

Sustainable Economic Growth Within Environmental Limits Hypothetical case study: 'Limitville'

A report prepared for *emda*

Land Use Consultants and GHK Consulting

10 November 2010

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SUSTAINABLE ECONOMIC GROWTH WITHIN ENVIRONMENTAL LIMITS

HYPOTHETICAL CASE STUDY: 'LIMITVILLE'

**Prepared for the East Midlands Development Agency
by
Land Use Consultants
and GHK Consulting**

10 November 2010



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1 Introduction

- 1.1 A new approach to delivering ‘sustainable economic growth within environmental limits’ has been developed for the East Midlands. The approach is described in detail in a guidance document prepared by Land Use Consultants and GHK Consulting for *emda* and partners¹.
- 1.2 The ‘Limitville’ case study was developed to test and illustrate the new approach. It was prepared for use in a workshop with *emda* officers and nominated representatives of the project Steering Group in August 2010. Those attending the workshop considered it to be a success. It was therefore decided that the outputs from the workshop should be made available as part of the library of documents, information and tools that it is anticipated will be built up over time as users become more familiar with the approach, and examples of its use in decision-making become available.
- 1.3 It should be noted that the case study is hypothetical and was developed purely for use in the workshop. As such, it represents a truncated version of what, in practice, would be a much longer and more detailed process.
- 1.4 Notwithstanding this, it is hoped that Limitville will provide a useful example of how the new approach to sustainable economic growth within environmental limits is expected to work in real-life situations.
- 1.5 Those involved in the workshop are listed in Table I.1. We would like to acknowledge the enthusiastic and constructive nature of all the contributions made during the workshop, which helped to make it a success.

Table I.1: Workshop attendees

| Name of attendee | Organisation |
|------------------|---|
| Craig Bickerton | Principal Economist, <i>emda</i> |
| Steve Harley | Head of Spatial Development, <i>emda</i> |
| Ruth Hyde | Tourism Director, <i>emda</i> |
| Betinna Lange | East Midlands Environment Link |
| Chris Lawton | Research Manager, <i>emda</i> |
| James Luger | Head of Sustainable Development, <i>emda</i> |
| James Medhurst | GHK Consulting (facilitator) |
| Chloe Nicholson | Sustainable Development and Environmental Policy Advisor, <i>emda</i> |
| Jeremy Owen | Land Use Consultants (facilitator) |
| Ann Plackett | English Heritage |
| Will Rossiter | Head of Strategy and Regional Affairs, <i>emda</i> |

¹ Land Use Consultants and GHK Consulting (30 September 2010) Sustainable Economic Growth with Environmental Limits. Volume I: Guidance for the East Midlands

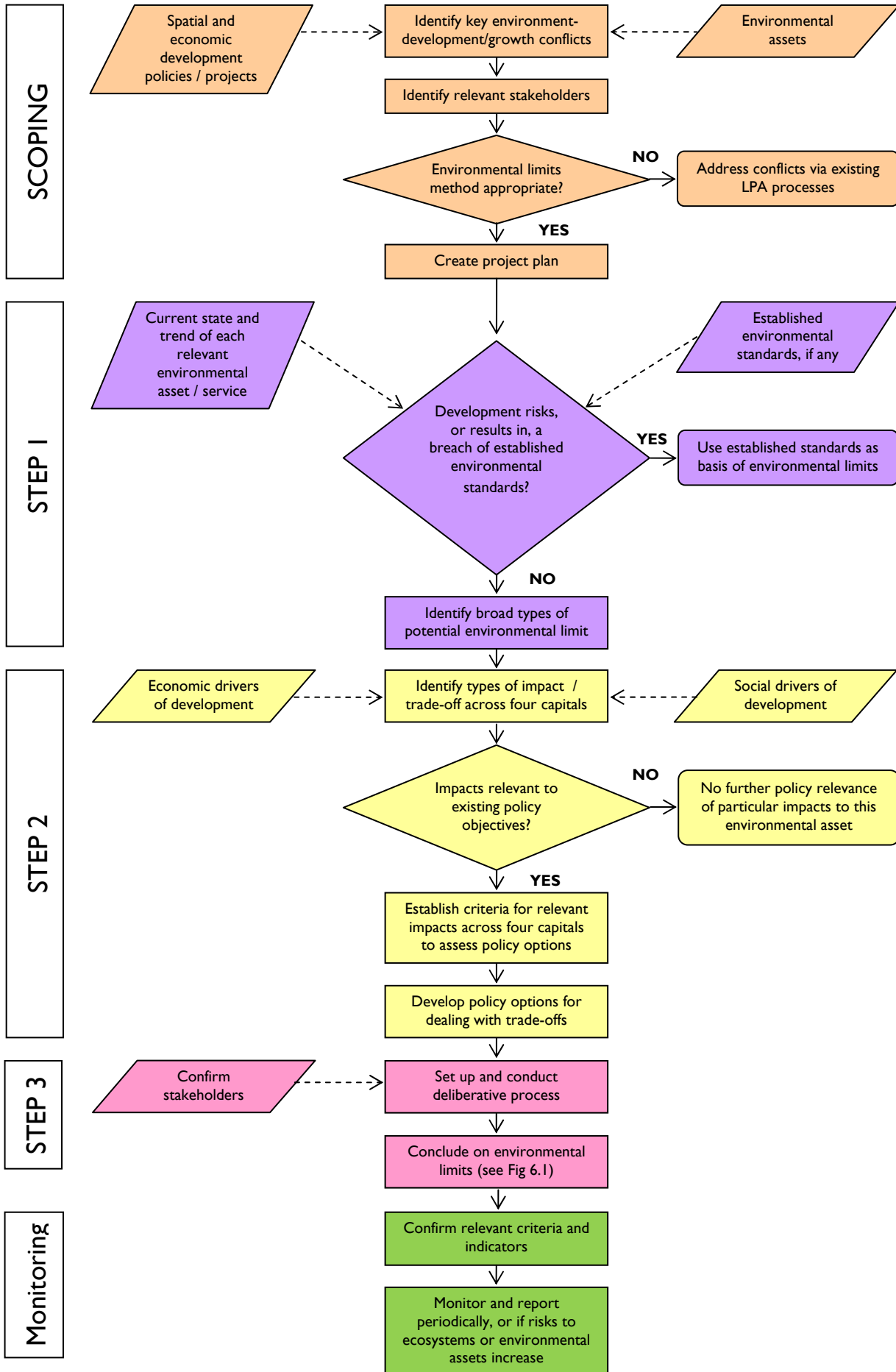
| Name of attendee | Organisation |
|-------------------------|---|
| Alan Srbljanin | Transport and Connectivity Advisor, <i>emda</i> |
| Michael Stubbs | Rural and Communities Team Manager, <i>emda</i> |
| Julie Tanner | Head of Urban Team, <i>emda</i> |
| Chris Ward-Brown | Construction Policy Manager, <i>emda</i> |

2 Introducing the environmental limits method

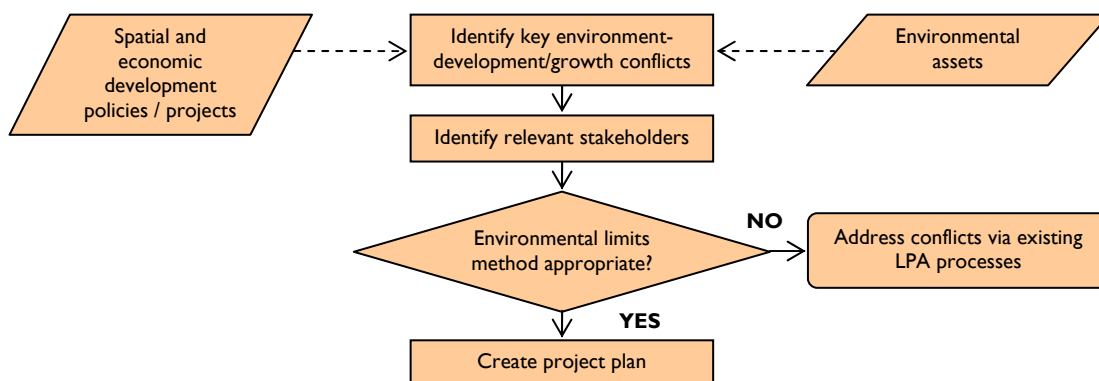
THE METHOD: AN OVERVIEW

- 2.1 The method for applying environmental limits in the East Midlands comprises three core steps, starting with gathering evidence, through to analysis, and finally to determining environmental limits (see **Figure 2.1**). Before applying the method, its relevance and appropriate parameters need to be established (scoping). Once the exercise is complete, the outcomes will need to be kept under review (monitoring and evaluation):
- **Scoping:** Setting out in broad terms the relevant issues and identifying the relevant stakeholder community in order to confirm the relevance of the approach.
 - **Step 1:** Reviewing the environmental asset(s) and ecosystem services.
 - **Step 2:** Identifying the relationship between economic and social development and threats to environmental assets.
 - **Step 3:** Assessing and agreeing environmental limits.
 - **Monitoring and evaluation:** Monitoring trends and periodically evaluating whether the limit needs to be revised.

Figure 2.1: The 3-step method for establishing environmental limits



3 Initial scoping



Purpose

The key term during Initial Scoping is **'relevance'**: to set out in broad terms the relevant issues and to identify the relevant stakeholder community; and then to confirm the relevance of the approach.

Context to Limitville

- 3.1 Limitville is a historic county town that plays a major service function for both its own population and for neighbouring settlements. Its current population is 80,000, although it has grown rapidly since the Second World War.
- 3.2 Economically, its performance is similar to the UK average, both in terms of employment rates and GVA per capita. However, recently a major local manufacturing employer closed down with the loss of 2,000 jobs, mainly lower skilled. 35% of jobs in the town are in the public sector (including NHS). Other important sectors include leisure and tourism (the town has a castle and remnants of medieval walls, plus an attractive historic core), financial and businesses services, and a fledgling but rapidly growing high technology sector.
- 3.3 There is net in-commuting into the town, equivalent to 15,000 trips a day. Most of these trips are from households located in adjoining suburbs, with a minority from neighbouring towns.
- 3.4 The town nestles within attractive landscapes, with a chalk downland Area of Outstanding Natural Beauty (AONB) to the south, and a number of historic parks and gardens both within the town and nearby. There is also significant biodiversity interest in close proximity to the town, most notably remnants of internationally and nationally important heathland (designated for its bird and reptile species), complemented by local nature conservation designations. There are a few pockets of Grade 3 agricultural land, but otherwise best and most versatile land is not a significant constraint.

- 3.5 The River Limit flows through the town from south to north, and has a narrow, but defended floodplain – there is a residual risk of flooding through the centre of the town. There are no current water resource or water quality issues of particular note, although water supply could become an issue in the future if Limitville expands markedly.
- 3.6 Limitville has good transport links with a major dualled trunk road linking it to a major conurbation 10km to the west and an ageing coastal resort, some 20km to the east. It is also on a busy mainline, with significant commuting both into and out of the town at peak times. There is considerable rush hour traffic congestion in the town centre, and on the main arteries into and out of the town centre. As a result of traffic pollution, the town centre and the main trunk road have been designated an Air Quality Management Area.
- 3.7 **Figure 3.1** shows the international assets and constraints. **Figure 3.2** shows local assets and constraints.

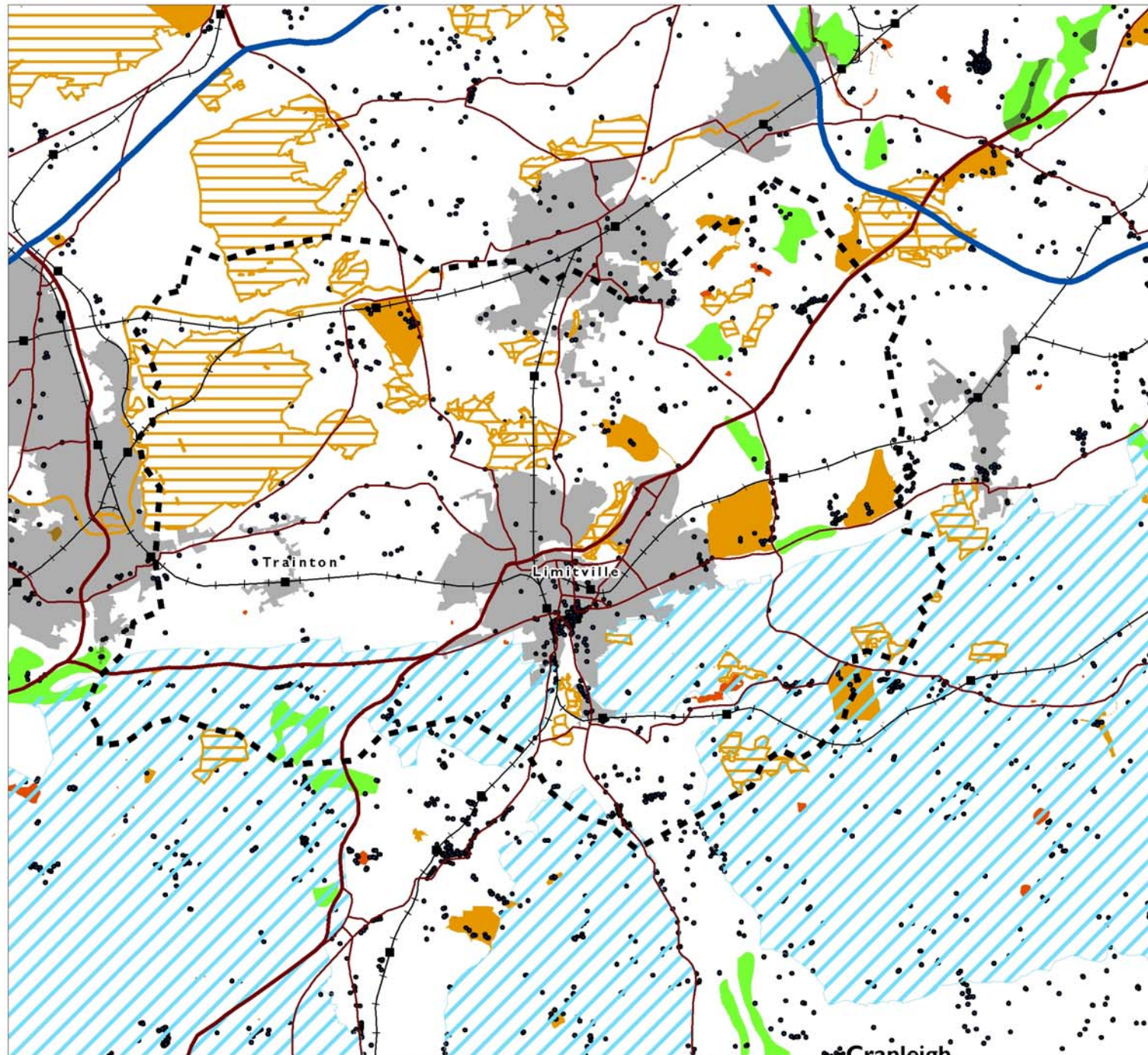
Initial Scoping

Strategic questions

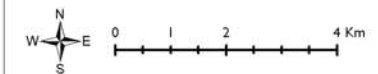
1. What development policies and projects are giving rise to possible concerns for the environment?
2. What features of the environment are likely to be affected (directly and indirectly) by development?

- 3.8 There is substantial pressure for new housing both from the local population and from people wishing to relocate from the major conurbation and from the coastal resort. Employers are looking to expand.
- 3.9 Demographic pressure could double the population over a 40 year period, with first 20 years being planned for now (i.e. 20,000 new dwellings 2010-2030), and 20,000 likely to be needed 2030-2050.
- 3.10 Over recent years, it has become apparent that those environmental assets that have been most affected by development pressure have been the biodiversity assets, and in particular the internationally designated sites. There have been issues relating to recreational, noise and light disturbance.
- 3.11 In addition, the proximity of the AONB to the south and the heritage assets in the centre of the town have given rise to concerns that further development may begin to affect the character of Limitville and its setting.
- 3.12 Concerns were also evident about the impacts of development on the air quality of the town centre, and the contribution of new development to the local authority area's carbon emissions.

**Limitville Figure 3.1:
Hypothetical International and
National Environmental Assets
and Constraints**



- Key**
- Local Authority Boundary
 - Motorways
 - Primary roads
 - A roads
 - Railway stations
 - +— Railway lines
 - Internationally and Nationally Designated Nature Conservation Sites
 - ▨ Area of Outstanding Natural Beauty
 - Listed Buildings
 - Key urban areas
 - Scheduled Monuments
 - Historic Parks and Gardens
 - Best and Most Versatile Land
 - Grade 1
 - Grade 2



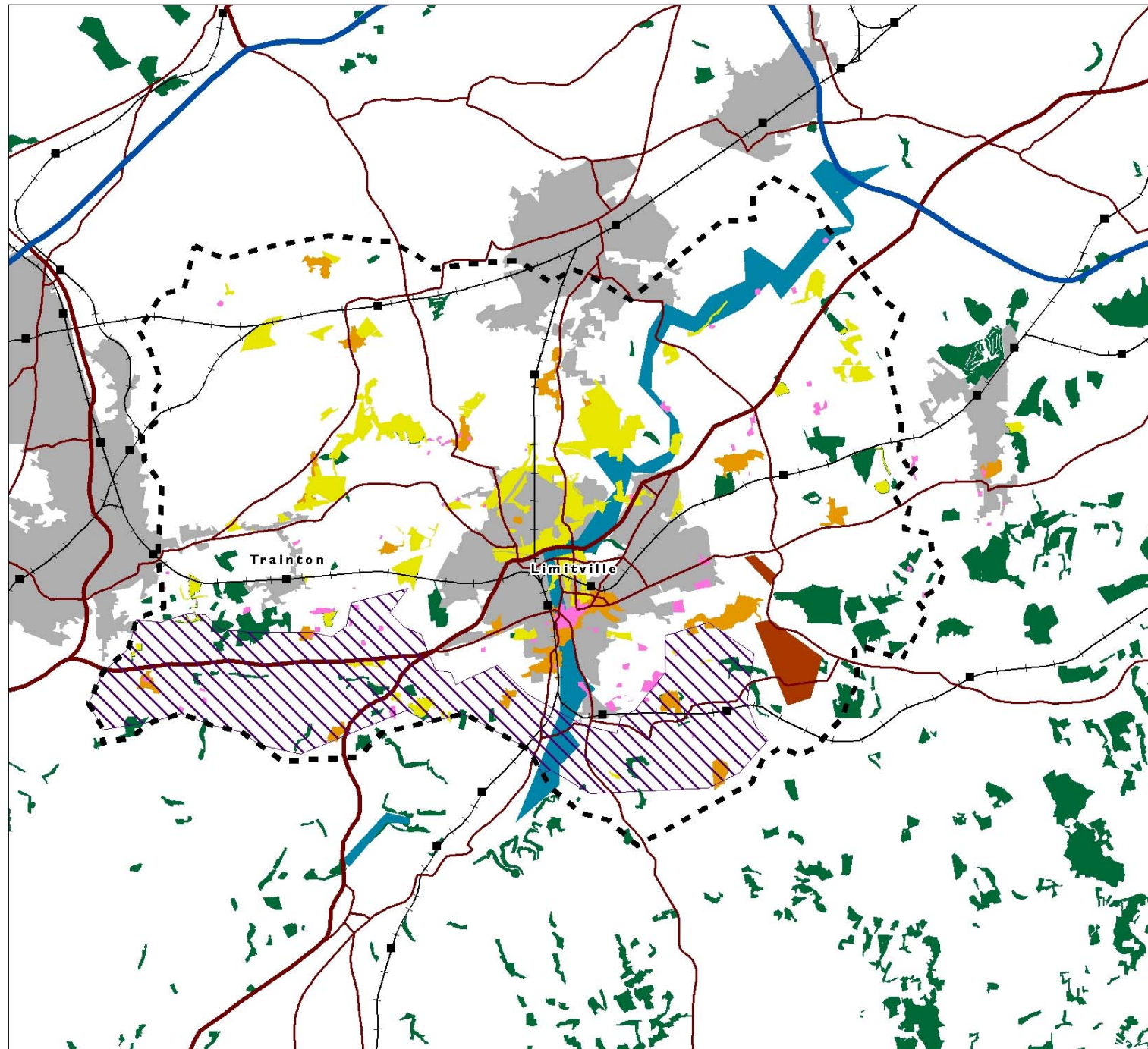
Limitville is a hypothetical location and hypothetical constraints layers have been generated to illustrate the issues raised in the report

Date: 09/11/2010

Revision:

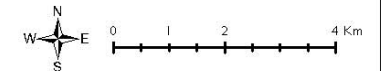


**Limitville Figure 3.2:
Hypothetical Local
Environmental Assets
and Constraints**



Key

-  Local Authority Boundary
-  Key Urban Areas
-  Motorways
-  Primary roads
-  A roads
-  Railway stations
-  Railway lines
-  Areas of Attractive Landscape
-  Sites and Areas of High Archaeological Potential
-  Regionally Important Geological /Geomorphological Site
-  Sites of Nature Conservation Importance
-  Conservation Areas
-  Areas of Floodplain
-  Ancient Woodland



Limitville is a hypothetical location and hypothetical constraints layers have been generated to illustrate the issues raised in the report

Date: 09/11/2010

Revision



Strategic questions

1. What is the planning context for the development and the application of the environmental limit?
2. What is the likely geographic scope of the environmental limit (local area within a local planning authority, the whole local planning authority, sub-regional level, including cross-regional boundaries)?

- 3.13 With current planned additional dwellings within existing built-up urban area of 2,500 (up to 2020 at 250 per annum) and space only for 2,500 more (5,000 in total), there is a need for an additional requirement for land for 15,000 dwellings, 2010-2030, and possibly another 20,000 beyond the plan period, depending on the scope to increase housing densities.
- 3.14 This housing need has been identified for the Limitville local authority area, but neighbouring authorities are facing similar pressure.

Strategic questions

1. What is the relevant constituency of interest and the range of stakeholder groups that should be involved, given the answers to the above questions?
2. Are there established representative bodies – statutory or non-statutory – reflecting the range of stakeholders, or are there additional stakeholders who have no representative voice but whose views must be heard?
3. Will they all participate, and is there a collective willingness to discuss and negotiate the establishment of an environmental limit that will frame current and future development proposals?

- 3.15 For the purposes of the case study, the workshop participants agreed to adopt roles that represented the sort of stakeholders who would typically have an interest in evaluating the strategic policy choices facing Limitville. The stakeholder roles played are listed in **Table 3.1**.

Table 3.1: Limitville stakeholders

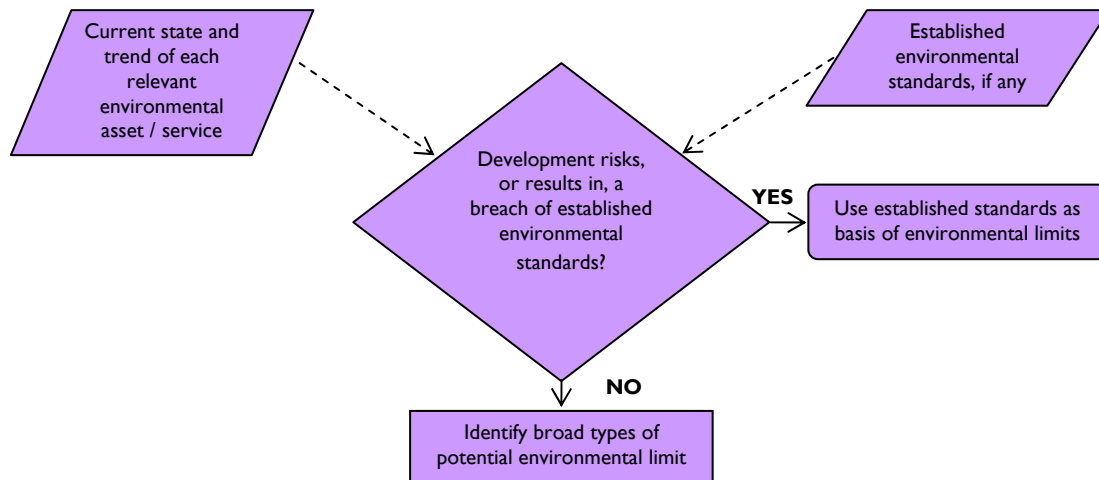
| Stakeholder | Nature of interest |
|---|---|
| Housebuilders | To maximise development opportunities in Limitville |
| Economic development and business interests | To deliver employment opportunities generally, but in particular to promote Limitville as a high-tech cluster |
| Transport and other infrastructure | To deliver the planned improvements to the rail network, but maximise benefits from very limited public funds available for other infrastructure |
| SLIE (Stop Limitville Expansion) | To campaign against the inexorable growth of Limitville and associated social and character changes |
| Happy Homes | To campaign for, and deliver, much needed affordable housing |
| Environmental NGOs | To campaign for the protection of Limitville's natural and historic assets |
| Chief Planning Officer, Limitville | To deliver a Core Strategy that is in accordance with national policy, sustainable development principles and to ensure proper planning processes |

Strategic questions

1. Is it worth adopting the approach or should the issue be left to the existing development plans and decision-making process of the local planning authority?
2. Are the resources available to use the approach in order to achieve meaningful outcomes?

3.16 It was agreed that the environmental limits approach would provide useful input into the Core Strategy preparation process, as part of the Planning & Compulsory Purchase Act Regulation 25 consultation process.

4 Step 1: Review of the environmental asset(s) and ecosystem services



Purpose

To understand the nature of the environmental asset(s) and related services:

- Define the types of asset for which a limit is sought, and the related geographic scope taking into account direct and indirect impacts of development.
- Assess the ecosystem services and related indicators.
- Map assets/services across the study area.

Strategic questions

1. What are the environmental assets and their related services and benefits that are particularly relevant to the assessment?
2. What are the trends in the stock of the asset and levels of ecosystem services?
3. Are there any relevant links with services and benefits provided by other environmental assets?
4. What should be considered to be the minimum acceptable level of provision of ecosystem services, and hence the required environmental limit, on the basis of established environmental objectives and existing scientific information?
5. Do the identified trends suggest that this level is likely to be reached or has already been exceeded?

- 4.1 The initial scoping stage concluded that the key environmental topic areas likely to be of relevance to a consideration of environmental limits for Limitville were as follows:
- Biodiversity.
 - Landscape.
 - Historic environment.
 - Air quality.
 - Climate.
- 4.2 Significant conflicts with development were not expected in relation to water quality, water resources, flood risk, soils and agriculture.
- 4.3 The results of this analysis, summarised in **Table 4.1**, informed Steps 2 and 3 of the method.

Table 4.1: Summary of Step I analysis for relevant environmental topics

| Relevant environmental assets & services | Current state & trends | Links to other environmental assets & services | Established environmental standards/ objectives, if any | Current state relative to established standard/ objective |
|---|--|--|---|---|
| <p>Biodiversity</p> <p>Particularly: Heathland habitat with important bird and reptile species</p> <p>Fragments of ancient woodland</p> <p><i>Ecosystem services: Direct provision of genetic resources plus indirect provision of most other ecosystem services</i></p> | <p>Since the 1930s, a significant area of the remaining heathland and ancient woodland has been lost or degraded e.g. through clearance for agriculture, conversion to conifer plantation, fragmentation by urban development and associated infrastructure.</p> <p>Nationally- and European-designated heathland and ancient woodland sites are generally in good condition at present but a significant minority are already under pressure and more could become so in future. In addition to a lack of appropriate management (e.g. scrub clearance from heathland; clearance of non-native plants from ancient woodland), key development-related pressures on designated habitats are:</p> <ul style="list-style-type: none"> - land take by greenfield development - recreational disturbance from nearby urban areas e.g. dog walkers disturbing ground- | <p>Biodiversity is a key determinant of many ecosystem services including the provision of food, fuel and fibre; regulation of air and water quality; maintenance of soil fertility through nutrient cycling and decomposition of wastes. It also contributes to cultural services such as provision of a relaxing place for reflection, outdoor exercise or outdoor education and contributing to landscape benefits such as aesthetic experience and the setting of historic assets.</p> | <p>95% of SSSI area in favourable condition.</p> <p>Avoidance of threats to integrity of European-designated sites.</p> <p>Maintain and enhance habitats and species within and outside designated areas in line with national and county Biodiversity Action Plan (BAP) targets.</p> | <p>89% of SSSIs are in favourable or unfavourable-improving condition.</p> <p>The integrity of European sites is currently intact but a variety of development pressures could threaten future integrity (see current state and trends). Climate change will place an additional pressure on sensitive habitats.</p> <p>Little progress has been made towards reversing historic fragmentation of BAP habitats.</p> |

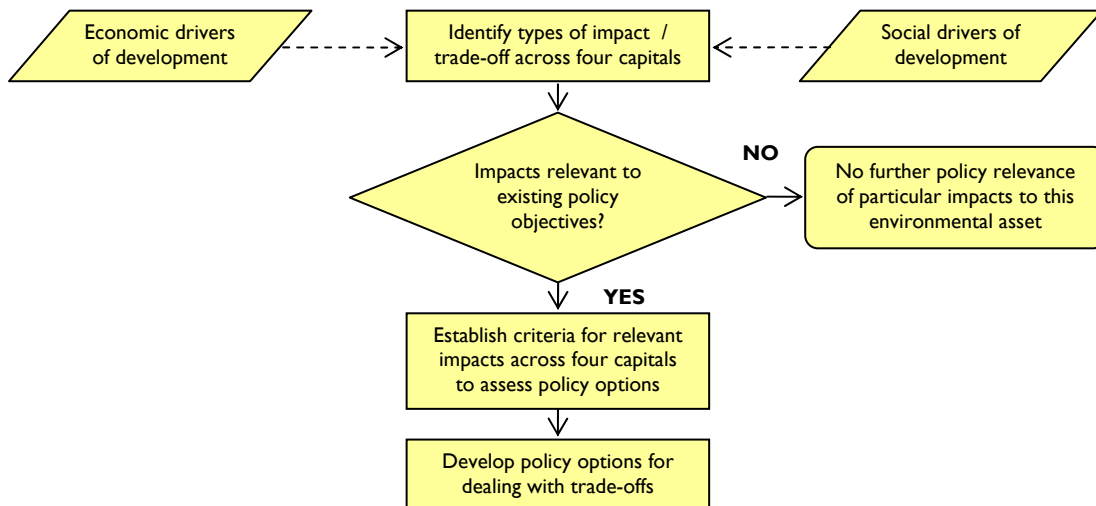
| Relevant environmental assets & services | Current state & trends | Links to other environmental assets & services | Established environmental standards/ objectives, if any | Current state relative to established standard/ objective |
|---|---|---|--|---|
| | <ul style="list-style-type: none"> nesting birds - fly tipping - fires, as a result of arson or barbeques - eutrophication as a result of nitrogen deposition from road traffic emissions - invasion by non-native plant species e.g. from tipping of garden waste - contaminated run-off from roads and urban areas impacting a small number of areas of wet heath - impact of light pollution on bats. | | | |
| <p>Landscape</p> <p>There are significant areas nationally designated as AONB abutting the urban area to the south of Limitville, much of which is also locally designated as an Area of Attractive Landscape.</p> | <p>Tranquillity is being steadily eroded by land take for urban development, light pollution and traffic noise.</p> <p>There is a perceived shortage of open space in the urban area.</p> <p>Historically, targets for the proportion of development taking place on brownfield land have been exceeded but few</p> | <p>Landscape is closely related to the provisioning, supporting and cultural services provided by biodiversity and provides a setting to historic environment assets.</p> | <p>Change in condition/character of National Character Areas (Countryside Quality Counts 'CQC' programme).</p> <p>AONB management objectives.</p> <p>Natural England standards for access to natural greenspace (ANGSt).</p> | <p>CQC assessment: the character of the semi-natural and wooded landscape has been maintained, although further opportunities to strengthen character remain.</p> <p>AONB - Continued pressures from urbanisation and</p> |

| Relevant environmental assets & services | Current state & trends | Links to other environmental assets & services | Established environmental standards/ objectives, if any | Current state relative to established standard/ objective |
|---|---|---|---|--|
| <p><i>Ecosystem services:</i> <i>Aesthetic qualities of landscape and sense of place.</i></p> | <p>large brownfield sites remain available in the urban area.</p> <p>Views of Limitville – both of its historic core and the town’s setting – from the AONB are particularly sensitive, and have been eroded by expansion of the town over the last 50 years.</p> | | | <p>fragmentation are considerable risks to the landscape, and ensuring farming remains viable in the AONB is very important. Coppice management has seen a sharp decline as demand for coppice timber has fallen.</p> <p>Changes to agricultural practice and the development of settlements is causing divergence from the vision for the character area.</p> <p>ANGSt standards are not currently achieved for residents of main urban area.</p> |
| <p>Historic environment</p> <p>38 Conservation Areas, more than 1,000 Listed Buildings and a number of archaeologically important sites within the local authority area, concentrated in and around the town centre.</p> | <p>Intensification of the urban area is threatening the setting of a number of historic assets.</p> <p>The condition of assets in rural areas is generally stable.</p> | <p>The historic environment is closely linked to landscape (e.g. field patterns produced by historic agricultural practice) and aspects of biodiversity (e.g. the high biodiversity value of ancient woodland).</p> | <p>Registered parks and gardens assessed as in ‘good’ condition.</p> <p>To reduce the proportion of Listed Buildings, Conservation Areas, Scheduled Monuments, Registered Parks and Gardens, Registered Battlefields and Protected Wreck Sites at risk.</p> | <p>Most of the registered parks and gardens are in good condition but a few have suffered a mild loss of character.</p> <p>The number of historic assets designated as ‘at risk’ is small but has increased slightly in</p> |

| Relevant environmental assets & services | Current state & trends | Links to other environmental assets & services | Established environmental standards/ objectives, if any | Current state relative to established standard/ objective |
|--|--|--|---|---|
| <p>A number of registered parks and gardens in the surrounding rural area.</p> <p><i>Ecosystem services:</i> <i>Cultural heritage.</i></p> | | | | <p>recent years.</p> |
| <p>Air quality</p> <p><i>Ecosystem services:</i> <i>Regulation of air quality.</i></p> | <p>Air quality has generally improved over the past 50 years with the exception of increasing levels of nitrogen oxides emitted by road traffic (despite improvements in vehicle technologies).</p> <p>Car ownership and traffic congestion are increasing in the local authority area.</p> <p>Significant commuting by road takes place into and out of the town at peak times.</p> | <p>Biodiversity - there is some evidence that areas of designated heathland habitat adjacent to major roads have declined in quality as a result of nitrogen deposition. Increased road traffic and infrastructure improvements have contributed to habitat fragmentation.</p> <p>Climate - Increasing levels of road traffic are contributing to growth in greenhouse gas emissions.</p> <p>Landscape – increasing road traffic noise has contributed to erosion of tranquillity.</p> | <p>National Air Quality Objectives (AQOs) designed to safeguard human health.</p> <p>Critical levels and loads with respect to certain habitat types, as documented on the UK Air Pollution Information System (APIS).</p> | <p>Air Quality Management Areas (AQMAs) have been declared for oxides of nitrogen (NO_x) in the town centre and on the trunk road linking it to the closest conurbation.</p> <p>Critical loads for nitrogen have been exceed for some areas of lowland heath within the local authority area.</p> |
| <p>Climate</p> <p><i>Ecosystem services:</i> <i>Regulation of the climate.</i></p> | <p>The region is expected to experience hotter, drier summers, warmer, wetter winters and an increased incidence of extreme climatic events with climate change.</p> <p>Estimates of carbon emissions by end user suggest that total emissions for the local authority</p> | <p>Air quality – oxides of nitrogen emitted by road traffic are also GHGs.</p> <p>Water quality and biodiversity – increasing temperatures and reduced summer rainfall are expected to lead to a decline in the quality of surface waters and freshwater habitats.</p> | <p>None at local level. A number of relevant national objectives exist e.g. in relation to reduction of carbon emissions, the proportion of energy to be generated from renewable and low carbon sources and the energy efficiency standards to be attained by new buildings.</p> | <p>N/A – no local standards.</p> |

| Relevant environmental assets & services | Current state & trends | Links to other environmental assets & services | Established environmental standards/ objectives, if any | Current state relative to established standard/ objective |
|--|---|--|---|---|
| | <p>area are increasing, driven by traffic growth and domestic and commercial energy consumption by a growing number of homes and businesses.</p> <p>Increases in recycling rates per household are being offset by household growth and difficulty in achieving higher recycling rates for commercial waste, leading to a failure to reduce the total amount of waste going to landfill and associated greenhouse gas (GHG) emissions from organic waste.</p> <p>Town centre residents express concern about overheating, in light of urban intensification and climate change.</p> | <p>Water resources – increasing summer temperatures and reduced summer rainfall are expected to adversely affect water availability.</p> <p>Biodiversity – climate change is expected to lead to a change in the conditions required by habitats and species currently present in the area. Reduced rainfall and higher temperatures are expected to increase heathland fires.</p> <p>Landscape – changes in semi-natural habitats and in agricultural crops that can be grown in hotter, drier weather will alter the landscape.</p> <p>Historic environment – climate change is expected to lead to increased soil shrinkage/swelling and damage to some historic buildings.</p> <p>Soils and agriculture – increased intensity of rainfall is expected to lead to more frequent and severe surface water runoff and increased soil erosion.</p> | | |

5 Step 2: The relationship between economic and social development and threats to an environmental asset



Purpose

To understand the nature of development that threatens the environmental asset(s) and to scope out the relevant issues that need to be considered in establishing the limit:

- Review major development objectives, policies and potential threats.
- Define potentially significant trade-offs between development and protection of environmental assets as the basis of assessment criteria.
- Consider ways (policy options) in which the trade-offs might be avoided or mitigated.

Strategic question

1. What are the economic and social drivers that affect the environmental asset and what are the indicative TYPES of benefits and costs of these drivers across each of the four capitals?

- 5.1 It was considered that the standard table in the guidance was a useful reference point for determining the indicative types of benefits and costs of the drivers across the four capitals (Figure 6.1 in the guidance document; **Table 5.1** in this case study report). In the case of Limitville, the principal driver is the demand for new housing from both local residents and people wishing to move into the area.

Table 5.1: General Description of Drivers of Economic and Social Development and Related Impacts

Green = benefits; **Red** = costs **Bold italics** = environmental assets/resources that could be subject to environmental limits negotiations

| Impacts of: | On objectives for increasing stocks of capitals: | | | |
|---|--|---|--|---|
| | Manufactured capital | Human capital | Social capital | Natural capital |
| Driver: Population growth and household formation Resulting in: New housing development | Increase in housing stock | Accommodation for population with their skills and talents | Improve social cohesion by meeting housing needs | Consumes natural resources during both construction (<i>water, minerals, land, energy</i>) and operation (<i>water, energy</i>). Can lead to loss of <i>habitats, heritage assets, landscape</i> and <i>visual impacts</i> , pollution to <i>air</i> and <i>water</i> . Generates <i>waste</i> |
| | | Health and well-being during construction | Some forms of housing exacerbate social exclusion | Replacement housing can be more <i>energy</i> efficient New housing can provide new <i>habitats</i> if well designed Can restore contaminated/ degraded <i>land</i> |
| Driver: Population growth and increased consumption, increases in productivity Resulting in: Increased economic output and development | Increase in business space and its productive capacity to deliver goods and services | Creation of jobs Possible skills development Improved health and well-being | Employment growth can support social cohesion, with reduced levels of inequality, crime etc. | Consumes natural resources during both construction (<i>water, minerals, land, energy</i>) and operation (<i>water, energy</i>). Can lead to loss of <i>habitats, heritage assets, landscape</i> and <i>visual impacts</i> , pollution to <i>air</i> and <i>water</i> . Generates <i>waste</i> |
| | | Health and well-being during construction | Historically, job creation has not benefited those who need it most – inequality has increased | New economic development can provide new <i>habitats</i> if well designed. Can restore contaminated/ degraded <i>land</i> |
| Driver: Population growth and household formation; renewal of urban fabric Resulting in: Increased provision of social infrastructure | New, expanded or improved social infrastructure (e.g. schools, colleges, hospitals, healthcare, local authority service provision, places of worship, entertainment, etc.) | Creation of jobs Skills development Improved health and well-being | Social infrastructure supports social cohesion and helps to meet the needs of all but especially the most vulnerable | Consumes natural resources during both construction (<i>water, minerals, land, energy</i>) and operation (<i>water, energy</i>). Can lead to loss of <i>habitats, heritage assets, landscape</i> and <i>visual impacts</i> , pollution to <i>air</i> and <i>water</i> . Generates <i>waste</i> |
| | | Health and well-being during construction | | Replacement infrastructure can be more <i>energy</i> efficient New social infrastructure can provide new <i>habitats</i> if well designed. Can restore contaminated/ degraded <i>land</i> |
| Driver: Population growth and increased economic activity Resulting in: Demand for new and improved utilities and transport infrastructure | New, expanded or upgraded transport, energy, water supply and treatment, waste management infrastructure | Assured access to basic needs (e.g. water, heat and light) Improved personal mobility | Improved public transport provision can meet current unmet needs | Consumes natural resources during both construction (<i>water, minerals, land, energy</i>) and operation (<i>water, energy</i>). Can lead to loss/fragmentation of <i>habitats, heritage assets, landscape</i> and <i>visual impacts</i> , pollution to <i>air</i> and <i>water</i> . |
| | | Health and well-being during construction Possible impacts on health from increased traffic (noise, air quality) | Can lead to severance of communities | Can encourage a switch to renewable <i>energy</i> off-setting <i>carbon emissions</i> Improved public transport services can offset <i>carbon emissions</i> , improve <i>air quality</i> Reduces environmental impacts from <i>waste</i> |

NB: In the long-term climate change can also be expected to be a driver of regional development, affecting the costs and locations of development

5.2 Particular costs and benefits arising from the drivers identified by the stakeholders in the workshop included:

- **Manufactured capital:** on the one development would require investment in new transport capacity and on the other hand if the investment in such infrastructure if development were to be allowed to proceed with transport investment, additional demand and increased supply of skills would support further investment in manufactured capital.
- **Human capital:** development would bring much needed employment opportunities, but restricting development could deter those with higher skills living in Limitville undermining aspirations for the high tech economy.
- **Social capital:** development would bring much needed affordable housing, but could lead to over-crowding and a change in the character and quality of Limitville, and potentially increase social segregation.
- **Natural capital:** increased greenfield landtake, potential loss of floodplain and open space, disturbance to biodiversity and especially ground-nesting birds, pressures on the historic core of Limitville, air pollution from increased traffic including commuting, and use of materials and energy in construction.

Strategic question

2. What are the potential trade-offs and are there locations where these are particularly relevant?

5.3 It was agreed that trade-offs with major increases in house building would depend on its scale and location but in general are likely to be between manufactured and human capital (new houses, new jobs) and:

- Natural capital especially the historic core and biodiversity.
- Social capital, for example addressing local housing need and increasing densities such that more affluent households leave.

Strategic question

3. What are the impacts, relevant policy objectives and hence assessment criteria for each of the four capitals in order to determine what is acceptable or unacceptable with respect to the identified trade-offs?
Note: the process of determination of acceptability is part of Step 3.

5.4 Types of impact from **allowing increases in house building within the existing urban area** of Limitville include:

- Increasing housing densities and related impacts on household quality of life and social cohesion, potentially leading to social segregation.
- Increases in demand for local services and related employment.
- Reduced reliance on in-commuting and related climate change impacts.
- Increased pressure for town centre development on historic core.
- Increased numbers of local commuting trips and reduced levels of air quality.

- Potential impacts on biodiversity on edge of town.
- 5.5 Measures to manage impacts by **limiting house building** would have impacts on:
- Ability to provide affordable houses.
 - Increased reliance on in-commuting and related climate change impacts.
 - Increased employment costs to attract skilled workers, higher unemployment rates for low skilled.
 - Reduced pressure on historic core.
 - Limited impacts on biodiversity.
- 5.6 Impacts from locating **housing growth outside the existing urban area** include:
- Local communities affected by greenfield development.
 - Potential landscape impacts, for example on AONB.
 - Potential major loss of biodiversity.
 - Reduced pressure on historic core.
- 5.7 For the purposes of assessing the acceptability or otherwise of options, it was decided that six key criteria relevant to key trade-offs identified should be used (see **Table 5.2**).

Table 5.2: Policy objectives and assessment criteria

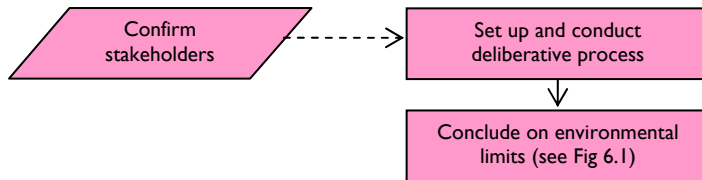
| Capital category | Policy objective | Assessment criteria |
|-------------------------|---|--|
| Manufactured | • To meet housing need | • Impacts on housing stock |
| | • To ensure infrastructure capacity is sufficient to meet development needs | • Impacts on infrastructure |
| Human | • To strengthen and diversify employment opportunities | • Impacts on employment opportunities |
| | • To upskill the workforce | • Impacts on skills development |
| Social | • To improve social cohesion | • Impacts on social segregation |
| Natural | • To protect and enhance biodiversity | • Impacts on habitats, especially international designations |
| | • To protect and enhance Limitville's historic character | • Impacts on historic assets/character |

Strategic question

4. What policy options are there for dealing with the trade-offs, including investment in natural capital?

- 5.8 Four policy options were identified by the stakeholders for assessment:
- **Option 1: Business as usual (BAU)**, which comprised continuing development at 250 dwellings per annum with development restricted to within the urban area – in effect, this was the baseline scenario.
 - **Option 2: Urban concentration**, which would involve continuing to develop only within the urban area, but to intensify and increase the speed of development to meet identified need.
 - **Option 3: Urban extension**, comprising increased housing delivery to meet need but accommodated within one or more major urban extensions.
 - **Option 4: New settlement**, being BAU but with a new settlement to be developed to the west of Limitville focused on the small settlement and railway station at Trainton.
- 5.9 All four options pose trade-offs with environmental assets. The issue is whether all, some or none of the options are acceptable in terms of the impacts on environmental assets, and what environmental limits should be set to govern policy choices.
- 5.10 Options 2 to 4 were all predicated on the need to deliver sufficient housing to meet identified need. Other options considered, but discounted for the purposes of the assessment included:
- Dispersed development, comprising a series of smaller development sites in smaller settlements. Whilst it was acknowledged that this could help to support shops and community facilities in the smaller settlements, it was not considered further because it was felt that it would not deliver sufficient affordable housing, would be an ‘infrastructure headache’, and that it would be easier to negotiate the much needed Community Infrastructure Levy (CIL) with the development of larger sites. In addition, housebuilders strongly indicated that they would not be interested in delivering housing under this model.
 - Prioritising vacant urban sites before developing greenfield land – it was considered that this was not a separate policy option, but one that could be applied to either of options 3 or 4.
- 5.11 The four chosen options were then subjected to Step 3 of the approach.

6 Step 3: A deliberative approach to assessing and agreeing environmental limits



Purpose

To establish a deliberative process for negotiating the establishment of an environmental limit:

- Confirm the deliberative process (stakeholders, chair, meeting formats, etc).
- Confirm the assessment criteria and related evidence.
- Confirm the policy options that can best achieve the different objectives.
- Assess the impacts of options and implications for environmental limits.
- Conclude on the preferred approach to setting the environmental limit.
- Conclude on the environmental limits to be adopted.

Strategic question

1. Which stakeholders are likely to have different views about what is acceptable or unacceptable and which should be included in the deliberation process?

- 6.1 The stakeholders were identified during the scoping stage and it was decided that these were sufficient for the purposes of the workshop exercise (see **Table 3.1**). The workshop participant playing the role of the Chief Planning Officer of Limitville felt that all the key stakeholders had been identified, with the exception of the residents of Trainton, who were unable to attend and would need to be consulted separately.

Strategic question

2. Is the range of costs and benefits identified in Step 2 fully reflected in the assessment criteria – do additional criteria need to be added?

- 6.2 A wide range of costs and benefits were identified in Step 2, but it was felt that the assessment criteria covered the key trade-off issues. Further criteria

could have been added but there was insufficient time to consider these in the workshop.

- 6.3 The Chief Planning Officer of Limitville confirmed that he was content with the criteria selected.

Strategic question

3. What are the IMPACTS of each of the policy options on the selected criteria – do these provide a clear picture of the benefits and costs of the option on each of the four capitals; are these impacts acceptable to all stakeholders?

- 6.4 These component of the case study was conducted in two parts:
- The impacts of the options on each of the criteria were identified (**Table 6.1**).
 - The acceptability of the impacts identified for each stakeholder were recorded (**Table 6.2**).
- 6.5 Table 6.1 indicates that there were pros and cons arising from all the options against the assessment criteria – none stood out as offering the ‘best’ solution from the point of view of reducing the need for trade-offs. All would lead to trade-offs between the various capitals of one form of another.
- 6.6 It was therefore necessary to consider which of the impacts would be acceptable or unacceptable to each of the stakeholders. The results of this exercise are presented in Table 6.2. This shows, for each option against each criterion, whether the stakeholders were happy to accept the impact or not according to the following key:

Key to Table 6.2

| | |
|--|--|
| Impact of option on assessment criterion acceptable to stakeholder | |
| Impact of option on assessment criterion unacceptable to stakeholder | |
| Impact of option on assessment criterion of neutral interest to stakeholder | |

Table 6.1: Assessment of impacts against criteria

| Manufactured capital | Human capital | Social capital | Natural capital |
|---|---|---|--|
| Option 1: Business as usual | | | |
| <p>Housing: Neither enough market housing nor affordable housing would be delivered to meet identified need.</p> <p>Infrastructure: There would be less strain on existing infrastructure than other options, but it would also mean less investment for essential renewal.</p> | <p>Employment: Restricting the amount of housing would be likely to constrain the economy and restrict employment opportunities, both in terms of quantity and quality.</p> <p>Skills: The range of investment in skills training and development is likely to be restricted.</p> | <p>Social segregation: Likely to affect those most in need of affordable housing and jobs.</p> | <p>Habitats: Likely to lead to relatively less pressure on habitats, but also less investment in new habitats.</p> <p>Historic environment: Likely to lead to reduced pressure on the historic environment, but also less investment in its management.</p> |
| Option 2: Urban concentration | | | |
| <p>Housing: Although more housing would be delivered under this option, it would be difficult to deliver sufficient housing to meet need, and the density of development could prove unattractive to some.</p> <p>Infrastructure: This option would lever in more investment in infrastructure but could place strain on existing infrastructure.</p> | <p>Employment: This option potentially could deliver more employment opportunities, but this could be offset by pressure on employment land for housing instead.</p> <p>Skills: Depends upon the level of economic and business investment, but could be relatively limited.</p> | <p>Social segregation: Will help to provide housing and jobs to those living in Limitville, but increased development of development could mean that higher skilled workers move out and commute in.</p> | <p>Habitats: Likely to lead to relatively less pressure on greenfield habitats and reduced need for in-commuting with associated NOx emissions, but at the expense of brownfield habitats within the urban area, but could attract some investment in new habitats.</p> <p>Historic environment: Could place considerable pressure on the historic core.</p> |
| Option 3: Urban extension | | | |
| <p>Housing: This would provide a sufficient range of housing to meet identified need.</p> <p>Infrastructure: Development of a greenfield site would allow for</p> | <p>Employment: An urban extension would safeguard employment land within the existing urban area, and provide for new economic opportunities</p> | <p>Social segregation: Likely to be attractive to both higher skilled and lower skilled residents, although danger that development could be split into</p> | <p>Habitats: Significant issues regarding direct and indirect impacts on internationally designated sites but would allow for investment in habitat creation.</p> |

| Manufactured capital | Human capital | Social capital | Natural capital |
|--|--|---|--|
| <p>straightforward investment in infrastructure outside the urban area, but potentially at the expense of investment in ageing infrastructure within the urban area.</p> | <p>within the urban extension, boosting jobs. Skills: Likely to lever in investment in educational facilities, and also through business due to support of the economy through housing.</p> | <p>social enclaves.</p> | <p>Historic environment: Could impact on important historic assets to north and east of Limitville and would need assessment of historic interest on greenfield land and on setting of Limitville, but would reduce pressure on historic core.</p> |
| <p>Option 4: New settlement</p> | | | |
| <p>Housing: This would provide a sufficient range of housing to meet identified need. Infrastructure: Development of a new settlement would allow for straightforward investment in infrastructure outside the urban area, but potentially at the expense of investment in ageing infrastructure within the urban area.</p> | <p>Employment: A new settlement would safeguard employment land within the existing urban area, and provide for new within the urban extension, boosting jobs but outside walking and cycling distance from existing residents in Limitville itself. Skills: Likely to lever in investment in educational facilities, and also through business due to support of the economy through housing, but some of these could be at some distance from Limitville and those in need of upskilling.</p> | <p>Social segregation: Likely to be attractive to both higher skilled and lower skilled residents, although danger that development could be split into social enclaves. Cost of commuting could put off some lower skilled households from taking up residential opportunities.</p> | <p>Habitats: Would be far enough away from internationally designated sites to reduce likely impacts, although could be some localised nature conservation interest, but would allow for investment in habitat creation. Could increase in-commuting with associated NOx emissions. Historic environment: Would need assessment of historic interest new settlement site, but would reduce pressure on historic core.</p> |

Table 6.2: Stakeholders' views on acceptability of options against assessment criteria

| Housing | Infrastructure | Employment | Skills | Social Segreg'n | Habitats | Heritage |
|--------------------------------------|----------------|----------------|----------------|-----------------|----------------|----------------|
| Option 1: Business as usual | | | | | | |
| House builder | House builder | House builder | House builder | House builder | House builder | House builder |
| Economist | Economist | Economist | Economist | Economist | Economist | Economist |
| SLIE | SLIE | SLIE | SLIE | SLIE | SLIE | SLIE |
| Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure |
| Env NGO | Env NGO | Env NGO | Env NGO | Env NGO | Env NGO | Env NGO |
| Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes |
| Option 2: Urban concentration | | | | | | |
| House builder | House builder | House builder | House builder | House builder | House builder | House builder |
| Economist | Economist | Economist | Economist | Economist | Economist | Economist |
| SLIE | SLIE | SLIE | SLIE | SLIE | SLIE | SLIE |
| Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure |
| Env NGO | Env NGO | Env NGO | Env NGO | Env NGO | Env NGO | Env NGO |
| Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes |
| Option 3: Urban extension | | | | | | |
| House builder | House builder | House builder | House builder | House builder | House builder | House builder |
| Economist | Economist | Economist | Economist | Economist | Economist | Economist |
| SLIE | SLIE | SLIE | SLIE | SLIE | SLIE | SLIE |
| Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure |
| Env NGO | Env NGO | Env NGO | Env NGO | Env NGO | Env NGO | Env NGO |
| Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes |
| Option 4: New settlement | | | | | | |
| House builder | House builder | House builder | House builder | House builder | House builder | House builder |
| Economist | Economist | Economist | Economist | Economist | Economist | Economist |
| SLIE | SLIE | SLIE | SLIE | SLIE | SLIE | SLIE |
| Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure | Infrastructure |
| Env NGO | Env NGO | Env NGO | Env NGO | Env NGO | Env NGO | Env NGO |
| Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes | Happy Homes |

Strategic question

4. Do additional or modified options need to be examined?

- 6.7 There was limited time to consider additional options at the workshop, but the Chief Planning Officer suggested that the eventual option was likely to be a hybrid of the options presented, but that the main decision the local planning authority was faced with was whether to plan for urban extensions or a new settlement.

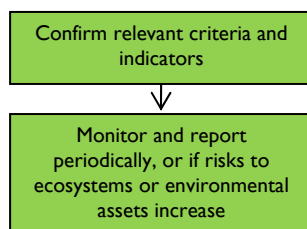
Strategic question

5. Can the basis of an acceptable limit be agreed across the stakeholders? Does this require certain conditions (e.g. the limit should last for a certain period, and then be reviewed/revised)?

- 6.8 It can be seen from Table 6.2 that the stakeholders views were wide-ranging. In summary:
- The **housebuilders** were not supportive of the business as usual option across a range of criteria, but were supportive of any of the other options.
 - The views of the **economic development and business interests** tended to mirror those of the housebuilders.
 - The **transport and other infrastructure providers** were not against any of the options under any of the criteria, but were supportive of those that they felt were most likely to deliver much needed rail improvements.
 - **SLIE** (Stop Limitville Expansion) were opposed to all options across most criteria with the exception of the business as usual option, which they supported. They were less concerned about the new settlement option as this would protect their interests in Limitville.
 - **Happy Homes** found the business as usual option unacceptable across a number of the criteria, and were also concerned about some of the aspects of the urban extension and new settlement options against the skills and/or social segregation criteria. They found the urban concentration option to be the most acceptable.
 - The **environmental NGOs** felt that the urban extension and new settlement options were unacceptable against the habitats and heritage criteria. They were also concerned about the social segregation implications of the business as usual option, although this might benefit habitats and heritage. The urban concentration option they found acceptable.
- 6.9 It was acknowledged by all stakeholders that there were legal requirements to protect the internationally designated biodiversity sites, although some stakeholders felt that this frustrated the positive elements of one or two of the available options.
- 6.10 Having identified which options were acceptable/unacceptable against the assessment criteria, it was agreed that the business as usual option was not sustainable over the plan period.

- 6.11 The urban concentration option gained considerable support. SLIE were willing to accept this option on condition that the historic core is protected, that housing is suitable zoned, and that there would be no major employment development in the town centre that would detract from its character.
- 6.12 It was also agreed that the urban extension option should be pursued, so long as any impacts on designated biodiversity sites could be mitigated through investment in green infrastructure and habitat creation and that there would be no impact on the heritage interest to the north and east of Limitville (conditions called for by the environmental NGOs). Happy Homes preferred the urban concentration option, but were willing to accept the urban extension as a complementary part of the development plan.
- 6.13 There was considerable relief amongst a number of the stakeholders that the new settlement option would not need to be pursued, and the Chief Planning Officer concluded that he would not therefore need to pursue his consultation on this option with the residents of Trainton.
- 6.14 Therefore, the option that proved most acceptable to stakeholders represented at the workshop was, as the Chief Planning Officer predicted, a hybrid option, being a combination of urban concentration and an urban extension. This would be acceptable to all stakeholders so long as the conditions identified above were to be incorporated in the development plans.
- 6.15 The option appraisal identified the imperative of maintaining under any circumstance the protection of internationally designated biodiversity sites (the spatially defined limit). It also identified a requirement that the loss of any other natural capital be compensated with the provision of replacement assets such that there should be no net loss of environmental assets (i.e. the current stock of biodiversity should not be depleted any further), representing the effective environmental limit for Limitville. Any development that gave rise to a net loss would be deemed unacceptable.

7 Monitoring and evaluation



Purpose

To monitor trends relevant to the indicator (using the criteria previously used) and periodically evaluate whether the limit needs to be revised

- Confirm relevant indicators based on previously selected criteria.
- Establish data collection.
- Review trends and the need for any revisions to policy direction or environmental limits.

Strategic questions

1. Are the trends indicating changes in the scale or nature of costs and benefits from development that were not anticipated in the deliberation process?
2. Is the level of ecosystem services provided becoming unacceptable?
3. Is there merit in relaxing the environmental limit to allow more development?
4. Do these signify a need to reconvene the deliberation process?

7.1 There was insufficient time at the workshop to consider the issue of indicators of for subsequent monitoring. However, these indicators would relate to the criteria against which the impacts were most strongly contested, especially:

- Housing development and supply of affordable housing.
- Changes in the social mix and use of the town by different groups.
- The protection of the historic core of Limitville.
- The protection of biodiversity.

8 Conclusions and recommendations

- 8.1 The participants at the workshop expressed their pleasure to have been involved in the testing process, whilst acknowledging that the workshop sought to compress into one day, by use of a hypothetical example, a process that would normally take many months and sometimes years to complete.
- 8.2 There was a feeling that the approach simply reflected the adoption of a 'good planning' approach, but that it offered greater value in the definition and determination of policy choices than that provided by current sustainability appraisal (SA) methods. The approach was considered to be helpful at all levels in forward planning and potentially in determining single development projects too.
- 8.3 It was understood that many environmental limits need to be the subject of deliberative negotiation. However, it was equally felt that some limits, such as internationally designated biodiversity sites, must be protected come what may – such sites have already had their limits set through legislation under European law.
- 8.4 The identification of trade-offs was considered to be an important benefit of the approach, which is often not made explicit in other appraisal methods. By identifying such trade-offs, the approach offers the advantage of informing the design and implementation of development, by way of conditions and mitigation, as well as its location.
- 8.5 A concern was raised that the new approach could be resource intensive, and that there would be a need to educate those officers using it as a technique, and also training in facilitation and negotiation skills.
- 8.6 Above all, it was considered that the new approach needed to be applied to real-life examples at the local level, especially in the preparation process of Core Strategies in order to ensure its rigour and its usefulness in supporting both statutory appraisal processes such as SA and in meeting the tests of soundness.

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10 November 2010

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