Oxfordshire County Council

Oxfordshire Local Transport Plan 3
Strategic Environmental Assessment
Environmental Report

September 2010

Halcrow Group Limited

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Non-technical Summary

Introduction

This is the non-technical summary of the Environmental Report for Oxfordshire's third local transport plan, known as the LTP3. The Environmental Report forms part of a process known as Strategic Environmental Assessment (SEA). SEA is a process required by law for certain types of plan or programme, such as a local transport plan. The overall aim of the SEA process is to ensure better protection for the environment and human health by making decision-makers aware at an early stage of the likely effects of the plan on the environment and by seeking to introduce measures that can be undertaken either to avoid adverse effects or to help improve the environment.

Oxfordshire's Draft Third Local Transport Plan (LTP3)

Oxfordshire's draft LTP3 is now available for consultation. It includes objectives, policies, scenarios and area strategies. The objectives set the long term aspirations for the County in terms of its transport provision. The policies set the guidelines within which the Council plans to meet its objectives. The Council's scenarios represent the broad approach to meeting the transport issues and challenges for Oxfordshire's distinct geographical areas: Oxford City, larger towns, smaller towns and rural Oxfordshire. Four Scenarios have been developed as part of the plan to set the appropriate choices of transport provision (such as improvements for walking, cycling, public transport, highways) and the level of investment required to meet the specific challenges of those areas. Under these scenarios, a set of Area Strategies have been developed that list the specific transport initiatives to be taken forward locally within each of the geographic areas.

To get to this stage Oxfordshire County Council has consulted the public and organisations on a number of alternative scenarios and options. These alternatives have been assessed as part of the SEA process and the effects on the environment of the various options have been considered during the development of the draft LTP3.

Environmental Context

The following paragraphs summarise some of the key environmental and planning issues that are relevant to Oxfordshire and its transport provision.

- Air quality across Oxfordshire is generally good but there are a number of areas in the county where elevated levels of pollutants have been detected. There are currently nine declared Air Quality Management Areas (AQMAs) in Oxfordshire where standards in air quality are not met. In all the AQMAs in Oxfordshire the declaration has been made on the basis of the annual average level of nitrogen dioxide which is linked to transport emissions. The general trend is for a reduction in emissions per vehicle, as the vehicle stock is replaced by newer vehicles meeting higher emissions standards. However, this downward trend can be offset locally if traffic growth exceeds these reductions.
- Currently greenhouse gas emissions from transport are increasing. These gases are linked to climate change. Climate change is occurring and average

temperatures within Central England have increased. It is predicted that climate change will lead to warmer, drier summers and milder, wetter winters. The frequency of storms, floods, droughts and heat waves is believed to increase as a result of climate change, and authorities are encouraged to take action to ensure services and facilities can withstand these new conditions.

- It is estimated that 87% of the population in England and Wales are exposed to general road traffic noise in their homes, an estimated 2% of the population were exposed to noise in their homes from motorways and 12% are exposed to noise from railways. Exposure to noise can cause sleep disturbance, poor concentration and effects mental wellbeing.
- Wildlife and habitats are under pressure from development, particularly because of the need to accommodate new housing growth and other development. The construction of transport links such as roads can fragment habitats and cause barriers to movement of wildlife. However, road verges can also provide valuable habitats if appropriately managed. There are protected wildlife sites of local, national and international importance in Oxfordshire that need to be taken into account and protected when planning for further development.
- Nationally, there is a trend towards inactive lifestyles. Lack of physical activity is linked to a variety of health issues including premature deaths from cancer, strokes and heart disease, as well as a trend towards being overweight and obesity. By undertaking more local journeys on foot or by bicycle, there would be clear health benefits. However, Oxfordshire has a higher number of cars per household than the national average, an increasing volume of traffic on the roads, and county wide has fewer people cycling or walking to work than the national average.
- Accident rates are falling within Oxfordshire. However, certain travellers are more vulnerable to road accidents, particularly motorcyclists, cyclists and pedestrians. 20mph areas have been implemented in residential parts of Oxford to improve safety.
- Although approximately one quarter of the population is under 19 years of age, the percentage of the population over 65 in the county, with the exception of Oxford, is increasing. The ageing population requires consideration when planning for transport provision into the future. The population density disparity within the county places different demands on the countywide transport infrastructure. An increasing population size also puts increasing demands on the existing infrastructure.
- It is estimated that 78% of the land in Oxfordshire is agricultural. Soils and agricultural land are also under pressure from new development. Soil is needed for food production and serves a number of other uses (such as the cycling of nutrients, and storage of carbon). The protection of soil is therefore an important consideration in sustainable development.
- River water quality in Oxfordshire varies between districts. On a county level it was not possible to determine what percentage of water pollution incidents could be attributed to transport, but for England and Wales 4% of all serious incidents

are related to transport. Under European legislation the water environment should be protected and improved.

- Large areas of Oxfordshire lie within main river catchments and are prone to flooding. In recent years Oxfordshire, as with other parts of the country, has experienced significant damage to property due to flooding. Lower parts of the Thames Valley are vulnerable to flooding at least once a year. The predicted impact of climate change is likely to include increased flood risk as a result of more intense periods of rainfall. This has implications for the resilience of transport networks.
- The transport sector uses mineral resources in the construction of new infrastructure as well as fuels for vehicles. Fossil fuels are non-renewable and subject to price fluctuations on the global market due to changes in supply and demand. Dependence on car use has high resource requirements since significant land is required to accommodate traffic growth, while continued capacity improvements are required on the transport network such as road widening and the provision of parking infrastructure. Increased uptake in passenger transport and walking and cycling has lower overall demands on resources per person.
- Archaeological remains are intrinsically finite and Oxfordshire has a rich archaeological resource. There is considerable archaeological potential on many sites for which information is presently limited. Historic town and village centres, greenfield and previously developed sites may all contain significant levels of surviving archaeology. Current policy guidance is for new development to contribute positively to the character of the environment and an area's sense of place, and for the re-use of existing historic infrastructure to reduce waste and maintain local distinctiveness.
- The Oxfordshire countryside covers various landscape types including woodland and farmland. In total almost three quarters of Oxfordshire is designated as Green Belt, Area of Outstanding Natural Beauty or Area of High Landscape value. Oxfordshire's settlement pattern provides few opportunities for major re-use of land within existing built up areas. This has meant that a high proportion of development has had to be accommodated on greenfield sites on the edge of the County Towns (Banbury, Bicester, Didcot and Witney).
- According to CPRE, light pollution is rapidly increasing in the South East and 'there are no dark skies left in Oxfordshire'. As development in the south-east continues, light pollution is likely to increase further. Lighting can affect the quality of people's lives. In some cases it can provide a greater feeling of security and safety, in others it can mean a lack of viewable night sky features such as stars. Lighting can also affect bird and animal behaviour and vegetation growth.

Evolution of the Environmental Context Without the Plan

Environmental Issue	Evolution of the baseline without the plan
Air quality	Whilst the vehicle fleet in general is getting cleaner with improved emissions standards, the projected growth for Oxfordshire is likely to lead to increased traffic volumes and greater traffic congestion unless strategic action is undertaken. This in turn could lead to more AQMAs being declared as the increases in traffic and congestion outstrip improvements in emissions standards.
Climatic factors	It is predicted that the South East will expect warmer, drier summers and warmer, wetter winters. Extreme weather events such as droughts and flooding are predicted to become more frequent with increased demands on maintenance such as repairs to structures, reinforcements to embankments and additional drainage requirements.
Noise	The continued pressure for development and new infrastructure is likely to result in continued traffic growth. This is likely to result in greater proportions of the population being disturbed by transport-related noise.
Biodiversity	The continued pressure for development and new infrastructure is likely to result in further loss and fragmentation of habitats.
Population	The population across the region has doubled in size since the 1940s and the increase is set to continue. The proportion of people of pension age is expected to rise in line with the general aging trend of the UK population. Road transport is expected to increase in the county and the reliance on cars as the main mode of transport for commuters will continue unless additional strategic action is taken.
Human health	Obesity and lack of exercise are problems that face the county and they are likely to get worse across the county. Increases in traffic are likely to cause further community severance increasing isolation and safety fears among pedestrians and cyclists. Health issues related to lack of exercise and obesity are likely to reduce the abilities of people to use modes of transport other than the car, compounding the issue of traffic growth and its associated environmental problems. Health issues related to air pollution are likely to increase.
Soil	The continued pressure for development and new infrastructure is likely to result in further greenfield development and loss of farmland. Increased traffic volumes are likely to lead to greater levels of diffused pollution from surface-water run-off on older roads, causing further pollution to adjacent soil resources.
Water	Increased traffic volumes are likely to lead to greater levels of diffused pollution from surface-water run-off on older roads, causing further pollution of adjacent waterbodies. Levels and frequency of flooding are predicted to increase as a result of the effects of climate change.
Material assets	The condition of many roads and footpaths will deteriorate. Increasing occurrence of extreme weather events as a result of climate change is likely to increase the need for repairs to structures.

Environmental Issue	Evolution of the baseline without the plan
Cultural heritage	The principal threats to scheduled monuments in the county (arable farming, vegetation growth (including trees, scrub and plants) and animal burrowing) would continue. Increasing traffic levels will impact upon the amenity and quality of streetscapes and the cultural environment.
Landscape	Light pollution from development will continue. Increasing traffic volumes will increase noise disturbance in the countryside and the loss of tranquillity. Increases in traffic will cause more vehicles to use unsuitable rural roads.

Environmental Assessment Objectives

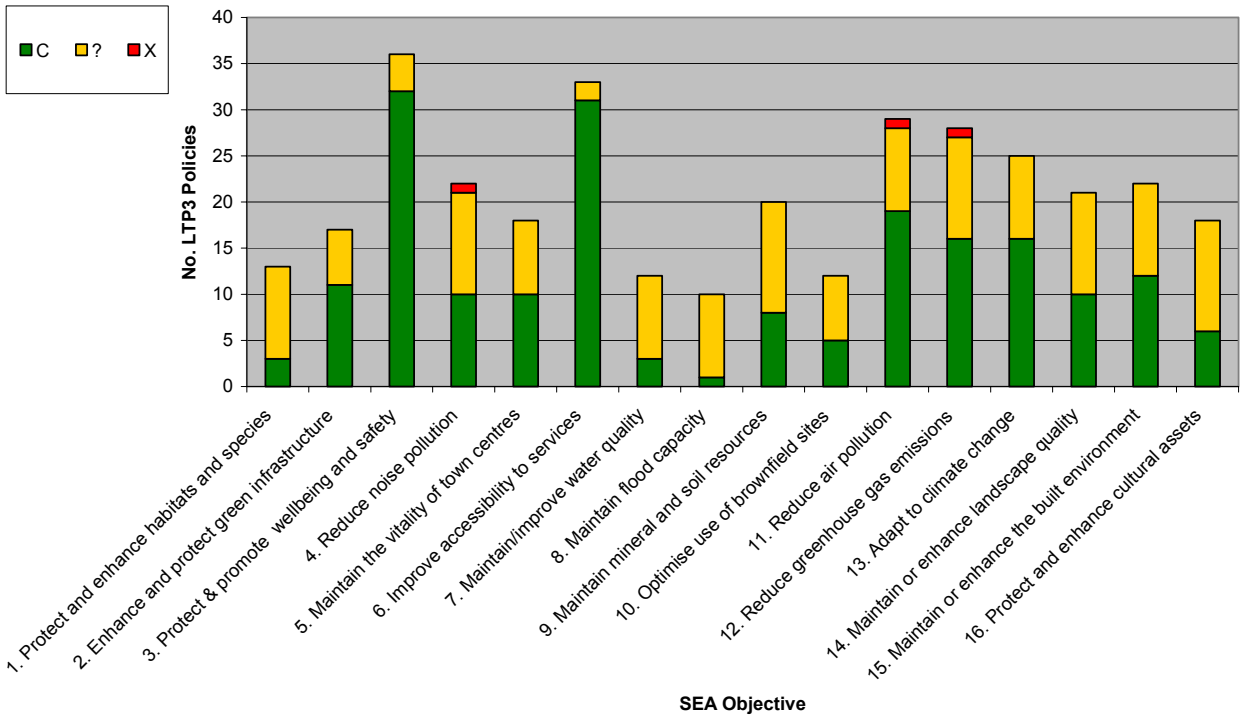
Taking into account the information on the environmental context, together with feedback gained from consultation on the scope of environmental assessment, a set of environmental objectives were developed against which to assess the likely effects of the draft LTP3. The environmental objectives related to the following issues:

1. Protect and enhance habitats and species
2. Enhance and protect green infrastructure
3. Protect & promote wellbeing and safety
4. Reduce noise pollution
5. Maintain the vitality of town centres
6. Improve accessibility to services
7. Maintain/improve water quality
8. Maintain flood capacity
9. Maintain mineral and soil resources
10. Make effective use of land
11. Reduce air pollution
12. Reduce greenhouse gas emissions
13. Adapt to climate change
14. Maintain/enhance landscape quality
15. Maintain/enhance the built environment
16. Protect and enhance cultural assets

Likely Environmental Effects of the draft LTP3

LTP3 Policies

An assessment was made relating to the compatibility of the draft LTP3 policies with objectives to protect the environment. The following graph shows the results of the assessment. The yellow indicates quantities of policies where there is uncertainty over the compatibility with environmental objectives. The green are those policies which are compatible, and the red are where issues of conflict with environmental objectives have been identified.



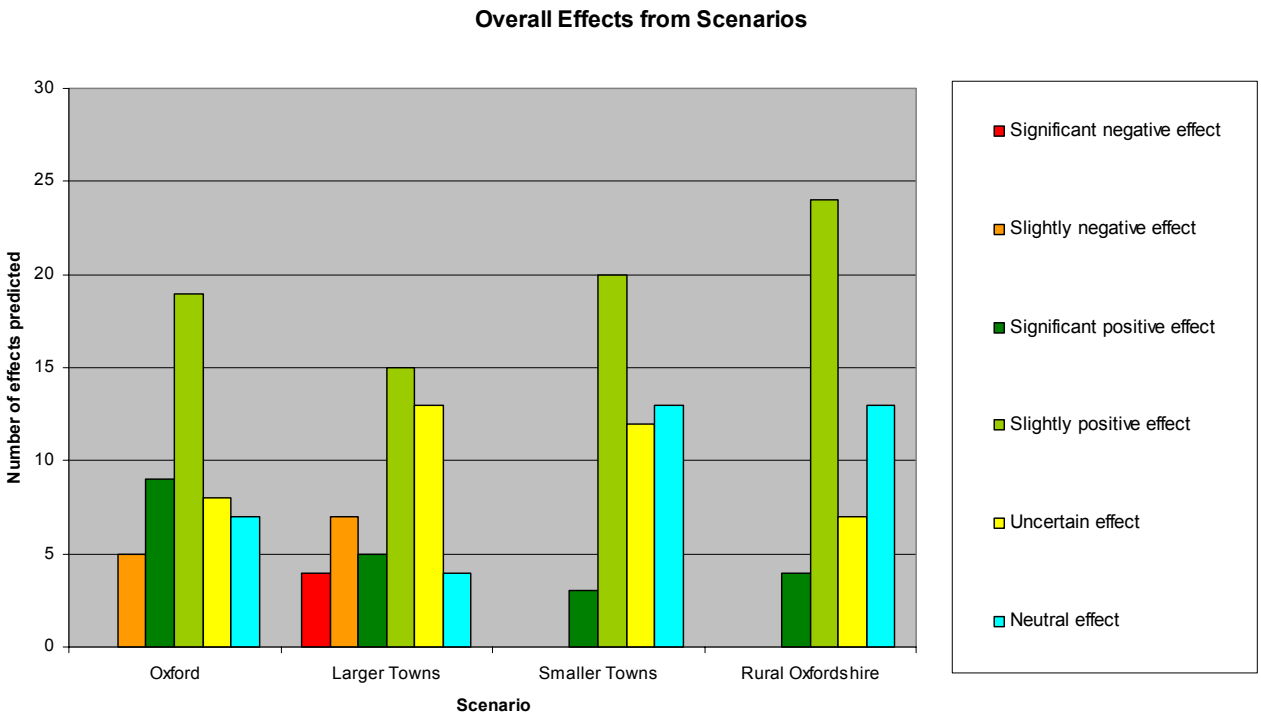
As indicated by the graph, very few areas of conflict were identified, with the exception of the policy related to air travel. There is apparent conflict between the LTP3 Policies and objectives relating to noise, air quality and greenhouse gas emissions. It was considered that this policy would conflict with those particular SEA objectives because air travel is unlikely to lead to any significant reduction in other forms of transport within the County, and would therefore have an additive effect on overall emissions of noise, air pollutants and greenhouse gases.

LTP3 Scenarios

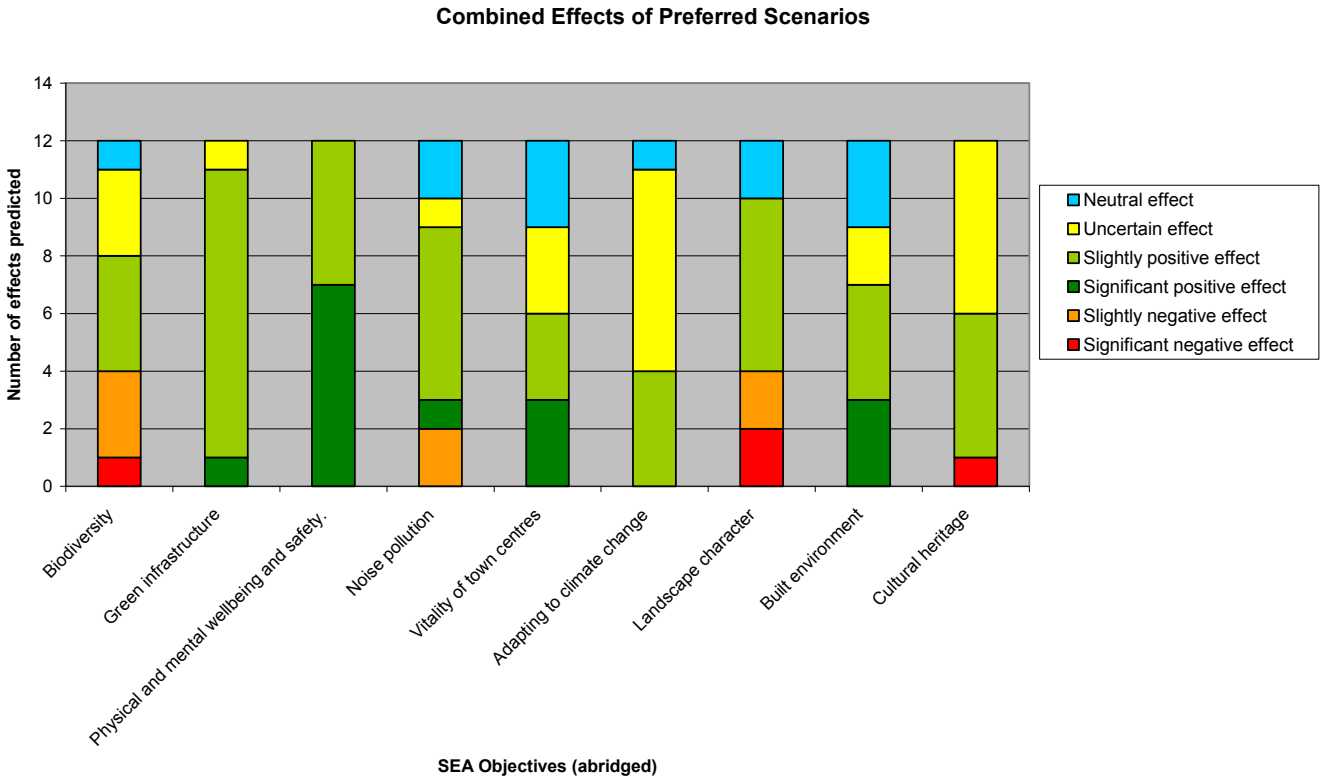
The Scenarios assessment was undertaken in stages as the draft LTP3 was developed. Overall the assessment results indicate that the most significant positive effects on the environment are likely to be gained from the Oxford Scenario. In general these benefits relate to improvements to human health through better opportunities for physical activity from walking and cycling, as well as improvements in overall accessibility and built environment.

The likely significant negative effects are predicted to be restricted to the Larger Towns Scenario. This relates to the predicted environmental impacts of new highway links proposed under the Area Strategies for Bicester, Science Vale and Witney. This is likely to give rise to some permanent and irreversible impacts upon landscape, soils and biodiversity.

No negative effects were predicted for the Smaller Towns and Rural Oxfordshire Scenarios. Generally the proposals for these areas are related to small-scale improvements to existing infrastructure to improve accessibility by public transport, walking and cycling, as well as to reduce traffic and speed.



In relation to the environmental objectives, the assessment found the scenarios are predicted to have significant negative effects on biodiversity, landscape and cultural heritage although overall the positive effects outweigh the negative effects. This is indicated by the following graph which adds the predicted effects for each scenario together under each objective



Recommendations to Improve the Environmental Outcomes

The predicted significant adverse effects upon biodiversity, landscape and cultural heritage relate to the proposals under the Preferred Scenario for Larger Towns. Under this scenario it is proposed that there would be some new highway infrastructure as well as new Park & Ride schemes. It should be noted that the Area Strategies do heavily promote measures other than the use of the private car so that traffic growth overall would be minimised. However, it is assumed that under this scenario, at some stage during the life of the LTP3 there would be some infrastructure that would impact upon habitats, Green Belt land and soils. This would have potential impacts upon buried archaeology as well.

To help mitigate these potential adverse effects, proposals should be subject to detailed Environmental Impact Assessment (EIA). Investigations into the local biodiversity value of the sites, the potential for archaeology and the quality of soil should all be considered and used to inform the location and design of the infrastructure in order to minimise or avoid adverse effects.

Significant reductions in greenhouse gas emissions are predicted for Oxford. It is considered that similar potential is possible for larger towns where services are likely to be relatively close to where people live and work. A greater proportion of investment in demand management in Larger Towns may lead to a greater level of modal shift from private car use to walking, cycling and public transport for shorter journeys. This would help to reduce overall emissions from transport although it may be unpopular.

A further point for consideration is the contradiction with Policy SD 5 which concerns the support of air travel. It is recommended that a review of the likely emissions from air travel activities originating in Oxfordshire is undertaken in order to gain an overall understanding of its impacts upon the Council's targets to reduce greenhouse gas emissions.

Some aspects of the transport network offer opportunities for biodiversity. For example, highway and railway verges can offer significant opportunities for native planting and habitat enhancement. It is therefore recommended that advice is sought from the County Ecologist when developing proposals that may impact on verges, or when planning maintenance regimes, so that opportunities for habitat enhancement and protection are included.

Overall the draft LTP3 has significant investment in facilities for pedestrians and cyclists which are likely to improve the convenience for travelling on foot or by bicycle. The LTP3 could go further by containing a target to increase the volume of walking and cycling (and plan to collect local data to monitor progress), as well as a target to limit growth in volumes of car traffic. This would serve to reduce the health burden of traffic in urban locations and improve health through greater levels of physical activity.

Trees in the urban environment create shade and have a cooling effect. Research suggests that if we increase green cover in towns and cities by 10 per cent, we could keep surface temperatures at current levels despite climate change. Trees can help

reduce asthma rates in children. Researchers have found asthma rates among children aged between four and five fell by a quarter for every additional 343 trees per square kilometre. Trees and woodland can reduce surface water flooding by improving drainage. They can also help to improve landscape and the overall attractiveness of the urban environment to live in and walk and cycle in. Finally, they can have significant biodiversity value, for example through their planting as part of wildlife corridors.

Monitoring

The SEA legislation requires monitoring of the significant environmental effects of the plan. A monitoring system will be developed which will help to provide understanding of how the baseline environment of the area is developing, to monitor the significant effects of the plan and to ensure that action can be taken to reduce or offset the significant effects of the plan.

Although no longer a requirement of LTPs (under the Transport Act 2008) it is recommended that Oxfordshire County Council continues to produce annual progress reports which include selected environmental factors and meet SEA monitoring requirements.

It is proposed that LTP3 is monitored to check the potential effects on biodiversity, landscape, cultural heritage and greenhouse gas emissions. It is also recommended that the plan is monitored to see if it results in higher uptake of walking and cycling and lower use of private cars for journeys to work and school. At present the monitoring requirements are not well developed. There is currently significant uncertainty over available public funding and the monitoring programme may need to be designed to be achievable within limited budgets. Therefore it may be necessary to identify other monitoring regimes and link in with those processes to avoid duplication of effort and to make the best use of available information. The monitoring framework will be developed further and confirmed in the SEA Statement which will be prepared once the Final SEA has been developed.

Next Steps

This Non-Technical Summary and the Environmental Report will be made available on the Oxfordshire County Council consultation webpage under Local Transport Plan 3. http://www.oxfordshire.gov.uk

If you would like to comment on the draft LTP3 or this SEA, comments should be received no later than January 9th 2011.

When the final Oxfordshire LTP3 is prepared in April 2011 it will be accompanied by an SEA Statement. In line with legislation, the SEA Statement will provide the following information:

- How environmental considerations have been integrated into the plan;
- How the Environmental Report has been taken into account;

- How opinions expressed in relation to the consultations on the plan/ programme and Environmental Report have been taken into account;
- The reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and
- The measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme

1 Introduction

1.1 Purpose of Environmental Report

1.1.1 This Environmental Report has been prepared to meet the requirements of the Environmental Assessment of Plans and Programmes Regulations (Statutory Instrument 2004/1633)[1]. It is the main output of the Strategic Environmental Assessment of the Oxfordshire draft Local Transport Plan 3. The purpose of Strategic Environmental Assessment (SEA) is to allow decision makers (including the public) to consider the effects that a plan may have on the environment. The aim "to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development[2]".

1.1.2 This Environmental Report provides an assessment of "the likely significant effects on the environment" of the LTP3. It should be noted that the SEA does not provide a detailed assessment of all schemes listed within the LTP3. Instead it provides a broad assessment of the likely effects from the overall plan.

1.1.3 The SEA was conducted by specialist consultants from Halcrow Group Limited working on behalf of Oxfordshire County Council. This has allowed an independent assessment of the likely significant effects of the plan.

1.2 SEA Guidance and Procedure

1.2.1 This SEA takes account of the following guidance:

- SEA guidance published by the Office of the Deputy Prime Minister, the Welsh Assembly Government, the Scottish Executive and the Department of the Environment for Northern Ireland September 2005 - *A Practical Guide to the Strategic Environmental Assessment Directive* (Communities and Local Government 2005) (referred to herein as 'the SEA guidance');
- SEA guidance issued by the European Commission - Implementation of Directive 2001/42 on the assessment of the effects of certain plans and programmes on the environment (EC 2001);
- SEA guidance published by the Department for Transport - Strategic Environmental Assessment for Transport Plans and Programmes, Transport Appraisal Guidance (TAG) Unit 2.11 "In Draft Guidance" (DfT 2009); and

1.2.2 SEA is an iterative process informing each stage of the plan development process. As such, SEA requires close involvement of the persons

[1] Known as the "SEA Regulations" which implement European Directive 2001/42/EC (the "SEA Directive")
[2] Article 1 of the SEA Directive (2001/42/EC)

responsible for the SEA, and those developing the plan or programme. The SEA of the Oxfordshire LTP3 has therefore been carried out with close involvement of the LTP3 team at Oxfordshire County Council.

1.2.3 The SEA procedure is considered in five main stages – stages A to E. Table 1 sets out the stages and the steps that have been undertaken for the assessment of the Oxfordshire LTP3.

1.3 Approach to SEA

1.3.1 As indicated in Table 1, a Scoping Report was prepared by Halcrow and consulted upon to establish the environmental context of Oxfordshire and the extent of potential significant impacts that might arise on the environment from the implementation of the LTP3. Section 3 of this Environmental Report presents some of the information that appeared in the Scoping Report. However, as the SEA process has progressed this information has been edited and updated based upon input from the consultants and in response to feedback from consultation with the statutory environmental bodies and other stakeholders.

1.3.2 This SEA uses an objectives led approach to assessment. To do this a series of environmental assessment objectives (SEA objectives) are established against which to assess the performance of the plan on the environment. A set of SEA objectives was proposed in the SEA scoping report and have since been amended following feedback during the consultation at the scoping stage. The SEA objectives are set out in Section 2 of this Environmental Report.

1.4 Spatial and Temporal Scope

1.4.1 The scope of the assessment focuses on the County of Oxfordshire although some effects, such as greenhouse gas emissions, are considered in terms of their cumulative global effect.

1.4.2 In the Scoping Report it was proposed to set timescales against which to assess the effects, for example short term effects would be expected up until 2016. However, due to the uncertainty over funding and at what point it will be possible to deliver the elements contained within the Area Strategies, the timescales have been amended as follows:

- **Short term** (ST): effects expected from implementation or construction.
- **Medium term** (MT): effects expected up until 2030 from the operation of the transport improvement.
- **Long term** (LT): effects expected beyond 2030.

1.5 Limitations and Difficulties Encountered

1.5.1 Some of the difficulties encountered relate to the collection of baseline data. It was not possible to obtain a consistent level of data in terms of its geographical relevance and the dates for which information is available.

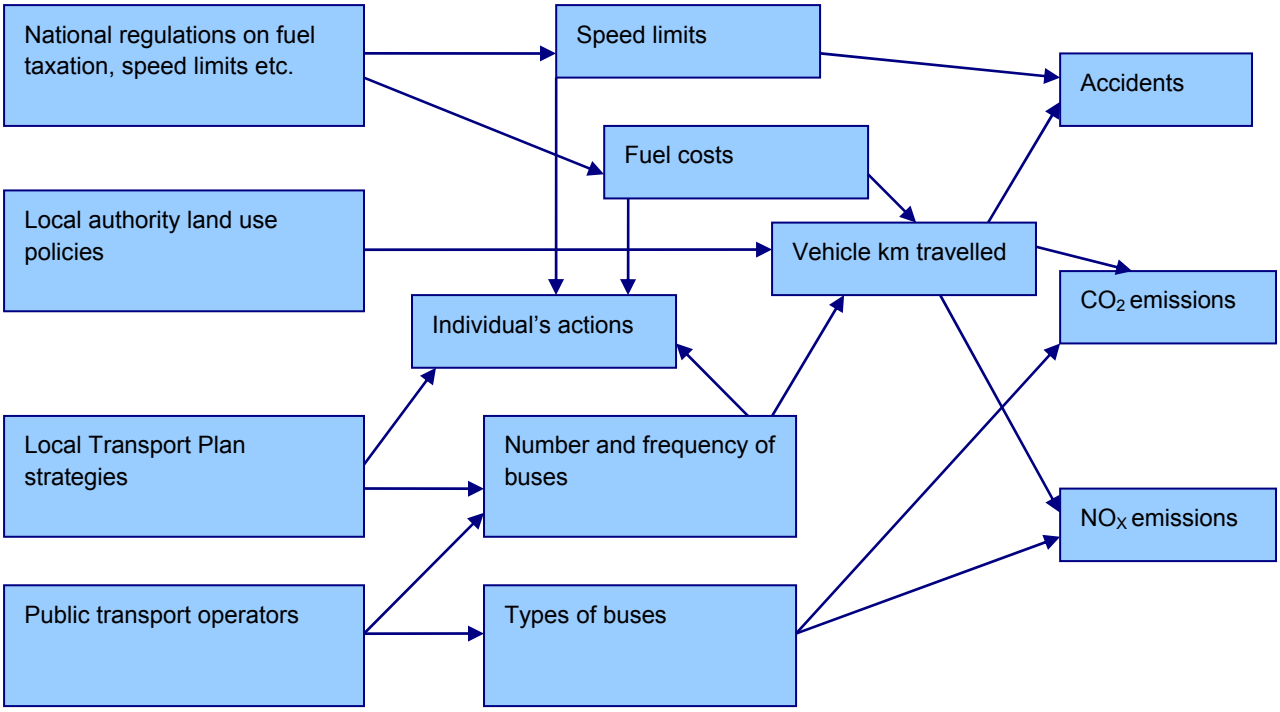
Furthermore there is a tremendous amount of information available and it is not feasible to research and include all the environmental data for the area. The scope of the baseline environmental information provided in Section 3 aims to focus on the key environmental issues of the area that may be influenced by the application of a county level transport plan.

1.5.2 One key difficulty encountered is related to the uncertainty over future funding and policy direction in light of the current economic conditions and recent change of government. For example, it has been announced by the new coalition government that Regional Spatial Strategies will be abolished and that Local Planning Authorities would be permitted to alter any unwanted policies imposed by the Regional Spatial Strategies. Policy Planning Statements are also likely to be reviewed in the short term to reflect new policy priorities. This may impact upon the assumptions made regarding the likely evolution of the baseline environmental context without the LTP3 as described in Section 3.

1.5.3 Owing to uncertainty over funding allocations, the format of the LTP3 has been altered so that there is not an implementation plan outlining anticipated measures for the next five years. This leads to uncertainty over the timescales of the assessment as outlined in the next paragraph on spatial and temporal scope.

1.5.4 A further difficulty arises from understanding how much influence a local transport plan can have on environmental outcomes when taking into account the range of other influences which are present. The following diagram represents a simplified example of the tenuous links between measures within an LTP and environmental outcomes. It is included to highlight the point that other factors influence the choices people have and make and that these also contribute the environmental effects of transport.

Figure 1.1: Simplified Example of Tenuous Links between Local Authority Actions and Environmental Outcomes[3]



[3] Inspired by Riki Therivel, 2004, Strategic Environmental Assessment in Action, Earthscan. Figure 6.2

Table 1: SEA Stages and the SEA Process followed for the Oxfordshire LTP3

	SEA Stages	Oxfordshire LTP3 Development Milestones	SEA Milestones
A	Setting the context and objectives, establishing the baseline and deciding on the scope	• Development of objectives for LTP3 and public consultation (July to September 2009) • LTP3 objectives agreed at Oxfordshire County Council Cabinet meeting 15 September 2009	• SEA Scoping Report prepared between May and June 2009. • Scoping Report issued in June 2009 for five-week statutory consultation (July to September 2009). • Consultation responses reported to Oxfordshire County Council September 2009
B	Developing and refining alternatives and assessing effects	• Six-week consultation on a long list of LTP3 schemes (November to December 2009) • Compilation of extended list of schemes following consultation feedback • Stakeholder consultation of draft list of LTP3 policies 20 January to 21 February 2010 • Development of alternative scenarios representing the overall approaches that could be adopted to provide and prioritise transport investment in areas of the county (Oxford, larger towns, smaller towns and rural areas) • Six week stakeholder consultation on the LTP3 scenarios (May and June 2010) • Preferred scenarios presented to County Council's Cabinet on 20 July	• Interim report to Oxfordshire County Council including compatibility assessment and high level assessment of transport interventions – January 2010. • Initial assessment of alternative scenarios issued to Oxfordshire County Council (May 2010) • Preliminary assessment of preferred scenarios issued to Oxfordshire County Council to accompany presentation to Cabinet (July 2010)
C	Preparing the Environmental Report	• Development of local area strategies based around preferred scenarios for the four settlement types to help meet LTP objectives and support delivery of growth and infrastructure in the county (August 2010) • Completion of draft LTP3 for consultation (September 2010)	• Revision of assessment of preferred scenarios in light of further detail provided in local area strategies (August 2010) • Preparation of this Environmental Report on the SEA of the draft LTP3 issued to Oxfordshire County Council September 2010

	SEA Stages	Oxfordshire LTP3 Development Milestones	SEA Milestones
D	Consulting on the draft plan and the Environmental Report	• Consultation on draft LTP3 and Environmental Report planned for 4 October 2010 - 9 January 2011 • Adoption of Oxfordshire LTP3 scheduled to take place by April 2011. • Preparation of Post-adoption Environmental Statement to record how SEA was taken into account for LTP3	
E	Monitoring the significant effects of implementing the plan on the environment		• Monitoring regime to be developed and agreed by Oxfordshire County Council

2 Oxfordshire draft LTP3

2.1 Introduction

2.1.1 The Oxfordshire draft LTP3 has now been developed and will be consulted upon alongside this Environmental Report. The LTP3 will set the policy and strategy for Oxfordshire's transport requirements covering the period 2011 to 2030.

2.2 LTP3 Objectives

2.2.1 Oxfordshire County Council held a Cabinet meeting on 15 September 2009 and agreed upon a set of transport objectives for the LTP3 to deliver. Some of the objectives related to the Department for Transport's five goals for transport as outlined in DaSTS[4]. Other objectives relate to the local priorities for Oxfordshire. The LTP3 objectives are:

1. Improve the condition of local roads, footways and cycleways, including resilience to climate change
2. Reduce congestion
3. Reduce casualties and the dangers associated with travel
4. Improve accessibility to work, education and services
5. Secure infrastructure and services to support development
6. Reduce carbon emissions from transport
7. Improve air quality, reduce other environmental impacts and enhance the street environment
8. Develop and increase the use of high quality, welcoming public transport
9. Develop and increase cycling and walking for local journeys, recreation and health

2.2.2 The LTP3 objectives help to set the long term aspirations of the plan and guide the prioritisation of schemes that would ultimately be put forward in the LTP3. Therefore, as part of the SEA process, a compatibility assessment was undertaken to identify whether any of the LTP3 objectives contradict the SEA objectives. The results of the compatibility assessment are included in Appendix C.

2.2.3 The result of the exercise showed that in general the LTP3 objectives were largely compatible with the SEA objectives. There were no instances of the LTP3 objectives being incompatible with the SEA objectives, but there were fifty uncertain effects. This was because some of the LTP3 objectives could have been delivered through a variety of potential options with variable consequences for the environment. The table in Appendix C outlines the concerns that were raised as to why there was uncertainty over compatibility between the LTP3 objectives and the SEA objectives. The results of the assessment were fed back to Oxfordshire County Council's LTP3 team in the

[4] Delivering a Sustainable Transport System (DfT 2008)

form of an interim guidance note (Halcrow January 2010) in order to ensure the environmental concerns could be taken into account when developing the plan options. The interim guidance note included broad recommendations to help inform the development of options which were anticipated to lead to improved or less harmful environmental outcomes (included in the table in Appendix C).

2.3 Structure of the LTP3

2.3.1 The structure of the draft LTP3 has been altered from that originally envisaged. Instead of including an implementation plan listing the priority schemes for implementation over a five year period, the timescales have been relaxed to take account of the significant funding uncertainty in response to the nation's economic challenges.

2.3.2 The draft LTP3 will be in three parts. The first part sets out a series of transport policies that have been developed to meet the long term aspirations as set out through the LTP3's objectives. The second part provides more details as to how the LTP3 objectives will be met. The third part presents a series of Area Strategies based around broad scenarios. These list the priority schemes and initiatives that are planned to be delivered over the life of the LTP3 as and if funds become available.

2.4 Development of LTP3 Policies

2.4.1 A draft set of transport policies were produced by Oxfordshire County Council in light of the approved LTP3 objectives. These covered nineteen topics, including walking, cycling, disability, bus and rail services. A draft combined list of 75 policies extracted from the nineteen transport topics were put to a stakeholder consultation which took place from 20 January to 21 February 2010. Around 150 responses were received to this consultation. The LTP3 team carried out an analysis of all of the consultation responses and made changes to the draft list of policies in light of the comments received. Following this, 40 of the 74 policies were reworded, eight policies were deleted and eight new policies were added to the list. Following further discussion with colleagues and stakeholders the Council made some further amendments and the final Recommended LTP3 policies, were presented and subsequently approved by Cabinet on 20 July.

2.5 LTP3 Settlement Types and Consultation on Long List of Schemes

2.5.1 Oxfordshire County Council recognised that transport needs and priorities vary across the county and therefore an approach was agreed which divided the county into four types of settlement. This allowed the prioritisation of the objectives for each of the four settlement types considered in the Plan. The settlement types are:

- Oxford City;
- Larger Towns (Abingdon, Banbury, Bicester, Science Vale UK (including Didcot and Wantage & Grove) and Witney;

- Smaller Towns (Chipping Norton, Kidlington, Carterton, Faringdon, Wallingford, Henley-on-Thames, Chinnor and Thame); and
- Rural Oxfordshire.

2.5.2 The Council prepared a long list of potential transport schemes for inclusion in the plan. This comprised schemes for each of the four different settlement types in the county. A six-week stakeholder consultation on the long list of schemes was held over November and December 2009. Stakeholders were asked whether there were any schemes that they would like added or removed from the list, as well as the reasons for their comments. A total of 226 responses were received and just under 1,000 additional schemes were suggested for inclusion in the plan. An extended long list of schemes, featuring additional schemes suggested by stakeholders, has been compiled and is divided into extended long lists of schemes for each of the four settlement types, as well as list of 'Revenue' schemes, 'Community' schemes and 'General' schemes.

2.6 Development of Area Strategies

2.6.1 The final step in the development of the draft LTP3 has been to develop the Area Strategies. In order to do this the Oxfordshire County Council LTP3 team took the approved scenarios to develop local area strategies in the four settlement types to help meet LTP objectives and support delivery of growth and infrastructure in the county. These Area Strategies include the priority measures and interventions for each area. Taking the information available from the Area Strategies, the Preferred LTP3 Scenarios were reassessed. This allowed more certainty to be applied to the assessment of the overall LTP3 since it had been necessary to make a number of assumptions during the preliminary assessment.

2.7 Development of LTP3 Scenarios

2.7.1 Alongside the development of the LTP3 policies has been the development of a series of alternative scenarios. The scenarios are the overall approaches that could be adopted to provide and prioritise transport investment in each settlement in the county over the next 20 years. Each scenario would be a combination of different transport measures, and would set out what the main focus of investment would be in each area. For example, one scenario might involve more investment in cycling and walking facilities, while another could mean more emphasis on better bus and rail travel. This would not rule out undertaking other types of scheme if there was an identified local need. The alternative scenarios which were developed for consultation were as follows:

Area	Scenarios
Oxford	• Promoting walking and cycling; • Promoting alternative modes • Promoting public transport
Larger Towns	• Promoting lower emissions • Promoting transport choice • Supporting economic growth
Smaller Towns	• Promoting lower emissions • Promoting transport choice • Improving the roads
Rural areas	• Promoting lower emissions • Managing movements • Promoting transport choice • Improving the roads

2.7.2 As part of the SEA process, these alternative scenarios were assessed by Halcrow using detailed assessment worksheets which also include a brief description of each alternative scenario. The full results of this assessment are included in Appendix D2 (Assessment of Alternative Scenarios). Oxfordshire County Council was provided with the assessment of the alternative scenarios in May 2010. Oxfordshire County Council took the information from the SEA as well as some of the findings from the INTRA-SIM model on a range of indicators: accessibility on foot and cycle, accessibility by bus, climate change, road safety, air quality and the economy. The information was presented in a simplified format for the purposes of consultation. A six week stakeholder consultation on the LTP3 scenarios was held over May and June 2010. This consultation closed on Sunday 20th June. Following the completion of the consultation, the LTP3 assessed all of the consultation responses before recommending a set of preferred scenarios.

2.8 Preferred LTP3

2.8.1 The draft LTP3 has been developed over the past year involving a number of rounds of consultation as well as taking into account information provided by the SEA process (Table 1). Each scenario represents a combination of levels of investment in certain types of transport provision in order to respond to the identified transport challenges of that area.

2.8.2 The following table sets out the preferred scenarios in terms of the relative level of investment that would be allocated to each category of transport provision. These scenarios represent Oxfordshire County Council's preferred broad approaches to dealing with specific challenges presented by each geographical area.

2.8.3 The ticks in the table represent the broad level of investment as follows:

Level of investment:

✓ = Low ✓✓ = Medium ✓✓✓ = High

(Additional ticks in brackets would apply if the Eco-Town in Bicester proceeds)

2.8.4 These Preferred Scenarios have been used to guide the Area Strategies that form the third part of the draft LTP3. The Area Strategies describe the combination of measures that would be developed for each settlement and Rural Oxfordshire at a more local level if and when funds become available. The SEA has focused upon the overall effect of the Preferred Scenarios using the Area Strategies as evidence of the type of on-the-ground measures that are likely to take place.

Preferred Scenarios

	Preferred Scenarios			
	Oxford	**Larger Towns**	**Smaller Towns**	**Rural Oxfordshire**
Rail	✓✓	✓✓		✓
Bus	✓	✓✓(✓)	✓	✓✓
Walking	✓✓✓	✓✓	✓✓	✓✓
Cycling	✓✓✓	✓✓(✓)	✓✓	✓✓
Highway Infrastructure		✓✓		
Traffic Management	✓	✓	✓	
Park & Ride	✓✓	✓✓		
Behavioural Change	✓	✓(✓✓)	✓	✓
Low Emissions Vehicles	✓✓✓			✓✓
Slower speeds	✓			✓✓
Freight Management	✓✓✓			✓

2.8.5 The preferred scenarios were adapted slightly from the alternative options included in the consultation. Therefore a further assessment was undertaken of the preferred scenarios as part of the SEA. The preliminary assessment of the preferred scenarios was issued to Oxfordshire County Council in July 2010 to accompany the presentation to Cabinet on 20th July when the preferred scenarios were approved. The preliminary assessment of the preferred scenarios is included in Appendix D3.

3 Environmental and Planning Context

3.1 Planning Context

3.1.1 The SEA Regulations require that the Environmental Report includes an outline of the plan's relationship with other relevant plans and programmes and the environmental protection objectives set at international, European or national level. In order to fulfil this requirement a review of policies and plans was undertaken at the scoping stage and has been revised and included in Appendix A.

3.1.2 Since the policy and plan review was undertaken, there has been a change of Government which has altered the planning context. In particular the South East Plan, which provided the context for the emerging LTP3s and Core Strategies in the region, is to be abolished and Council's are permitted to alter their Core Strategies to remove any undesired policies that were imposed by the South East Plan.

3.1.3 The new Government has held a consultation process entitled "*The Coalition: our programme for government".* It is now in the process of formulating new guidance on a number of transport issues. However it has announced that it has priorities for transport relating to low carbon travel (including the promotion of a national high speed rail network) as well as improving road safety.

3.1.4 It is uncertain how the planning context will unfold in the coming months. However the current understanding of the planning context is detailed in Appendix A.

3.2 Baseline Environment Summary

3.2.1 The SEA Regulations also require a description of the current state of the environment and the likely evolution of the environment that would take place if the plan were not implemented. It is recognised that the future baseline is difficult to predict due to the uncertainty of other effects and actions on the environment. The following Section summarises the current state of the environment relevant to Oxfordshire and the likely scope of influence from the LTP3. An indication of future trends is also provided towards the end of the Section.

3.3 Air Quality

3.3.1 Air quality across Oxfordshire is generally good but there are a number of areas in the county where elevated levels of pollutants have been detected. Air pollution in Oxfordshire is monitored across the county by the District Councils and at two sites that are included in the UK Automatic Urban and Rural Network, one in Oxford city centre and the other in Harwell in the Vale of the White Horse.

3.3.2 There are currently nine declared Air Quality Management Areas (AQMAs) in Oxfordshire (Abingdon, Botley, central Oxford, Green Road Oxford, Chipping Norton, Henley, Wallingford, Watlington and Witney). In addition a number of other sites are currently being investigated in detail to see if further declarations are required, as shown on Figure 2[5]. In all the AQMAs in Oxfordshire the declaration has been made on the basis of the annual average level of nitrogen dioxide (NO_2), although Oxford City Council is also currently investigating whether a further declaration is required on the basis of peak concentrations of NO_2 in Oxford city centre. The general trend is for a reduction in emissions per vehicle as the vehicle stock is replaced by newer vehicles meeting higher emissions standards. However this downward trend can be offset locally if traffic growth exceeds these reductions; overall emissions increases are even more likely if traffic growth results in increased congestion. Predictions of future emissions have to include consideration of future traffic levels and composition, and the manner of future traffic flow through an area.

3.3.3 Figure 3.1 shows the AQMAs in the county and levels of NOx respectively.

3.4 Climatic Factors

Greenhouse Gas Emissions

3.4.1 Provisional figures for 2008[6] show overall greenhouse gas emissions have fallen in the UK by almost 19% since 1990 (see Figure 3.2). This compares to the Kyoto target of a 12.5% cut between 1990 and 2008-2012. However, carbon dioxide (CO_2) emissions have been declining at a lower rate (approximately 8.5% since 1990). Furthermore, since 1990, UK emissions of CO_2 from road transport have increased by 11%, against the trend in emissions from other sectors.

3.4.2 Regional data released in 2008[7] indicate the following CO_2 emissions in Oxfordshire during 2006:

Table 2: Carbon Dioxide Emissions by District

District	CO_2 Emissions	CO_2 Emissions from Road Transport (Mt)
Cherwell	1,592	632
City of Oxford	1,075	189
South Oxfordshire	1,322	474
Vale of White Horse	1,162	410
West Oxfordshire	818	248
Total	**5,969**	**1,954**

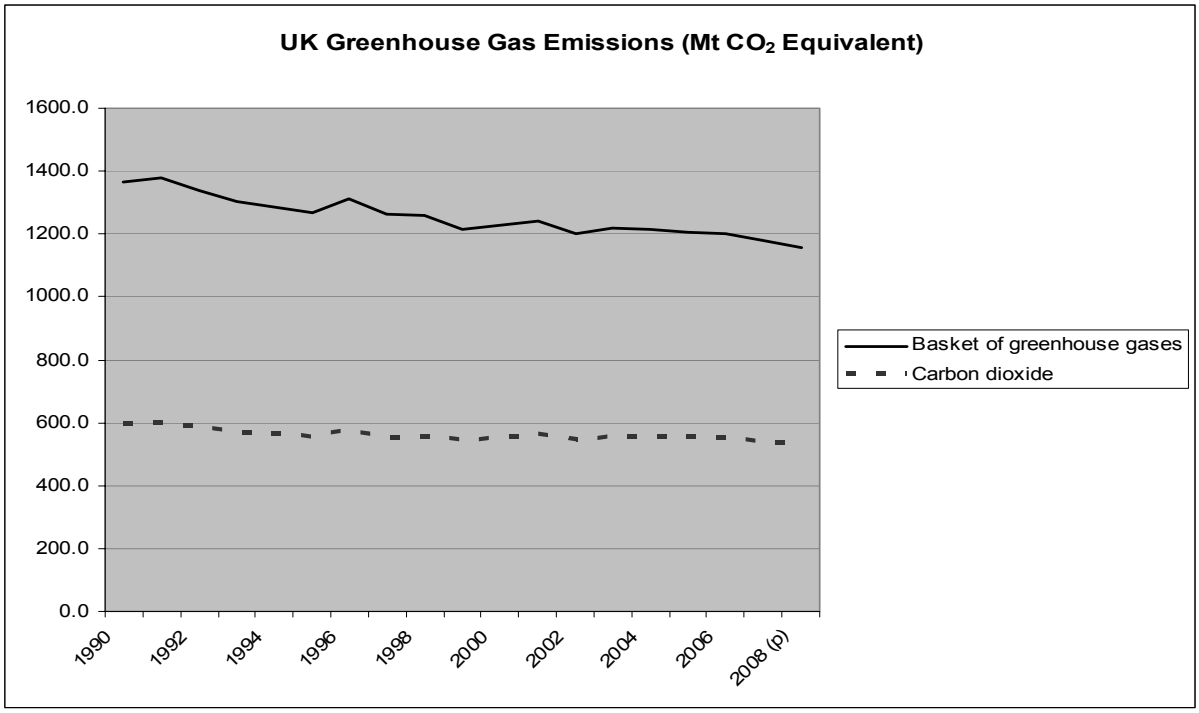
[5] NB: Watlington has been declared an AQMA since the figure was prepared.
[6] Department of Energy and Climate Change, March 2009, Statistical Release: UK Climate Change Sustainable Development Indicator: 2008 Greenhouse Gas Emissions, Provisional Figures.
[7] AEA 2008, Emissions of carbon dioxide for local authority areas, published by Defra at: http://www.defra.gov.uk/environment/statistics/globatmos/galocalghg.htm

3.4.3 All districts in Oxfordshire showed a decline in CO_2 from the previous year. However, based upon the available 2006 data, road transport in Oxfordshire contributes 32.7% of the total CO_2 emissions in the county. This is substantially higher than the national average (approximately 25%).

Figure 3.1: Air Quality Management Areas in Oxfordshire

Source: Oxfordshire County Council, December 2008, Local Transport Plan 2006-2011, 2008 Progress Report. www.oxfordshire.gov.uk

Figure 3.2: UK Greenhouse Gas Emissions



Climate Change

3.4.4 Warming of the global climate system is unequivocal, with global average temperatures having risen by nearly 0.8 ºC since the late 19th century, and rising at about 0.2 ºC/decade over the past 25 years[8]. Temperatures for Central England have seen a more rapid rise than that of the global average land-surface temperature over the same period, and considerably faster than that of the global mean temperature. The UK Climate Change Projections predict that the UK climate will change as follows:

- All areas of the UK get warmer, and the warming is greater in summer than in winter;
- There is little change in the amount of precipitation (rain, hail, snow etc) that falls annually, but it is likely that more of it will fall in the winter, with drier summers, for much of the UK;
- Sea levels rise, and are greater in the south of the UK than the north.

3.4.5 It is predicted that the climate will change by the 2080s in the South East under a medium emissions scenario in the following way:

- The central estimate of increase in winter mean temperature is 3ºC; it is likely to be within the range of 1.6ºC to 4.7ºC.
- The central estimate of increase in summer mean temperature is 3.9ºC; it is likely to be within the range of 2ºC to 6.4ºC.

[8] UK Climate Change Projections, 2009, http://ukclimateprojections.defra.gov.uk/content/view/751/9

- The central estimate of change in winter mean precipitation is 22%; it is likely to be within the range of 4% to 50%.
- The central estimate of change in summer mean precipitation is –22%; it is likely to be within the range –47% to 7%.

3.5 Noise

3.5.1 There is a lack of available baseline data relating to the issue of noise from transport at the Oxfordshire level. The National Noise Incidence Survey 2000 indicates that 55% (+/- 3%) of the population in England and Wales live in dwellings that are exposed to noise levels above the day-time threshold recommended by the World Health Organisation (BRE, 2002). It also indicates that 68% (+/- 3%) of the population live in dwellings exposed to noise levels above the night-time threshold (BRE, 2002).

3.5.2 The same survey also indicates that an estimated 87% of the population are exposed to general road traffic noise in their homes, an estimated 2% of the population were exposed to noise in their homes from motorways and 12% are exposed to noise from railways (BRE, 2002).

3.5.3 In 2007/2008 there were 139 complaints per million people in the UK relating to traffic noise[9]. Based on available data, the overall trend since 2005 is unclear. However, data provided by the Office for National Statistics states that noise complaints in relation to traffic fell by 22% between the period 1984/5 and 2003/4.

3.6 Biodiversity

3.6.1 The priority habitats within the Oxfordshire Biodiversity Action Plan comprise[10]:

- Ancient and/or species-rich hedgerows;
- Coastal and floodplain grazing marsh;
- Fens;
- Lowland beech and yew woodland;
- Lowland calcareous grassland;
- Lowland heathland;
- Lowland wood-pasture and parkland;
- Reedbeds; and
- Wet woodland

3.6.2 With regard to internationally protected nature conservation sites, there are no Special Protection Areas or Ramsar sites in Oxfordshire. However, seven Special Areas of Conservation lie wholly or partly within Oxfordshire. Their names and conservation status[11] are listed below:

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[9] CEIH, 2007/2008
[10] Oxfordshire Biodiversity Action Plan. UKBAP website: http://www.ukbap.org.uk/lbap.aspx?id=454, accessed on 23/6/09.
[11] Source: Nature on the Map: http://www.natureonthemap.org.uk/map.aspx , accessed on 23/6/09.

Table 3: Special Areas of Conservation

SAC name	SAC Area (ha)	Component SSSIs	Condition of SSSIs
Oxford Meadows	265.89	Wytham Ditches and Flushes Wytham Woods	100% unfavourable recovering 100% unfavourable recovering
Little Wittenham	68.76	Frilford Heath, Ponds and Fens	100% unfavourable recovering
Hartslock Wood	34.24	Hartslock	83.38% favourable 11.62% unfavourable recovering
Hackpen Hill	35.83	Hackpen, Warren and Gramp's Hill Downs	100% favourable
Cothill Fen	43.55	Cothill Fen	65.36% favourable 34.64% unfavourable recovering
Aston Rowant	127.75	Knightsbridge Lane	100% favourable
Chilterns Beechwoods	1276.48	Ashridge Commons and Woods (Bucks/ Herts) Ellesborough and Kimble Warrens (Bucks) Tring Woodlands (Herts) Windsor Hill (Bucks) Bradenham Woods, Park Wood and the Coppice (Bucks) Bisham Woods (Berks) Hollowhill & Pullingshill Woods (Bucks) Naphill Common (Bucks)	14.65% favourable 85.35% unfavourable recovering 11.32% favourable 88.68% unfavourable recovering 100% unfavourable recovering 26.89% favourable 73.11% unfavourable recovering 94.52% favourable 5.48% unfavourable recovering 97.35% favourable 2.65% unfavourable recovering 100% favourable 100% favourable

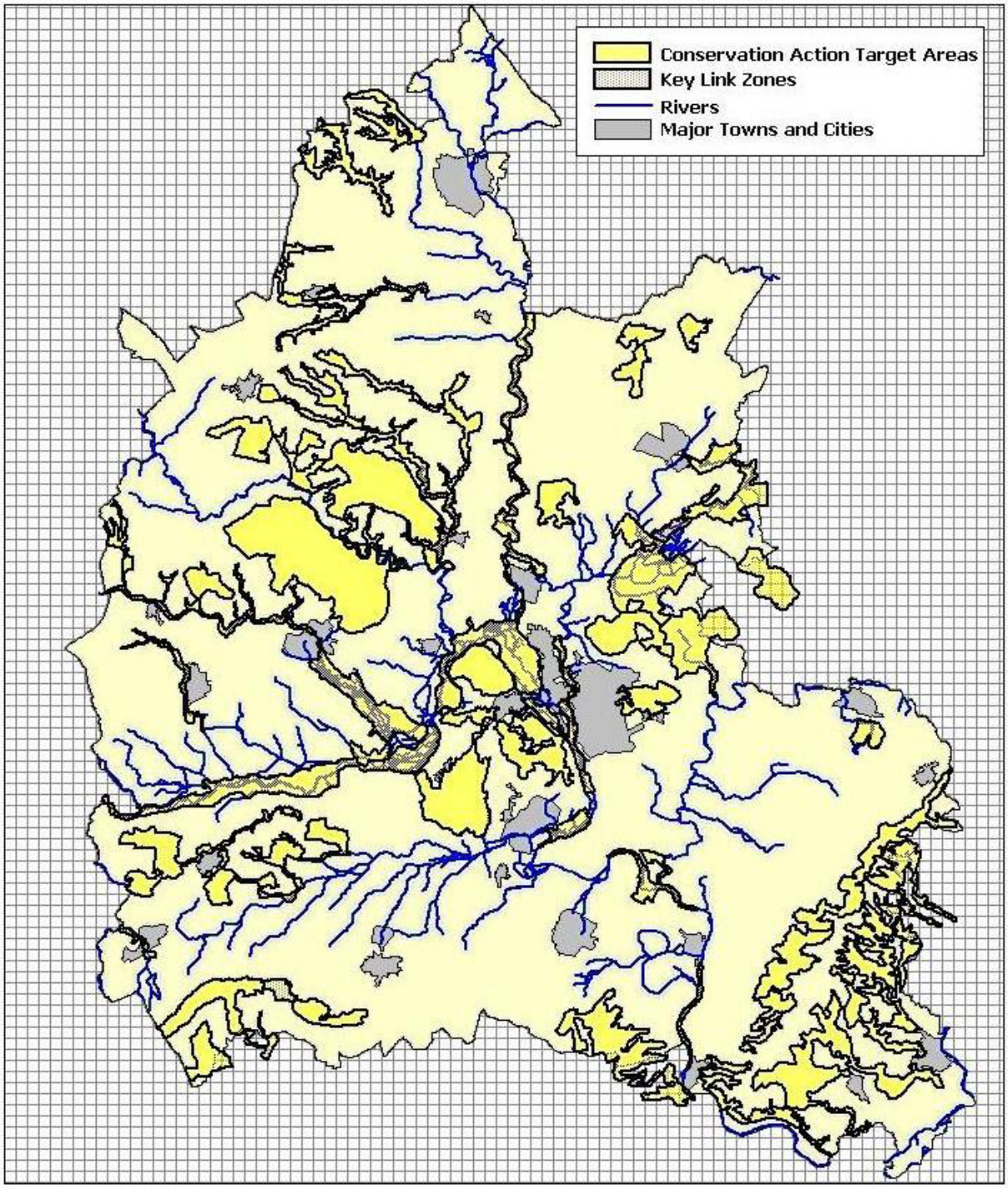
3.6.3 There are 105 SSSIs in Oxfordshire, covering a diverse range of habitats. As shown above, 14 of these are constituent parts of SACs but the majority are separate entities. Half of the area designated as Sites of Special Scientific Interest (SSSIs) in Oxfordshire (50.3%) was in favourable condition in 2008. A further 38% was classed as recovering favourable, giving a total of 88% of SSSI area in favourable or recovering favourable condition, up from 84% in 2007.

3.6.4 In recent years, the Oxfordshire Wildlife and Landscape Study (OWLS)[12] have investigated landscape character and biodiversity across the county. It has produced a series of "biomaps", "biolandscape" maps and regional and joint character area maps for the county. As part of the OWLS study, the Thames Valley Environmental Records Centre has produced a map of target

[12] OWLS was jointly sponsored by Oxfordshire County Council, English Nature and the Countryside Agency (now merged to form Natural England) and the Northmoor Trust

areas for conservation action in the county. All the SSSIs and County Wildlife Sites were mapped onto a GIS layer, with other GIS information such as geology, soil type, slope gradients, archaeology and public access overlaid. This combined information was used to identify and prioritise areas of surviving habitat that are in good condition. These are shown in Figure 3.3.

Figure 3.3: Conservation Target Action Areas in Oxfordshire, Spring 2006



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3.7 Population and Human Health

3.7.1 Oxfordshire has a total population size of 635,000 people, higher than some neighbouring counties such as Buckinghamshire and Wiltshire. The population of the county has doubled in size since the 1940s. In the ten years between the 1991 and 2001 census surveys, population growth in Oxfordshire (10.6%) was well above the average for the south east region (6.7%). In terms of migration, significant in-migration (greater than 4,000 people) occurred in 1999 and 2005, whereas out-migration from the county occurred in 1993 and 2001.

3.7.2 The majority of the county has a low population density, of 100-249 people per km^2, whereas Oxford city has a very high density of 2500 people per km^2. It is the least densely populated county in the south east.

3.7.3 Although approximately 25% of the population is under 19 years of age, the percentage of the population over 65 in the county, with the exception of Oxford, is increasing. The Indices of Multiple Deprivation for England show that Oxfordshire has a very low relative level of deprivation, ranking 137th out of 149 counties.

3.7.4 The population density disparity within the county places different demands on the countywide transport infrastructure. An increasing population size will also put increasing demands on the existing infrastructure.

3.7.5 Oxfordshire has a higher number of cars per household (1.3) than the national average (1.1), an increasing volume of traffic on the roads and county wide has less people cycling or walking to work than the national average. The high use of private cars for travelling is of concern since it causes significant emissions of greenhouse gases and noise. It also contributes to community severance and leads to unsafe conditions for pedestrians and cyclists reducing rates of physical activity through these forms of travel.

3.7.6 Although there are a wide variety of potential indicators of human health, some issues can be used to help identify areas where populations are at greater risk of social exclusion through poor health and environment. The indices of multiple deprivation have shown that Oxfordshire as a whole has a good standard of health compared to the rest of the country. Three of Oxfordshire's five Super Output Areas (SOAs) in the 20% most deprived areas nationally are in Oxford City, and two are in Cherwell. Carfax '008B' is the only Oxfordshire SOA in the 10% most deprived areas nationally for the Health domain. Figure 3.4 shows health deprivation by Super Output Area for the county, with blue representing the most health deprived areas and yellow the least deprived.

3.7.7 The county also has a higher life expectancy than the rest of south-east England, with people on average living to between 82 and 88.7 years.

Although levels of physical activity are comparable in the south-east to the rest of England, the Oxfordshire Partnership notes that obesity levels are rising across localities and age groups.

3.7.8 Total road accidents in Oxfordshire have fallen from 3575 in 1999 to 2650 in 2007. Vehicle crime rates in the county have fallen from 13.7 per 1000 population in 2002/03 to 6.6% in 2007/08.

3.7.9 It is not possible to show clear links between areas of high air pollution (see summary of environmental baseline on air quality) and human health problems on a local scale but the European Commission has estimated that there are 32,000 premature deaths a year in the UK due to poor air quality[13].

3.8 Soil

3.8.1 It is estimated that 78% of the land in Oxfordshire is agricultural. Oxfordshire is the most rural county in the south-east, with over 50% of people in Oxfordshire living in settlements of less than 10,000 people. The quantity of agricultural land in Oxfordshire has decreased from 195,510ha in 2007 to 192,410ha in 2008.

3.8.2 Figure 3.5 shows the Agricultural Land Classification grades in relation to the principal roads of Oxfordshire. The following grades are shown on the map:

- Grade 1: excellent quality agricultural land
- Grade 2: very good quality agricultural land
- Grade 3: good to moderate quality agricultural land
- Grade 4: poor quality agricultural land
- Grade 5: very poor quality agricultural land

3.8.3 Each of the five district councils are obligated by law to keep a contaminated land register. Very few sites have been put on the registers in the county. However, there are a large number of potentially contaminated sites that require further investigation.

3.8.4 In West Oxfordshire, approximately 40% of development is on previously developed land, with 60% on Greenfield sites, due to the lack of available brownfield sites[14]. There are no data on potentially developable brownfield land or contaminated land in Oxfordshire collected at a county level.

[13] BBC news article, available on: http://news.bbc.co.uk/1/hi/health/4283295.stm
[14] Telephone *pers. comm.* with W. Oxon District Council, 1/7/09.

Figure 3.4: Health deprivation and disability

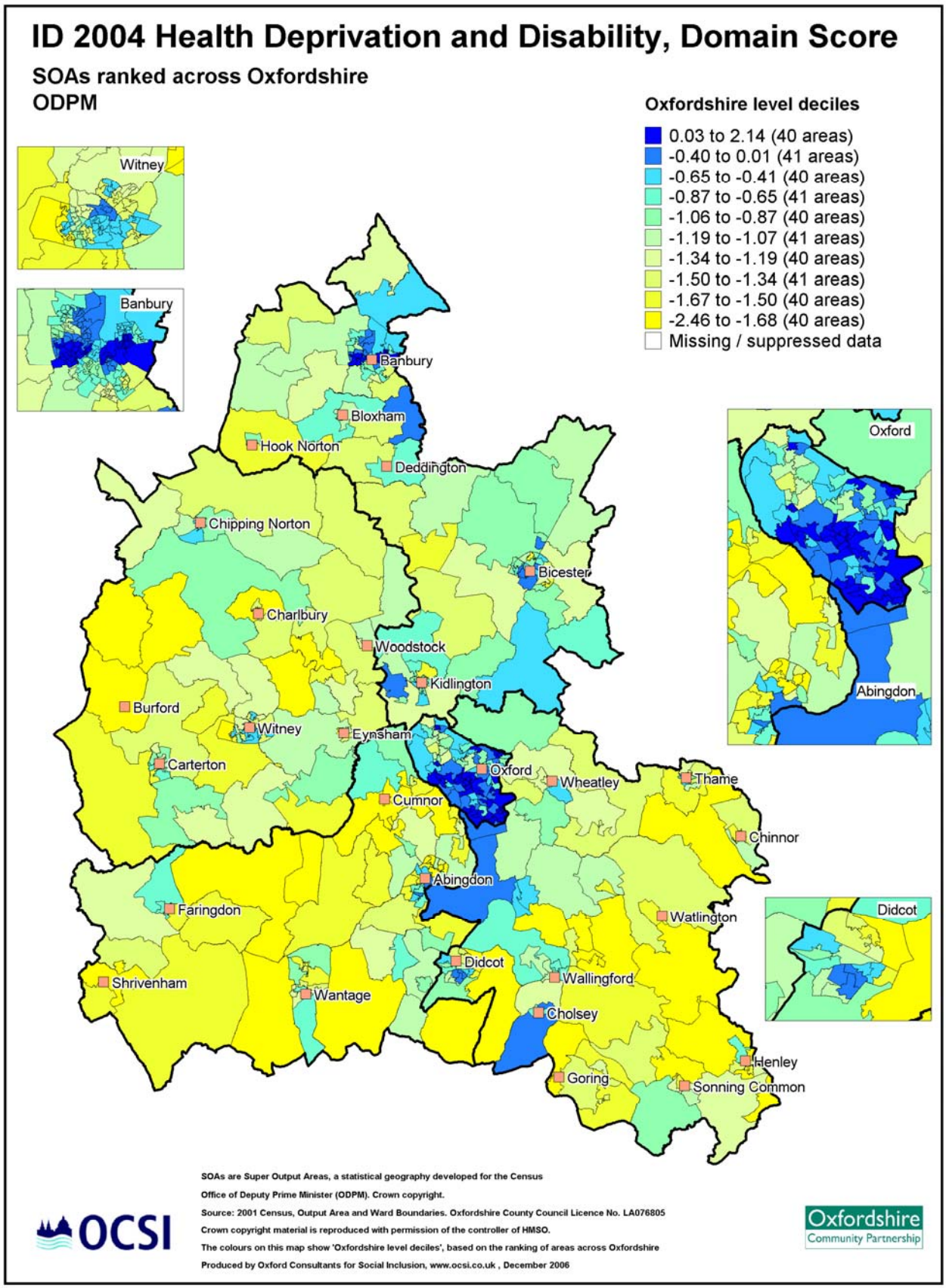
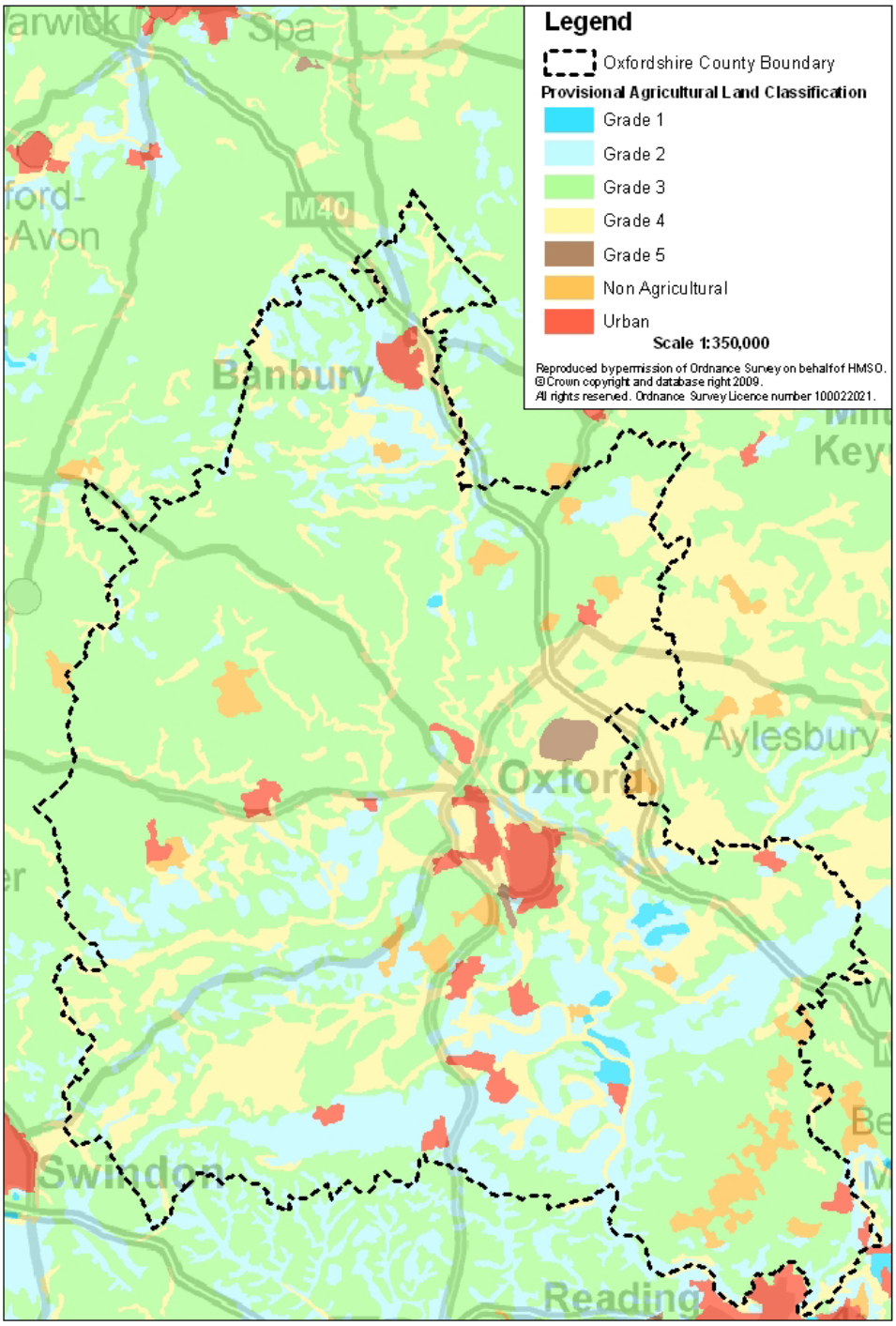


Figure 3.5: Provisional Agricultural Land Classification in Oxfordshire



Natural England

3.9 Water

3.9.1 River water quality in Oxfordshire is variable between districts and between parameters. In 2009, 23 per cent of surface waters in the Thames River Basin were classified to be good or better ecological status/potential and 28 per cent assessed surface waters were at good or better biological status. This assessment included 571 surface water bodies assessed for ecological status/potential and 362 for biological status.

3.9.2 On a county level it was not possible to determine what percentage of water pollution incidents could be attributed to transport but for England and Wales 4% of all serious incidents are related to transport.

3.9.3 Large areas of Oxfordshire lie within each of the main river catchments and are prone to flooding. In recent years Oxfordshire, as with other parts of the country, has experienced significant damage to property due to flooding in Oxford and to the north of the county. Lower parts of the Thames Valley are vulnerable to flooding at least once a year. The predicted impact of climate change is likely to include increased flood risk as a result of more intense periods of rainfall, hotter, drier summers and wetter winters, and a greater incidence of extreme weather. It has not been identified how much of Oxfordshire's transport network is vulnerable to flooding.

3.10 Material Assets

3.10.1 The term "material assets" is not defined in the SEA Directive. For the purposes of this SEA the term is being used in relation to the consumption of natural resources and the generation of waste. Waste is included as it is an indicator of the inefficient use of resources. The state of the existing transport infrastructure is also included in this topic area. According to WWF, globally, people are using about 25% more natural resources than the planet can replace.

3.10.2 The transport sector uses mineral resources in the construction of new infrastructure as well as fuels for vehicles. Fossil fuels are non-renewable and subject to price fluctuations on the global market due to changes in supply and demand. Dependence on car use has high resource requirements since significant land is required to accommodate traffic growth while continued capacity improvements are required on the transport network such as road widening and the provision of parking infrastructure. Increased uptake in passenger transport and walking and cycling has lower overall demands on resources per person.

3.11 Cultural Heritage

3.11.1 Archaeological remains are intrinsically finite and non-renewable resources, which once destroyed cannot be recreated. Oxfordshire has a rich archaeological resource with 55 historic parks and gardens, 13,000 listed buildings, 220 Conservation Areas and nearly 300 scheduled monuments. Oxfordshire County Council is responsible for maintaining the Sites and Monument Record which currently holds information on more than 13,000 archaeological remains.

3.11.2 There is considerable archaeological potential on many sites for which information is presently limited. Historic town and village centres, greenfield and previously developed sites may all contain significant levels of surviving archaeology.

3.12 Landscape

3.12.1 The Oxfordshire countryside covers various landscape types, from the ancient beech woods of the Chilterns to the large arable farms of the clay vales. In total almost 75% of Oxfordshire is designated as Green Belt, Area of Outstanding Natural Beauty or Area of High Landscape value. There are three Areas of Outstanding Natural Beauty (AONBs) that partly lie within Oxfordshire. These are the Chilterns, the Cotswolds and the North Wessex Downs. In the county they cover 24% of the county area. A further 13.6% of Oxfordshire is designated as an Area of High Landscape Value.

3.12.2 Oxfordshire's settlement pattern provides few opportunities for major re-use of land within existing built up areas. This has meant that a high proportion of development has had to be accommodated on greenfield sites on the edge of the County Towns (Banbury, Bicester, Didcot and Witney).

3.12.3 According to CPRE, light pollution is rapidly increasing in the South East and 'there are no dark skies left in Oxfordshire'. As development in the south-east continues, light pollution is likely to increase further. Lighting can affect the quality of people's lives. In some cases it can provide a greater feeling of security and safety, in others it can mean a lack of viewable night sky features such as stars. Lighting can also affect bird and animal behaviour and vegetation growth.

3.13 Evolution of the Baseline without the Plan

3.13.1 The sea regulations requires that information is provided on "…the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan".

3.13.2 The future baseline or "without plan scenario" is difficult to describe due to a lack of some trend data. Furthermore this assessment has been prepared prior to the new coalition government's spending review. For example it is uncertain whether government spending cuts would impact some of the routine services of the Council such as the current level of maintenance and the provision of certain concessionary services. However, the following assumptions have been made:

(i) The Council's minimum statutory functions would continue. For transport this would include highway maintenance such as resurfacing of roads and repairs of structures to ensure ongoing safety. The Council's social services responsibilities would also be continued including Blue Badge disabled parking scheme and community transport services for people who cannot use public transport in Oxfordshire. Home to school travel would continue.

(ii) Other plans, where adopted, would go ahead. Major transport projects currently underway would be completed including:

- London Road in Headington, Oxford;
- Controlled Parking Zones in Oxford;
- Oxford High Street; and
- Transport Strategies for Abingdon, Banbury, Bicester, Henley, Oxford, Southern Central Oxfordshire and Witney.

Table 4: Evolution of the Baseline without the Plan

SEA Topic	Evolution of the baseline without the plan
Air quality	Whilst the vehicle fleet in general is getting cleaner with improved emissions standards, the projected growth for Oxfordshire is likely to lead to increased traffic volumes and greater traffic congestion unless strategic action is undertaken. This in turn could lead to more AQMAs being declared as the increases in traffic and congestion outstrip improvements in emissions standards.
Climatic factors	It is predicted that the South East will expect warmer, drier summers and warmer, wetter winters. Extreme weather events such as droughts and flooding are predicted to become more frequent with increased demands on maintenance such as repairs to structures, reinforcements to embankments and additional drainage requirements.
Noise	The continued pressure for development and new infrastructure is likely to result in continued traffic growth. This is likely to result in greater proportions of the population being disturbed by transport-related noise.
Biodiversity	The continued pressure for development and new infrastructure is likely to result in further loss and fragmentation of habitats.
Population	The population across the region has doubled in size since the 1940s and the increase is set to continue. The proportion of people of pension age is expected to rise in line with the general aging trend of the UK population. Road transport is expected to increase in the county and the reliance on cars as the main mode of transport for commuters will continue unless additional strategic action is taken.
Human health	Obesity and lack of exercise are problems that face the county and they are likely to get worse across the county. Increases in traffic are likely to cause further community severance increasing isolation and safety fears among pedestrians and cyclists. Health issues related to lack of exercise and obesity are likely to reduce the abilities of people to use modes of transport other than the car, compounding the issue of traffic growth and its associated environmental problems. Health issues related to air pollution are likely to increase.

SEA Topic	Evolution of the baseline without the plan
Soil	The continued pressure for development and new infrastructure is likely to result in further greenfield development and loss of farmland. Increased traffic volumes are likely to lead to greater levels of diffused pollution from surface-water run-off on older roads, causing further pollution to adjacent soil resources.
Water	Increased traffic volumes are likely to lead to greater levels of diffused pollution from surface-water run-off on older roads, causing further pollution of adjacent waterbodies. Levels and frequency of flooding are predicted to increase as a result of the effects of climate change.
Material assets	The condition of many roads and footpaths will deteriorate. Increasing occurrence of extreme weather events as a result of climate change is likely to increase the need for repairs to structures.
Cultural heritage	The principal threats to scheduled monuments in the county (arable farming, vegetation growth (including trees, scrub and plants) and animal burrowing) would continue. Increasing traffic levels will impact upon the amenity and quality of streetscapes and the cultural environment.
Landscape	Light pollution from development will continue. Increasing traffic volumes will increase noise disturbance in the countryside and the loss of tranquillity. Increases in traffic will cause more vehicles to use unsuitable rural roads.

3.13.3 Appendix E includes data on existing trends and environmental indicators which may assist in understanding how the baseline would evolve without the plan.

3.14 SEA Objectives

3.14.1 The review of current policies, plans and programmes (Appendix A), together with the understanding of the baseline environmental context, allowed a series of SEA objectives to be developed. The purpose of SEA objectives is to focus the assessment of the plan on the salient issues for the area. The assessment has focused on how the LTP3 options would meet or undermine these objectives.

3.14.2 Draft objectives were presented in the SEA Scoping Report (Halcrow, July 2009) and consulted upon as part of the SEA scoping consultation held between July 2009 and September 2009. In general the consultees agreed on the scope covered by the SEA objectives presented in the report. However, some of the SEA objectives have been subsequently re-worded slightly in light of some of the consultation feedback (refer to Appendix B for how comments have been addressed in the SEA process).

3.14.3 The following table presents the SEA objectives. The environmental themes or SEA topics are included in the first column of the table to provide the

context. The fourth column of the table presents some of the considerations that have been made when assessing the LTP3 against the objectives.

Table 5: SEA Objectives

Environmental theme	SEA Objective	Sub-objectives	Assessment considerations
Biodiversity, flora, fauna and geology	**1. Protect and enhance habitats and the diversity and abundance of species**	• To avoid or minimise transport related damage to designated wildlife sites and protected species • To manage the transport network in a way that protects, and enhances biodiversity, including ecological connectivity • To enable people to access and appreciate the natural heritage • To minimise wildlife casualties in the transport network • To protect the varied geological features within the county and improve access to sites of greatest geodiversity	• Likelihood of new schemes impinging on habitats or geological sites of significant conservation value; • Likelihood of new transport routes likely to cause severance of wildlife corridors; • Inclusion of schemes designed to promote non-motorised access to greenspace/countryside (e.g. footpaths, bridleways, cycleways).
Interrelated themes of biodiversity, landscape, water, soil and human health	**2. Enhance and protect the green infrastructure of the region**	• To protect and improve the interconnectivity of green infrastructure • To protect and improve the quality of green infrastructure for wildlife, drainage, landscape value and accessibility • To protect and improve pedestrian, cycling and public transport routes to and from green infrastructure	• Does the LTP3 reduce or restrict the growing space requirements for transport infrastructure or free up urban space for other multi-functional uses? • Does the LTP3 increase the provision of footpaths, bridleways, cycleways?

Environmental theme	SEA Objective	Sub-objectives	Assessment considerations
Population and human health	**3. Protect and promote everyone's physical and mental wellbeing and safety**	• To increase opportunities and amenity of active travel modes for health benefits • To promote safer non-motorised and public transport • To ensure access to health facilities by a wide range of sustainable modes of travel • To provide safer conditions for pedestrians and cyclists, including children and the infirm.	• Accident statistics • Accessibility modelling (to hospitals and schools) • Does the LTP3 improve conditions for pedestrians and cyclists? • Does the LTP3 demonstrate a commitment to the health benefits of physical activity and a move away from car dependency for shorter journeys?
Noise and human health	**4. Reduce noise pollution**	• To reduce the number of people being affected by transport noise • To avoid/minimise the impacts of transport related noise on sensitive receptors	• Will disturbance from traffic be reduced in residential areas? • Is noise from traffic likely to change in rural locations and affect tranquillity?
Population. Interrelated with cultural heritage and air quality	**5. Maintain the vitality of town centres**	• To ensure town centres are well connected to surrounding areas by sustainable modes of travel • To provide a sustainable, functional, uncongested transport network in keeping with the character and local distinctiveness of town centres	• Is the LTP3 likely to reduce the impacts of traffic in the public realms of key settlements? • Will it be possible to access key settlements by convenient public transport? • Will town centres be easier to walk or cycle to and around for local residents?

Environmental theme	SEA Objective	Sub-objectives	Assessment considerations
Population and human health	**6. Improve accessibility to jobs, facilities and services**	• To reduce transport related community severance • To improve access to facilities, particularly for disadvantaged groups, the elderly, mobility impaired and those without a car • To improve the integration of and between different modes of travel	• Is public transport and community transport likely to improve under the LTP3? • Are all groups' transport needs catered for including rural residents without cars, elderly , disabled and children?
Water and biodiversity	**7. Maintain and improve the quality of water resources**	• To avoid transport related pollution of water in line with the measures to protect water resources set out in the Water Framework Directive	• Is the LTP3 likely to significantly increase the risk of diffuse pollution from increasing traffic volumes? • Will the LTP3 improve performance of drainage of existing older infrastructure?
Water and population	**8. Retain the floodwater storage function of riparian land and the floodplain and reduce the risk of flooding where it would be detrimental**	• To avoid increasing detrimental flood risks resulting from infrastructure development and maintenance • To ensure water table is protected in natural areas dependent upon the status quo • To reduce the extent of non-permeable surfaces and promote Sustainable Drainage Systems (SuDS) in infrastructure	• Will the LTP3 improve capacity of drainage of existing older infrastructure? • Will the LTP3 lead to the inclusion of SuDS?

Environmental theme	SEA Objective	Sub-objectives	Assessment considerations
Material assets and soil	**9. Maintain resources such as minerals and soils and enhance geological diversity.**	• To promote the use of secondary and recycled materials for transport including manufactured aggregates and soils • To use sustainable construction and maintenance methods, and materials • To improve currently contaminated land through the construction and maintenance of transport infrastructure • To protect soils and minimise loss or contamination by transport • To protect agricultural land, particularly the best quality land according to the Agricultural Land Classification system	• Does the LTP3 require large scale demolition and construction of new infrastructure? • Will proposals under the LTP3 require significant resources for ongoing maintenance? • Does the LTP3 reduce or limit the demand for finite fossil fuels? • Is the LTP3 likely to increase demand for greenfield land and/or sterilise areas of mineral resources or agriculturally productive land?
Material assets	**10. Optimise the use of previously developed (brownfield) land thereby reducing waste generation**	• To protect greenfield land wherever possible • To make the best use of existing resources	• Do the proposals make use of previously developed sites? • Are transport improvements feasible within the footprint of existing infrastructure?
Air quality and human health	**11. Reduce all forms of transport-related air pollution in the interests of local air quality**	• To minimise the negative impact of transport on Air Quality Management Areas and those areas where monitoring shows high levels of pollutants • To maintain good air quality in areas of low pollutants • To minimise the number of exceedences of Air Quality Standards • Reduce number of AQMAs due to traffic	• Does the LTP3 encourage and facilitate the use of active travel for short journeys? • Will the LTP3 help to reduce traffic congestion? • Will the LTP3 limit the more polluting vehicles in sensitive areas? • Will the LTP3 help to limit traffic growth?

Environmental theme	SEA Objective	Sub-objectives	Assessment considerations
Climatic factors	**12. Reduce transport related greenhouse gas emissions**	• To minimise carbon emissions from construction and maintenance activities • To improve energy/fuel efficiency in transport, by enabling a shift to alternative fuels • To minimise need to travel by promoting and protecting local facilities • To minimise freight travel distances by raising awareness of 'food' (consumer product) miles	• Does the LTP3 reduce or limit dependency on finite fossil fuels? • Does the LTP3 support or facilitate the use of low carbon modes of transport? • Does the LTP3 help to ensure vehicle journeys can be made efficiently with minimum disruption or distance?
Climatic factors, material assets and population	**13. Adapt transport network to climate change**	• To minimise the vulnerability of transport infrastructure to climate change impacts, including surface and groundwater flooding, increased storminess and higher temperatures • To avoid exacerbating climate change impacts such as flooding on areas adjacent to transport network	• Does the LTP3 provide proposals to address the issues of climate change? • Will the LTP3 improve capacity of drainage of existing older infrastructure?
Landscape	**14. Maintain and enhance the quality and character of the landscape, including its contribution to the setting and character of settlements;**	• To protect and enhance landscape character from impacts of transport • To minimise loss of tranquillity and light pollution caused by transport	• What is the likelihood of additional transport infrastructure being developed which will encroach upon valued landscapes and countryside? • Will traffic noise and disturbance increase in rural areas? • Will lighting provision change on transport infrastructure?

Environmental theme	SEA Objective	Sub-objectives	Assessment considerations
Cultural heritage, population	**15. Maintain and enhance the quality and distinctiveness of the built environment**	• To promote a high quality built environment through good planning and design • To prevent the negative impact of transport infrastructure upon designated sites, such as Conservation Areas	• Will the LTP3 contribute to the enhancement of the built environment? • Does the LTP3 make appropriate use of existing historic buildings and structures?
Cultural heritage, soil	**16. Protect and where appropriate enhance the rich diversity of the historical/cultural environment and archaeological assets**	• To avoid or minimise negative effects of transport on cultural assets, the historic environment and local distinctiveness • To ensure access to areas valued for cultural heritage by sustainable modes •	• Is there a likelihood that proposals will encroach upon undeveloped land (which may harbour archaeological remains), or cultural heritage assets? • Does the LTP3 include provision for sustainable access to key cultural heritage sites?

4 Assessment of the LTP3 and its Alternatives

4.1 Level of Detail of Assessment

4.1.1 SEA is different from Environmental Impact Assessment (EIA) mainly because it is used to assess relatively broad strategies rather than site specific proposals. The level of detail reflects the overall level of detail in the draft LTP3. The two elements of the LTP3 which have been covered by this SEA are the LTP3 Policies and the LTP3 Scenarios. The LTP3 Area Strategies have not been assessed individually because there is insufficient site specific information. Instead, the likely measures in the Area Strategies have been reviewed and used as evidence to inform the updated assessment of the Preferred Scenario.

4.1.2 In general, the assessments are qualitative assessments based upon expert judgement. However, against some SEA objectives, evidence has been gathered from the use of a model developed especially to inform the LTP3 options development. This model is known as INTRA-SIM and provides some quantification of impacts, for example carbon dioxide emissions. Where the model has been used, reference is made in the detailed assessment worksheets (Appendix D).

4.2 Results of Policy Assessment

4.2.1 The assessment of the LTP3 policies took the form of a compatibility assessment using a similar approach to that applied to assess the compatibility of the LTP3 Objectives (Appendix C). In total there are 44 Policies in the draft LTP3. These were assessed for compatibility against each of the SEA objectives using a matrix.

4.2.2 The following criteria were applied. The assessment has not evaluated the Policies in terms of significance because the policies represent statements of intent rather than actual measures. Instead, the focus of this assessment is to highlight areas where the policies may conflict with environmental objectives in order to highlight ways to reduce the potential for environmental harm, or preferably to increase the potential for positive environmental outcomes.

C	Policy appears to contribute to meeting SEA objective
?	There is uncertainty over compatibility. Potential issues of incompatibility have been identified which could be resolved with appropriate planning and mitigation
X	Policy appears to conflict with the SEA objective
-	No significant relationship between policy and SEA objectives has been identified

4.3 Key Findings from Policy Assessment

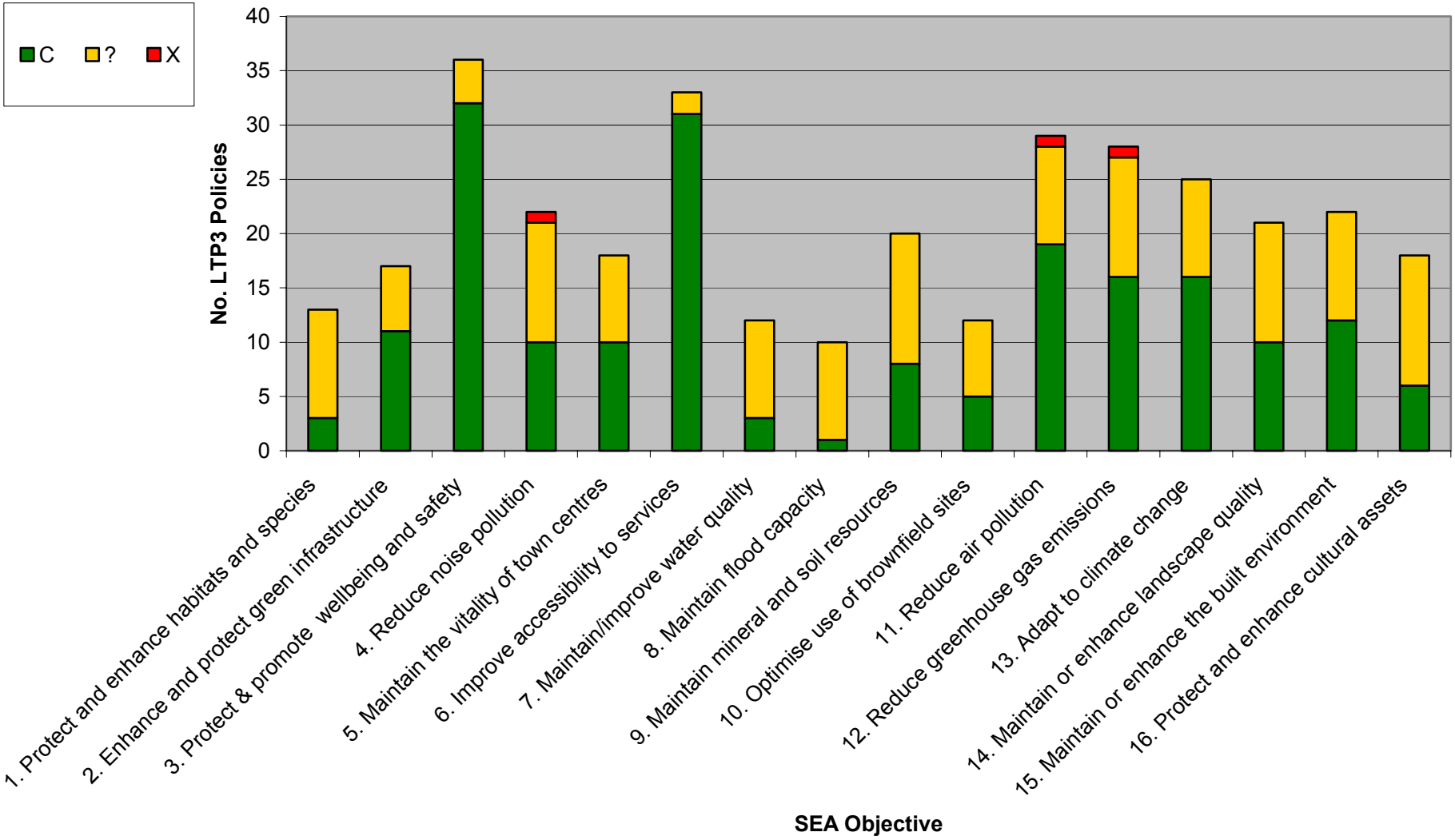
4.3.1 The full Policy assessment matrix is included in Appendix D1. However, in order to provide an overview, the total numbers of instances of identified compatibility, uncertainty and conflicts have been presented in the form of a bar chart (Figure 5.1). This provides an indication of the areas of priority within the LTP3. For example, the high level of compatibility with SEA objectives 3 and 6 indicates that improving health and safety as well as accessibility are key themes in the draft LTP3 Policy section.

4.3.2 However there is apparent conflict between the LTP3 Policies and SEA objectives 4 (noise), 11 (air quality) and 12 (greenhouse gas emissions). These three instances of identified conflict all relate to just one draft LTP3 policy:

4.3.3 Policy SD 5 “Oxfordshire County Council will support the development of air travel services and facilities which contribute to the economic development of the county, unless they have unacceptable environmental impacts or discourage making the best use of existing capacity”.

4.3.4 It was considered that this policy would conflict with those particular SEA objectives because air travel is unlikely to lead to any significant reduction in other forms of transport within the County and would therefore have an additive effect on overall emissions of noise, air pollutants and greenhouse gases. In this respect the policy differs from other policies such as Policy PT3 “Oxfordshire County Council will support the development of appropriate high quality public transport interchanges and infrastructure” because although this policy is also likely to result in the production of greenhouse gas emissions (due to construction of infrastructure), this may be offset in the longer term if more local traffic was taken off the road due to a modal shift to local public transport. Recommendations to manage this potential contradiction is outlined later in this Environmental Report.

Figure 5.1: Results of Policy Assessment



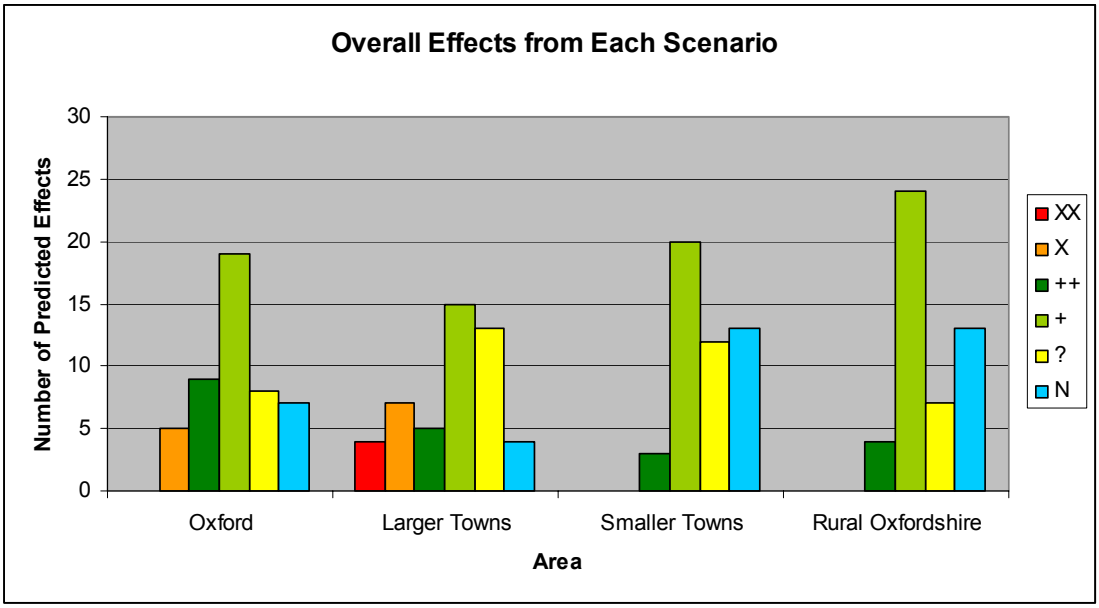
4.4 Results of Scenarios Assessment

4.4.1 The Scenarios assessment was undertaken in stages as indicated in Table 1. The assessment of the alternative scenarios is presented as the Assessment worksheets in Appendix D2. The preliminary assessment of the preferred scenario was undertaken prior to the development of the Area Strategies. This is presented in Appendix D3. The final assessment of the Preferred Scenarios is presented in D4. This is the main assessment of the preferred option and has been amended to take account of additional information provided in the Area Strategies for Oxford., the Larger Towns, the Smaller Towns and Rural Oxfordshire.

4.5 Key Findings from the Assessment of the Preferred Scenarios

4.5.1 The results of the Preferred Strategy assessment have been aggregated to provide an overall assessment of the effects on the SEA objectives. The aggregated results are presented in Figure 5.2. The overall results indicate that the most significant positive effects on the environment are likely to be gained from the Oxford Scenario. In general these benefits relate to improvements to human health through better opportunities for physical activities from walking and cycling, as well as improvements in overall accessibility and built environment.

Figure 5.2: Results of the Preferred Scenario Assessment



4.5.2 The likely significant negative effects are predicted to be restricted to the Larger Towns Scenario. This relates to the predicted environmental impacts of new highway links proposed under the Area Strategies for Bicester, Science Vale and Witney. This is likely to give rise to some permanent and irreversible impacts upon landscape, soils and biodiversity.

4.5.3 No negative effects were predicted for the Smaller Towns and Rural Oxfordshire Scenarios. Generally the proposals for these areas are related to small-scale improvements to existing infrastructure to improve accessibility

by public transport, walking and cycling, as well as to reduce traffic and speed.

4.5.4 The following paragraphs describe some of the effects on each of the SEA objectives from each scenario.

4.6 Biodiversity

SEA Objective 1: Protect and enhance habitats and the diversity and abundance of species

Oxford

4.6.1 No significant positive or negative effects are predicted on biodiversity from the Oxford Scenario. There is likely to be some habitat loss when implementing new or extended Park & Ride, and the possible new railway station facilities, which could be mitigated in the longer term depending upon the habitats and species involved.

4.6.2 In the medium and longer term some improved air quality may benefit habitats and species that are sensitive to air quality. However, this benefit will be limited to the relatively low numbers of species and habitats in the Oxford urban area, so the significance of the benefit is uncertain.

Larger Towns

4.6.3 A significant adverse effect is predicted on biodiversity from the Larger Towns Scenario. This relates to the proposed implementation of new highway links under the Bicester, Science Vale and Witney Area Strategies. These proposals are likely to have an overall adverse effect upon biodiversity through the loss and fragmentation of habitats. They are also likely to encourage more and longer trips to be made by road, so it is likely that there would be an increase in road kills and pollution effects on biodiversity, and therefore ongoing negative effects. However these longer term effects are in part mitigated by the investment in public transport. Therefore the significant effect is likely to be short term, as a result of construction impacts.

Smaller Towns

4.6.4 No significant effects are anticipated upon biodiversity from the Smaller Towns Scenario. On the basis that there is no significant investment in new highways or other major transport infrastructure it is assumed that this scenario would have a negligible effect on the baseline biodiversity and therefore it is assessed as neutral in the short term. In the medium term it is possible that the focus on modes other than car use would reduce pressure on biodiversity, although in the long term it is possible that traffic growth would result in increases in road kills and pressure on habitats. Therefore the long term effects are uncertain.

Rural Oxfordshire

4.6.5 No significant effects are predicted upon biodiversity from the Rural Oxfordshire Scenario. It is predicted that this would have a minor positive effect on biodiversity by encouraging a modal shift within rural areas and reducing the effects of traffic on biodiversity. These benefits are likely to outweigh any adverse effects on biodiversity from small scale infrastructure improvements. Localised effects on biodiversity may arise from the possible use of verges to extend pedestrian and cycle routes, but these effects are likely to be minor in the overall context of the County.

4.7 Green Infrastructure

SEA Objective 2: Enhance and protect the green infrastructure of the region

Oxford

4.7.1 No significant effects are anticipated from this scenario. However, overall it is anticipated to be slightly beneficial in the short, medium and long term due to the improvements for pedestrian routes and cycle network.

Larger Towns

4.7.2 A significant positive effect is predicted in the short term. The majority of Area Strategies include proposals to improve linkages to rural rights of way and therefore a significant positive effect is anticipated from its implementation. In the medium and longer term the maintenance of pedestrian and cycle routes is anticipated to be positive although less significant.

Smaller Towns

4.7.3 The Area Strategies include proposals to improve linkages to rural rights of way and therefore have a significant effect upon the SEA objective in the short term. It is anticipated that in the medium and long term under the scenario green infrastructure would be protected but not necessarily increased significantly, and therefore a slight positive effect is anticipated.

Rural Oxfordshire

4.7.4 No significant effects upon green infrastructure are anticipated from the Rural Oxfordshire Scenario. The scenario may lead to improved access to green spaces for residents of Oxfordshire, although not necessarily add to green infrastructure.

4.8 Human health

SEA Objective 3: Protect and promote everyone's physical and mental wellbeing and safety

Oxford

4.8.1 Significant positive effects are anticipated in the medium and long term (once the full suite of proposals for Oxford is implemented). The improved pedestrian experience, increased provision for active travel modes and

reduced pressure from traffic both through traffic management and slower speeds will combine to make a significant improvement to health, wellbeing and safety in Oxford. Further benefits to health include improved accessibility to healthcare and reduced noise.

Larger Towns

4.8.2 The Area Strategies for the Larger Towns provide details on several initiatives to improve overall provision for walking and cycling. Provided that this leads to a significant uptake in active forms of travel for regular journeys, it is anticipated that it will lead to significant medium and long term health impacts through health benefits associated with physical activity. This assessment has been significantly revised since the preliminary assessment due to the additional information from the Area Strategies.

Smaller Towns

4.8.3 A significant positive effect is anticipated in the medium term when the proposed combination of improved facilities, together with publicity, is achieved. The medium level of investment in cycling, walking and behavioural change is assumed to contribute to health benefits associated with active travel, therefore a positive effect is assumed. It is assumed that the demand management proposals would combat the rising trend in car use which contributes to sedentary lifestyles, as well fear of accidents among pedestrians and cyclists. This assessment has been substantially revised to be more positive in light of information from the Area Strategies.

Rural Oxfordshire

4.8.4 The overall effect of this scenario on health is likely to be significantly positive by encouraging more active lifestyles and reducing the effects of severance as well as the risk of accidents. Furthermore, increased access to green space is likely to help reduce effects of stress.

4.9 Noise

SEA Objective 4: Reduce noise pollution

Oxford

4.9.1 No significant effects are predicted on noise. Modelling predictions indicate a slight decrease in noise levels from the scenario and a more significant reduction in vibration. However in the short term a slight negative effect is likely due to noise associated with construction activities. This is likely to override positive effects from some recent use of low noise surfacing on certain roads in Oxford.

Larger Towns

4.9.2 No significant effects on noise are anticipated. However modelling predicts reductions in noise and vibration from this scenario in the medium term. It is likely that more heavy goods vehicles would bypass towns under this

scenario bringing benefits to residents, particularly through reduced effects of vibration.

Smaller Towns

4.9.3 No significant effect on noise is predicted. Modelling results predict a negligible effect on noise and vibration from this scenario. In the long term the effect is uncertain as overall traffic growth may result in an increase in noise effects in smaller towns.

Rural Oxfordshire

4.9.4 Modelling results predict that there would be a slight reduction in noise and a significant reduction in vibration from this scenario in the medium term. This is likely to be as a result of the freight management element of the scenario and slower traffic speeds. Short and long term effects are likely to be similar to the medium term effects so long as investment in freight management continues.

4.10 Vitality of town centres

SEA Objective 5: Maintain the vitality of town centres

Oxford

4.10.1 Significant positive effects are predicted from the scenario. The enhanced pedestrian experience is likely to encourage more retail and leisure activity within Oxford and the extensions to Park and Ride facilities, and improvements to public transport are likely to enable ease of access into the city centre and help to reduce congestion.

Larger Towns

4.10.2 The overall effect upon town centres by this scenario is difficult to predict. Accessibility by public transport would be improved and the public realm and pedestrian experience would be enhanced. However this could be undermined by the programme of highway improvements which would support the convenience of out of town retail developments. This could be prevented by appropriate policies set out in the emerging Core Strategies.

Smaller Towns

4.10.3 The majority of the smaller towns are relatively self-contained. It is anticipated the combination of measures to encourage local journeys on foot or by bicycle, together with some targeted demand management, will help maintain town centre vitality by combating the effects of traffic growth in the centres. However no significant effect is anticipated overall.

Rural Oxfordshire

4.10.4 No significant effects on this SEA objective are anticipated.

4.11 Accessibility

SEA Objective 6: Improve accessibility to jobs, facilities and services

Oxford

4.11.1 Modelling results predict improved accessibility to town centres, work places and hospitals by bus, bicycle and on foot. The scenario therefore has a significant positive benefit upon the SEA objective. It is assumed that the full significance of this would take place in the medium term onwards, once a combination of measures have been implemented.

Larger Towns

4.11.2 It is predicted there would be significant improvements in public transport accessibility (particularly with the Eco-Town project) and slight improvements on foot or by bicycle. However, the road improvements would also support traffic growth, which could lead to further community severance effects and reduce accessibility for some. Therefore the overall effect is likely to be minor positive in the short-term and improving in the medium-term. The long term effect is uncertain and depends upon transport provision in future plans.

Smaller Towns

4.11.3 In the medium term, once proposals are implemented, it is predicted there would be a significant improvement in accessibility by bus and minor improvements on foot or by bicycle. However, in the long term, the effects have been assessed as uncertain as it is not clear whether service investment would continue or whether congestion may increase with traffic growth.

Rural Oxfordshire

4.11.4 In the medium term, once proposals are implemented, it is predicted that there would be an overall improvement in accessibility for walking, cycling and most significantly by bus. Longer term effects are uncertain as they depend upon policy interventions and population and traffic influences beyond the timescale for LTP3.

4.12 Water Quality

SEA Objective 7: Maintain and improve the quality of water resources

Oxford

4.12.1 No significant effects are predicted upon water quality. This scenario is anticipated to be beneficial to water quality as a greater number of local journeys are anticipated by walking and cycling, coupled with a reduction in the use of more heavily polluting vehicles. Overall this is anticipated to result in a reduction of diffuse water pollution.

Larger Towns

4.12.2 No significant effects upon water quality are anticipated. It is assumed that new infrastructure would be designed with appropriate drainage to address potential surface water pollution.

Smaller Towns

4.12.3 No significant effects upon water quality are anticipated. It is assumed that new infrastructure would be designed with appropriate drainage to address potential surface water pollution.

Rural Oxfordshire

4.12.4 No significant effect is anticipated upon this SEA objective as a result of this scenario.

4.13 Flood Risk

SEA Objective 8: Retain the floodwater storage function of riparian land and the floodplain and reduce the risk of flooding where it would be detrimental

Oxford, Larger Towns, Smaller Towns and Rural Oxfordshire

4.13.1 It is assumed that new infrastructure would be designed with appropriate drainage to address potential flood risk.

4.14 Minerals and Soils

SEA Objective 9: Maintain resources such as minerals and soils and enhance geological diversity

Oxford

4.14.1 No significant effects are predicted upon material assets, minerals and soils. In the short term the effect on soils is likely to be slightly negative as there is likely to be some impact arising from new Park & Ride and the other associated infrastructure is likely to require resources and generate some waste. In the longer term the scenario is likely to be slightly positive as it would reduce dependence upon fossil fuels and the demand for space required by high levels of car usage.

Larger Towns

4.14.2 A significant adverse effect is predicted for the implementation stage (short term permanent effect) and continued slight adverse effects are predicted in the longer term. The potential highway schemes would be resource intensive. It is assumed that increases in frequency and length of trips to be taken by road would lead to an ongoing high maintenance requirement and long term mineral use. The additional public transport provision would help reduce dependence on fossil fuels, but this effect is likely to be undermined by the convenience of car use.

Smaller Towns and Rural Oxfordshire

4.14.3 No significant effects are predicted upon this SEA objective. These scenarios are unlikely to result in significant additional resource usage in themselves. However, the focus on traffic management, behavioural change, improved bus services and improvements to facilities for walking and cycling is likely to bring improvements to transport, whilst reducing dependency upon fossil fuels and maintenance requirements of a busy road network. Therefore, they would have slight positive effects in the medium and long term.

4.15 Land Use

SEA Objective 10: Optimise the use of previously developed (brownfield) land thereby reducing waste generation

Oxford

4.15.1 No significant effects are anticipated upon the SEA objective. In the short term the effect is likely to be slightly negative as there is likely to be some impact arising from new railway station and park & ride as well as any other associated infrastructure. This is likely to impact upon green belt land. In the longer term the scenario is likely to be neutral as transport measures would generally be contained within the footprint of existing infrastructure. In the long term the effect is uncertain as there may be opportunity to lock in the benefits of reduced car use and reclaim brownfield sites currently occupied by parking into other public realm enhancements which would be positive.

Larger Towns

4.15.2 No significant effects are predicted overall. The proposed highways schemes would have a negative effect upon land use. However, the proposed reallocation of some road space within towns to enable bus priority, wider footways and cycle routes would make more efficient use of land within towns. Therefore the overall effect is likely to be minor negative.

Smaller Towns

4.15.3 No significant effect is predicted. However, the conversion of some of the road network to pedestrian/cycle use would make more efficient use of the land available within smaller towns and therefore the overall effect on land use is predicted to be slightly beneficial.

Rural Oxfordshire

4.15.4 No significant effect is predicted. In general this scenario makes good use of existing infrastructure and therefore would have a minor positive effect upon land use during the timescale of the LTP3.

4.16 Air Quality

SEA Objective 11: Reduce all forms of transport-related air pollution in the interests of local air quality

Oxford

4.16.1 No significant effect is predicted upon the SEA objective. It is likely that dust and air pollution from traffic would increase during the construction phases due to construction activities and associated traffic management. The modelling calculates that in the medium term there would be improvements to NOx and 1-3 butadiene, but some very slight increases in particulates, carbon monoxide and benzene. There is uncertainty over the timeframe in which lower emission vehicles would be introduced. It is likely that the trend towards cleaner vehicles and increases in walking and cycling would lead to benefits in the longer term.

Larger Towns

4.16.2 The overall effect is uncertain. The model results predict increases for three air pollutants and slightly lower decreases in the other three air pollutants measured. The use of low emission buses and bus rapid transit is likely to have a less polluting effect than currently modelled. Therefore the overall effect is uncertain and depends not only upon the sensitivity of the population to the pollutants involved, but also the extent of low emission bus services associated with the Bicester Eco-Town. It is likely that the trend towards cleaner vehicles would lead to benefits in the longer term.

Smaller Towns

4.16.3 The use of the model predicts negligible changes under this scenario and therefore the effect has been assessed as neutral.

Rural Oxfordshire

4.16.4 The model result predicts that there would be slight reductions in transport related air pollution from this scenario. It is assumed that this would continue into the long term due to the trend toward cleaner vehicles and lower traffic speeds.

4.17 Greenhouse Gas Emissions

SEA Objective 12: Reduce transport related greenhouse gas emissions

Oxford

4.17.1 A significant positive effect is predicted for this SEA objective from the Oxford scenario. The model does not predict the short term impacts and the long term effects are also uncertain due to uncertainty over population size, traffic volumes and future vehicle efficiency.

Larger Towns

4.17.2 No overall significant effect is predicted. The model result predicts a reduction of 14.27% in carbon dioxide emissions from this scenario (-17,392 Tonnes) which would be slightly positive for the SEA objective. The short term effects are uncertain and the long term effects depend upon traffic growth and emission standards. It is likely that there would be an increase in CO_2 emissions during construction, but it is not certain whether benefits from the public transport service improvements would counteract this increase.

Smaller Towns

4.17.3 No overall significant effect is predicted. The model result predicts a reduction in carbon dioxide of 17.90% (4,128 tonnes) in the medium term. The short term effects are uncertain and depend upon the rate at which behavioural change can be affected in smaller towns. In the long term the effects are uncertain as they relate to the rate of population growth within Oxfordshire and whether there is a corresponding increase in car use.

Rural Oxfordshire

4.17.4 No overall significant effect is predicted. The model result predicts a 9.50% reduction (243,893 tonnes) in carbon dioxide in the medium term. This is likely to be in part due to the 50mph speed limits. The short term effects are uncertain but unlikely to be significant, while the long term effects are uncertain as they relate to the rate of population growth within Oxfordshire and whether there is a corresponding increase in car use.

4.18 Adapting to Climate Change

SEA Objective 13: Adapt transport network to climate change

Oxford

4.18.1 It is predicted that there would be a slight positive effect in the medium and long term. The promotion of walking and cycling is likely to be beneficial to this objective. The investment in improved walking and cycling facilities would support the potential increased uptake in walking and cycling in drier summers. It is also assumed that any new designs associated with the scenario would take into account climate change predictions when selecting surfacing materials and providing new drainage capacity.

Larger Towns

4.18.2 Overall a slight positive effect is predicted. It is assumed that all new developments under this scenario would be constructed to design standards that take account of climate change predictions and therefore be more resilient than existing infrastructure. However, in the long term there is a risk that infrastructure would be overwhelmed by extreme weather events, such as experienced in some parts of Britain in 2007 and in Cumbria in 2009.

Smaller Towns and Rural Oxfordshire

4.18.3 The overall effect from both of these scenarios is uncertain. This scenario does not provide for significant investment in new infrastructure and therefore it is not clear how climate change adaptations would be made. Improvements to walking and cycling would support the potential increased uptake in walking and cycling in drier summers. However it is not certain how resilient transport links to services would be with increasing extreme weather events.

4.19 Landscape

SEA Objective 14: Maintain and enhance the quality and character of the landscape, including its contribution to the setting and character of settlements

Oxford

4.19.1 No significant effect on landscape is predicted. Some elements of this scenario, such as new rail facilities and further Park & Ride provision, may affect green belt land at the urban fringe which would contribute to a cumulative effect upon landscape character. However, it is assumed that the effect would be neutral in the medium and longer term as the majority of measures would be contained within Oxford.

Larger Towns

4.19.2 A significant adverse effect on landscape is anticipated from the Larger Towns scenario. New elements in the landscape such as new highway links outlined in the Area Strategies and Park & Ride are likely to have an adverse effect on landscape character through visual intrusion and noise. These adverse effects are likely to outweigh the minor benefits from improved connections to rural rights of way. The adverse effects are likely to be local and depend upon the context and design of the individual schemes put forward.

Smaller Towns and Rural Oxfordshire

4.19.3 No significant effects are predicted from these scenarios. However, the improved rights of way and connections between them is likely to be minor positive to the SEA objective, through enabling more access to and enjoyment of the countryside.

4.20 Built Environment

SEA Objective 15: Maintain and enhance the quality and distinctiveness of the built environment

Oxford

4.20.1 A significant, positive effect is predicted upon this SEA objective in the medium and long term. This scenario would continue the programme of public realm enhancement. Pedestrianised areas would allow more social interaction and appreciation of the cityscape. The reduction in pressure from

traffic and traffic noise would benefit the urban experience, while the reduction in vibration would help preserve buildings.

Larger Towns

4.20.2 Significant positive effects on the built environment are predicted from this scenario in the medium term (once proposals have been implemented). The scenario supports the redevelopment of some town centres as detailed in the Area Strategies. It is likely that improved pedestrian facilities and some reallocation of road space would have a significant improvement on the built environment. Under this scenario it is assumed that traffic would be managed to reduce its adverse effects in town centres. The significance of this is likely to reduce in the long term, as traffic growth may undermine the benefits unless further strategic action is taken.

Smaller Towns

4.20.3 No significant positive effects are predicted. However the improvements to pedestrian facilities and the reduction of congestion are likely to improve the built environment in smaller towns. However, it is not certain whether this effect would continue into the longer term, as it is not certain whether congestion would return due to continued traffic growth.

Rural Oxfordshire

4.20.4 No significant effect is anticipated upon this SEA objective as a result of this scenario.

4.21 Cultural Heritage

SEA Objective 16: Protect and where appropriate enhance the rich diversity of the historical/cultural environment and archaeological assets

Oxford

4.21.1 No significant effects have been identified and the short term effects from implementation are uncertain. There may be impacts upon archaeology or listed buildings and Conservation Areas associated with the construction phase. However, in the longer term the reduction in pressure from traffic in Oxford's historic centre is anticipated to be slightly positive.

Larger Towns

4.21.2 It is likely that there would be some negative effect upon cultural heritage from highway improvements and Park & Ride measures. It is assumed that this would be a significant adverse effect, although the certainty of this is very low. However, in the medium and long term there may be benefits if air pollution and vibration is reduced in towns.

Smaller Towns

4.21.3 There is very little infrastructure development proposed with this scenario, therefore it is unlikely that there would be a significant effect on archaeology.

However the maintenance regime and design of signage and other measures could impact cultural heritage if done insensitively. Therefore the overall effect is uncertain without further detailed information.

Rural Oxfordshire

4.21.4 No significant effect is predicted from this scenario. However there may be cumulative minor local benefits to the cultural heritage of villages (such as village churches, crosses and other features) from reduced vibration.

4.22 Combined Effect of the Preferred Scenarios on the Environment

4.22.1 The total numbers of positive, negative, neutral and uncertain effects have been added up for each scenario and combined to give an overall breakdown of the nature of predicted effects on each SEA objective. This combined effect is indicated in the bar chart presented overleaf (Figure 5.3). By adding up all of the effects the short, medium and long term effects are combined.

Significant Positive Effects

4.22.2 Based upon the results of the assessment it can be seen that the most significant positive effects would be upon the following SEA topic areas:

- SEA Objective 3: Protect and promote everyone's physical and mental wellbeing and safety
- SEA Objective 5: Maintain the vitality of town centres
- SEA Objective 6: Improve accessibility to jobs, facilities and services
- SEA Objective 15: Maintain and enhance the quality and distinctiveness of the built environment

Significant Negative Effects

4.22.3 The most significant negative effects would be upon the following:

- SEA Objective 1: Protect and enhance habitats and the diversity and abundance of species
- SEA Objective 14: Maintain and enhance the quality and character of the landscape, including its contribution to the setting and character of settlements
- SEA Objective 16: Protect and where appropriate enhance the rich diversity of the historical/cultural environment and archaeological assets
- Recommendations for mitigation are outlined in Section 7 of this Environmental Report.

Uncertain Effects

4.22.4 The greatest amount of uncertainty over effect would be upon the following:

- SEA Objective 11: Reduce all forms of transport-related air pollution in the interests of local air quality
- SEA Objective 12: Reduce transport related greenhouse gas emissions

- SEA Objective 13: Adapt transport network to climate change
- SEA Objective 16: Protect and where appropriate enhance the rich diversity of the historical/cultural environment and archaeological assets

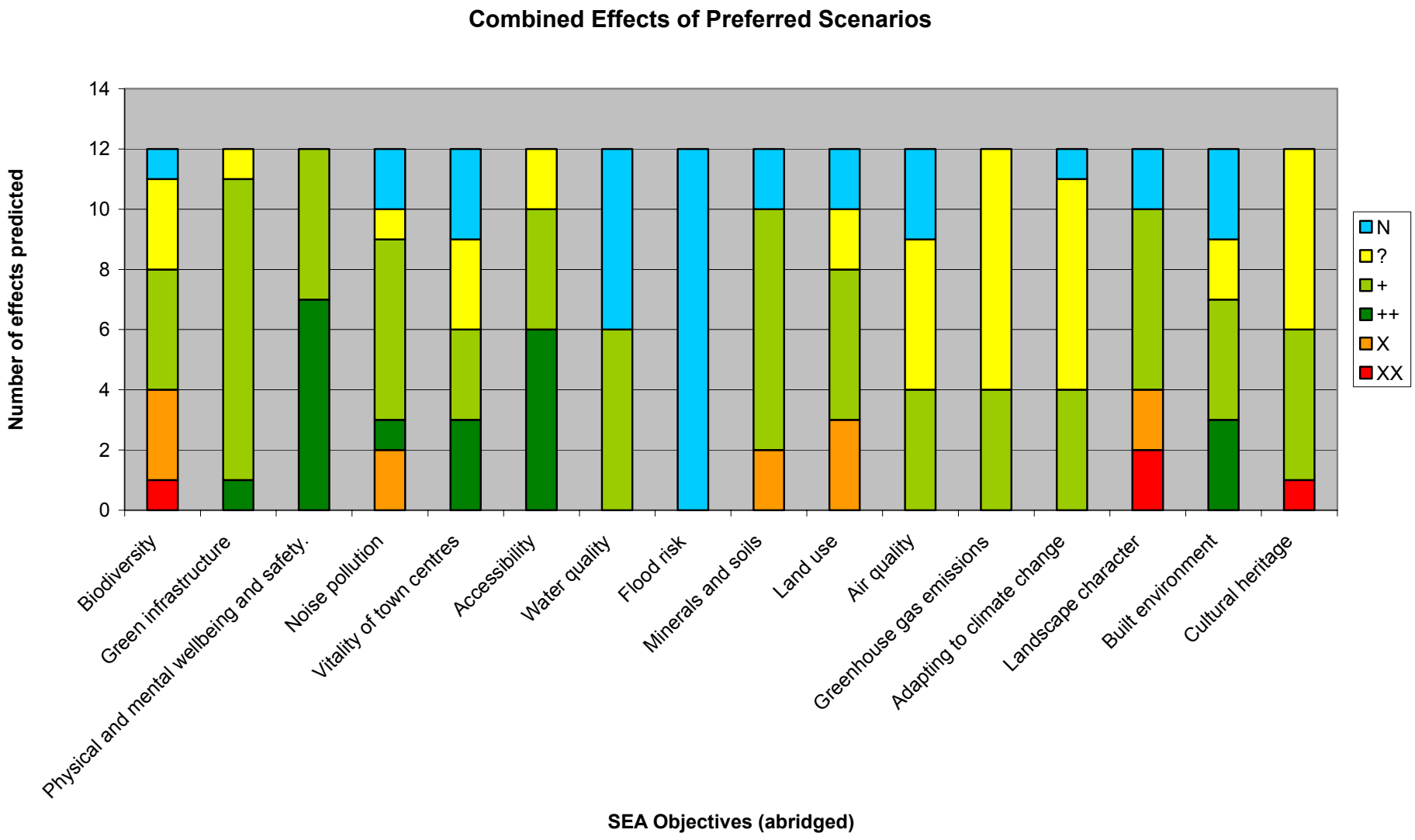
4.22.5 Recommendations to reduce the uncertainty are set out in Section 7 of this Environmental Report.

4.23 Cumulative Effects

4.23.1 Many of the effects predicted for the JLTP3 are cumulative in their nature. For example, the predicted positive effect on air quality depends upon a reduction in traffic arising from the cumulative effect on modal shift from the combination of public transport measures and promotion of walking and cycling.

4.23.2 The negative effects predicted on the landscape, soils and biodiversity are chiefly due to the cumulative effect of transport measures in combination with development pressure on greenfield sites in general. Each measure in itself is unlikely to have any significance on a strategic scale, but the additive effect of loss of greenfield land would lead to a significant overall effect.

4.23.3 It is anticipated that there would be a cumulative positive effect on human health through active travel. The combination of a reduction in traffic in urban centres, an increase in walking and cycling and improvements to walking and cycling facilities would combine to improve human health through a combination of increased physical activity and reduced air and noise pollution.


Combined Effects of Preferred Scenarios
Number of effects predicted
0
2
4
6
8
10
12
14
Biodiversity
Green infrastructure
Physical and mental wellbeing and safety.
Noise pollution
Vitality of town centres
Accessibility
Water quality
Flood risk
Minerals and soils
Land use
Air quality
Greenhouse gas emissions
Adapting to climate change
Landscape character
Built environment
Cultural heritage
SEA Objectives (abridged)
N
?
+
++
X
XX

5 Mitigation and Enhancement Recommendations

5.1 Significant Adverse Effects on Biodiversity, Landscape and Cultural Heritage

5.1.1 The predicted significant adverse effects upon biodiversity, landscape and cultural heritage relate to the proposals under the Preferred Scenario for Larger Towns. Under this scenario it is proposed that there would be some new highway infrastructure and capacity improvements as well as new Park & Ride schemes. It should be noted that the Area Strategies do heavily promote measures other than the use of the private car so that traffic growth overall would be minimised. However, it is assumed that under this scenario, at some stage during the life of the LTP3, there would be some infrastructure that would impact upon habitats, Green Belt land and soils. This would have potential impacts upon buried archaeology as well.

5.1.2 To help mitigate these potential adverse effects, proposals should be subject to detailed Environmental Impact Assessment (EIA). Investigations into the local biodiversity value of the sites, the potential for archaeology and the quality of soil should all be considered and used to inform the location and design of the infrastructure in order to minimise or avoid adverse effects.

5.2 Uncertainty over Air Quality and Greenhouse Gas Emissions

5.2.1 There is significant uncertainty over the short term and long term effects in relation to greenhouse gas emissions and air quality. The short term effects are uncertain because it is not clear how quickly improvements will have an effect and also what overall effect would arise from implementation (including emissions from use of materials such as concrete, as well as emissions from congestion generated from diversions and traffic management).

5.2.2 The long term uncertainty is mainly due to whether long term traffic growth would be curbed through the Scenarios and particularly whether the trend in rising greenhouse gas emissions from the transport sector could be reversed.

5.2.3 Significant reductions in greenhouse gas emissions are predicted for Oxford. It is considered that similar potential is possible for larger towns where services are likely to be relatively close to where people live and work. A greater proportion of investment in demand management in Larger Towns may lead to a greater level of modal shift from private car use to walking, cycling and public transport for shorter journeys. This would help to reduce overall emissions from transport although it may be unpopular.

5.2.4 A further issue with the draft LTP3 is the contradiction with Policy SD 5, which concerns the support of air travel. It is recommended that a review of the likely emissions from air travel activities originating in Oxfordshire is

undertaken in order to gain an overall understanding of its impacts upon the Council's targets to reduce greenhouse gas emissions.

5.3 Consideration of biodiversity in transport design and maintenance

5.3.1 Some aspects of the transport network offer opportunities for biodiversity. For example, highway and railway verges can offer significant opportunities for native planting and habitat enhancement. It is therefore recommended that advice is sought from the County Ecologist when developing proposals that may impact verges or when planning maintenance regimes, so that opportunities for habitat enhancement and protection are included. The Highways Agency Biodiversity Action Plan, in particular, will need to be cross-checked at the plan-making stage and adhered to at the implementation stage. Project level EIA, including Construction Environmental Management Plans and strategic level and project level Habitats Regulations Assessment (HRA), will also help to inform avoidance and mitigation measures. The HRA being undertaken in parallel with this SEA looks in more detail at avoidance and mitigation measures, insofar as they relate to Natura 2000 sites or Ramsar sites.

5.4 Increasing the Health Benefits of the draft LTP3

5.4.1 Overall the draft LTP3 has significant investment in facilities for pedestrians and cyclists which are likely to improve the convenience for travelling on foot or by bicycle. The LTP3 could go further by containing a target to increase the volume of walking and cycling (and plan to collect local data to monitor progress), as well as a target to limit growth in volumes of car traffic. This would serve to reduce the health burden of traffic in urban locations and improve health through greater levels of physical activity.

5.4.2 However it is likely that further significant health gains could be made by rolling out further 20mph limits or zones in other areas of the County. There is unequivocal evidence from Europe for casualty reduction where 30kph zones are implemented[15] [16]. Implementation of 20mph limits is now favoured by DfT as a potentially effective intervention to improve safety in residential areas (Interim report by Atkins on Portsmouth city-wide 20mph limits), as well as improve quality of life.

5.5 Urban tree planting

5.5.1 Trees in the urban environment create shade and have a cooling effect (Huang et al. 1987). Modelling work in Greater Manchester suggested that if we increase green cover in towns and cities by 10 per cent, we could keep surface temperatures at current levels despite climate change.

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[15] Janssen, S. 1991 Road safety in urban districts. Final results of accident studies in the Dutch Demonstration Projects of the 1970s, Traffic Engineering and Control, June: 292-296.
[16] Killing Speed: A Good Practice Guide to Speed Management, 2000 Hereford: Slower Speeds Initiative.

5.5.2 Trees can help reduce asthma rates in children. Researchers have found asthma rates among children aged between four and five fell by a quarter for every additional 343 trees per square kilometre.[17]

5.5.3 Trees and woodland can reduce surface water flooding by improving drainage. They can also help to improve landscape and the overall attractiveness of the urban environment to live in and walk and cycle in. Finally, they can have significant biodiversity value, for example through their planting as part of wildlife corridors.

[17] Lovasi et al. (2008).

6 Monitoring

6.1 Background to monitoring requirements

6.1.1 The SEA Regulations explicitly require monitoring of the significant environmental effects of the plan. A monitoring system will be developed which will help to provide understanding of how the baseline environment of the area is developing, to monitor the significant effects of the plan and to ensure that action can be taken to reduce or offset the significant effects of the plan.

6.1.2 Although no longer a requirement of LTPs (under the Transport Act 2008), it is recommended that Oxfordshire County Council continues to produce annual progress reports which include selected environmental factors and meet SEA monitoring requirements.

6.1.3 Under the SEA Directive there is a statutory requirement to monitor the environmental impacts of the implementation of the Plan. Oxfordshire's draft LTP3 must therefore be monitored and reported in order to comply with the Directive, as well as to continue to identify problems and issues that need resolving. The Progress Report should describe any changes to the environmental baseline from the implementation of the LTP3 and how Oxfordshire County Council will work to mitigate any adverse effects identified.

6.2 Monitoring Proposals

6.2.1 The monitoring proposals included in this section refer to the significant effects that have been predicted as a result of the draft LTP3 Scenarios and Policies, as well as the effects which are highly uncertain.

6.2.2 At present the monitoring requirements are not well developed. There is currently significant uncertainty over available public funding and the monitoring programme may need to be designed to be achievable within limited budgets. Therefore it may be necessary to identify other monitoring regimes and link in with those processes to avoid duplication of effort, and to make the best use of available information. The monitoring framework will be developed further and confirmed in the SEA Statement which will be prepared once the Final SEA has been developed. Appendix E includes data on existing trends. Some of these could be taken forward and used in future monitoring of LTP3.

Table 6: Proposed SEA Monitoring Framework

Effect or indicator to be monitored	Information required	Information source	Information gaps/quality	When to take remedial action	Remedial action to take
Interrelated effects on population and human health/ climate change/ air quality	Modal split	LTP Annual Progress Report (APR) NI 198 Children travelling to school – mode of transport usually used	The ongoing monitoring of these indicators needs to be confirmed with Oxfordshire County Council, taking into account availability of public services budgets for this type of monitoring.	Criteria for triggering remedial action will be finalised in the SEA Statement.	Additional demand management measures may need to be taken. Increased promotion of non-car modes of transport may assist.
	Traffic counts	LTP APR			
	Greenhouse gas emissions	Estimate from Traffic counts in APR NI 185 CO_2 reduction from Local Authority (LA) Operations NI 186 per capita reduction in CO_2 emissions in LA area			
Cultural Heritage and landscape	Impacts of traffic schemes	Heritage Counts data (English Heritage); Natural England, CPRE	Site specific proposals.	To be confirmed in SEA statement	Tighten planning controls in areas of high landscape sensitivity Project-level EIA mitigation required
Biodiversity, Flora and Fauna	Number and condition of designated wildlife sites at risk from transport infrastructure or transport	Natural England, e.g. SSSI Favourable Condition tables	Continuous pollution monitoring at sites sensitive to transport-derived air pollution Annual monitoring of other potential impacts, e.g. pollution from drainage	To be confirmed in SEA statement	Project-level EIA mitigation required and HRA mitigation for internationally designated sites

7 Next steps in the SEA process

7.1 Consultation on Draft LTP3 and SEA

7.1.1 The SEA Regulations set specific requirements for consultation with the Consultation Bodies, the public and other interested parties (these could include non-governmental organisations and community groups), and require that the Environmental Report is made available for consultation alongside the consultation draft LTP3.

7.1.2 This Environmental Report and a separate Non-Technical Summary will be made available on the Oxfordshire County Council consultation webpage under Local Transport Plan 3:

- http://www.oxfordshire.gov.uk

7.1.3 If you would like to comment on the draft LTP3 or this SEA, comments should be received no later than January 9th 2011.

7.2 SEA Statement

7.2.1 When the final Oxfordshire LTP3 is prepared in April 2011 it will be accompanied by an SEA Statement. In line with the SEA Regulations, the SEA Statement will provide the following information:

- How environmental considerations have been integrated into the plan;
- How the Environmental Report has been taken into account;
- How opinions expressed in relation to the consultations on the plan/ programme and Environmental Report have been taken into account;
- The reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and
- The measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme.

Glossary

AQMA	Air Quality Management Area
Baseline environment	The state of the environment against which to measure change from the plan
CO_2	Carbon dioxide
Countryside Quality Counts	A project sponsored by Natural England in partnership with Defra and English Heritage to develop a national indicator on how the countryside is changing.
DaSTS	Delivering a Sustainable Transport System
DfT	Department for Transport
Ecosystem services	Benefits to people from resources and processes that are supplied by natural ecosystems. For example clean drinking water and processes such as the decomposition of wastes
Green infrastructure	Areas set aside for multi-functional purposes of leisure, exercise, drainage, wildlife corridors, green space and play areas.
LTP3	Local Transport Plan 3
NO_2	Nitrogen dioxide
NOx	Oxides of nitrogen
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
Smarter Choices	The Department for Transport's recommendations for a more sustainable transport network (promoting alternatives to single-occupancy car use)
SSSI	Site of Special Scientific Interest

Appendices