Wash; siltation resulting from low flows is already recognised as a problem. Although the distances involved render it unlikely that increased abstraction from the Ouse to service the Marston development in isolation would lead to an adverse impact on freshwater flows into The Wash, this eco-town must be considered within the context of the overall increases in abstraction from the Great Ouse that will be required to service some of the 26,830 new dwellings per annum that will be delivered across the East of England under the Regional Spatial Strategy, and within this context it is not possible to state that adverse effects will not occur.

Water quality

- 3.2.6 The Environment Agency's Review of Consents has concluded that, although phosphorous levels in the rivers adjacent to The Ouse Washes are considered to be too high at the moment, action at other Sewerage Treatment Works (STWs) within the Great Ouse catchment will allow the target quality to be met. Funding for the necessary improvements has been made available in AMP4, and all schemes are to be completed by the end of 2009. However, there is nonetheless potential for future development to exceed these standards and require further technological adaptations of other STWs.
- 3.2.7 There will be substantial dilution of any phosphates contained in treated sewage effluent discharged to the Great Ouse from Marston due to the presence of numerous tributaries of the Great Ouse upstream of The Ouse Washes SPA or The Wash SPA. However, it is reasonable to conclude that some of these watercourses may themselves carry higher levels of phosphate due to increased development within the South East and East of England (such as some of the 60,000 new dwellings per annum that will be delivered across the two regions as a result of the respective Regional Spatial Strategies), and cumulatively it cannot at this stage be considered unlikely that the Marston eco-town will contribute to heightened phosphate levels in all of these European sites (even though Marston's individual contribution may well be small).
- 3.2.8 At this stage it is therefore not possible to conclude with confidence that adverse cumulative water quality effects on Portholme SAC, the Ouse Washes SAC/SPA & Ramsar site and The Wash & North Norfolk Coast SAC, SPA & Ramsar site will not occur.

Coastal squeeze

- 3.2.9 Not applicable, since the site is 100km from the nearest coastal European site (Colne Estuary SPA & Ramsar site).

3.3 Conclusion

- 3.3.1 It has not proven possible to say that the development that may be delivered at Marston under the Draft PPS will not lead to material adverse effects on The Ouse Washes SAC/SPA & Ramsar site and The Wash & North Norfolk Coast SAC/SPA & Ramsar site as a result of increased abstraction or deteriorating water quality, without further amendments to the Policy Statement.
- 3.3.2 Additional measures are therefore required within the PPS to provide sufficient direction (in terms of both scope and detail) to enable eco-towns to deliver the detailed site-specific measures necessary to avoid or mitigate an adverse effect. With these recommendations for mitigation and avoidance measures it is essential to bear in mind that these are

recommendations for a policy in a Planning Policy Statement. As such they are constrained by the fact that individual policies cannot be tailored to specific eco-towns but must be sufficiently general to cover all the eco-towns and any future developments that will seek to acquire the 'eco-town' label.

3.4 How can we mitigate effects?

Water resources

- 3.4.1 It has not been possible to conclude with confidence that the Marston Vale eco-town would not lead to adverse effects on Portholme SAC, the Ouse Washes SPA/SAC and The Wash SPA/SAC as a result of additional demands on water resources, when considered in combination with all other developments across the area promoted by the Regional Spatial Strategies and other initiatives, without additional measures being included within the Draft PPS. These measures are given below.
- 3.4.2 Avoiding an adverse effect is largely in the hands of the Water Companies (through their resource planning) and the Environment Agency (through their abstraction licencing process). However, there are actions that can be taken by local authorities and central government through the PPS. The water efficiency & drainage policy in the Draft PPS does include two robust measures to maximise water efficiencies and these will contribute considerably to minimising water consumption and therefore mitigating adverse effects on European sites from the eco-towns:
- *“Eco-towns in areas of serious water stress should aspire to achieve water neutrality, ie achieving development without increasing overall water use across a wider area And set out how....*
 - *New homes will be equipped to meet the water consumption requirement of Level 5 of the Code for Sustainable Homes.”*
- 3.4.3 The scale of greenspace provision required (40 per cent of the total area) and the reference to habitats of potential biodiversity value (eg community forests) could reduce the extent to which residents are likely to visit European sites and thereby minimise any potential increase in visitor pressure.
- 3.4.4 Due to the limitations of the assessment tools and data available at this time (and in particular the inability to quantify the number of residents of each eco-town that will be making use of the European sites in question and what proportion of the total cumulative load this represents), coupled with the need for any standards within the Draft PPS to be generally applicable, it is not possible to specify an exact quantity of alternative natural greenspace that will need to be provided for individual eco-towns in order to absorb recreational visitors to such an extent that they will not materially contribute towards recreational pressure on the European sites in question.

- 3.4.5 While specific standards for the provision of open space have been developed for the Thames Basin Heaths SPA (known as Suitable Accessible Natural Greenspace or SANGs), it is acknowledged that they are not necessarily universally applicable. However, Natural England's more general Accessible Natural Greenspace Standards (ANGSt) provide a set of benchmarks for ensuring access to places of wildlife interest and were specifically developed to provide size and distance criteria to provide natural spaces that will contribute most towards sustainable use of recreational resources. While the criteria were not developed with the specific intention of mitigating for adverse impacts on European sites, they were intended to specify a level of semi-natural greenspace provision that would meet the needs of a development's population.
- 3.4.6 In many cases natural greenspace provision to the ANG Standard should serve to minimise the need for recreational resources further afield (ie European sites) to receive an unsustainably large influx of visitors provided that they are delivered within a timescale linked to that of the development and will fulfil a function similar to that of the European site in question (ie dog walking and appreciation of nature rather than more formal recreational activities). For these reasons, we have selected the Natural England ANG standards as the criterion for semi-natural greenspace provision that the Draft PPS should require eco-towns to meet in order to ensure that sufficient recreational space is provided to minimise adverse effects on the identified European sites.
- 3.4.7 It is therefore recommended that the following additions to the recreation Policy are incorporated in order for it to provide a more detailed specification:
- As a minimum, new areas of natural (as opposed to more formal) greenspace created as part of the 40 per cent area allocation indicated above should be provided in alignment with the Natural England Accessible Natural Greenspace Standard (ANGSt), which would require the provision of a natural greenspace (as opposed to a more formal park) of at least 2 hectares in size, no more than 300 metres from the houses it is intended to serve, and new statutory Local Nature Reserves at a minimum level of one hectare per thousand population. If, after the project-level Appropriate Assessment for the eco-town, it is considered that the ANGSt level of provision will be inadequate to reduce the recreational pressure on a European site then a higher level of provision should be made, in line with the conclusions of the project assessment.
 - Where the eco-town proponents intend to include existing areas of publicly accessible semi-natural greenspace within their allocation in order to meet these standards, they would need to demonstrate that sufficient capacity remained within these sites to absorb the new population from the eco-town.

- The relevant greenspace would need to be provided in advance of occupation of the eco-town and will need to serve a similar recreational function to the European sites from which it is intended to draw recreational users (eg dog-walking and appreciation of nature).
- It is acknowledged that there are some European sites which have an intrinsic appeal that is sufficiently great that the provision of alternative greenspace is unlikely to result in a material reduction in recreational pressure. In these cases the developer would need to liaise with stakeholders in the European site to assist in the development and long-term delivery of an appropriate Site Management Plan, particularly addressing any changes in management that would be necessary to respond to increased visitor numbers or to constrain or manage such an increase. Precise details of measures to be implemented and the actual scale of any contribution would need to be agreed with Natural England and other stakeholders at the project-level Appropriate Assessment but these may need to include car park closures, fencing and moving of footpaths informed by data on visitor behaviour patterns on the European site in question.

Water quality

- 3.4.8 It has not been possible to conclude with confidence that the Marston Vale eco-town would not lead to adverse effects on Portholme SAC, the Ouse Washes SPA/SAC and The Wash SPA/SAC as a result of deteriorating water quality from increased volumes of treated sewage effluent, when considered in combination with all other developments across the area promoted by the Regional Spatial Strategies, without additional measures being included within the Policy Statement. These measures are given below.
- 3.4.9 Avoiding an adverse effect is largely in the hands of the Water Companies (through their resource planning) and the Environment Agency (through their abstraction licensing process). However, there are actions that can be taken by local authorities and central government through the Planning Policy Statement. The water efficiency & drainage policy in the eco-towns Policy Statement does not contain any specific measures relating to water quality and it is therefore recommended that the following additions to this Policy are incorporated in order for it to be additionally robust:
- specific reference should be made to the fact that the eco-town development should only take place once any new wastewater treatment infrastructure necessary to service the development while avoiding an adverse effect on European sites is in place. The Policy Statement should also indicate how this need will be determined and delivered through interaction with other authorities (Water Companies, the Environment Agency etc) ie through a Water Cycle Strategy

The Draft Eco-towns PPS

3.4.10 The Draft PPS sets the standards for eco-towns at a strategic level; as such, it is important that it incorporates those mitigation and avoidance measures identified as being necessary for all the potential eco-towns. Incorporating these measures within the Draft PPS will help ensure their implementation as the eco-town proposals develop. With this in mind, the recommended mitigation and avoidance measures identified in this section are reproduced within the HRA of the Draft PPS itself (even though the need for the measures arises from the specific eco-town rather than the Draft PPS).

Further HRA/AA

3.4.11 This HRA/AA has been undertaken at a strategic level and is therefore necessarily broad in its assessment, conclusions and recommendations. It constitutes the first of a series of successive assessments that will be undertaken for each of the eco-towns that are taken forward. As each tier of the planning system is negotiated and the eco-town proposals are further developed, a new and more detailed HRA/AA will be required. For example, where the eco-town is included in a LDF the proposal will be subject to HRA/AA and reappraised in the light of more detailed information that may be available and further mitigation or avoidance measures may also be suggested. Planning applications for eco-towns will also need to include a detailed HRA/AA which will demonstrate how the necessary mitigation measures will be delivered on the ground.

Glossary

Abbreviation

AA	Appropriate Assessment
AD	Anaerobic Digestion
AMR	Annual Monitoring Report
AONB	Area of Outstanding Natural Beauty
AQMA	Air Quality Management Area
AWCS	Automated Waste Collection Systems
CAMS	Catchment Abstraction Management Strategies
CHP	Combined Heat and Power
CNP	Campaign for National Parks
CPRE	Campaign to Protect Rural England
CRP	Community Reference Point
DEFRA	Department for the Environment, Food and Rural Affairs
DPA	Dwellings Per Annum
DPD	Development Plan Document
EIA	Environmental Impact Assessment
EiP	Examination in Public
EP	English Partnerships
FEH	Flood Estimation Handbook
GWMU	Chalk Groundwater Management Unit
HRA	Habitats Regulations Assessment
IMD	Index of Multiple Deprivation
ISSET	Institute of Sustainable Energy Technology
LCAs	Landscape Character Areas
LDF	Local Development Framework
LNR	Local Nature Reserve
LoWS	Local Wildlife Site
LPA	Local Planning Authority

MBC	Metropolitan Borough Council
MRF	Material Recycling Facility
MUSCO	Multi-Utility Supply Company
NNR	National Nature Reserve
ONS	Office of National Statistics
PDL	Previously Developed Land
PUA	Principal Urban Area
RDF	Refuse Derived Fuel
RPB	Regional Planning Body
RTR	Rapid Transit Route
SA	Sustainability Appraisal
SAC	Special Areas of Conservation
SAPs	Species Action Plans
SEA	Strategic Environmental Assessment
SEEDA	The South East England Development Agency
SFRA	Strategic Flood Risk Assessment
SINCs	Sites of Importance for Nature Conservation
SLA	Special Landscape Area
SNCI	Sites of Nature Conservation Importance
SOAs	Super Output Areas
SPA	Special Protection Areas
SRS	Sub-Regional Strategy
SSSI	Site of Special Scientific Interest
STW	Sewerage Treatment Works
SUDS	Sustainable Drainage Systems
SUE	Sustainable Urban Extension
UKCIP	UK Climate Impacts Programme
WRAP	Waste & Resources Action Programme
WRMU	Water Resource Management Units
WRZ	Water Resource Zone

