Appendix A: Policy, Plan and Programme Review

This appendix provides a summary of selected key planning documents that have an influence on the development of the LTP3. The change of Government is likely to mean that some of the national priorities will be altered over the coming year and where there is uncertainty this is noted. A more detailed planning review was provided within the SEA Scoping report. This appendix includes a more concise review to provide understanding of the context behind which environmental issues have been assessed as part of the SEA.

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
Climate Change Act 2008	This legislation introduces the world's first long term legally binding framework to tackle the causes and consequences of climate change. Requirements include: • An aim to improve carbon management and help the transition towards a low carbon economy in the UK; • Legally binding targets: Reductions in CO_2 emissions of at least 26% by 2020, against a 1990 baseline. The 2020 target will be reviewed to reflect the move to all greenhouse gases and the increase in the 2050 target to 80%; • On adaptation the Government must report at least every five years on the risks to the UK of climate change, and publish a programme setting out how these impacts will be addressed. The Act also introduces powers for Government to require public bodies and statutory undertakers to carry out their own risk assessment and make plans to address those risks.	1. LTP3 should consider including objective to match or better national target for CO_2 reduction. SEA to assess plan for CO_2 reduction. 2. LTP3 could draw upon information on latest climate change risks for West of England and identify measures to mitigate risks to transport infrastructure. SEA could assess whether LTP has takes into account climate change adaptation.	Climatic factors
EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (92/43/EEC). In England the Directive is transposed into law by means of the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended).	The Directive lists a number of species and habitats which are to be protected by means of a network of sites across Europe. Once identified and adopted, these sites are known as Special Areas of Conservation (SACs). The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest. In such cases compensation measures will be necessary to ensure the overall integrity of network of sites. As a consequence of amendments to the Birds Directive these measures are to be applied to SPAs also.	LTP3 should avoid adverse impacts on SACs and SPAs.	Biodiversity, flora and fauna

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
	Article 10 requires that linear structures such as rivers/streams, hedgerows, field boundaries, ponds, etc., that enable movement and migration of species should be preserved.		
The EU Water Framework Directive (Directive 2000/60/EC) Transposed into English law via the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (SI 3242)	The Water Framework Directive (WFD) is the most substantial piece of EC water legislation to date and is designed to improve and integrate the way water bodies are managed throughout Europe. Member States must aim to reach good chemical and ecological status in inland and coastal waters by 2015. It is designed to: • enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands, which depend on the aquatic ecosystems • promote the sustainable use of water • reduce pollution of water, especially by 'priority' and 'priority hazardous' substances • ensure progressive reduction of groundwater pollution	LTP3 could encourage more sustainable water use by transport operators and sustainable drainage systems. Improvements to existing infrastructure could identify opportunities for improvements to drainage systems to protect the aquatic environment from transport related water pollution or surface run-off.	Water, human health, biodiversity.
The Air Quality Framework Directive (96/62/EC) and the EU Directive On Ambient Air Quality and Cleaner Air for Europe (Directive 2008/50/EC). In the UK the Air Quality Standards Regulations 2007 transpose Directive 96/62/EC. The new requirements of Directive 2008/50/EC will be transposed into national law by June 2010.	The Air Quality Framework Directive (96/62/EC) on ambient air quality assessment and management defines the policy framework for 12 air pollutants known to have a harmful effect on human health and the environment. A new air quality directive came into force on 21 May 2008 (Directive 2008/50/EC). Main points to note are that it • consolidates existing air quality legislation apart from the 4th Daughter Directive (which covered arsenic, cadmium, nickel and polycyclic aromatic hydrocarbons), which will be brought within the new Directive at a later date; and	LTP3 could consider further opportunities for low emissions zones and ways of encouraging less polluting modes of transport in areas of higher population density or areas of high heritage or nature conservation interest.	Air, human health, flora and fauna.

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
	• provides a new regulatory framework for $PM_{2.5}$		
The European Noise Directive (Directive 2002/49/EC). Transposed into English law through the Environmental Noise (England) Regulations 2006 (as amended).	Environmental Noise Directive (END) - concerns noise from road, rail and air traffic and from industry. It requires: • the determination of exposure to environmental noise, through noise mapping; • provision of information on environmental noise and its effects on the public; • adoption of action plans, based upon noise mapping results, which should be designed to manage noise issues and effects, including noise reduction if necessary; • preservation by the member states of environmental noise quality where it is good.	The LTP3 could seek to preserve its tranquil areas from transport related noise pollution. In areas degraded by noise pollution the LTP3 could consider whether traffic management may help mitigate noise.	Noise, human health.
Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World (DfT 2007) and Delivering a Sustainable Transport System (DfT 2008) Please note that under the new Government these policy documents have now been archived although the new Government continues to support the need to reduce carbon emissions from transport and to prioritise safety.	These publications set the following goals for transport: • To support national economic competitiveness and growth, by delivering reliable and efficient transport networks • To reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of tackling climate change • To contribute to better safety security and health and longer life-expectancy by reducing the risk of death, injury or illness arising from transport and by promoting travel modes that are beneficial to health • To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society; • To improve quality of life for transport users and non-transport users, and to promote a healthy natural environment	LTP3 has adopted the goals under its objectives. The SEA has assessed the draft LTP3 in relation to its effects on greenhouse gas emissions, human health and safty, accessibility, adaptation to climate change and the natural environment (including water, landscape and biodiversity) as well as the built environment (including cultural heritage).	Climatic factors, population, human health, air, landscape, cultural heritage, water and biodiversity.

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
	"Delivering a Sustainable Transport System" sets out the following objectives for the transport system: • Deliver quantified reductions in greenhouse gas emissions within cities and regional networks, taking account of cross-network policy measures. (Climatic factors) • Ensure local transport networks are resistant and adaptable to shocks and impacts such as adverse weather, accidents, terrorist attacks and impacts of climate change. (Material assets, Climatic factors) • Enhance social inclusion and the regeneration of deprived or remote areas by enabling disadvantaged people to connect with employment opportunities, key local services, social networks and goods through improving accessibility, availability, affordability and acceptability. • Reduce the risk of death, security or injury due to transport accidents. • Reduce social and economic costs of transport to public health, including air quality impacts. • Improve the health of individuals by encouraging and enabling more physically active travel. • Manage transport-related noise in a way that is consistent with the emerging national noise strategy and other wider Government goals • Minimise the impacts of transport on the natural environment, heritage and landscape and seek solutions that deliver long-term environmental benefits.		
Ultra Low Carbon Vehicles in the UK, DfT (April 2009)	The Government has identified that the only sustainable future for transport lies in a transformative shift to low carbon. The publication sets out its vision to promote ultra low carbon vehicles in the UK.	LTP3 could consider opportunities for improving the available infrastructure for low carbon vehicles in its main urban areas.	Climatic factors.
A Safer Way: Consultation on Making Britain's Roads the	The Department for Transport is consulting on its vision, targets and measures for improving road safety in Great Britain beyond	LTP3 should address inequalities that result in	Human health.

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
Safest in the World, DfT (April 2009)	2010. This follows on from its ten year strategy "Tomorrow's Roads – Safer for Everyone" (March 2000). The consultation document identifies the following challenges based on an analysis of existing road safety trends: • reducing the number of road deaths, which have fallen at a slower rate than serious injuries; • pedestrian and cyclist casualties in our towns and cities – particularly in deprived communities; • protecting children, particularly in deprived areas, and young people, who are greatly over-represented in the casualty statistics; • protecting motorcyclists, who represent 20% of road fatalities but just 1% of traffic; • safety on rural roads: 62% of all road fatalities in 2007 occurred on rural roads, which carry only 42% of traffic; • variations in safety from area to area and road to road; poor road user behaviour amongst a minority, where drink-driving and failure to wear a seatbelt remain a problem; • illegal and inappropriate speed: excessive speed was recorded as a contributory factor in 26% of road fatalities in 2007.	overrepresentation of children, rural roads, motorcyclists, deprived communities in accident statistics.	
Air Quality Strategy for England, Scotland, Wales and Northern Ireland (November 2007)	The Air Quality Strategy provides a long-term vision for improving air quality in the UK and offers options for further consideration to reduce the risk to health and the environment from air pollution. In relation to transport, it identifies that "Traffic management can make a significant contribution to help reduce emissions of pollutants from road vehicles, for example, schemes which restrict or exclude less clean vehicles from certain roads or areas, such as low emission zones, or reduce road congestion…LTPs in England are the main mechanisms for implementing transport policies at the local level. One of the key criteria against which these plans are judged for central	LTP3 could consider what further measures are appropriate in to reduce transport related causes of air pollution (including most polluting vehicles in highly populated areas and traffic congestion). Air quality is assessed in the scope of the SEA.	Air, human health

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
	funding is the extent these take account of air quality considerations".(para. 71		
Planning Policy Statements and Planning Policy Guidance A series of Planning Policy Statements and Guidance is described below. The new Coalition government has stated that: "Current planning policy for planning and the environment is set out in Planning Policy Statements and Planning Policy Guidance. The Government has committed to publish and present to Parliament a simple and consolidated national planning framework covering all forms of development and setting out national economic, environmental and social priorities. More information on this is available from the planning system web pages. Future workstreams for planning and environment include: • delivering the Government's commitment to: maintain the Green Belt, Sites of Special Scientific Interest and other environmental protections, and create a new designation to protect green areas of particular importance to local communities, as part of the Localism Bill; and • take forward the findings of the Pitt Review to improve our flood defences, and prevent unnecessary building in areas of high flood risk" http://www.communities.gov.uk/planningandbuilding/planningenvironment/			
Planning Policy Statement 1: Delivering Sustainable Development and Planning Policy Statement: Planning and Climate Change - Supplement to Planning Policy Statement 1	PPS1 sets out a number of key principles, the second principle is as follows: "… local planning authorities should ensure that development plans contribute to global sustainability by addressing the causes and potential impacts of climate change through policies which reduce energy use, reduce emissions (for example, by encouraging patterns of development which reduce the need to travel by private car, or reduce the impact of moving freight), promote the development of renewable energy resources, and take climate change impacts into account in the location and design of development." The Supplement to PPS 1 has the following objectives: To deliver sustainable development, and in doing so a full and appropriate response on climate change, regional planning bodies and all planning authorities should prepare, and manage the delivery of, spatial strategies that:	Te LTP3 should seek to minimise the need to travel, especially by car. The LTP3 has been assessed against an objective for accessibility that is focused on non-car related methods to access services.	Population, climatic factors

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
	• …deliver patterns of urban growth and sustainable rural developments that help secure the fullest possible use of sustainable transport for moving freight, public transport, cycling and walking; and, which overall, reduce the need to travel, especially by car;		
Planning Policy Guidance 2: Green Belts (January 1995)	The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the most important attribute of Green Belts is their openness. In addition the use of land in them has a positive role to play in: • fulfilling the following objectives: • to provide opportunities for access to the open countryside for the urban population; • to provide opportunities for outdoor sport and outdoor recreation near urban areas; • to retain attractive landscapes, and enhance landscapes, near to where people live; • to improve damaged and derelict land around towns; • to secure nature conservation interest; and • to retain land in agricultural, forestry and related uses. PPG 2 has the following guidance of specific relevance to Park & Ride: “Park and ride development is not inappropriate in Green Belts, provided that: (a) a thorough and comprehensive assessment of potential sites has been carried out, including both non-Green Belt and, if appropriate, other Green Belt locations, having regard to sustainable development objectives, and the need to be flexible about size and layout; (b) the assessment establishes that the proposed green belt site is the most sustainable option taking account of all relevant	The SEA has assessed the likely encroachment of transport infrastructure on Green Belt land.	

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
	factors including travel impacts; (c) the scheme will not seriously compromise the purposes of including land in Green Belts, as set out in paragraph 1.5; (d) the proposal is contained within the local transport plan and based on a thorough assessment of travel impacts; and (e) new or re-used buildings are included within the development proposal only”		
Planning Policy Statement 9: Biodiversity and Geological Conservation (August 2005)	Regional planning bodies and local planning authorities should adhere to the following key principles to ensure that the potential impacts of planning decisions on biodiversity and geological conservation are fully considered. (ii) Plan policies and planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests. In taking decisions, local planning authorities should ensure that appropriate weight is attached to designated sites of international, national and local importance; protected species; and to biodiversity and geological interests within the wider environment. (iii) Plan policies on the form and location of development should take a strategic approach to the conservation, enhancement and restoration of biodiversity and geology, and recognise the contributions that sites, areas and features, both individually and in combination, make to conserving these resources.	The SEA assesses the LTP3 in relation to its potential effects on biodiversity and includes recommendations to enhance biodiversity through planning and management of transport assets.	Biodiversity, flora and fauna.
Planning Policy Guidance 13: Transport (March 2001)	Planning Policy Guidance 13 (PPG13) sets out the objectives to integrate planning and transport at the national,	The LTP3 should focus on providing for non-car based	Population, climatic factors,

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
	regional, strategic and local level and to promote more sustainable transport choices both for carrying people and for moving freight. It has the following objectives: 1. promote more sustainable transport choices for both people and for moving freight; 2. promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling, and 3. reduce the need to travel, especially by car.	forms of travel wherever possible.	material assets.
PPG 15 and 16 were reviewed at the scoping stage but have now been cancelled and replaced by PPS 5: Planning for the Historic Environment	Key points include: Policy HE 3: "…local development frameworks (LDF) should set out a positive, proactive strategy for the conservation and enjoyment of the historic environment in their area, taking into account the variations in type and distribution of heritage asset, as well as the contribution made by the historic environment by virtue of: (i) its influence on the character of the environment and an area's sense of place (ii) its potential to be a catalyst for regeneration in an area, in particular through leisure, tourism and economic development (iii) the stimulus it can provide to inspire new development of imaginative and high quality design (iv) the re-use of existing fabric, minimising waste; and (v) its mixed and flexible patterns of land use that are likely to be, and remain, sustainable. Policy HE 5: Local planning authorities should consider how they can best monitor the impact of their planning policies and decisions on the historic environment. They should pay particular attention to the degree to which individual or groups of heritage assets are at risk of loss or decay, how they expect this will	The SEA assesses the likely effects of the draft LTP3 on the historic environment. It provides recommendations for sensitive designs and monitoring.	Cultural heritage

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
	change over time, and how they propose to respond.		
Planning Policy Guidance 17: Planning for Open Space, Sport and Recreation.	PPG 17 identifies that open spaces, sport and recreation all underpin people's quality of life. Well designed and implemented planning policies for open space, sport and recreation are therefore fundamental to delivering broader Government objectives. This includes an objective to ensure that open space, sports and recreational facilities (particularly in urban areas) are easily accessible by walking and cycling and that more heavily used or intensive sports and recreational facilities are planned for locations well served by public transport.	LTP3 should recognise that access to recreation is important for health, well-being and community cohesion. The SEA assesses the likely effects on green infrastructure.	Human health, landscape.
UK Biodiversity Action Plan, Oxfordshire Biodiversity Action Plan and the South East Biodiversity Strategy	The UK Biodiversity Action Plan (UKBAP) represents a national strategy for the conservation of biological diversity and the sustainable use of biological resources. It contains 391 Species Action Plans and 45 Habitat Action Plans. It is further supported by Local Biodiversity Action Plans developed by local authorities. It has the following aims: • to conserve, promote and enhance species and habitats • to develop public awareness and understanding	The SEA assesses the LTP3 in relation to its potential effects on biodiversity and includes recommendations to enhance biodiversity through planning and management of transport assets.	Biodiversity
South East Plan (May 2009). The new Government has announced its intention to abolish Regional Spatial Strategies. Therefore Oxfordshire no longer needs to plan deliver requirements of the South East Plan. It is possible that the Core Strategies for Oxfordshire will be amended to reflect this change of planning context. The District Councils of South Oxfordshire, West Oxfordshire, Vale of White Horse are all currently reviewing their draft Core Strategies to ensure an appropriate pattern of development up until 2026. The Oxford City Core Strategy is currently being examined in public. The lastest version includes a spatial strategy that “reduces the need to travel”. It will be necessary fot eh LTP3 team and District Council Spatial Planning Teams to work together to ensure that the transport needs are appropriate to the emerging patterns of development.			

Other policy, plan or programme	Objectives or requirements of the other plan or programme	How objectives and requirements might be taken on board	Environmental topic
Cherwell Local Development Framework Draft Core Strategy (February 2010)	The spatial strategy can be summarised as:- • Focus growth in and around Banbury and Bicester, including the eco-development at North West Bicester • Deliver approximately 1,000 homes at RAF Upper Heyford • Support growth in Kidlington where this meets local needs, subject to green belt constraints • Limit growth in the rest of our rural areas towards larger and more sustainable villages • Strictly control development in open countryside.	The LTP3 should take account of the development patterns promoted under the emerging Core Strategy and work closely to ensure sustainable patterns of development and travel.	Population

Appendix B: Scoping Consultation Responses

1 Introduction

This document provides a summary of consultation responses received in relation to the draft SEA scoping report issued for the Oxfordshire Local Transport Plan 3. The consultation took place over five weeks starting in July 2009.

Responses were received from Natural England and English Heritage, both statutory consultees. No response was received from the Environment Agency. A summary of these responses is included in section 2 of this document.

Responses were also received from the Cotswolds Conservation Board, The Chilterns Conservation Board and the Oxford Fieldpaths Society. A summary of these responses is included in section 2 of this document.

In addition, a number of responses on each consultation question were received via the Oxfordshire LTP3 website. These responses came from five residents, and the following organisations: Sustainable Wallingford, Sustainable Woodstock, OCC Biodiversity and Landscape Team, OCC Countryside Service, Oxfordshire Countryside Access Forum and Cherwell District Council. These responses are included in the table in section 3 of this document.

For each of the responses received, a description of how the comments have been taken into account is provided. In many cases the most appropriate means of action is through the development of the LTP3 itself.

The tables are structured around the sections of the Scoping Report and consultation questions.

2 Summary Consultation Responses

Consultee: English Heritage	
Summary Response	**Action taken**
EH suggest landscape and heritage issues are given more prominence in the LTP itself. EH supports the proposal to include cultural heritage and the historic environment, including architectural and archaeological heritage; and landscape and townscape as proposed SEA topics. With this in mind, EH advises that Section 2.4 should include the European Landscape Convention and the Valletta Convention on the Protection of Archaeological Heritage (Revised) at the International level. PPG15 should also be included. PPS1 and PPS 12 should also be appropriately referenced and worded in the plans and programmes review. The baseline summary should equally balance consideration of historical assets as well as archaeology. EH also suggest the environmental baseline would be enhanced by use of historic landscape/townscape characterisation (as advocated by the South East Plan). They also suggest a possible change to SEA objective 16 (Protect and enhance the rich diversity of the historical/cultural environment and archaeological assets to be worded) '…where appropriate, enhance…', in line with a similar SEA objective used for the South East Plan SEA.	SEA objective 16 was re-worded. The Environmental Report policy review also takes account of the policy guidance and international conventions outlined by EH**.**
Consultee: Natural England	
Summary Response	**Action taken**
NE suggest, in relation to Consultation question 6, that designated sites should be protected from any impacts of transport and that green infrastructure can play a role in protecting biodiversity. Various suggestions for the protection and enhancement of the landscape are provided, including the use of Landscape Character Assessment (LCA) and close consultation with the AONB authorities. NE support all of the SEA objectives and would not support the removal of any of them.	The LTP3 has been assessed in relation to its effects on green infrastructure and this is documented in the Environmental Report.
Consultee: Cotswolds Conservation Board	
Summary Response	**Action taken**
The CCB suggest the consideration of the statutory Management Plans for the 3 AONBs in Oxfordshire in response to Question 13. All 3 plans address transport in relation to the purposes of AONB designation. They also point out that both the Cotswolds and Chilterns Conservation Boards have published guidance for the management and maintenance of highways in the AONBs and agreed this with the County Council.	It is recommended that this guidance is taken into account in the Transport Asset Management Plan.
Consultee: Chiltern Conservation Board	
Summary Response	**Action taken**
Agreed with the Cotswolds Conservation Board's comments above and provided links to their AONB Management Plan and highways guidelines.	As above.
Consultee: Oxford Fieldpaths Society	
Summary Response	**Action taken**
The OFS agree with the scope of the environmental baseline. However, they suggest that the spatial scope of the LTP should be expanded in order to take into account the county's role as a regional transport hub for road	These comments will be given consideration in the next stage of the

and rail. They also stress the need to separate walkers from cyclists and separate both from street furniture. OFS consider some designated sites of nature conservation have been omitted from the environmental baseline (Shotover SSSI and Woodmeadow Nature Reserve). They also propose that the SEA needs to give full consideration to the following: • Impervious surface areas and their effect on the environment through run-off • Use of recycled materials in transport infrastructure • Access to historic sites • Provision of footpaths across major trunk roads and their interchanges • Protecting or providing separate (from roads) and safe walking routes, e.g. when considering the Chiltern Railways Evergreen 3 development • Protecting agricultural land and reducing the need to transport food long distances • Protecting greenbelt land • Preventing further light pollution in the county OFS also suggests that the LTP needs to consider: • Transport's key role in CO_2 and NOx emissions • The Oxford Park and Ride Scheme and the reduction of buses entering the city centre • More closely monitoring light pollution in the county	SEA through potentially revising the wording of the proposed objectives/sub-objectives, the consideration of appropriate indicators and monitoring targets and the further collection of evidence base. The LTP should take into account the comments. Where it is considered the comments are not feasible or relevant to the LTP, the Environmental Report will document reasons.

3 Summary of responses to specific consultation questions

Question 1: Are there any other environmental issues that might be important for Oxfordshire that are not covered by the list below?		
Ref.	**Response**	**Action taken**
1.1	Climate change mitigation and 'Biomass' as a mitigator of concentrations in the atmosphere, and the fauna as integrated aspect of any healthy eco-system that supports healthy flora.	This comment relates to “ecosystem services” (refer to Appendix A, page A18). The proposed list of topics in the Scoping Report was derived from the SEA Directive objectives. Consideration to addressing ecosystem services has been given for the Environmental Report and is one of the reasons behind the objective for green infrastructure.
1.2	The connections between people and places, which public transport can either facilitate or inhibit.	It is considered that this issue is covered by the issue “population, including severance”.
1.3	Food Security and Production in Oxfordshire taking account of the need to grow locally and reduce "food miles"	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
1.4	The maintenance of farmland and transport of food: food should be grown locally and efficient distribution systems developed.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
1.5	Access to natural green space and the public rights of way network.	Environmental Report considers access to green space and public rights of way under objectives for human health, green infrastructure and landscape.
1.6	Soil should include land quality and contamination	Baseline for soil already considers agricultural land quality and contaminated land.
1.7	Quality of life affected by restrictions on personal mobility through restrictions, taxation and control. Also, failure for the consistent downward trend in crashes to continue at its pre-1992 levels. Imposition of unattractive, over signed and inappropriate urbanising traffic calming schemes in rural areas. The introduction of shared space schemes to replace traditional, conflict-based traffic calming.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
1.8	The reference to Climatic factors fails to mention mitigation, which needs to become far more pervasive. Specifically, in this context, 'Biomass' being the quantity of flora and fauna, the flora as a mitigator of CO_2 concentrations in the atmosphere, and the fauna as integrated aspect of any healthy eco-system that supports healthy flora.	As for response to 1.1
1.9	The population, human health and cultural heritage environmental issues do not seem to include anything about access to natural green space (including ‘the countryside’) and the public rights of way network. This is possibly [of]a major omission given that there are specific policies in the SE Plan, and OCC has adopted the	Environmental Report considers access to green space and public rights of way under objectives for human health, green infrastructure and landscape.

	Rights of Way Improvement Plan (a statutory duty under s60 Countryside and Rights of Way Act 2000) and that the LTP and RoWIP are meant to be integrated from 2010. Guidance on this has been produced by Natural England, Defra and DfT. Please add public rights of way/natural green space/recreation as a new topic for the SEA or include it under population or human health topics. Chapter 3 of the SEA includes these under SEA topic of Biodiversity, flora and fauna – but there is no other linkage in the scoping document.	
1.10	Electrification of rail transport and its benefits to noise and pollution plus energy usage.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the Environmental Statement.
1.11	Two responses of "no"	No action.
Q2: Is the proposed spatial and temporal scope for the SEA appropriate for the Oxfordshire LTP3?		
Ref.	**Response**	**Action taken**
2.1	Environmental impacts with regard to climate cannot be limited geographically, and assessment has to include consideration of impacts on the overall global environment.	It is acknowledged that climatic factors are related have a global environmental scope. However, control of greenhouse gas emissions must be within scope of LTP3.
2.2	Yes as far as I can see provided public transport remains available and affordable to all.	LTP3 to take into account accessibility of public transport.
2.3	The spatial scope should be greater: really transport should be being considered in a nationwide context.	LTP3 to take into account accessibility of public transport. Environmental Report to address cross-boundary issues where appropriate.
2.4	There should be consideration given to discouraging commuting, and travel between dwellings, places of work and for leisure purposes. For example, would a new train line to London increase the numbers of people living further from their work?	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
2.5	Three responses of "yes", one response of "don't understand the question, and four responses of "no comment".	No action
Q3: Are there any other policies, plans or programmes that contain environmental protection objectives or identify relevant issues that are not covered by this list?		
Ref.	**Response**	**Action taken**
3.1	South East Plan policies NRM5, NRM7, CC2, CC8 - South East Green Infrastructure Framework - From Policy into Practice, GOSE et al June 2009 - Conservation Target Areas Report, TVERC 2006 - Oxfordshire Wildlife & Landscape Study	SEA objective 2 covers green infrastructure.

3.2	Yes -please include: Planning Policy Statement 9, para 12: 'Networks of natural habitats provide a valuable resource. They can link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans networks should be protected from development, and, where possible, strengthened by or integrated within it. This may be done as part of a wider strategy for the protection and extension of open space and access routes such as canals and rivers, including those within urban areas.' DfT - LTP and RoWIP integration guidance note - http://naturalengland.etraderstores.com/NaturalEnglandShop/product.aspx?ProductID=a9f67df9-f61d-40ae-9ed7-457b60b89394 Natural England, the Department for Transport and the Department for Environment, Food and Rural Affairs want to achieve a national transport framework that will improve all kinds of access to meet the needs of everyday lives – to increase walking and cycling[and horse-riding] opportunities, a more interesting and connected access network. We want to ensure that travel to work and services in our towns and cities and to the wealth of wildlife and landscapes in our countryside are easier to experience and enjoy. Linking rights of way improvement plans to local transport plans has an important role to play in today's society as we set out on the path to a greener, healthier, low carbon society where the wonders of the natural environment can be brought into everybody's life. This good practice note gives advice on how to achieve these outcomes and make efficient use of funding through joined up working. There are specific South East Plan policies relating to access, countryside and green space: Rural urban fringe (SE Plan policy C5), countryside access and public rights of way management (C6), as well as green infrastructure (CC8) and management for an urban renaissance (BE1) - all of these are relevant to the SEA and should be included Local Oxfordshire Rights of Way Improvement Plan – including the full assessment of need. This document was adopted by Oxfordshire County Council in February 2001 and sets out the ambitions of the authority for improving access and public rights of way. www.oxfordshire.gov.uk/rowip	Environmental Report takes account of effects on biodiversity, green infrastructure and landscape including access to green space.

3.3	There seem to be a few gaps in the PPPs - especially when we look at the set of SEA Objectives at the end of the document. These are supported but I think we need to 'show the working' if possible and show the evidence supporting these. I have identified the following PPPs: National - please include the text of Planning Policy Statement 9, para 12: 'Networks of natural habitats provide a valuable resource. They can link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans networks should be protected from development, and, where possible, strengthened by or integrated within it. This may be done as part of a wider strategy for the protection and extension of open space and access routes such as canals and rivers, including those within urban areas.' DfT - LTP and RoWIP integration guidance note - http://naturalengland.etraderstores.com/NaturalEnglandShop/product.aspx?ProductID=a9f67df9-f61d-40ae-9ed7-457b60b89394 In this integration note it says "Natural England, the Department for Transport and the Department for Environment, Food and Rural Affairs want to achieve a national transport framework that will improve all kinds of access to meet the needs of everyday lives – to increase walking and cycling opportunities [and horse-riding], a more interesting and connected access network. We want to ensure that travel to work and services in our towns and cities and to the wealth of wildlife and landscapes in our countryside are easier to experience and enjoy. Linking rights of way improvement plans to local transport plans has an important role to play in today's society as we set out on the path to a greener, healthier, low carbon society where the wonders of the natural environment can be brought into everybody's life. This good practice note gives advice on how to achieve these outcomes and make efficient use of funding through joined up working. Regional There are specific South East Plan policies relating to access, countryside and green space which are important in relation t the LTP and SEA: Rural urban fringe (SE Plan policy C5), countryside access and public rights of way management (C6), as well as green infrastructure (CC8) and management for an urban renaissance (BE1) - all of	It is not feasible or appropriate to review all policies and plans available. The review focuses on a number of the key policies that lead to certain environmental protection objectives. The assessment process has considered the likelihood of habitat fragmentation and links to open space and green infrastructure.

	these are relevant to the SEA and should be included Local Oxfordshire Rights of Way Improvement Plan – including the full assessment of need. This document was adopted by Oxfordshire County Council in February 2001 and sets out the ambitions of the authority for improving access and public rights of way. www.oxfordshire.gov.uk/rowip LTP2 - this includes references to the value of walking, cycling and horse-riding. Interim Oxfordshire County Council walking and cycling policy statements (2009). These contain key policy statements and background information that is directly relevant to the LTP and SEA.	
3.4	Cherwell Environmental Strategy for a Changing Climate, 2002	The Environmental Report takes account of greenhouse gas emissions and climate change adaptation.
3.5	The overall reduction of car usage and the promotion of alternative methods of mass transit.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
3.6	SODC core strategy 2009 has a major section on transport. Please consider revising the SEA after the outcome of the Copenhagen climate summit in December 2009.	No significant changes to the policy context took place in light of the Copenhagen Summit.
3.7	Local Oxfordshire Rights of Way Improvement Plan	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
3.8	Ramsar wetlands	There are no Ramsar sites within Oxfordshire and therefore the Ramsar Convention does not need further specific detail within the Environmental Report. However, the SEA does include proposed objectives for protection of habitats and species.

Q4: How can the LTP seek to reverse the increasing trend in carbon dioxide emissions from transport whilst ensuring sufficient transport provision for a growing population in the county?

Ref.	Response	Proposed Action
4.1	Transport is an almost insignificant contributor to CO_2 emissions - even though those emissions are rising.	Evidence suggests that transport in the UK contributes approximately 25% of the UK's measured CO_2 emissions. The Environmental Report uses available evidence to assess emissions attributable to the transport sector.
4.2	1 The County Council can connect its spatial and transport planning systems to a greater extent, and recognise that spatial planning decisions can enormously reduce the population's need for journeys on the present scale of length and frequency. Employment, residential and retail provision can be organised so that low-CO_2 emitting travel (i.e. walking, cycling and public transport) can become far more attractive options. 2 Wherever possible, ownership and use of	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.

	single-occupant vehicles should be severely disincentivised. 3 High quality cycle and pedestrian routes should be widespread, and prioritised over motor traffic. 4 Public transport should be improved enormously, probably with light rail/tram services within the urban areas. 5 Rail and bus services need to be integrated, in both time and spatial dimensions. 6 All fixed-wing or helicopter traffic over the County should be severely curtailed	
4.3	Decisions on the grouping of facilities around centres of population will tend to decrease longer journeys to the next tier e.g. Adderbury is first, Banbury is second and Oxford highest but Oxford is almost more accessible than Banbury by public transport. Banbury needs up-grading. Fewer people should need to travel to Oxford if the facilities, shops, and work were to be available in Banbury.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
4.4	OCC should offer more positive support to the Transition Towns initiative. OCC and the District Councils should promote the use of more fuel efficient cars through its staff vehicle fleet and subsidise staff travel to work by public transport	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
4.5	Provide a greater number of and higher quality cycle and footpaths (appropriate width, well maintained, more connected, separated from vehicles, appropriate lighting levels, accessible for all).	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
4.6	It is necessary to give preference to cyclists and pedestrians in all relevant towns and cities. Cyclists are taken for granted in Oxford city and the provision of cycle racks/storage and other facilities is appalling given the number of cyclists that are already using this method of transportation. Public transportation, such as city and county buses, must all be equipped by cycle racks on their fronts allowing for cyclists to come to cities/town elsewhere and then cycle locally when they arrive. This can be done cost effectively by simply retrofitting existing buses with pull down cycle racks in the front of the buses, as is done elsewhere in the world! Similarly, a public transportation system must be in operation that requires operators to use the most environmentally friendly means of transport. Poor investment decisions by operators (i.e. Stagecoach) in buying less than the best in recent years, because they expected country regulations would not get tighter, is no excuse (as evidenced by Oxford Bus Company). The bus companies themselves should be reduced to one. There is no reason to have two bus companies that run the exact same routes at the exact same time. A single bus company needs to operate where a ticket can be time bound, allowing for transfers, rather than bus bound. If I	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.

	would like to get to work by bus I have to take two buses, even though I live 2.6 miles from my office. One bus for 3 minutes and one bus for 10 minutes. At the moment this means I must get a day pass, but this is a major demotivating factor in utilising transport. Additionally, an Oyster style system should be implemented in the city allowing for journey based fees, rather than day pass only fees.	
4.7	Radical change is required. Climate change will not be reversed if CO_2 emissions are allowed to increase. It is vital that extensive public transport networks with frequent and reliable services are developed. Safe provision for cycling and walking are required, prioritising the needs of cyclists and pedestrians over car-users, and developing routes to enable them to get to public transport hubs and places of employment and leisure. In towns, pedestrian-biased road arrangements should be provided: areas of pedestrianisation, home-zones and 20 mph limits. Car use must be reduced; this will resolve more than CO_2 emissions: congestion, noise pollution, air pollution, safety on the roads, etc, etc. Furthermore, polluting cars should be stopped and electric alternatives used. Buses and lorries should be required to be non-polluting. Freight should be carried by canal and train. There should be no building of new roads - these must be unnecessary if car numbers are to g o down. Similarly, a massive house-building programme should not be embarked upon in this over-populated county.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
4.8	Promote and support the management, improvement and extension of the public rights of way and countryside access network (including quiet roads and unclassified roads) for walkers and riders (including cyclists and equestrians) so that people have more choice in their day to day utility and social journeys as well as journeys for recreation. This is especially important in the urban fringe and between rural settlements.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
4.9	Include a target and finance to promote and support the management, improvement and extension of the public rights of way and countryside access network (including quiet roads and unclassified roads) for walkers, cyclists and horse-riders. This will give people - residents and visitors, more choice in their day to day utility and social journeys as well as journeys for recreation. This is especially important in the urban fringe and between rural settlements.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
4.10	The LTP should encourage the use of low carbon emission vehicles and transport modes	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.

4.11	More public transport with economic pricing that ensures use. A bus ride should not cost more than a car ride! The promotion of hybrid transport fuels and tax incentives for use.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement..
Q5: What are the priority areas where noise from transport should be addressed in the new LTP?		
Ref.	**Response**	**Action taken**
5.1	Buses, trains and HGVs - the most significant causes of transport noise	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
5.2	Wherever traffic noise interferes with residents' enjoyment of their homes, or interferes with residents' and visitors' experiences of public places of heritage or amenity value, or interferes with students or workers in pursuit of their lawful activity.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
5.3	Second tier A roads like A4260 take too much traffic at peak times and when the M40, A43 or other trunk roads have an incident causing diversions. The network of strategic roads is needing a rethink.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
5.4	Identify further areas of "quiet lanes" in the countryside and eliminate rat runs	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
5.6	Countryside; the city cannot really be addressed except by adjusting building standards to require certain levels of insulation. However, I am not supportive of this in and of itself because when it is hot it may be a demotivator in opening windows to cool offices/residences rather than turning on the air con.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
5.7	In towns, pedestrian-biased road arrangements should be provided: areas of pedestrianisation, home-zones and 20 mph limits. Car use must be reduced in towns. Electric cars should replace petrol and diesel cars. Road surfaces should be improved when they require re-surfacing. Freight should be carried by canal and train. There should be no building of new roads - it is well-known that extra road provision increases traffic.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
5.8	The new LTP should focus on noise from road, rail and air traffic prioritising the existing transport	This comment should be taken into account in

	corridors and airfields	the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
5.9	Better road surface, tighter restrictions on car, bus and truck engine noise. Tax fuel price reductions for fuel efficient and noise efficient transport. The removal of humps and other ineffective traffic calming. Lowering of speed limits in town centres to 20/30 instead of 30/40	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
5.10	Three responses of “no comment”.	No action
Q6: How should the LTP balance objectives to protect and enhance Oxfordshire’s biodiversity and habitats with the need to ensure transport requirements for the county are met?		
Ref.	**Response**	**Proposed Action**
6.1	To satisfy imperatives around sustainability, bio-diversity and bio-mass rich habitats should take precedence over short-term economic goals. Provision of transport is as much curtailed by overall ecological issues as any other contemporary human activity.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
6.2	Encouraging people to use public transport more and use of more creative projects in the type of public transport available e.g. light railway / trams in some urban areas such as Kidlington - Oxford - Abingdon or Banbury to selected villages Deddington and north into Warwickshire.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
6.3	The level of legal protection afforded to designated sites, and protected/ notable species and habitats in Oxfordshire is hierarchical as follows: (1) European Sites (Special Areas of Conservation), European Protected Species (under the Habs Regs) (2) UK Sites (Sites of Special Scientific Interest, National Nature Reserves, Ancient Woodland Inventory) Wildlife & Countryside Act protected species (3) Local Sites (Local Wildlife Sites, Local Nature Reserves, Roadverge Nature Reserves, Woodland Trust Sites, BBOWT Reserves, RSPB Reserves) UK BAP priority habitat and species. This hierarchy of protection (and importance) should be used when considering the balance of LTP objectives against biodiversity. All of the above sites, habitats and species should be considered within the context of the LTP. Areas of opportunity to focus biodiversity and landscape restoration and management of habitats have been identified (Conservation Target Areas). Whether LTP objectives can help me set the targets of nearby CTAs should also be considered as a way to deliver a positive impact. More information on this is available in the soon to be published "Biodiversity Guidance" document for Oxfordshire, produced by Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT), Thames Valley Environmental Records Centre (TVERC) and Oxfordshire County Council.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
	Do not give planning permission to any development that would require transport links through	This comment should be taken into account in

	environmentally sensitive areas 2) If transport links are unavoidable then these links should be signed and controlled appropriately	the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
	Do not build new roads. Make provision for non-motorised, and public, transport. Give priority to public transport on the existing road network. Do not build more houses in this county.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
	The South East Plan policy text for Green Infrastructure (CC8) includes a recreation and access component in addition to habitat and biodiversity. This demonstrates that it is possible to co-locate walking and riding access with biodiversity. The text in the PPP review should reflect this actual wording – "Local authorities and partners should work together to plan, provide and manage connected and substantial networks of accessible multi-functional green space. Networks should be planned to include both existing and new green infrastructure. They should be managed with the primary aim of maintaining and improving biodiversity, but should also deliver recreational and cultural benefits and ensure that an improved and healthy environment is available for the benefit of present and future communities."	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
	The South East Plan policy text for Green Infrastructure (CC8) includes a recreation and access component. This and the national and regional guidance for GI, plus our access work on the ground in Oxfordshire, demonstrates that it is possible to co-locate walking, cycling and equestrian access provision with biodiversity. The text in the PPP review should reflect this actual wording: "Local authorities and partners should work together to plan, provide and manage connected and substantial networks of accessible multi-functional green space. Networks should be planned to include both existing and new green infrastructure. They should be managed with the primary aim of maintaining and improving biodiversity, but should also deliver recreational and cultural benefits and ensure that an improved and healthy environment is available for the benefit of present and future communities".	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
	The LTP should seek to avoid proposals that have a detrimental impact on important sites in terms of habitats, biodiversity and species	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
	Greater use of public transport	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
	Two responses of "no comment"	No action.

Q7: How should the LTP address the transport needs of a growing ageing population?		
Ref.	**Response**	**Proposed Action**
7.1	An ageing population needs both a good provision of flexible, private transport and easy to use, regular public transport. They also need affordable car parking charges.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
7.2	This question is the wrong way round: the growing population of Oxfordshire would partly be a consequence of more transport facilities. Similarly, residential provision and policies to attract new economic activities encourage population growth in the area, rather than being merely responses to population growth. I suspect an ageing population requires better quality of public transport provision to medical, leisure and retail locations.	The population growth referred to in the scoping report relates to the policy to include Oxfordshire as a growth area and as such is an intervention to promote growth rather than organic growth from other factors such as transport links.
7.3	Retain and expand the free transport option available to people over 65 years	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
7.4	Continue to provide free public transport for pensioners and consult with relevant organisations that can provide further input into the needs of this population.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
7.5	Provide free public transport. Take a more flexible approach to public transport in rural areas, responsive to the needs of the local community. For example, taxi-buses or minibuses on call-up should be made available from central funds, not by volunteer activity.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
7.6	Promote and support the management, improvement and extension of the public rights of way and countryside access network (including quiet roads and unclassified roads) for walkers and riders (cyclists and equestrians) so that people have more choice in their day to day utility and social journeys as well as journeys for recreation. This is especially important in the urban fringe and between rural settlements. For an ageing population this means making the public rights of way and countryside access network easier and safer to use. For example by appropriate surfacing and furniture works (like replacing stiles with gates) and by improving the connectivity of these resources and making sure people can access them directly from where they live - and that they are better maintained.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
7.7	Include a target and finance to promote and support the management, improvement and extension of the public rights of way and countryside access network (including quiet roads and	This comment should be taken into account in the LTP3. If it is considered not feasible or not

	unclassified roads) for walkers, cyclists and horse-riders. This will give people - residents and visitors, more choice in their day to day utility and social journeys as well as journeys for recreation. For an ageing population this means making them easier and safer to use, ideally directly from and near to where they live so avoiding the need to use cars. The routes themselves need better maintenance so that they do not fall out of repair and are felt to be safe and pleasant to use, combined with access improvements such as replacing stiles with gates and appropriate surface treatments. The network could be better connected too, for example by providing road verge linking routes and new links across country that avoid busy roads and join up people to local facilities or their local greenspaces and countryside.	relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
7.8	The LTP should identify the transport issues affecting the elderly and in particular the provision of public transport and accessible modes of transport for the older population	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
7.9	Specialised and low cost bus and train services	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
7.10	Two responses of “no comment”	No action.
Q8. How do you think transport can contribute to improving human health?		
Ref.	**Response**	**Proposed Action**
8.1	Encouraging cycling and walking as key parts of a "transport toolbox" approach	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.2	Where 'transport' includes modes of travelling such as walking and cycling, health benefits are well-known. Additionally, 'transport' can be prevented from disrupting local communities, and destroying opportunities for healthy human social interaction.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.3	Transport to remoter places for walking and recreation or increased publically funded communications will decrease private car usage. School sponsored holiday time travel using buses owned and run on behalf of the LA.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.4	Through more vigorous promotion of cycling and walking and support for the Transition Towns	This comment should be taken into account in

	initiative	the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.5	There has been a wealth of research recently which demonstrates that access to the countryside and green space is beneficial to human health. The LTP can help this by ensuring there is access for all to green space. This should include ensuring transport networks contain green/blue infrastructure (e.g. trees, hedgerows, wildflower verges, canals, rivers, streams, swales) as well as ensuring there are good transport links to the wider countryside. The LTP should aim to ensure that Oxfordshire residents can access green space as set out by Natural England's "Standards for Accessible Natural Greenspace".	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.6	Incorporate different forms of transport that encourage human mobility (i.e. adding cycle racks to buses, cycle hire schemes in town, pedestrianisation of certain areas, etc.)	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.7	Provision of safe cycle and walking routes linking residential areas to public transport hubs, retail areas, businesses, leisure areas and the countryside. By reducing car travel and use to increase air quality.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.8	Promote and support the management, improvement and extension of the public rights of way and countryside access network (including quiet roads and unclassified roads) for walkers and riders (including cyclists and equestrians) so that people have more choice in their day to day utility and social journeys as well as journeys for recreation. This is especially important when we are looking at the walking and riding connections from settlements into the wider countryside so that people can access the countryside and greenspaces without using cars.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.9	By including a target and finance to promote and support the management, improvement and extension of the public rights of way and countryside access network (including quiet roads and unclassified roads) for walkers, cyclists and horse-riders so that people have more choice in their day to day utility and social journeys as well as journeys for recreation. This is especially important when we are looking at the walking and riding connections from settlements into the wider countryside so that people can easily access the countryside and greenspaces without using cars.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
8.10	Sustainable modes of transport such as walking and cycling can contribute to a more healthy lifestyle and reduce obesity. Reducing the need to travel by the private car can also contribute. The LTP should show how improving walking and cycling conditions can have a positive effect on human health	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.

8.11	By providing incentives such as more cycle ways and improved footpaths to promote walking and cycling.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
Q9. How should the LTP ensure that negative impacts to soils are avoided when developing new infrastructure?		
Ref.	**Response**	**Proposed Action**
9.1	Avoid building rural developments.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
9.2	There should be a presumption that any destruction or degradation of soil grades is harmful, and where it is considered the harm must be mitigated or compensated for, within the County.	The proposed SEA objective 9 relates to protection of soil This objective could be re-worded to more explicitly protect soils.
9.3	Make sure that waste dumping sites are plentiful, properly sited and well managed	It is likely that this issue is outside the scope of the LTP3. However the LTP3 could give consideration to any significant access issues if these are present.
9.4	Natural England are best placed to comment on this	No action.
9.5	Restrict infrastructure development to railways, cycle paths and dedicated bus routes only. House-building should be avoided, especially in greenfield sites.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
9.6	When planning and implanting access schemes for walkers and riders (cyclists and equestrians), the authority should work closely with landowners and local stakeholders to ensure that the needs of agriculture and the health of the soil are not compromised. This includes choice of route, drainage and surface treatments.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
9.7	When planning and implanting access schemes for walkers and riders, the Countryside Service already works closely with landowners and local stakeholders to ensure that the needs of agriculture and the health of the soil are not compromised as well as making sure existing users are not prejudiced and the character of the area and landscape is not affected. This includes choice of route, drainage and surface treatments. This approach needs to be used for all works in the countryside -whether National Cycle Network schemes or surfacing paths for cyclists and other users.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
9.8	LTP proposals should consider the quality of the soil to avoid negative impacts when developing	This comment should be taken into account in

	new infrastructure	the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
9.9	Greater use of eco friendly building technology, less run off and better flood control. Full and meaningful eco audits on new build.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
9.10	Two responses of “no comment”.	**No action.**
Q10: What steps should the LTP take to reduce water pollution from transport sources and to address increased flood risk?		
Ref.	**Response**	**Proposed Action**
10.1	Build fewer rural developments - concentrating on town brownfield sites	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
10.2	Pollution of water by transport should be considered unacceptable and made expensive for the source of pollution. Steps should be taken to reduce existing pollution, and to manage any identified risks of worse pollution.	The Scoping Report proposes the sub-objective “To avoid transport related pollution of water in line with the measures to protect water resources set out in the Water Framework Directive”. No additional action is required.
10.3	Store water underground even more than at present	The scoping report proposes objective 8 which is concerned with maintaining flood storage capacity. Specific actions for water management are outside of the remit of the LTP3.
10.4	SUDS	Objective 8 includes the sub-objective to promote SuDS. No further action is required for the Environmental Report.
10.5	The Environment Agency are best placed to comment on this.	No action.
10.6	Ensure that alternative routes are developed for flood scenarios. The Council should have a central number for citizens to call to get information about closures and changes. In February 2009 there was no way to receive information from the bus companies about closures or changes of service and people had to just chance it to see if any routes were running. No comments on water pollution.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
10.7	Do not build more roads, or houses; particularly in flood-plains.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the

		comment into account should be outlined in the SEA Statement.
10.8	The LTP should include measures to protect water sources and reduce pollution from transport sources through for example the use of sustainable urban drainage systems.	This comment is addressed through proposed SEA objectives 7 and 8. No further action required.
10.9	Two responses of “no comment”	No action.
Q11: How should the LTP seek to reduce the transport sector’s contribution to the use of material resources and generation of waste?		
Ref.	**Response**	**Proposed Action**
11.1	This is - in my view - outside the scope of the LTP	No action.
11.2	This section of the SEA seems very confusing - concerned more with overall consumption, waste and recycling issues than the waste generation of the transport sector. How the LTP might enable lower consumption of resources, and higher overall recycling rates, might be a more useful question. The direct answer to this question would be about replacement of short-life, under-utilised machines (usually private cars) with durable, efficiently utilised devices, wherever walking cannot suffice.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
11.3	Only buy vehicles than can be maintained easily, locally sourced and with a long projected lifetime of use	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
11.4	Eliminate Stagecoach as a primary operator; they provide a worse service and have lower quality buses on the road. This would reduce congestion, as only one bus company would need to run buses down a single route, and reduce excess petrol and machine waste.	Individual views of the performance of individual transport operators are not directly relevant to the SEA or the LTP3. However, the SEA could propose the use of customer satisfaction surveys to monitor performance on some SEA objectives for example proposed objectives 3 and 6.
11.5	Radical change is required. Climate change will not be reversed if CO_2 emissions are allowed to increase. It is vital that extensive public transport networks with frequent and reliable services are developed. Safe provision for cycling and walking are required, prioritising the needs of cyclists and pedestrians over car-users, and developing routes to enable them to get to public transport hubs and places of employment and leisure. In towns, pedestrian-biased road arrangements should be provided: areas of pedestrianisation, home-zones and 20 mph limits. Car use must be reduced; this will resolve more than CO_2 emissions: congestion, noise pollution, air pollution, safety on the roads, etc, etc. Furthermore, polluting cars should be stopped and electric alternatives used. Buses and lorries should be required to be non-polluting. Freight should be carried by canal and train. There should be no building of new roads - these must be unnecessary if car numbers are to go down. Similarly, a massive house-building programme should not be embarked upon in this over-populated county.	These comments should be taken into account in the LTP3. If any are considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the Environmental Statement.

11.6	The LTP should include policies to reduce the transport sector's contribution to the use of material resources including more sustainable construction methods for infrastructure and more efficient vehicles.	Proposed SEA objective 9 covers these issues in its sub-objectives. No further action required.
11.7	More use of rail road interchange schemes to reduce heavy transport on the roads and reduce the need for road widening.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
11.8	Four responses of “no comment”.	No action.
Q12: How should the LTP balance addressing access to sites of historic interest with the need to protect and preserve cultural heritage?		
Ref.	**Response**	**Proposed Action**
12.1	Local authorities need to stop using insensitive, inappropriate, urbanised traffic calming in rural and historic areas.	This comment may require further clarification from the respondent. However, the sensitivity of traffic calming should be taken into account in the LTP3.
12.2	Providing access to heritage or other valuable sites in a manner that destroys or reduces them is clearly a short-sighted practice. Unless we are planning on consuming to the point of eradication, precedence clearly goes to enhancement of valuable sites.	This comment highlights the potential conflict between promoting access to historic sites for recreation or education and protecting sites from degradation. Policy advice from English Heritage may assist in establishing clear SEA objectives.
12.3	Keep village centres free of private transport.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
12.4	The Archaeology team should be best placed to answer this question.	No action.
12.5	Impose a charge on all private vehicles entering the area, but allow public transport links to enter and drop off visitors with no additional surcharge (i.e. make it cheaper for people to take public transport than to drive to visit these areas).	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
12.6	Provide public transport and safe cycling and walking routes to areas of historic interest. Devise 'tours' of such sites by bicycle and foot. Pedestrianise the centres of historic market towns such as Wallingford.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
12.7	The LTP should encourage access to sites of historic interest by sustainable modes of transport whilst protecting and preserving the cultural heritage	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the

		comment into account should be outlined in the SEA Statement.
12.8	Organised use of park and ride lower prices for visitors using bus and or rail access	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
12.9	Three responses of “no comment”.	No action.
Q13: How should the LTP seek to ensure that the transport infrastructure and traffic does not detract from the quality of the County’s landscapes?		
Ref.	**Response**	**Proposed Action**
13.1	Again, consider traffic calming measures that have sensitivity to the rural environment.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
13.2	By making it a clear design criterion for any development that it enhances the landscape it is located within.	This comment is supported by SEA objective 14.
13.3	The Oxfordshire Wildlife and Landscape Study as well as various District Council landscape character assessments should be used as baseline data for assessing the potential impact of transport infrastructure on landscape.	The character assessments can be used as a monitoring tool. This will be clarified in the SEA Statement.
13.4	Do not grant planning permission in areas that would require transport infrastructure that would be in sensitive areas.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
13.5	No new roads. Avoid light pollution by stopping night-lighting of major roads and by switching off street lamps, for example, residential streets could have lights turned off between midnight and 6.00am.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
13.6	Ensuring that they link in with the Cotswolds, Chilterns and North Wessex Downs AONB plans and policy/position statements	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
13.7	Ensuring that it and links in with the Cotswolds, Chilterns and North Wessex Downs AONB plans and policy/position statements. When planning and implanting access schemes for walkers and riders, the Countryside Service already works closely with landowners and	These comments should be taken into account in the LTP3. If any are considered not feasible or not relevant to the scope of the LTP reasons for not

	local stakeholders to ensure that the needs of existing users are not prejudiced and the character of the area and landscape is not affected. This includes choice of route, drainage and surface treatments. This approach needs to be used for all works in the countryside - whether National Cycle Network schemes or surfacing paths for cyclists and other users.	taking the comment into account should be outlined in the Environmental Statement.
13.8	The LTP should seek to ensure that the impact of transport infrastructure and traffic minimises its impact on the quality of the County's landscapes	This comment is supported by SEA objectives 14 and 15.
13.9	Better use of landscaping and tree planting and careful use of architecture and design of roads and bridges.	This comment is partially supported by SEA objective 15.
Q14. Are there any key environmental problems, issues or opportunities that are not covered by the SEA objectives listed on pages 58-61?		
Ref.	**Response**	**Proposed Action**
14.1	In figure 9 Preliminary view of key environmental problems, issues and opportunities, there should be an indication that the LTP will enhance biodiversity and landscape rather than simply protect what already exists. This would be in line with SE plan policies NRM5, C3, C4 and PPS9.	The SEA objective for biodiversity has been re-worded.
14.2	Objective 2: provide better public transport as an alternative to building new roads. No housing development on greenfield sites. Objective 3: provide facilities for safe non-motorised travel rather than just 'promoting it. Include promotion of cycling and walking as important areas of health promotion. Objective 5: prioritise pedestrians and reduce speed limits to enhance environment. Provide facilities for cyclists and walkers. Objective 8: no new developments of houses or roads especially in flood plains. Objective 12: increased public transport availability to reduce car use. Objective 15: pedestrianisation of town centres and other living spaces as part of this objective, including home zones.	Consideration has been given to the wording of proposed objectives in light of this comment. Where re-wording is considered appropriate (taking into account existing environmental policy) amendments have been made.
14.3	The population, human health and cultural heritage environmental issues do not seem to include anything about access to the greenspace, countryside and public rights of way for transport, recreation, leisure – and the associated social, health and environmental benefits associated with them. Although this is included in the SEA Objective tables, there are no links to this or development of evidence in preceding sections.	Access to green space has been considered in the assessment process.
14.4	The population, human health issues do not seem to include anything about access to the greenspace, countryside and public rights of way for transport, recreation, leisure – and the associated social, health and environmental benefits associated with them. Although this is included in the SEA Objective tables of Biodiversity, flora and fauna (and this is welcomed and supported), there seem to be no other linkage or evidence base in the scoping document. We are able to contribute to this evidence gathering if needed.	As above.
14.5	Two responses of “no” and three of “no comment”.	No action.
Q15. Could any of the proposed SEA objectives be removed without causing any significant issues to be overlooked?		
	Response	**Proposed Action**
15.1	Yes - remove the CO_2 reduction objectives	Removal of this proposed objective would be against current government transport policy and is therefore

		not recommended.
15.2	No, all of the SEA objectives under the "Biodiversity, Fauna and Flora" and "Cultural heritage and landscape" headings should remain	No action
15.3	No-all are important, especially LTP3 SEA Objective 2 (Green Infrastructure) and 3 (physical and mental wellbeing and safety)	No action
15.4	Four responses of “no” and one of “no comment”.	No action
Q16. Are there any other potential conflicts between the proposed SEA objectives that have not been identified in the compatibility assessment? If so, how can these be addressed?		
Ref.	**Response**	**Proposed Action**
16.1	Objective 13 to adapt to climate change and objective 1 to protect and enhance habitats and species are compatible (rather than having no relationship).	Comment noted.
16.2	Providing new access as well as improving biodiversity in the same location can possibly have some negative impacts. However biodiversity can live alongside rights of way very well in the right circumstances. The Countryside Service has demonstrated that this can work in our access schemes. Early discussions and good planning and implementation are the way to minimise negative impacts and we are happy to work with others closely.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
16.3	Four responses of “no” and two of “no comment”	No action.
Q17. What are the key cross-boundary issues for transport in Oxfordshire?		
Ref.	**Response**	**Proposed Action**
17.1	People now need to commute further to find work - they need ease of cross-boundary transport links to facilitate this. This means not restricting them with road user charging or workplace parking taxes	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
17.2	At the fringes cooperation needs to be cross border	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
17.3	The potential impact of air pollution on European sites in other counties should be considered.	Screening for Habitats Regulation Assessment is being undertaken and should take this issue into account.
17.4	These have been identified; local pollution and climate change.	No action.
17.5	There are far more issues than air quality. Transport should be dealt with on a national scale to provide compatibility of real-time info for buses; through-ticketing into different counties; and strategic movement of trains and buses to major centres. Aeroplane use could be reduced by improving the rail network.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.

17.6	There is a significant impact on Oxfordshire Transport, countryside and recreation from the Swindon EDA. In addition tourism is a cross boundary issue that needs to be factored in. This includes people travelling to Oxfordshire by vehicle as well as those using cross-boundary long distance trails like the Ridgeway and Thames Path National Trails, the Oxfordshire Way, and the Macmillan Way.	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the Environmental Statement.
17.7	Air pollution and CO_2 emissions Major developments in neighbouring areas and the transportation of construction materials and freight	The Environmental Report has considered these cross-boundary effects where information is available.
17.8	Control of expanding motorway usage	This comment should be taken into account in the LTP3. If it is considered not feasible or not relevant to the scope of the LTP reasons for not taking the comment into account should be outlined in the SEA Statement.
Q18. Is the proposed structure of the Environmental Report for the SEA of the LTP3 appropriate or should anything be added or removed?		
Ref.	**Response**	**Proposed Action**
18.1	The structure is fine but should include the additional information on biodiversity and landscape highlighted earlier in this questionnaire.	The level of information in the Environmental Report is considered appropriate for SEA. Further investigations for specific sites are recommended when developing transport proposals further.
18.2	It is appropriate.	No action.
18.3	At this stage it is fine	No action.
18.4	Two responses of “yes”, one of “don’t understand”.	No action.

Appendix C: Compatibility Assessment

Key to Compatibility Assessment Matrix

C	Objectives are compatible
?	Uncertainty over compatibility. Potential issues of incompatibility have been identified which could be resolved with appropriate planning and mitigation
X	Objectives are incompatible
-	No significant relationship between objectives has been identified.

Compatibility Assessment Matrix Between SEA and LTP3 Objectives

LTP3 Objectives \ SEA Objectives	1. Protect and enhance habitats and species	2. Enhance and protect green infrastructure ss	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. Optimise use of brownfield sites	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
1. Improve condition of roads/foot & cycle ways	?	C	C	C	C	C	C	C	?	C	C	C	C	?	C	?
2. Reduce congestion	?	C	C	C	C	C	-	?	?	-	C	?	?	?	C	?
3. Reduce casualties and dangers of travel	?	C	C	-	-	C	-	-	?	-	?	-	C	?	?	?
4. Improve accessibility to services	?	C	C	?	C	C	-	?	?	C	?	?	C	?	?	?
5. Secure infrastructure to support development	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
6. Reduce carbon emissions from transport	C	C	C	C	C	?	C	C	C	C	C	C	C	C	C	C
7. Improve air quality & street environment	C	C	C	C	C	C	C	C	?	C	C	C	-	?	C	C
8. Develop & increase quality of public transport	C	?	C	C	C	C	-	?	?	-	C	C	C	?	C	C
9. Develop & increase cycling and walking for local journeys & health	?	C	C	C	C	C	-	-	-	C	C	C	C	C	C	C

Potential Incompatibility and Recommendations

LTP 3 Objective	Potential Area/s of conflict	Recommendation/s
1. Improve the condition of local roads, footways and cycleways, including resilience to climate change	Potential conflicts have been identified with SEA objectives 1, 9, 14and 16. The main concern is whether delivery of the LTP3 objective will require major improvement of infrastructure which could increase footprint of development on habitats, landscape and soils and also require significant mineral use. Road improvements can result in a loss of cultural character, for example through the removal of traditional stone walls and through the introduction of new signage.	The LTP3 should seek to improve existing infrastructure within the current footprint of development wherever possible to avoid encroachment on undeveloped land and to make most prudent use of existing resources. Where major improvement works are required these should be subject to detailed site investigations and EIA to minimise impacts where possible.
2. Reduce congestion	Potential conflicts have been identified with SEA objectives 1, 8, 9, 12,13, 14 and 16. The main concern is that development of new roads could be promoted to relieve existing areas of congestion. This could put pressure on currently undeveloped land including habitats, floodplains, farmland and impact upon the wider landscape.	Oxfordshire CC should prioritise alternatives to new roads when seeking measures to reduce congestion. For example through encouraging modal shift from private car use to more efficient urban transport options.
3. Reduce casualties and the dangers associated with travel	Potential conflicts have been identified with SEA objectives 1, 9, 11, 14, 15 and 16. The main concerns are that significant road improvements could impact upon habitats (especially hedgerows and verges) and encroach upon soils, and that safety interventions such as additional signage and new road layouts could be located in sensitive locations that detract from the quality of the built environment.	Oxfordshire CC should take account of locations where safety improvements are required that also coincide with sensitive locations such as areas with historic settings and seek to find solutions that are appropriate for the setting.
4. Improve accessibility to work, education and services	Potential conflicts have been identified with SEA objectives 1, 4, 7, 8, 9, 11, 12, 14, 15 and 16. The main concern is that significant new infrastructure would be required such as new transport routes or parking areas that would encroach on undeveloped land and involve significant consumption of resources.	Oxfordshire CC should prioritise interventions that improve accessibility whilst minimising the need for additional new development on undeveloped locations. Improvements to existing public transport services should be promoted to make better use of infrastructure already in place. Opportunities to use existing brownfield locations should be investigated should new infrastructure be required before developing outside of existing

LTP 3 Objective	Potential Area/s of conflict	Recommendation/s
		settlements.
5. Secure infrastructure and services to support development	This LTP3 objective could potentially conflict with all SEA objectives. If it is necessary to secure new infrastructure, the environment is likely to be impacted in a variety ways. This could include effects associated with new land take (impacting upon habitats, soils, minerals, landscape and archaeological remains); as well as effects associated with growth in traffic arising from development (noise, air emissions, community severance and congestion).	Oxfordshire CC should take into account the principles of sustainable development and current spatial planning policy in seeking to make the best use of current infrastructure and to make prudent use of natural resources. The need to provide for development should be balanced against the need to maintain the value of the environment, including the services provided by healthy ecosystems. Significant new infrastructure, where required, should be subject to detailed site investigations to ensure the most sustainable options are promoted and adverse environmental effects are mitigated wherever possible.
6. Reduce carbon emissions from transport	Potential conflicts have been identified with SEA objective 6. This is because there is potential for measures put forward to reduce carbon dioxide emissions from transport may result in reduced accessibility, for example, if certain transport options are withdrawn in order to cut emissions.	Oxfordshire CC should consider measures which are more efficient than current transport options (and therefore generate fewer greenhouse gas emissions) in order to also meet access needs for people in Oxfordshire.
7. Improve air quality, reduce other environmental impacts and enhance the street environment	Potential conflicts have been identified with SEA objectives 9 and 14. The main concern here is that the construction of new roads (bypasses) will be promoted to relieve air pollution and adverse transport related effects associated with existing congested routes.	Recommendations are as for LTP3 objective 2.
8. Develop and increase the use of high quality, welcoming public transport	Potential conflicts have been identified with SEA objectives 2, 8, 9 and 14. The main concern here is whether significant new infrastructure will be required, for example major new park & ride facilities, which would put pressure on currently undeveloped land and resources.	Potential opportunities to make better use of existing services and infrastructure should be prioritised. Where new infrastructure is deemed necessary sites should be subject to detailed investigations to ensure development takes place in the most sustainable locations.
9. Develop and increase cycling and walking for local journeys, recreation and health	The only potential area of conflict identified is with SEA objective 1. The concern is that new walking and cycle routes may be constructed that intrude upon existing habitats or result in increased disturbance to species of wildlife.	In seeking to develop and increase walking and cycling facilities Oxfordshire CC should consider how human access can be managed to minimise habitat loss and disturbance. At a strategic level it should be possible to identify and where possible avoid protected sites

LTP 3 Objective	Potential Area/s of conflict	Recommendation/s
		and sensitive habitats. Site specific investigations should then be made to inform specific routes and mitigation requirements.

Appendix D: Assessment Worksheets

- **D1 – Assessment of Policies**
- **D2 – Assessment of Alternatives**
- **D3 – Assessment of Preferred Scenario**

Appendix D1: Policy Assessment

This appendix includes a record of the draft LTP3 policies that have been assessed and the assessment matrix used. The overall findings of the assessment are reported within the Environmental Report.

Assessment criteria

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

Draft Local Transport Plan 3: Policies

General Policies

Policy G1 Oxfordshire County Council will seek to implement this Local Transport Plan as and when funding becomes available, including seeking opportunities for funding from organizations and businesses.

Policy G2 Expenditure on maintaining existing transport assets will have a higher priority than improvements to the network.

Policy G3 Oxfordshire County Council will work to ensure that the transport network can meet the requirements of the county's world class economy, whilst protecting the environment and the amenity of Oxfordshire residents.

Policy G4 Oxfordshire County Council will seek as priorities:

* improvements to the transport network to improve access to Oxford from other towns and regions; and
* transport improvements within the Science Vale UK area (Didcot - Harwell - Wantage/Grove)

Policy G5 Oxfordshire County Council will support sustainable, healthy and inclusive modes of travel.

Policy G6 Oxfordshire County Council will take into account the location, best use of space and the potential need to prioritise particular movements or users when designing schemes.

Policy G7	Oxfordshire County Council will consult from an early stage in the development of schemes and initiatives so that the needs of all groups, including disabled people, are considered and where appropriate acted upon.

Highway Maintenance

(Improve the condition of local roads, footways and cycleways, including resilience to climate change)

Policy HM1	Oxfordshire County Council will use a whole life approach for determining and delivering its highway maintenance programme.
Policy HM2	Oxfordshire County Council will seek to develop a programme of community-led, low-cost highway maintenance schemes.
Policy HM3	Oxfordshire County Council will use best practice in developing sustainable drainage systems for roads and other transport assets.

Congestion Reduction

(Reduce congestion)

Policy CR1	Oxfordshire County Council will manage, and where appropriate improve, its transport network effectively to reduce congestion, and minimise disruption and delays to the travelling public.
Policy CR2	Oxfordshire County Council will work with major traffic generators to promote sustainable travel for journeys to employment, health, shopping and education in order to reduce congestion.
Policy CR3	Oxfordshire County Council will ensure that travel information is timely, accurate and easily accessible in a range of appropriate formats.
Policy CR4	Oxfordshire County Council will manage the parking under its control to reduce congestion.
Policy CR5	Oxfordshire County Council will identify suitable and unsuitable routes for freight movement, balancing the needs of businesses with protection of the local environment and maintaining the highway network.

Road Safety

(Reduce casualties and the dangers associated with travel)

Policy RS1	Oxfordshire County Council will develop a programme of education and engineering measures to reduce the number of road accident casualties, focusing on high risk groups.

Policy RS2	Oxfordshire County Council will seek to reduce the casualty rate of motorcyclists by working closely with interested groups to encourage more responsible motorcycling.

Accessibility

(Improve accessibility to work, education and services)

Policy AX1	Oxfordshire County Council will maintain a separate Bus Services Funding Strategy, and develop and manage the Concessionary Fares Scheme in Oxfordshire.
Policy AX2	Oxfordshire County Council will work with partners and particular sections of the community to identify how access to healthcare, education and employment by public transport can be improved.
Policy AX3	Oxfordshire County Council will encourage the use of taxis and private hire vehicles where they can help to meet local transport and accessibility needs, including those of disabled people.
Policy AX4	Oxfordshire County Council will continue to allow the use of bus lanes by taxis and private hire vehicles.
Policy AX5	Oxfordshire County Council will develop, protect and maintain the county's Public Rights of Way and access to natural areas so that all users are able to understand and enjoy their rights in a responsible way.
Policy AX6	Oxfordshire County Council will encourage the growing and inclusive use of the county's waterways, and support opportunities for freight transport on the waterways network, where appropriate.

Supporting Development

(Secure infrastructure and services to support development)

Policy SD1	Oxfordshire County Council will seek to influence the location and layout of new developments to minimise the need for travel and can be served by high quality public transport, cycling and walking facilities.
Policy SD2	Oxfordshire county Council will oppose any new development where there is insufficient capacity on the transport network available to accommodate its impact and where arrangements for releasing additional capacity have not been agreed with the developer.
Policy SD3	Oxfordshire County Council will promote sustainable travel for all journeys associated with new developments, but particularly those to work and education.
Policy SD4	Oxfordshire County Council will secure contributions from new developments towards improvements for all modes of transport, including public rights of way; will ensure that all infrastructure associated with the developments is provided to appropriate design standards; and will normally seek commuted sums towards the long term operation and maintenance of facilities and services.

Policy SD5	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 best use of existing capacity.

Carbon Reduction

(Reduce carbon emissions from transport)

Policy CBR1	Oxfordshire County Council will work with local communities and employers to promote sustainable travel for journeys to work, education, health and other facilities.
Policy CBR2	Oxfordshire County Council will support the use of low carbon forms of transport and associated infrastructure.
Policy CBR3	Oxfordshire County Council will seek to reduce the carbon footprint of its operation of the transport network.

Reducing Environmental Impacts

(Improve air quality, reduce other environmental impacts and enhance the street environment)

Policy RE1	Oxfordshire County Council will ensure that the operation of the transport network balances the protection of the local environment with efficient and effective access for freight and distribution.
Policy RE2	Oxfordshire County Council will work with partners to improve the public realm and de-clutter the street environment.
Policy RE3	Oxfordshire County Council will take into account the needs of vulnerable users, including people with disabilities, in the design of public realm improvement schemes.

Public Transport

(Develop and increase the use of high quality, welcoming public transport)

Policy PT1 Oxfordshire County Council will define a three-tier hierarchy of services, consisting of:

- *Premium Routes* - operating at "turn up and go" frequencies;
- *Hourly Plus* - operating at frequencies of at least once an hour during weekdays; and
- *Local* - meeting local accessibility needs.

Policy PT2	Oxfordshire County Council will help create the conditions for welcoming, effective and successful commercial bus services by working with operators and other partners to: i. improve the reliability and reduce journey times of bus services, especially on Premium Route services. ii. produce up to date, comprehensive public transport information that is publicly available in a range of appropriate formats; iii. improve ticketing arrangements to make travel easier and reduce boarding times; iv. encourage the use of buses that meet standards for low emissions, particularly those passing through designated Air Quality Management Areas or Low Emission Zones; v. encourage social inclusion by ensuring that services use low floor buses, have drivers that are trained in customer care and disability awareness, and that wheelchair users have access to designated spaces on vehicles.
Policy PT3	Oxfordshire County Council will support the development of appropriate high quality public transport interchanges and infrastructure.
Policy PT4	Oxfordshire County Council will support proposals for strategic enhancement of the existing Oxfordshire rail network, and will work with the rail industry to facilitate these.
Policy PT5	Oxfordshire County Council will work with the rail industry and other partners to deliver new or improved stations, new rail services and greater integration of rail and buses.
Policy PT6	Oxfordshire County Council will support High Speed 2 providing that its local economic benefits outweigh the environmental impact on the county.
Policy PT7	Oxfordshire County Council will support the development of Quality Bus Partnerships and Rail Partnerships, where appropriate.

Encouraging Cycling & Walking

(Develop and increase cycling and walking for local journeys, recreation and health)

Policy CW1	Oxfordshire County Council will seek to improve facilities for cycling and walking, and promote greater levels of responsible use.
Policy CW2	Oxfordshire County Council will work with interested groups and local communities to encourage greater levels of cycling and walking.
Policy CW3	Oxfordshire County Council will take into account the needs of vulnerable users, including people with disabilities, in the design of cycling or pedestrian facilities.

Figure 1: Compatibility Assessment Between SEA and LTP3 Policies

LTP3 Policies \ SEA Objectives	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. Optimise use of brownfield sites	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
Policy G1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Policy G2	-	-	?	?	?	?	?	?	C	-	?	?	?	C	C	C
Policy G3	C	-	C	C	-	C	C	-	C	C	C	C	-	C	C	C
Policy G4	?	?	C	?	C	C	?	?	?	C	?	?	?	?	?	?
Policy G5	-	C	C	C	C	C	C	-	-	-	C	C	C	-	-	-
Policy G6	C	C	C	?	C	C	-	?	C	C	?	?	?	?	?	?
Policy G7	-	-	C	-	-	C	-	-	-	-	-	-	-	-	-	-
Policy HM1	-	-	-	-	-	-	-	-	C	C	-	-	-	-	-	-
Policy HM2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Policy HM3	-	C	-	-	-	-	C	C	-	-	-	-	C	-	-	-
Policy CR1	-	-	C	-	-	C	?	?	?	?	C	?	?	?	?	?

SEA Objectives / LTP3 Policies	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. Optimise use of brownfield sites	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
Policy CR2	-	C	C	C	-	C	-	-	C	-	C	C	C	-	-	-
Policy CR3	-	-	C	-	-	C	-	-	-	-	-	-	-	-	-	-
Policy CR4	-	-	C	-	?	C	-	-	-	-	C	?	-	-	C	-
Policy CR5	?	-	C	C	?	C	-	-	?	-	?	?	?	C	C	C
Policy RS1	-	-	C	-	-	-	-	-	-	-	?	-	-	?	-	-
Policy RS2	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-
Policy AX1	-	-	C	-	-	C	-	-	-	-	-	-	-	-	-	-
Policy AX2	-	-	C	-	-	C	-	-	-	-	-	-	-	-	-	-
Policy AX3	-	-	C	-	-	C	-	-	-	-	-	-	-	-	-	-
Policy AX4	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-
Policy AX5	C	C	C	-	-	C	-	-	-	-	-	-	-	C	-	-

SEA Objectives / LTP3 Policies	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. Optimise use of brownfield sites	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
Policy AX6	?	?	?	C	-	C	?	-	-	-	C	C	C	-	-	?
Policy SD1	?	C	C	?	-	C	?	?	?	?	C	C	C	C	C	C
Policy SD2	-	-	-	-	-	-	-	-	?	-	C	?	-	-	-	-
Policy SD3	-	-	C	C	-	C	-	-	-	-	C	C	C	?	?	?
Policy SD4	-	C	C	-	-	C	-	-	-	-	C	C	C	-	C	-
Policy SD5	?	-	-	X	-	-	-	-	?	-	X	X	X	?	-	-
Policy CBR1	-	C	C	C	C	C	-	-	C	-	C	C	C	C	C	-
Policy CBR2	-	-	C	-	-	-	-	-	-	-	C	C	C	-	-	-
Policy CBR3	-	-	-	-	-	-	-	-	-	-	C	C	-	-	-	-
Policy RE1	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Policy RE2	-	-	C	-	C	-	-	-	-	-	-	-	-	C	C	?

SEA Objectives / LTP3 Policies	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. Optimise use of brownfield sites	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
Policy RE3	-	-	C	-	-	C	-	-	-	-	-	-	-	-	-	-
Policy PT1	-	-	C	?	C	C	-	-	-	-	?	?	?	-	-	-
Policy PT2	-	-	C	C	C	C	-	-	-	-	C	C	C	-	C	-
Policy PT3	?	C	C	?	C	C	-	-	?	C	?	?	C	C	C	?
Policy PT4	?	?	C	?	?	C	-	-	?	?	?	?	?	?	?	?
Policy PT5	-	-	C	?	?	C	?	?	?	?	C	C	C	?	?	?
Policy PT6	?	?	?	?	?	C	?	?	?	?	C	C	C	?	?	?
Policy PT7	?	?	C	?	?	C	?	?	?	?	C	C	C	?	?	?
Policy CW1	-	C	C	C	C	C	-	-	C	-	C	C	C	C	C	C
Policy CW2	-	C	C	C	C	C	-	-	C	-	C	C	C	C	C	C
Policy CW3	-	-	C	-	-	C	-	-	-	-	-	-	-	-	?	-

Appendix D2: Alternatives Assessment

Detailed Assessment of Alternative LTP3 Scenarios

May 2010

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed
01	00	Draft	25/3/10	J Wade
01	01	Draft	20/4/10	L Jones
02	02	OCC comments (re air quality) addressed	17/5/10	L Jones

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Key

++ Major Positive	The option would be significantly beneficial to the SEA objective by resolving an existing environmental issue and/or maximising opportunities for environmental enhancement.
+ Minor Positive	The option would be partially beneficial to the SEA objective by contributing to resolving an existing environmental issue and/or offering opportunity for some environmental enhancement.
N Neutral	The option would not significantly affect the SEA objective.
? Uncertain	There is insufficient detail available on the option or the baseline situation in order to assess how significantly the SEA objective would be affected by the option.
X Minor Negative	The option would partly undermine the SEA objective by contributing to an environmental problem and/or partially undermine opportunities for environmental enhancement.
XX Major Negative	The option would severely undermine the SA objective by contributing to an environmental problem and/or undermining opportunities for environmental enhancement. This effect is considered to be significant.

- Nature: whether they are anticipated to be:
    - **Positive** (+)
    - **Neutral** (N)
    - **Negative** (-) or
    - **Uncertain** (?)

- Duration: the duration of potential effects are presented in terms of the timescale over which they are anticipated:
    - **Short term** (ST): effects expected up until 2016.
    - **Medium term** (MT): effects expected from 2016 to 2030.
    - **Long term** (LT): effects expected beyond 2030.

- Reversibility:
    - A **reversible** effect is an environmental effect that can be reversed, for example an incident of water pollution can be cleaned up over time.
    - An **irreversible** effect is an environmental effect that cannot be reversed such as the loss of a historic feature or the loss of agricultural soil due to permanent development.
- Spatial Scale:
    - **Local**: effect is restricted to the immediate location of the proposal or to a specific site within one of the four areas – Oxford, Larger Towns, Smaller Towns, Rural Oxfordshire
    - **Regional**: effect is anticipated to cover a significant proportion or all of Oxfordshire.
    - **National:** effect covers the whole of England and/or the UK (also includes international).
- Permanence:
    - A **permanent** effect is one which results from a physical change that is anticipated to last beyond the life of the LTP.
    - A **temporary/intermittent** effect is one which results from an operational change which could change if there is a change of policy, or a short term condition such as a construction phase related impact.

Assessment Approach and Limitations

This assessment has been made mainly by using expert judgement based assessment that is supported by appropriate evidence. For some of the SEA objectives, evidence has been drawn from INTRA-SIM which predicts potential changes on a number of indicators from the scenarios. The INTRA-SIM model considers changes in the medium term (up to 2026). It should be noted that the INTRA-SIM model is still evolving and there is therefore a significant likelihood that this assessment will have to be updated to take account of adaptations made to the model.

Oxford: Promoting Walking & Cycling

Focus on:

- High quality on and off road cycle network across city
- Better facilities for pedestrians in city centre and with new developments
- Restrictions on vehicle emissions
- Promoting better transport choices

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	+	+	+	R	L	T	Improved air quality would 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 limited. Construction of the off-road cycle network could have localised impacts on existing habitats and species, depending upon the location.	The construction of a new cycle network may provide opportunity to include native peripheral tree and shrub planting in the design which would provide improved habitats for birds, invertebrates and small mammals.
2	Green infrastructure	+	++	++	R	L	P	The off-road elements of the new cycle network would form part of Oxford's green infrastructure and therefore be beneficial. The improved pedestrian and cycle facilities would also help to link other elements of green infrastructure such as parks and play spaces.	As above. In line with guidance from Natural England (2009), new transport developments should be planned to integrate green infrastructure into the design.

3	Physical & mental wellbeing and safety	+	+	++	R	L	T	INTRA-SIM predicts that there will be a slight reduction in accidents in the medium term as a result of the slower speed limits. In addition, there are well documented health and wellbeing effects associated with walking and cycling (DfT 2009) and the health benefits associated with more active lifestyles are anticipated to be beneficial in the longer term.	
4	Noise pollution	?	?	?	R	L	T	The INTRA-SIM modelling does not predict a significant change in the number of people affected by noise or by nuisance from vibration. In the short term there is a risk that disruption associated with construction may affect people in certain areas and the longer term implications are difficult to predict.	
5	Vitality of town centres	+	+	?	R	L	T	The INTRA-SIM modelling predicts reduced vehicle delay in the medium term and that the scenario would result in increased accessibility on foot to the city. It is anticipated that the improved pedestrian facilities within the city centre would enhance the public realm. Without knowledge of the future population for Oxford it is difficult to predict the long term effects.	
6	Accessibility	+	+	?	R	L	T	The INTRA-SIM modelling predicts that there would be improvements in access to facilities by walking and cycling with improvements to walking to work being particularly significant. However there would not be a significant change in access through public transport.	Footways would require regular maintenance to ensure optimum use. Maintenance should be particularly targeted in areas of high elderly populations or health facilities where vulnerable users are more likely to be susceptible to trips and falls.

7	Water quality	+	+	+	R	L	T	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.	The integration of SuDS into the design of the new cycle and pedestrian facilities would provide opportunity to enhance the existing drainage network in Oxford and help improve water quality further.
8	Flood risk	N	N	N	-	L		Since the infrastructure associated with this proposed scenario would be restricted to Oxford and that much of the scenario comprises publicity and marketing, no significant effect on flood risk is anticipated.	The integration of SuDS into the design of the new cycle and pedestrian facilities would provide opportunity to enhance the existing drainage network in Oxford and help improve water quality further. The planting of trees and vegetation along new cycle routes would also help to reduce surface run-off rates.
9	Minerals and soils	?	?	?	R	L	P	Any land take associated with this option is unlikely to significantly impact upon any productive soils because it is within the urban area of Oxford. However there may be local benefits should any of the network coincide with previously developed land as a remediation strategy would be required where there is an existing risk of potential contamination. The construction of the new facilities would entail some resource use at a relatively small scale (compared to major schemes and new roads). However, if more local journeys were by foot or cycling as opposed to more damaging road vehicles, the mineral use (aggregate demand) required for maintenance would be reduced.	The design of the cycle and pedestrian network should make the best use of existing assets and previously developed land where possible to make prudent use of natural resources.

10	Land use	?	?	N	R	L	P	This scenario is likely to be beneficial to this objective but it is not possible to be certain without knowledge of the locations for the cycle network development and pedestrian facilities. The impacts are likely to occur in the short term.	
11	Air quality	?	+	?	R	L	T	The INTRA-SIM modelling calculates that there would be improvements in air quality in the medium term as a result of the implementation of this scenario. The modelling does not assess the shorter term and there is uncertainty over the timeframe in which lower emission vehicles would be introduced. It is likely that the trend in cleaner vehicles would continue with continued benefits in the longer term. However, there is uncertainty over the population size and policy scenario beyond 2030 so the overall effects are uncertain in the long term.	
12	Greenhouse gas emissions	?	++	?	R	L	T	The INTRA-SIM modelling predicts a significant beneficial effect on greenhouse gas emissions in the medium term. It is uncertain whether these effects would be realised in the shorter term as it is anticipated it would take time to fully implement the scenario and that construction activities would generate greenhouse gas emissions. The longer term effects are uncertain as they are dependant upon the population dynamics and policy scenario beyond 2030.	

13	Adapting to climate change	N	+	+	R	L	T	The promotion of walking and cycling is likely to be beneficial to this objective through a combination of effects. Firstly, it would contribute to a fitter and healthier population better able to cope with extremes of temperature, for example fatigue during heat waves. The investment in improved walking and cycling facilities would support the potential increased uptake in walking and cycling in drier summers.	Tree planting along key pedestrian walkways and cycleways would create shade and have a cooling effect (Huang et al. 1987). Modelling work in Greater Manchester suggested that if we increase our green cover in towns and cities by 10 per cent, we can keep surface temperatures at current levels despite climate change. The use of SuDs (described under SEA objective 8) and temperature resilient surfaces for new networks would help to meet this SEA objective.
14	Landscape character	N	N	N	-	-	-	The main impacts of this scenario are likely to be limited to Oxford itself and therefore have limited significance for landscape.	
15	Built environment	?	++	++	R	L	T	This scenario is anticipated to significantly benefit the urban environment with safer and more pleasant streets, better air quality and reduced congestion, noise and vibration. There may be short term disruption in some areas where new infrastructure is constructed.	
16	Cultural heritage	+	++	++	R	L	T	The associated improvements in air quality would be beneficial to historic buildings. Furthermore, the accessibility around Oxford would be enhanced by further pedestrian and cycle facilities.	Pedestrian and cycle routes in Conservation Areas should be designed sensitively to be in keeping with the historic fabric of the location.

Cumulative, synergistic and secondary effects: This scenario may have a synergistic effect on human health through the cumulative effect of improved air quality, more opportunities for active travel and improved public realm.
Summary: This scenario is predicted to have a positive effect on 11 of the SEA objectives during the timeframe of the LTP3. No adverse effects have been predicted although there is some uncertainty over a number of long term effects.

Oxford: Increasing Transport Choice

Focus on:

- Improving bus services
- Expanding park & ride
- Traffic management on approaches to Oxford
- Better facilities for pedestrians in city centre and with new developments
- Improvements to cycling and walking networks

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	X	X	?	I	L	P	The existing park & ride sites around Oxford are all at the edge of the city. For at least four of the five sites (Pear Tree, Thornhill, Redbridge and Seacourt) expansion would require land take on greenfield land. This is likely to involve direct loss of some hedgerows, trees as well as grassland (the quality of which is not identified). This loss will be localised but have an incremental and therefore cumulative effect on the biodiversity objective. The long term effects are not certain. For example there may be a desire for further expansion of the park & ride in the future if the schemes are popular, leading to further adverse effects on biodiversity. Impacts associated with the other measures for this scenario are likely to be neutral on biodiversity.	The impacts can be partially mitigated by incorporating environmental mitigation and enhancement into the design, for example by creating more diverse habitats where there is currently intensive agriculture or improved pasture, or by minimising light pollution or drainage pollution from new or expanded park and ride sites.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
2	Green infrastructure	?	?	?	R	L	T	The effects on green infrastructure are difficult to predict. Whilst the expansion of park & ride is likely to entail loss of hedgerows the proposals may have an indirect effect by freeing up urban space currently used for car parking, so that it can used for amenity, or community use.	Park & ride expansion proposals could be combined with a commitment to convert parking areas within Oxford to more valuable uses or green infrastructure.
3	Physical & mental wellbeing and safety	+	+	?	R	L	T	The INTRA-SIM model predicts a slight reduction in accidents. In addition it is assumed that improvements to walking and cycling would encourage more physical activity and that the reduction of car journeys in the city centre would help to reduce levels of stress.	
4	Noise pollution	?	?	?	?	?	?	It is uncertain as to whether this scenario would result in a perceptible change in the noise environment.	
5	Vitality of town centres	+	+	?	R	L	T	It is anticipated that the improved pedestrian facilities within the city centre would enhance the public realm. Without knowledge of the future population of Oxford it is difficult to predict the long term effects.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
6	Accessibility	+	+	?	R	L	T	The INTRA-SIM modelling calculates that there would be improvements in access to facilities by walking or cycling. However there would not be a significant change in access through public transport.	Footways would require regular maintenance to ensure optimum use. Maintenance should be particularly targeted in areas of high elderly populations or health facilities where vulnerable users are more likely to be susceptible to trips and falls.
7	Water quality	N	N	N	R	L	T	No significant effects are anticipated on this SEA objective from this scenario.	
8	Flood risk	N	N	N	R	L	T	The expansion of park & ride will entail new land take. However, it is assumed that the planning process would require any proposed development to fully mitigate any potential increase in surface run-off, for example through the inclusion of balancing ponds and SuDS. Other measures are unlikely to have a significant effect on flood risk.	Where designs are required to mitigate flood risk, there is likely to be opportunity to tie in biodiversity enhancement. For example balancing ponds can make valuable habitats. It is likely that habitats have already been created at existing sites which can provide examples of the types of enhancements that can be achieved.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
9	Minerals and soils	X	X	X	I	L	P	Expanding the park & ride facilities would require new land take. The existing park & ride sites around Oxford are located on former greenfield sites and any expansion is likely to impact on adjacent agricultural land. This would represent a permanent loss of agricultural land and therefore the effect is assessed as minor negative. The other packages within the scenario are likely to have minor impacts upon the objective for minerals and soils. A reduction in car trips is likely to reduce maintenance requirements on the road network and therefore reduce overall long term demand on minerals.	Existing topsoils on sites likely to be impacted by development proposals should be stripped and stored for re-use, for example as part of the landscaping, rather than sealed under the development. Such operations need to be planned carefully to ensure compliance with the Environmental Permitting Regulations 2009 (as amended).
10	Land use	X	?	?	R	L	P	The expansion of the park & ride facilities is likely to require greenfield land take and therefore have a negative permanent impact in the short term. However there may also be indirect effects in that by promoting alternatives to the car there may be a reduced need for parking in the city which would potentially free up brownfield sites for other development. Therefore the medium and longer term effects of this scenario are uncertain at this stage.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
11	Air quality	?	N	?	R	L	T	The INTRA-SIM model assesses a no change in air quality in the city centre in the medium term. The longer term effects are not currently known as it would depend upon the transport policies pursued after 2030, the type of vehicle and fuel technology in use and the population that the transport system would support.	Impacts on air quality may be mitigated by ongoing measures with the Bus Partnership to modernise the bus fleet and increase the patronage per bus (for example by sharing routes between companies rather than having them compete for patronage).
12	Greenhouse gas emissions	?	++	?	I	L	P	The INTRA-SIM modelling predicts a significant beneficial effect on greenhouse gas emissions in the medium term. It is uncertain whether these effects would be realised in the shorter term as it is anticipated it would take time to fully implement the scenario and that construction activities would generate greenhouse gas emissions. The longer term effects are uncertain as they are dependant upon the population dynamics and policy scenario beyond 2030.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
13	Adapting to climate change	N	+	+	R	L	T	The promotion of alternatives to the car is likely to be beneficial to this objective through a combination of effects. Firstly, it would contribute to a fitter and healthier population better able to cope with extremes of temperature, for example fatigue during heat waves. The investment in improved walking and cycling network would support the potential increased uptake in walking and cycling in drier summers.	Tree planting along key pedestrian walkways and cycleways would create shade and have a cooling effect (Huang *et al* 1987). Modelling work in Greater Manchester suggested that if we increase our green cover in towns and cities by 10 per cent, we can keep surface temperatures at current levels despite climate change. The use of SuDs (described under SEA objective 8) and temperature resilient surfaces for new developments would help to meet this SEA objective.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
14	Landscape character	X	X	X	I	L	P	The improvements to the city centre would require an incremental loss of green field area on the urban fringe to accommodate expansions to the park & ride facilities. Whilst this would be relatively minor in significance, it would represent a loss of landscape character for residents around the urban fringe. It is also likely to result in an increase of traffic related noise in the vicinity of the park & ride facilities and potentially increased light pollution, although again, this is likely to cause a minor cumulative effect against the baseline of the existing facilities.	The lighting associated with the scheme should be carefully designed to balance security requirements with minimising light intrusion into the wider landscape.
15	Built environment	?	+	?	R	N	P	The predicted improvements to air quality as a result of this scenario would in turn have a beneficial effect on buildings. Furthermore the reduction in some traffic related problems such as congestion within Oxford would again have beneficial effects on the built environment. The effects are assessed as having a national scale due to the distinctiveness of Oxford's built heritage.	
16	Cultural heritage	?	?	?	?	?	?	The overall effect on cultural heritage is difficult to predict. While there are likely to be beneficial impacts on cultural heritage features within Oxford because of improvements to air quality and reductions in vibration, there may be disturbance to as yet undiscovered cultural heritage in the vicinity of the park & ride developments.	Detailed archaeological assessment should be undertaken prior to any proposed works to ascertain the likelihood of archaeological remains and the potential significance.

SEA Objective (abridged)	Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
	Short term	Medium term	Long term	Reversibility	Scale	Permanence		
Cumulative, synergistic and secondary effects: A cumulative adverse effect on biodiversity, habitats and landscape is predicted from the proposed park & ride facilities.								
Summary: Five positive effects and five negative effects are predicted from this scenario on the SEA objectives during the life of the LTP3. A long term negative effect in relation to greenhouse gas emissions is predicted due to the length of time greenhouse gases can remain in the atmosphere**.**								

Oxford: Promoting public transport

Focus on:

- Major improvements to local bus services
- Improvements to rail connections
- Expanding park & ride

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	X	X	?	I	L	P	The existing park & ride sites around Oxford are all at the edge of the city. For at least four of the five sites (Pear Tree, Thornhill, Redbridge and Seacourt) expansion would require land take on greenfield land. This is likely to involve direct loss of some hedgerows, trees as well as grassland (the quality of which is not identified). This loss will be localised but have an incremental and therefore cumulative effect on the biodiversity objective. The long term effects are not certain. For example there may be a desire for further expansion of the park & ride in the future if the schemes are popular, leading to further adverse effects on biodiversity. Impacts associated with the other measures for this scenario are likely to be neutral on biodiversity.	The impacts can be partially mitigated by incorporating environmental enhancement into the design, for example by creating more diverse habitats where there is currently intensive agriculture or improved pasture or by minimising light pollution or drainage pollution from new or expanded park & ride sites.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
2	Green infrastructure	N	N	N	-	-	-	No significant effects on this SEA objective are anticipated from this scenario.	
3	Physical and mental wellbeing and safety	?	?	?	?	?	?	Although INTRA-SIM predicts a slight reduction in road accidents, the overall effect is uncertain. This is because the scenario does not focus on active travel modes. The health benefits from active travel would normally outweigh the risk of accidents. Therefore there is uncertainty as to whether the slight reduction in accidents would outweigh the rising trends in health problems associated with inactive lifestyles.	
4	Noise pollution	?	?	?	?	?	?	It is uncertain as to whether this scenario would result in a perceptible change in the noise environment.	
5	Vitality of town centres	?	?	?	?	?	?	It is uncertain whether this scenario would have a significant effect on the SEA objective.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
6	Accessibility	?	+	?	R	L	T	INTRA-SIM predicts substantial improvements in accessibility by bus but no significant change in access on foot or by cycle.	
7	Water quality	N	N	N	-	-	-	No significant effects on this SEA objective are anticipated from this scenario.	
8	Flood risk	N	N	N	-	-	-	It is assumed that park & ride expansions would include appropriate drainage designs to mitigate potential flood risk.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
9	Minerals and soils	X	X	X	I	L	P	Expanding the park & ride facilities would require new land take. The existing park & ride sites around Oxford are located on former greenfield sites and any expansion is likely to impact on adjacent agricultural land. This would represent a permanent loss of agricultural land and therefore the effect is assessed as minor negative. The other packages within the scenario are likely to have minor impacts upon the objective for minerals and soils. A reduction in car trips is likely to reduce maintenance requirements on the road network and therefore reduce overall long term demand on minerals.	Existing topsoils on sites likely to be impacted by development proposals should be stripped and stored for re-use, for example as part of the landscaping, rather than sealed under the development. Such operations need to be planned carefully to ensure compliance with the Environmental Permitting Regulations 2009 (as amended).
10	Land use	X	?	?	R	L	P	The expansion of the park & ride facilities is likely to require greenfield land take and therefore have a negative permanent impact in the short term. However there may also be indirect effects in that by promoting alternatives to the car there may be a reduced need for parking in the city which would potentially free up brownfield sites for other development. Therefore the medium and longer term effects of this scenario are uncertain at this stage.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
11	Air quality	?	x	?	R	L	T	INTRA-SIM predicts a significant increase in oxides of nitrogen as a result of this scenario in the medium term. However, the other air quality impacts are uncertain. The longer term effects are difficult to predict as they are dependent upon vehicle and fuel technology as well as the composition of traffic as a result of future policy interventions and other factors.	Impacts on air quality may be mitigated by ongoing measures with the Bus Partnership to modernise the bus fleet and increase the patronage per bus (for example by sharing routes between companies rather than having them compete for patronage).
12	Greenhouse gas emissions	?	++	?	I	L	T	The INTRA-SIM modelling predicts a significant beneficial effect on greenhouse gas emissions in the medium term. It is uncertain whether these effects would be realised in the shorter term as it is anticipated it would take time to fully implement the scenario and that construction activities would generate greenhouse gas emissions. The longer term effects are uncertain as they are dependant upon the population dynamics and policy scenario beyond 2030.	
13	Adapting to climate change	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
14	Landscape character	X	X	X	I	L	P	The improvements to the city centre would require an incremental loss of green field area on the urban fringe to accommodate expansions to the park & ride facilities. Whilst this would be relatively minor in significance, it would represent a loss of landscape character for residents around the urban fringe. It is also likely to result in an increase of traffic related noise in the vicinity of the park & ride facilities and potentially increased light pollution, although again, this is likely to take a minor cumulative effect against the baseline of the existing facilities.	The lighting associated with the scheme should be carefully designed to balance security requirements with minimising light intrusion into the wider landscape.
15	Built environment	?	?	?	?	?	?	It is uncertain whether there would be a significant effect from this scenario. The reduction in some traffic related problems such as congestion within Oxford may have beneficial effects on the built environment.	
16	Cultural heritage	?	?	?	?	?	?	The overall effect on cultural heritage is difficult to predict. There may be disturbance to as yet undiscovered cultural heritage in the vicinity of the park & ride developments.	Detailed archaeological assessment should be undertaken prior to any proposed works to ascertain the likelihood of archaeological remains and the potential significance.

SEA Objective (abridged)	Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
	Short term	Medium term	Long term	Reversibility	Scale	Permanence		
Cumulative, synergistic and secondary effects: A cumulative adverse effect on biodiversity, habitats and landscape is predicted from the proposed park & ride facilities.								
Summary: Negative effects have been identified on five of the SEA objectives from this scenario during the life of the LTP3. Other effects are largely uncertain or predicted to be neutral.								

Larger towns: Promoting lower emissions

Focus on:

- High quality on and off road cycle networks
- Better facilities for pedestrians in town centres and connections to new developments
- Encouraging lower vehicle emissions
- Promoting better transport choices

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	+	+	?	R	L	T	Improved air quality would benefit habitats and species that are sensitive to air quality. A new cycle network could potentially cause significant impact on habitats and species. However, it could also provide opportunities to enhance green infrastructure with biodiversity value.	The construction of a new cycle network may provide opportunity to include native peripheral tree and shrub planting in the design which would provide improved habitats for birds, invertebrates and small mammals.
2	Green infrastructure	+	++	++	R	L	P	The off-road elements of the new cycle network would form part of the green infrastructure within larger towns and therefore be beneficial. The improved pedestrian and cycle facilities would also help to link other elements of green infrastructure such as parks and play spaces and promote access to habitats and wildlife.	In line with guidance from Natural England (2009), new transport developments should be planned to integrate green infrastructure into the design.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical & mental wellbeing and safety	+	+	?	R	L	T	Whilst the INTRA-SIM model does not predict a change in personal accidents, the promotion of walking and cycling would bring benefits to human health. The predicted reduction in congestion would help reduce stress and anxiety.	The promotion of walking and cycling is likely to be more successful if there is a corresponding reduction in traffic and traffic speeds. A reduction in traffic speeds is likely to bring significant safety benefits and may help encourage more people to take up cycling if the perception of risk is reduced.
4	Noise pollution	?	?	?	?	?	?	It is uncertain as to whether this scenario would result in a perceptible change in the noise environment.	
5	Vitality of town centres	+	+	?	R	L	T	The INTRA-SIM modelling calculates a reduced vehicle delay and congestion in the medium term. It is anticipated that the improved pedestrian and cycling facilities within the larger towns would enhance the public realm. Without knowledge of the future population for Oxfordshire it is difficult to predict the long term effects.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
6	Accessibility	+	+	?	R	L	T	The INTRA-SIM model predicts that accessibility to town centres, hospitals and employment would improve for pedestrians and cyclists. However, no change is predicted by bus.	
7	Water quality	?	?	?	-	-	-	It is uncertain as to whether this scenario would have any significant effect on water quality. It is not currently known how much transport in larger towns currently affects the water quality.	There may be opportunity to integrate SuDs in the form of reedbeds and swales as part of the proposed off-road cycle networks which may reduce flood risk and surface water pollution.
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated on flood risk as a result of this scenario. The main element of new infrastructure introduced would be off road cycle networks. However it is unlikely that this would have a significant provided designs include appropriate drainage design.	
9	Minerals and soils	N	?	?	R	L	T	It is unlikely that the implementation of this scenario would have a significant effect on minerals and soils in the short term. Some mineral usage would be required to construct the cycle network but no significant effect on soils is anticipated. However, in the longer term the effects are uncertain. It is possible that if successful, it would lead to a reduction in traffic which would reduce mineral use required for ongoing road maintenance, as general wear and tear on roads would be reduced.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
10	Land use	?	?	?	R	L	T	It is uncertain at this stage which land will be affected in each of the larger towns. The construction of the off-road cycle network element of the proposals is likely to have the greatest impact on land use in the shorter term. However it is unlikely to be significant in scale. There may be longer term indirect effects on land use as a result of implementing the scenario if there is a successful reduction in car use within town centres that would free up urban land for other development. However, it is not clear how this scenario would assist with the transport needs for those further from urban centres needing to do their main shopping (and therefore transport large shopping items) or those with young children etc. It is likely that private car use would continue without other alternative modes.	
11	Air quality	?	++	?	R	L	T	The INTRA-SIM model predicts a significant reduction in carbon monoxide and in particulate pollution as a result of this scenario. It is uncertain what the longer term effects would be as these depend upon future policy interventions and fuel and vehicle technology.	
12	Greenhouse gas emissions	?	++	?	R	L	T	The INTRA-SIM model predicts a significant reduction in CO_2 emissions in the medium term from this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
13	Adapting to climate change	+	+	?	R	L	T	The focus on low emissions, together with the promotion of walking and cycling as a mode of transport will be of minor benefit to the goal of adapting to climate change.	Further beneficial effects could be secured by including suitable shade alongside footways and cycleways, especially through the planting of appropriate species of trees, The use of SuDs (described under SEA objective 8) and temperature resilient surfaces for new cycling and walking networks would help to meet this SEA objective.
14	Landscape character	N	N	N	R	L	P	No significant effects on landscape are anticipated from this scenario.	
15	Built environment	+	++	+	R	L	T	The anticipated reduction in air pollution would be beneficial to the facades of buildings and other built elements sensitive to air pollution. Furthermore a reduction of congestion within town centres would improve the quality of urban environment, especially with improvements in pedestrian facilities. The level of beneficial effect may decrease in the longer term unless reinforced by new strategic actions.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
16	Cultural heritage	?	?	?	?	L	?	The main potential significant effects would arise within the larger towns as a result of constructing new cycle networks and pedestrian facilities or through a reduction in air pollution that may affect monuments. However, further information is required on the proposed locations of these developments to assess the nature and likely significance of impact.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.
Cumulative, synergistic and secondary effects: No significant cumulative effects have been identified from this scenario alone.									
Summary: This scenario is predicted to have positive effects on nine SEA objectives and no significant negative effects during the life of the LTP3.									

Larger towns: Promoting transport choice

Focus on:

- Improving bus services
- Park & ride
- Traffic management
- Better facilities for pedestrians in town centres and with new developments
- Improvements to cycling networks

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	?	?	?	?	?	?	The overall effect on biodiversity is uncertain. It is likely that the park & ride facilities would impact upon habitats depending upon their location.	It is recommended that new infrastructure schemes incorporate environmental mitigation and enhancement into the design, for example by creating more diverse habitats where there is currently intensive agriculture or improved pasture.
2	Green infrastructure	?	?	?	R	L	T	It is uncertain as to how significant the pedestrian and cycle network improvements as part of this scenario would be and therefore whether this would create an opportunity to extend the county's green infrastructure resource or whether it would be insignificant.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	?	X	X	R	L	T	The proposals for pedestrians and cyclists are to be scaled to reflect available resources, while the focus on park & ride is unlikely to result in more active lifestyles. Therefore there is unlikely to be a change in the level of risk that might encourage more active travel modes nor a significant increase in opportunities to cycle in traffic free areas. Obesity is a rising problem in Oxfordshire and it is unlikely that this scenario would help to alter this trend.	Park & ride facilities should be designed to maximise opportunities for the use of transport modes other than the private car to access them. For example through the inclusion of bicycle facilities.
4	Noise pollution	?	?	?	R	L	T	It is not clear whether this scenario would result in a perceptible change in the noise environment. However there is concern that the promotion of park & ride for the larger towns would serve a growth in traffic in Oxfordshire (in line with the population growth) which may impact tranquil areas.	Project level EIA should consider how a growth in traffic in rural areas accessing park & ride facilities may impact upon sensitive locations, for example increased traffic noise on communities, landscape and biodiversity.
5	Vitality of town centres	?	?	?	R	L	T	It is not clear how this scenario may affect behaviour and travel patterns. There is concern that the improvements to park & ride at the larger towns and Oxford may have an indirect effect on smaller town centres because it may be easier to drive to the larger towns for shopping, work and leisure. However, the reduction in congestion in larger towns is likely to be beneficial for the larger towns.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
6	Accessibility	+	+	?	R	L	T	INTRA-SIM predicts an improvement in accessibility to employment, hospitals and town centres by bus but no significant change in accessibility for pedestrians and cyclists. It is uncertain how accessibility would be affected in the long term as it would depend upon the population size and policy interventions at the time.	
7	Water quality	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
9	Minerals and soils	x	x	?	I	L	P	It is assumed that the focus on park & ride would result in the permanent loss of some agricultural land or other greenfield sites.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
10	Land use	X	X	?	I	L	P	It is assumed that the focus on park & ride would result in the permanent loss of some agricultural land or other greenfield sites.	
11	Air quality	N	?	?	R	L	T	The INTRA-SIM does not predict a clear change in air pollution in the medium term from this scenario. It is difficult to predict the long term effects as these would be subject to the level and composition of traffic in the long term as well as the nature of vehicle technology and fuels.	
12	Greenhouse gas emissions	?	?	?	R	L	T	The INTRA-SIM model predicts reductions in CO_2 emissions in the medium term but it is not clear whether this is significant. It is uncertain without further evidence what effect on CO_2 emissions this scenario would have in the long term as it would depend upon the nature of growth in Oxfordshire and future transport policy.	
13	Adapting to climate change	N	N	N	-	-	-	No significant effect on the SEA objective is anticipated from this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
14	Landscape character	X	X	X	I	L	P	It is assumed that the provision of new park & ride facilities would impact upon the greenbelt leading to adverse an effect on overall landscape character. Further impacts upon landscape character may arise from an increase in light pollution from the proposed facilities as well as noise from traffic.	In selecting suitable park & ride sites, detailed appraisal should be carried out to minimise intrusion in sensitive landscape locations. Lighting should be designed to minimise light pollution and new infrastructure should be sensitively designed to minimise impacts upon the local landscape.
15	Built environment	?	?	?	R	L	T	It is uncertain what effect this scenario would have on the built environment. No changes in air quality are predicted so effects are likely to be related to the degree of improvement in the streetscape from a reduction in traffic congestion and improvements to the pedestrian environment.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
16	Cultural heritage	?	?	?	?	L	?	Further information is required on the proposed locations of developments associated with this scenario to assess the nature and likely significance of impact.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.
Cumulative, synergistic and secondary effects: A cumulative loss of greenfield land due to the focus on park & ride is anticipated from this scenario.									
Summary: Overall this scenario is predicted to have adverse effects on four SEA objectives and one positive effect during the timeframe of the LTP3. Other effects are largely uncertain because it is uncertain what degree of intervention is likely to be implemented and in which locations.									

Larger towns: Supporting economic growth

Focus on

- Improving road networks with selected improvement schemes
- Improvement to rail services
- Improving bus services
- Improvements to cycling and walking networks
- Promoting alternative fuels

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	?	X	?	?	L	?	The effects on biodiversity are difficult to predict as they are dependent upon the location, size and number of major schemes, particularly road improvements. However, on the basis that this scenario is likely to encourage more and longer trips to be made by road, it is likely that there would be an increase in road kills and air pollution effects on biodiversity and therefore a negative effect is predicted at least for the medium term.	Whilst road improvements would help make the best use of the existing network, it is recommended that investment in alternative modes is made to help counteract an overall increase in traffic. Each new scheme is likely to be subject to a detailed EIA which would identify measures to help minimise adverse effects on biodiversity.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
2	Green infrastructure	?	?	?	R	L	T	It is uncertain as to how significant the pedestrian and cycle network improvements as part of this scenario would be and therefore whether this would create an opportunity to extend the county's green infrastructure resource or whether it would be insignificant.	
3	Physical and mental wellbeing and safety.	?	X	X	R	L	T	The overall effects of this scenario are likely to be adverse. The inclusion of road improvements is unlikely to encourage more active lifestyles and the potential increase in trips by car may contribute to further community severance and discourage cycling. The INTRA-SIM model predicts no significant change in road accidents.	Measures to restrict traffic in town centres and the enforcement of lower speed limits are likely to significantly improve safety and encourage more active modes of transport.
4	Noise pollution	?	?	?	R	L	T	It is not clear whether this scenario would result in a perceptible change in the noise environment. However there is concern that an increase in longer trips by car may impact tranquil areas.	
5	Vitality of town centres	?	?	?	R	L	T	It is not clear how this scenario may affect behaviour and travel patterns. There is concern that the road improvements would not challenge the use of car as the main means of access and therefore in the longer term congestion would increase in line with traffic growth.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
6	Accessibility	+	+	?	R	L	T	INTRA-SIM predicts an improvement in accessibility to employment, hospitals and town centres by bus but no significant change in accessibility for pedestrians and cyclists. It is uncertain how accessibility would be affected in the long term as it would depend upon the population size and policy interventions at the time.	
7	Water quality	?	?	?	R	L	T	The overall effects on water quality are uncertain. It is assumed that any transport improvement schemes would incorporate appropriate drainage designs to intercept pollution from road surfaces. However a growth in traffic may lead to increases in diffuse pollution on the existing network as well as an increased likelihood of pollution incidents from accidents.	Highway improvement programmes should seek to upgrade existing highway drainage if continued traffic growth is foreseen.
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
9	Minerals and soils	X	X	X	R	L	P	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 high mineral use.	Measures to counteract traffic growth would help to reduce the maintenance requirements on the road network.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
10	Land use	?	?	?	I	L	P	Without further information the overall effect of this scenario is uncertain as it is not certain how much additional land may be affected by infrastructure improvements. There is concern that proposed road improvements may include relief roads and require land that could be used for other development purposes.	This scenario should prioritise making the best use of existing infrastructure, in order to make prudent use of existing land, before adding new schemes.
11	Air quality	?	+	?	R	L	T	INTRA-SIM assesses that there would be a significant reduction in pollution from particulates from this scenario in the medium term and a slight reduction in carbon monoxide. It is difficult to predict the long term effects as these would be subject to the level and composition of traffic in the long term as well as the nature of vehicle technology and fuels.	
12	Greenhouse gas emissions	?	+	?	I	L	P	The INTRA-SIM model predicts a slight reduction in CO_2 emissions in the medium term.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
13	Adapting to climate change	N	?	?	R	L	T	It is not clear what effect this scenario would have on the SEA objective. It is uncertain whether road improvements would seek to address issues associated with predicted climate change.	In deciding which improvements to make, Oxfordshire County Council should take into account potential effects of climate change on the existing network such as increased flood events, heat waves and droughts and consider whether adaptations need to be made.
14	Landscape character	X	X	X	I	L	P	It is assumed that the predicted increase in distance and frequency of trips by car as a result of this scenario would adversely affect the wider Oxfordshire landscape. Improvements may also result in increased light pollution.	Lighting should be designed to minimise light pollution and new infrastructure should be sensitively designed to minimise impacts upon the local landscape.
15	Built environment	?	+	?	R	L	T	The reduction in airborne chemical and particulate pollution in town centres is likely to be beneficial to the built environment in the medium term.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
16	Cultural heritage	?	?	?	?	L	?	Further information is required on the proposed locations of developments associated with this scenario to assess the nature and likely significance of impact.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.
Cumulative, synergistic and secondary effects: No significant cumulative effects has been identified for this scenario.									
Summary: Overall this scenario is predicted to give rise to negative effects on four SEA objectives and positive effects on four SEA objectives during the timeframe of the LTP3. Other effects are largely uncertain due to a lack of site specific information or are neutral.									

Smaller towns: Promoting lower emissions

Focus on:

- High quality on and off road cycle networks
- Better facilities for pedestrians across towns
- Restrictions on vehicle emissions
- Promoting better transport choices

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	+	+	?	R	L	T	It is predicted that this would have a minor positive effect on biodiversity by encouraging a model shift within small towns and reducing the effects of traffic on biodiversity. Since these effects would be localised to small town environments the impact is likely to be of minor significance.	
2	Green infrastructure	+	+	+	R	L	P	The off-road elements of the new cycle network would form part of the green infrastructure within smaller towns and therefore be beneficial. The improved pedestrian and cycle facilities would also help to link other elements of green infrastructure such as parks and play spaces and promote access to habitats and wildlife.	In line with guidance from Natural England, new transport developments should be planned to integrate green infrastructure into the design.
3	Physical and mental wellbeing and safety.	+	+	+	R	L	T	The overall effect of this scenario on health is likely to be beneficial by encouraging more active lifestyles and reducing the effects of severance as well as the risk of accidents.	The enforcement of lower speed limits is likely to significantly improve safety and encourage more active modes of transport.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
4	Noise pollution	?	?	?	R	L	T	It is not clear whether this scenario would result in a perceptible change in the noise environment.	
5	Vitality of town centres	?	?	?	R	L	T	It is assumed that improved pedestrian facilities within smaller towns would encourage more use of local facilities for shopping and therefore improve local economies. However this assumption depends upon other scenarios within Oxfordshire, for example whether people are encouraged to access larger towns by car and are therefore drawn away from the smaller towns.	This scenario is more likely to improve the vitality of town centres if it forms part of a wider strategy within Oxfordshire to encourage use of local facilities rather than travelling greater distances to larger centres.
6	Accessibility	?	+	?	R	L	T	INTRA-SIM predicts an improvement in accessibility on foot but no significant change in accessibility by bus or cycling.	This scenario is likely to be beneficial to accessibility if linked to other strategies (especially public transport) to improve accessibility to hospitals and employment sites.
7	Water quality	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
9	Minerals and soils	X	+	+	I	L	P	Although this scenario may require significant mineral use for construction, it is assumed that the material assets constructed (cycle network and pedestrian facilities) would require less overall maintenance than a heavily used road network in smaller towns.	This scenario should seek to make the best use of existing assets before constructing new routes.
10	Land use	+	+	+	I	L	P	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 beneficial.	This scenario should prioritise making the best use of existing infrastructure, in order to make prudent use of existing land, before adding new schemes.
11	Air quality	?	+	?	R	L	T	INTRA-SIM assesses that there would be a reduction in pollution from particulates and carbon monoxide from this scenario in the medium term. It is difficult to predict the long term effects as these would be subject to the level and composition of traffic in the long term as well as the nature of vehicle technology and fuels.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	++	?	R	L	T	The INTRA-SIM model predicts a significant reduction of CO_2 emissions in the medium term.	
13	Adapting to climate change	+	+	?	R	L	T	The focus on low emissions, together with the promotion of walking and cycling as a mode of transport will be of minor benefit to the goal of adapting to climate change.	Further beneficial effects could be secured by including suitable shade alongside footways and cycleways, especially through the planting of appropriate species of trees. The use of SuDs (described under SEA objective 8) and temperature resilient surfaces for new walking and cycling networks would help to meet this SEA objective.
14	Landscape character	N	N	N	I	L	P	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
15	Built environment	+	+	+	R	L	T	The reduction in airborne chemical and particulate pollution in town centres is likely to be beneficial to the built environment in the medium term. Furthermore the reduction in traffic is likely to improve the quality of the streetscape.	
16	Cultural heritage	?	?	?	?	L	?	Further information is required on the proposed locations of developments associated with this scenario to assess the nature and likely significance of impact.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.
Cumulative, synergistic and secondary effects: No significant cumulative effect has been identified from this scenario alone.									
Summary: Overall this scenario is predicted to give rise positive effects on ten SEA objectives and one negative effect during the timeframe of the LTP3.									

Smaller towns: Promoting transport choice

Focus on:

- Improving bus services
- Traffic management
- Better facilities for pedestrians in town centres
- Improvements to cycling and walking networks

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	?	?	?	R	L	T	Although this scenario is likely to have minimal impact on biodiversity, the possible introduction of park & ride may impact upon valuable habitats (depending upon location).	Any proposals for park & ride should seek to minimise habitat loss. Alternative means of accessing the sites should be included to minimise car use.
2	Green infrastructure	?	?	?	R	L	T	It is uncertain as to how significant the pedestrian and cycle network improvements as part of this scenario would be and therefore whether this would create an opportunity to extend the county's green infrastructure resource or whether it would be insignificant..	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	N	?	x	R	L	T	The overall effect of this scenario is uncertain. It is not clear whether there would be a significant modal shift and therefore no change is predicted for safety and it is unlikely that the trend towards obesity would be challenged.	An enforcement of lower speed limits is likely to significantly improve safety and encourage more active modes of transport.
4	Noise pollution	?	?	?	R	L	T	It is not clear whether this scenario would result in a perceptible change in the noise environment. However there is concern that the possible inclusion of park & ride would serve a growth in traffic which may impact tranquil areas.	
5	Vitality of town centres	N	N	N	R	L	T	No significant effect on this SEA objective is anticipated from this scenario.	
6	Accessibility	?	+	?	R	L	T	INTRA-SIM predicts an improvement in accessibility by bus but improvements for walking and cycling are of little significance.	
7	Water quality	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
9	Minerals and soils	?	N	N	I	L	P	The possible use of park & ride may impact upon agricultural soils. However the overall effect is currently uncertain. In the longer term this scenario is unlikely to have a significant effect on the SEA objective.	
10	Land use	?	N	N	I	L	P	The possible use of park & ride may impact upon green belt land. However the overall effect is currently uncertain. In the longer term this scenario is unlikely to have a significant effect on the SEA objective.	
11	Air quality	N	N	?	R	L	T	INTRA-SIM assesses that there would be no overall change in air quality as a result of this scenario in the medium term. The longer term effects are dependant upon future policy initiatives and vehicle technology and composition.	Impacts on air quality may be mitigated by measures to modernise the bus fleet and increase the patronage per bus (for example by sharing routes between companies rather than having them compete for patronage).

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	X	X	X	R	L	T	The INTRA-SIM model predicts no overall change in CO_2 emissions in the medium term. This is therefore considered to be an adverse effect on the objective since there is a requirement to reduce CO_2 emissions.	
13	Adapting to climate change	N	N	N	R	L	T	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
14	Landscape character	?	?	N	I	L	P	The possible use of park & ride may impact upon landscapes within Oxfordshire. Further information is required to assess whether this is likely to be significant.	
15	Built environment	N	N	N	R	L	T	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
16	Cultural heritage	?	?	?	?	L	?	Further information is required on the proposed locations of developments associated with this scenario to assess the nature and likely significance of impact.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.
Cumulative, synergistic and secondary effects: No significant cumulative effects have been identified at this stage.									
Summary: This scenario is anticipated to have a minor positive effect on the objective on accessibility in the medium term and a negative effect on the objective to reduce greenhouse gas emissions. There is significant uncertainty over the potential effect on six of the objectives suggesting more information is required to understand the potential effects on the environment.									

Smaller towns: Supporting economic growth

Focus on:

- New road links/bypasses
- Traffic management

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	X	XX	X	R	L	T	The construction of new roads is likely to lead to the direct loss of habitat as well as fragmentation of habitats and wildlife corridors such as hedgerows and watercourses. In the longer term, an increase in traffic is likely to increase incidents of road kill.	New road schemes should be subject to detailed EIA which should help to select routes that minimise habitat loss and to include designs to minimise adverse effects on biodiversity.
2	Green infrastructure	N	?	N	R	L	T	It is unlikely that this scenario would have a significant effect on the SEA objective in the short or medium term. However it is uncertain whether green infrastructure may be affected by proposals to construct new roads.	New road schemes should be subject to detailed EIA which should help to select routes that minimise loss of green infrastructures such as public open spaces (including informal play areas).
3	Physical and mental wellbeing and safety.	X	X	XX	R	L	T	INTRA-SIM predicts that this scenario may limit any future reduction in casualties. In addition, this scenario does not contribute to a reduction in sedentary lifestyles which is associated with the rising trend in obesity and other health problems.	An enforcement of lower speed limits in towns is likely to significantly improve safety and encourage more active modes of transport.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
4	Noise pollution	?	+	x	R	L	T	INTRA-SIM shows a slight decrease in noise pollution as road traffic shifts to improved roads in less populated areas. However it is likely that this scenario would support a rise in overall traffic which would lead to an increase of noise in the longer term.	The use of low noise surfacing would help to counteract increases in noise.
5	Vitality of town centres	N	N	N	R	L	T	No significant effect on this SEA objective is anticipated from this scenario.	
6	Accessibility	N	N	?	R	L	T	INTRA-SIM predicts no change in accessibility from this scenario in the medium term. However there is concern that this scenario would support traffic growth which may increase community severance in the longer term and reduce accessibility for pedestrians and cyclists.	
7	Water quality	?	?	?	R	L	T	The overall effects on water quality are uncertain. It is assumed that any transport improvement schemes would incorporate appropriate drainage designs to intercept pollution from road surfaces. However a growth in traffic may lead to increases in diffuse pollution on the existing network as well as an increased likelihood of pollution incidents from accidents.	Highway improvement programmes should seek to upgrade existing highway drainage if continued traffic growth is foreseen.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
9	Minerals and soils	X	XX	X	I	L	P	The construction of new roads is likely to impact upon agricultural soils as well as have high mineral requirements for construction. In the longer term there would be an increase in maintenance levels required to maintain the larger road network.	Greenfield land and high grade agricultural land should be avoided wherever possible to minimise impacts on soils. Existing topsoils on sites likely to be impacted by new road proposals should be stripped and stored for re-use, for example as part of the landscaping, rather than sealed. Such operations need to be planned carefully to ensure compliance with the Environmental Permitting Regulations 2009 (as amended). Use of recycled aggregates for roads wherever possible.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
10	Land use	x	xx	x	I	L	P	The construction of new roads will require further land to be developed. In addition there would be indirect effects as a growth in traffic would require additional parking facilities which would take up more land that could be used for other purposes.	
11	Air quality	N	+	?	R	L	T	INTRA-SIM assesses that there would a reduction in particulate pollution in the medium term. However longer term effects are uncertain as a growth in traffic may negate the benefits unless sufficient improvements in vehicle or fuel technology are delivered.	
12	Greenhouse gas emissions	x	+	?	I	L	T	The INTRA-SIM model predicts a slight reduction in CO_2 emissions in the medium term. However, this scenario is likely to support a growth in traffic and therefore greenhouse gas emissions may increase again in the longer term. The long term effect is therefore uncertain.	
13	Adapting to climate change	?	?	?	R	L	T	It is not certain whether this scenario would have a significant impact upon the SEA objective.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
14	Landscape character	x	xx	xx	I	L	P	This scenario is likely to have an adverse effect on landscape character through a variety of ways. There would be direct effects on landscape from the construction of new roads. In addition there would be an increase in noise which is likely reduce tranquillity in the landscape and there is the potential for an increase in light pollution from new lighting schemes.	Detailed EIA should be undertaken to select least environmentally sensitive locations for new roads. Lighting schemes should be designed to minimise light pollution.
15	Built environment	N	+	?	R	L	T	The reduction in airborne chemical and particulate pollution in the medium term is likely to be beneficial to the built environment. However it is not clear whether these benefits would be long term as an increase in traffic without measures to counteract traffic growth is likely to result in further congestion and adverse effects from traffic in town centres.	
16	Cultural heritage	?	x	?	?	L	?	It is assumed that the widespread construction of new roads and road improvements would have an impact upon cultural heritage through direct impacts upon potential archaeological remains from new road links. However it is uncertain as to whether there may be longer term benefits on existing monuments in town centres if traffic is relieved.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.

SEA Objective (abridged)	Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
	Short term	Medium term	Long term	Reversibility	Scale	Permanence		
Cumulative, synergistic and secondary effects: This scenario is predicted to have an adverse synergistic effect on human health. The promotion of new roads is likely to lead to an overall rise in traffic volumes, leading to increased fear of accidents, which is likely to discourage cycling and walking. This is likely to contribute to the growing trend in sedentary lifestyles and associated health problems. A cumulative effect is also anticipated on greenfield land from the construction of new roads which would impact upon soils, biodiversity, the landscape and potentially archaeological remains.								
Summary: Overall this scenario is predicted to have a negative effect on six SEA objectives and positive effects on four SEA objectives. This includes significant negative effects on biodiversity, human health, minerals and soils, land use and landscape character.								

Rural Oxfordshire: Promoting lower emissions

Focus on:

- High quality cycle network
- Better facilities for pedestrians
- Restrictions on vehicle emissions
- Promoting better transport choices
- Speed reduction measures

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	+	++	+	R	L	T	It is predicted that this would have a 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 construction of the cycle network.	
2	Green infrastructure	+	++	++	R	L	P	The off-road elements of the new cycle network would form part of the green infrastructure for the county and therefore be beneficial. The scenario would significantly improve access to green spaces for residents of Oxfordshire.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	+	++	++	R	L	T	The overall effect of this scenario on health is likely to be beneficial 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	Noise pollution	N	N	N	R	L	T	It is unlikely that there would be a significant effect on this SEA objective. There may be localised increases in noise disturbance from users of the new pedestrian and cycle network in rural locations but this is unlikely to be significant when compared to noise from traffic.	
5	Vitality of town centres	N	N	N	-	-	-	No significant effects on this SEA objective are anticipated.	
6	Accessibility	?	+	?	R	L	T	INTRA-SIM predicts an overall improvement in accessibility on foot but no significant change by bus or cycling. Longer term effects are uncertain as they depend upon policy interventions and population dynamics beyond the timescale for LTP3.	
7	Water quality	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
9	Minerals and soils	x	N	N	I	L	P	Although this scenario may require significant mineral use for construction, it is assumed that the material assets constructed would have little significance on the SEA objective in the longer term.	
10	Land use	x	N	N	I	L	P	This scenario is likely to require some limited land take in green field locations for construction of the cycle network. However in the longer term it is unlikely to have a significant effect on the SEA objective.	This scenario should prioritise making the best use of existing infrastructure, in order to make prudent use of existing land, before impacting undeveloped land.
11	Air quality	?	?	?	R	L	T	INTRA-SIM predicts no significant change from this scenario in the medium term. It is difficult to predict the long term effects as these would be subject to the level and composition of traffic in the long term as well as the nature of vehicle technology and fuels.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	++	?	R	L	T	The INTRA-SIM model predicts a significant reduction CO_2 emissions in the medium term.	
13	Adapting to climate change	+	+	?	R	L	T	The focus on low emissions, together with the promotion of walking and cycling as a mode of transport will be of minor benefit to the goal of adapting to climate change.	Further beneficial effects could be secured by including suitable shade alongside footways and cycleways, especially through the planting of appropriate species of trees and ensuring SuDS and temperature resilient surfaces are used for new pedestrian and cycling surfaces.
14	Landscape character	?	?	?	I	L	T	The overall effect on landscape is uncertain as it would depend upon the cumulative effect of individual elements of this scenario.	Designs of cycle network facilities, bus shelters, signage etc should be sensitively designed to minimise visual intrusion and to take account of local distinctiveness.

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
15	Built environment	N	N	N	R	L	T	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
16	Cultural heritage	?	?	?	?	L	?	Further information is required on the proposed locations of developments associated with this scenario to assess the nature and likely significance of impact.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.
Cumulative, synergistic and secondary effects: This scenario may have a synergistic effect on human health through the cumulative effect of improved air quality, reduced fear of accidents, more opportunities for active travel and access to green space.									
Summary: This scenario is anticipated to have positive effects on six SEA objectives including major positive effects on biodiversity, greenhouse gas emissions, green infrastructure, human health and accessibility. Short term negative effects are anticipated for minerals and soils and land use. Other effects are largely neutral although there is uncertainty over the potential significance of effect on landscape and cultural heritage.									

Rural Oxfordshire: Managing movements

Focus on:

- Improving road networks
- Improved rail services
- Encouraging efficient movement of freight
- Traffic management on rural roads

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	N	N	N	-	-	-	It is unlikely that this scenario would have a significant effect on the SEA objective.	
2	Green infrastructure	N	N	N	-	-	-	It is unlikely that this scenario would have a significant effect on the SEA objective.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	?	+	?	R	L	T	The reduction of heavy goods vehicles through some villages as a result of this scenario is likely to be beneficial in terms of safety, community severance and stress. However it is uncertain whether these benefits would outweigh the longer term adverse health effects resulting from sedentary lifestyles and car use.	
4	Noise pollution	+	+	?	R	L	T	It is assumed that the reduction in freight vehicle use on rural roads would have a perceptible improvement on noise. INTRA-SIM predicts a reduction in noise pollution in the medium term however the longer term impacts are uncertain.	
5	Vitality of town centres	N	N	N	-	-	-	No significant effects on this SEA objective are anticipated.	
6	Accessibility	N	N	N	-	-	-	INTRA-SIM predicts no change in accessibility from this scenario.	
7	Water quality	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
9	Minerals and soils	N	?	?	R	L	T	It is uncertain as to whether a reduction in freight vehicles on rural roads may reduce the frequency of maintenance requirements.	
10	Land use	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
11	Air quality	?	?	?	R	L	T	INTRA-SIM assesses that there would be a reduction in pollution from carbon monoxide and nitrogen oxides but an overall increase in particulate pollution from this scenario in the medium term. It is difficult to predict the long term effects as these would be subject to the level and composition of traffic in the long term as well as the nature of vehicle technology and fuels.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	+	?	R	L	T	The INTRA-SIM model predicts a slight reduction in CO_2 emissions from transport in the medium term.	
13	Adapting to climate change	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	Oxfordshire County Council should consider how the transport network is likely to be impacted by climate change, based on predictions, and seek to ensure that the freight network can be sustained.
14	Landscape character	N	+	?	I	L	T	A reduction of freight vehicles on rural roads is likely to be beneficial to landscape character in the medium term. Longer term effects are uncertain as they depend upon future policy interventions.	
15	Built environment	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
16	Cultural heritage	N	N	N	-	-	-	It is considered unlikely that there would be a significant effect upon this SEA objective as a result of this scenario.	
Cumulative, synergistic and secondary effects: No significant cumulative effect has been identified from this scenario alone. However this scenario would support a cumulative reduction in greenhouse gas emissions if other policies and plans are successful in meeting greenhouse gas reduction objectives.									
Summary: Positive effects have been identified for objectives for human health, noise, greenhouse gas emissions and landscape character. Other effects are predicted to be largely neutral on the SEA objectives.									

Rural Oxfordshire: Promoting transport choice

Focus on:

- Improved & new cycle links
- Better facilities for pedestrians
- Rail improvements
- Improving bus services
- Speed reduction

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	N	?	?	R	L	T	It is uncertain as to whether this scenario would have any significant effect on biodiversity. If successful there may be beneficial effects through a reduction in road kill.	
2	Green infrastructure	N	N	N	-	-	-	It is unlikely that this scenario would have a significant effect on the SEA objective.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	?	++	+	R	L	T	INTRA-SIM predicts a significant improvement in safety from this scenario. In addition, it is assumed that slower traffic speeds would encourage more walking and cycling and therefore improve health in the longer term through active travel and mental wellbeing,	
4	Noise pollution	?	+	?	?	?	?	INTRA-SIM predicts a reduction in noise pollution from this scenario due to slower speeds and a shift to non-car modes. It is uncertain as to whether this scenario would result in a perceptible change in the noise environment in the longer term.	
5	Vitality of town centres	N	N	N	-	-	-	No significant effects on this SEA objective are anticipated.	
6	Accessibility	N	++	?	R	L	T	INTRA-SIM predicts significant improvements in accessibility during the LTP3 timeframe. It is uncertain as to whether these beneficial effects would be maintained in the long term.	
7	Water quality	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
9	Minerals and soils	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
10	Land use	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
11	Air quality	?	?	?	R	L	T	INTRA-SIM assesses that there would be an overall increase in particulate pollution from this scenario in the medium term and no significant effect on other pollutants. It is difficult to predict the long term effects as these would be subject to the level and composition of traffic in the long term as well as the nature of vehicle technology and fuels.	

SEA Objective (abridged)		Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	?	?	R	L	T	The INTRA-SIM model predicts a marginal reduction in CO_2 emissions from transport in the medium term which is unlikely to be significant. Therefore the overall effect on the objective is uncertain.	
13	Adapting to climate change	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
14	Landscape character	N	?	?	R	L	T	It is not certain whether there would be a significant effect on landscape from this scenario. If successful in encouraging a modal shift away from the car, there may be beneficial effects.	
15	Built environment	N	?	?	R	L	T	It is not certain whether there would be a significant effect on townscape from this scenario. If successful in encouraging a modal shift away from the car, there may be beneficial effects.	
16	Cultural heritage	N	N	N	-	-	-	It is considered unlikely that there would be a significant effect upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)	Assessment of effect						Evidence and Reference	Suggested mitigation and enhancement measure
	Short term	Medium term	Long term	Reversibility	Scale	Permanence		
Cumulative, synergistic and secondary effects: No significant cumulative effects have been identified for this scenario.								
Summary: This scenario is predicted to have positive effects on three SEA objectives (human health, accessibility and greenhouse gas emissions) during the timeframe of the LTP3. No significant negative effects are anticipated.								

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Appendix D3: Preliminary Assessment of Preferred Option

Preliminary Assessment of Preferred LTP3 Scenarios

July 2010

(Superseded by Final Assessment in Appendix D4)

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed
01	00	Assessment of preferred scenarios	7/7/10	J Wade
01	01	Revised to address client queries	8/7/10	J Wade

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Background to the SEA Process

The Oxfordshire LTP3 is subject to the requirements of Strategic Environmental Assessment (SEA). SEA is a statutory assessment process under the Strategic Environmental Assessment Regulations (the SEA Regulations, Statutory Instrument 2004, No 1633) which require formal strategic environmental assessment of plans and programmes which are likely to have significant effects on the environment and set the framework for future consent of projects requiring Environmental Impact Assessment (EIA) under EU Directives 85/337/EEC and 97/11/EC concerning EIA. Halcrow has been commissioned to undertake the SEA of the Oxfordshire LTP3.

The key stages of the SEA process are outlined below[1] together with the approximate dates that these stages have been undertaken or are likely to take place:

SEA Stage		Date
Stage A	Setting the context and objectives, establishing the baseline and deciding on the Scope	May 2009 – October 2009 (Scoping report issued in July 2009 and consulted upon for 5 weeks)
Stage B	Developing and refining alternatives and assessing effects	November 2009 – July 2010
Stage C	Preparing the Environmental Report	August 2010 – September 2010
Stage D	Consulting on the draft implementation plan and the Environmental Report	October 2010 onwards
Stage E	Monitor the significant effects of implementing the plan or programme on the Environment	Post April 2011.

This document documents the ongoing assessment of the LTP3 options (and is therefore within Stage B).

This Document

This document has been prepared to present the environmental assessment of the preferred LTP3 scenarios in order to provide Oxfordshire County Council with information on the likely effects on the SEA objectives. This will assist their decision-making on the content of the consultation draft LTP3.

This document follows on from the assessment of alternatives provided to Oxfordshire County Council in May 2010 to inform their consultation as part of the development and refinement of the LTP3. Oxfordshire County Council has now consulted upon the various alternatives and has developed preferred scenarios for each of the four areas: Oxford, Larger Towns, Smaller Towns and Rural Oxfordshire. Two scenarios are presented for Larger Towns, one of them including the Bicester Eco-Town, which may or may not proceed. County Council officers are seeking approval of the preferred scenarios at the County Council Cabinet meeting on 20 July 2010.

Once the draft LTP3 is finalised, it will be consulted upon along with the forthcoming SEA Environmental Report. The latter document will describe the likely effects on the environment of the preferred LTP3 and report the SEA process so that the consultees, including statutory

[1] Based on SEA guidance issued by the Office of the Deputy Prime Minister, September 2005, A Practical Guide to the Strategic Environmental Assessment Directive. ODPM.

stakeholder and the general public, will understand the strategic environmental issues in relation to the LTP3.

Key to the Assessment

++ Major Positive	The option would be significantly beneficial to the SEA objective by resolving an existing environmental issue and/or maximising opportunities for environmental enhancement.
+ Minor Positive	The option would be partially beneficial to the SEA objective by contributing to resolving an existing environmental issue and/or offering opportunity for some environmental enhancement.
N Neutral	The option would not significantly affect the SEA objective.
? Uncertain	There is insufficient detail available on the option or the baseline situation in order to assess how significantly the SEA objective would be affected by the option.
X Minor Negative	The option would partly undermine the SEA objective by contributing to an environmental problem and/or partially undermine opportunities for environmental enhancement.
XX Major Negative	The option would severely undermine the SA objective by contributing to an environmental problem and/or undermining opportunities for environmental enhancement. This effect is considered to be significant.

- Nature: whether they are anticipated to be:
    - **Positive** (+)
    - **Neutral** (N)
    - **Negative** (X) or
    - **Uncertain** (?)

- Duration: the duration of potential effects are presented in terms of the timescale over which they are anticipated:
    - **Short term** (ST): effects expected up until 2016.
    - **Medium term** (MT): effects expected from 2016 to 2030.
    - **Long term** (LT): effects expected beyond 2030.

- Reversibility:
    - A **reversible** effect is an environmental effect that can be reversed, for example an incident of water pollution can be cleaned up over time.
    - An **irreversible** effect is an environmental effect that cannot be reversed such as the loss of a historic feature or the loss of agricultural soil due to permanent development.
- Spatial Scale:
    - **Local**: effect is restricted to the immediate location of the proposal or to a specific site within one of the four areas – Oxford, Larger Towns, Smaller Towns, Rural Oxfordshire
    - **Regional**: effect is anticipated to cover a significant proportion or all of Oxfordshire.
    - **National:** effect covers the whole of England and/or the UK (also includes international).
- Permanence:
    - A **permanent** effect is one which results from a physical change that is anticipated to last beyond the life of the LTP.
    - A **temporary/intermittent** effect is one which results from an operational change which could change if there is a change of policy, or a short term condition such as a construction phase related impact.

Assessment Approach and Limitations

This assessment has been made mainly by using expert judgement based assessment that is supported by appropriate evidence. For some of the SEA objectives, evidence has been drawn from INTRA-SIM which predicts potential changes on a number of indicators from the scenarios. The INTRA-SIM model considers changes in the medium term (up to 2026).

The assessment is a qualitative assessment based upon descriptions about the scenarios provided by Oxfordshire County Council. Any inconsistencies between this assessment and that prepared in May 2010 for the alternative scenarios is likely to be due to the availability of new information on the potential transport provision under each of the scenarios. This assessment may need to be further updated for the Environmental Report.

Preferred Scenarios

A stakeholder consultation exercise was held by Oxfordshire County Council between May and June 2010 in order to ascertain views relating to the scenarios developed for the Oxfordshire LTP3. The consultation responses allowed preferred scenarios to be developed for four geographic categories: Oxford, Larger Towns, Smaller Towns and Rural Areas.

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 areas.

	PREFERRED SCENARIOS			
	Oxford	Larger Towns (Bicester)	Smaller Towns	Rural Oxfordshire
Rail	✓✓	✓✓		✓
Bus	✓	✓✓(✓)	✓	✓✓
Walking	✓✓✓	✓✓	✓✓	✓✓
Cycling	✓✓✓	✓✓(✓)	✓✓	✓✓
Highway Infrastructure		✓✓		
Traffic Management	✓	✓	✓	
Park & Ride	✓✓	✓✓		
Behavioural Change	✓	✓(✓✓)	✓	✓
Low Emission Vehicles	✓✓✓	✓✓	✓✓	
Slower Speeds	✓			✓✓
Freight Management	✓✓✓			✓

Level of investment:
✓ = Low ✓✓ = Medium ✓✓✓ = High
(Additional ticks in brackets would apply if the Eco-Town in Bicester proceeds)

Larger Towns = Abingdon, Banbury, Bicester, Science Vale UK (including Didcot and Wantage & Grove) and Witney
Smaller Towns = Carterton, Chinnor, Chipping Norton, Faringdon, Henley-on-Thames, Kidlington, Thame and Wallingford

Assessment of Preferred LTP3 Scenarios

Oxford: Preferred Scenario

The preferred scenario is for high investment in walking, cycling, low emission vehicles and freight management, medium level in park & ride and rail and low investment in bus, traffic management, behavioural change and slower speeds.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	x	?	?	I/R	L	P	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. Similar potential impacts would occur for any other proposed infrastructure affecting the urban fringe or established habitats. 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 unknown.	Irreversible habitat loss associated with new railway facilities and park & ride may be partially or wholly offset by habitat enhancements/creation. A detailed EIA would inform an appropriate level of mitigation where required. Pedestrianisation and cycle network proposals may provide opportunity to include native peripheral tree and shrub planting in the design which would provide improved habitats for birds, invertebrates and small mammals.
2	Green infrastructure	+	+	+	R	L	P	The pedestrianisation and cycle network elements of this scenario would help to link existing and proposed elements of green infrastructure such as parks and play spaces and therefore be beneficial.	As above. In line with guidance from Natural England (2009), new transport developments should be planned to integrate green infrastructure into the design. The demand management element may help to reduce traffic and open up more possibility to convert space otherwise occupied by roads or parking to new elements of green infrastructure.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	+	++	++	R	L	P	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 (based upon INTRA-SIM).	No further enhancements identified.
4	Noise pollution	X	+	+	R	L	T	The INTRA-SIM model predicts a slight decrease (-2.08%) in noise levels from the scenario and a more significant reduction in vibration (-13.21%). However in the short term it is likely to be negative due to noise associated with construction activities.	Construction activities should be planned to minimise disturbance to pedestrians and workers within Oxford, for example through the use of temporary acoustic screening where appropriate.
5	Vitality of town centres	++	++	++	R	L	P	The INTRA-SIM model predicts improved accessibility to Oxford's centre by bicycle, bus and on foot. The enhanced pedestrian experience is likely to encourage more retail and leisure activity within Oxford.	None identified.
6	Accessibility	+	++	++	R	L	P	The INTRA-SIM model predicts improved accessibility to town centres, work places and hospitals by bus, bicycle and on foot. The scenario therefore has a major positive benefit upon the SEA objective. It is assumed that the full significance of this would take place in the medium term onwards.	None identified.
7	Water quality	+	+	+	R	L	T	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.	The integration of SuDS into the design of the new cycle and pedestrian facilities would provide opportunity to enhance the existing drainage network in Oxford and help improve water quality further.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	L	-	It is assumed that any new infrastructure under this scenario would be designed in accordance with PPS 25 or equivalent planning policy guidance so that any risk of flooding would be fully mitigated through appropriate drainage design standards.	The integration of SuDS into the design of the new cycle and pedestrian facilities would provide opportunity to enhance the existing drainage network in Oxford and help improve water quality further. The planting of trees and vegetation along new cycle routes would also help to reduce surface run-off rates.
9	Minerals and soils	X	+	+	I	L	P	In the short term the effect on soils is likely to be negative as there is likely to be some impact arising from new park & ride and the other associated infrastructure is likely to generate some waste. In the longer term the scenario is likely to be positive as it would reduce dependence upon fossil fuels and the demand for space required by high levels of car usage.	Secondary materials should be promoted to reduce the amount of resource consumption in new designs. Where possible, existing infrastructure should be used or incorporated into designs to minimise the generation of waste.
10	Land use	X	N	?	I	L	P	In the short term the effect on soils is likely to be 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 Oxford. In the long term the effect is uncertain as there may be opportunity to remediate brownfield sites currently occupied by parking into other public realm enhancements which would be positive.	Wherever possible, new park & ride sites should be located where there would be the least impact upon soils, particularly productive agricultural soils. Where this is not feasible, soils should be recovered and used taking into account relevant legislation.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
11	Air quality	?	?	+	R	L	T	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 INTRA-SIM 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.	The application of restrictions on more polluting vehicles within Oxford would help to encourage a cleaner fleet. Consideration could be given as to how to apply a "polluter pays" principle into demand management measures. Some types of trees filter out pollutants and therefore urban tree planting can be beneficial to air quality.
12	Greenhouse gas emissions	?	+	?	I	N	T	The INTRA-SIM model predicts a 37. 43% reduction in CO_2 (95,021 96,011 tonnes) from the application of this scenario. The model does not predict the short term impacts and the long term effects are uncertain due to uncertainty over population size and traffic volumes.	Park & Ride provision should be planned to minimise the likelihood of people driving greater distances than they would otherwise have done if parking in Oxford.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
13	Adapting to climate change	N	+	+	I	L	P	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.	Tree planting along key pedestrian walkways and cycleways would create shade and have a cooling effect (Huang et al. 1987). Modelling work in Greater Manchester suggested that if we increase our green cover in towns and cities by 10 per cent, we can keep surface temperatures at current levels despite climate change. The use of SuDs (described under SEA objective 8) and temperature resilient surfaces for new networks would help to meet this SEA objective.
14	Landscape character	X	N	N	I	L	P	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.	The design of the new infrastructure should take account of the landscape character and seek to minimise visual intrusion. This would be done through a detailed scheme level environmental impact assessment.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
15	Built environment	+	++	++	R	L	P	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.	Measures to restrict access of polluting vehicles would help to preserve building facades which are vulnerable to particulate pollution.
16	Cultural heritage	?	+	+	I	L	P	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 positive.	Detailed archaeological assessment as part of a scheme level environmental assessment is recommended to ensure the protection of cultural heritage during construction.
Cumulative, synergistic and secondary effects: A synergistic positive effect on human health is possible based upon the combined benefits of the scenario's support of increased physical exercise (which is associated with a reduction in all cause mortality and improved mental wellbeing, DoH 2004), reductions in certain air pollutants and noise, as well as improved public realm (improving community interaction and mental wellbeing) and access to health care.									
Summary: In the medium term the preferred scenario would have major positive effects upon the SEA objectives for built environment, accessibility, vitality of town centres and health, safety and wellbeing. Slight positive effects are anticipated upon green infrastructure, water quality, minerals and soils, adapting to climate change and cultural heritage. The identified negative effects and some uncertain effects are associated with the potential effects during construction such as impacts upon biodiversity (habitat loss), land use and noise.									

Larger towns: Preferred Scenario

Larger towns includes Abingdon, Banbury, Bicester, Science Vale UK (including Didcot and Wantage & Grove) and Witney. Under the preferred scenario there would be medium investment in measures related to rail and bus services, walking, cycling, low emission vehicles, highway infrastructure and park & ride. There would be a low level of investment in traffic management and behavioural change

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	XX	X	X	I	L	P	It is assumed that this scenario provides for a number of new roads which are likely to have an overall adverse effect upon biodiversity through the loss and fragmentation of habitats. It is 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 air pollution effects on biodiversity and therefore ongoing negative effects.	Each new scheme is likely to be subject to a detailed EIA which would identify the sensitive habitats and species that would be impacted and develop measures to help minimise adverse effects on biodiversity.
2	Green infrastructure	?	?	?	?	L	?	The scenario is likely to provide for improvements to footways and cycle ways through reallocation of existing road space. It is uncertain whether this scenario would increase provision or link areas of green infrastructure.	It is recommended that footpaths and cycleways are improved to link green infrastructure, especially play spaces, which would support safer access by children and improved physical activity.
3	Physical and mental wellbeing and safety.	?	?	?	?	R	?	The overall effect upon health and safety from this scenario is uncertain. The highway improvements may improve safety in some locations but may also result in higher risks associated with high speed traffic. Improvements to pedestrian and cycle routes may improve health but may not be sufficient to lead to a significant modal shift.	Physical traffic calming is likely to be more successful in managing speed in towns than signage only. 20mph zones in residential areas would have a significant positive effect upon safety and is likely to encourage more active travel, supporting overall health improvements.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
4	Noise pollution	?	+	+	R	R	P	The INTRA-SIM model 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 bring benefits to residents, particularly through reduced effects of vibration.	None identified.
5	Vitality of town centres	?	?	?	R	R	T	The overall effect upon town centres by this scenario is difficult to predict. Accessibility by public transport would be improved but this may be undermined by the programme of highway improvements which would support the convenience of out of town retail developments.	Highway improvements would allow those with cars to travel greater distances to access facilities. An intensive educational programme encouraging local journeys on foot or by bicycle or public transport may be required to help support use of town centre facilities.
6	Accessibility	+	+	?	R	R	P	INTRA-SIM predicts significant improvements in public transport accessibility 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. The long term effect is uncertain and depends upon transport provision in future plans.	Overall investment in transport improvements should take account of those without access to cars and should seek to provide equality of opportunity. This is likely to become more of an issue as the general population continues to age.
7	Water quality	N	N	N	-	R	-	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.	None identified.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	R	-	No significant effects upon water quality are anticipated. It is assumed that new infrastructure would be designed with appropriate drainage to address potential flood risk.	None identified.
9	Minerals and soils	XX	X	X	R	L	P	The potential highway schemes are likely to 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 high 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.	Measures to counteract traffic growth would help to reduce the maintenance requirements on the road network.
10	Land use	X	X	N	I	R	P	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 overall the effect is likely to be minor negative.	The effects on land use of individual highway schemes and park & ride should be a material consideration in site selection and considered as part of detailed environmental impact assessment.
11	Air quality	?	?	?	R	L	T	The INTRA-SIM model predicts increases for three air pollutants and slightly lower decreases in the other three air pollutants measured. Therefore the overall effect is uncertain and depends upon the sensitivity of the population to the pollutants involved.	Measures to counteract traffic growth would help to reduce overall air pollution. This may require more demand management in towns than currently indicated by the scenario.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	+	?	I	N	P	The INTRA-SIM model predicts a reduction of 14.27% in CO_2 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 a increase in CO_2 emissions during construction but it is not certain whether benefits from the public transport service improvements would counteract this increase.	A more intensive programme of Smarter Choices type promotions and demand management is likely to be successful in increasing the uptake of more carbon efficient travel (public transport, walking and cycling) within large towns where there is significant opportunity because of the relative close proximity of various services.
13	Adapting to climate change	+	+	?	R	L	P	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.	Tree planting along routes would increase shade and be beneficial during heat waves.
14	Landscape character	x	x	N	I	L	P	New elements in the landscape such as relief roads and park & ride are likely to have an adverse effect on landscape character.	The design of the new infrastructure should take account of the landscape character and seek to minimise visual intrusion and if possible enhance the landscape. This would be done through a detailed scheme level environmental impact assessment.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
15	Built environment	?	+	?	R	L	P	It is likely that improved pedestrian facilities and some reallocation of road space would have a slight improvement on the built environment. However, it is not certain that traffic growth would be curbed under this scenario and therefore the long term effects are uncertain.	Wherever traffic congestion in town centres is reduced it is recommended that the benefits are locked in through reallocation of road space to enhance the public realm.
16	Cultural heritage	X	?	?	I	L	?	It is likely that there would be some negative effect upon cultural heritage from highway improvements and park & ride measures. However, in the medium and long term there may be benefits if air pollution and vibration is reduced in towns.	Detailed archaeological appraisal of schemes should be carried out to minimise effects during construction and ensure protection of cultural heritage.
Cumulative, synergistic and secondary effects: Based upon the current understanding of this scenario it is likely that the trend in increased car use would continue despite measures to improve public transport and walking and cycling. The park & ride and highway improvements support the convenience of the car and therefore there may be a continued cumulative effect on the environment associated with traffic (noise, land take, increasing trends in obesity, wildlife road kills, and impacts upon landscape character).									
Summary: This scenario is likely to give rise to a number of construction related impacts such as land take, loss of habitats, resource use and impacts upon cultural heritage. Some positive effects are identified such as reductions in greenhouse gas emissions, noise and improvements to accessibility and built environment. However it is likely that more significant benefits could be gained from more intensive investment in walking, cycling and public transport, coupled with demand management since towns offer opportunity for successful uptake of these more efficient travel modes.									

Larger towns (with Bicester Eco-Town):

This scenario is similar to the Larger Towns scenario but also includes some additional transport provision should the proposed Bicester Eco-Town go ahead. Under the preferred scenario there would be high investment in bus (such as electric/hybrid buses and rapid transit), cycling (with on and off road routes) behavioural change, medium investment in measures related to rail, walking, low emission vehicles, highway infrastructure and park & ride. There would be a low level of investment in traffic management.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	XX	X	X	I	L	P	It is assumed that this scenario provides for a number of new roads which are likely to have an overall adverse effect upon biodiversity through the loss and fragmentation of habitats. It is 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 air pollution effects on biodiversity and therefore ongoing negative effects.	Each new highway scheme is likely to be subject to a detailed EIA which would identify the sensitive habitats and species that would be impacted and develop measures to help minimise adverse effects on biodiversity.
2	Green infrastructure	?	+	+	R	L	P	In addition to the improvements to footways and cycle ways through reallocation of existing road space, this scenario is likely to include some off-road cycle infrastructure associated with the Bicester Eco-Town which would help to link areas of green infrastructure. The Eco-Town would benefit from the provision of extensive new green infrastructure. However this effect would be local within the context of Oxfordshire and therefore only a minor positive effect overall.	It is recommended that footpaths and cycleways are improved in all towns to link green infrastructure, especially play spaces, which would support safer access by children and improved physical activity.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	?	?	?	?	R	?	The overall effect upon health and safety from this scenario is uncertain. The highway improvements may improve safety in some locations but may also result in higher risks associated with high speed traffic. Improvements to pedestrian and cycle routes may improve health but may not be sufficient to lead to a significant modal shift. Improved health outcomes would be supported within the Bicester Eco-Town due to provision for active travel and intensive behavioural change promotions. However, this effect is likely to be restricted to the Eco-Town residents and therefore not significant.	Physical traffic calming is likely to be more successful in managing speed in towns than signage only. 20mph zones in residential areas would have a significant positive effect upon safety and is likely to encourage more active travel, supporting overall health improvements.
4	Noise pollution	?	+	+	R	R	P	The INTRA-SIM model 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 and bring benefits to residents, particularly from reduced vibration.	None identified.
5	Vitality of town centres	?	?	?	R	R	T	The overall effect upon town centres by this scenario is difficult to predict. Accessibility by public transport would be improved but this may be undermined by the programme of highway improvements, which would support the convenience of out of town retail developments. Positive effects are anticipated for Bicester itself with its associated Eco-Town but this is likely to be localised.	Highway improvements would allow those with cars to travel greater distances to access facilities. An intensive educational programme encouraging local journeys on foot or by bicycle or public transport may be required to help support use of town centre facilities.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
6	Accessibility	+	++	?	R	R	P	INTRA-SIM predicts 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.	Overall investment in transport improvements should take account of those without access to cars and should seek to provide equality of opportunity. This is likely to become more of an issue as the general population continues to age.
7	Water quality	N	N	N	-	R	-	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.	None identified.
8	Flood risk	N	N	N	-	R	-	No significant effects upon water quality are anticipated. It is assumed that new infrastructure would be designed with appropriate drainage to address potential flood risk.	None identified.
9	Minerals and soils	xx	x	?	R	L	P	The potential new infrastructure schemes are likely to be resource intensive. While 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 high mineral use, the potential investment in bus rapid transit may help to counteract some traffic growth and help reduce dependence on fossil fuels. In the long term it is uncertain whether the new public transport infrastructure and services would counteract the resources used due to the convenience of car use.	Further measures to counteract traffic growth would help to reduce the maintenance requirements on the road network.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
10	Land use	x	x	N	I	R	P	The proposed highways schemes and links with the proposed Bicester Eco-Town 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 overall the effect is likely to be minor negative.	The effects on land use of individual highway schemes and park & ride should be a material consideration in site selection and considered as part of detailed environmental impact assessment.
11	Air quality	?	?	?	R	L	T	The INTRA-SIM model predicts 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 INTRA-SIM currently models. 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.	Measures to counteract traffic growth would help to reduce overall air pollution. This may require more demand management in towns than currently indicated by the scenario.
12	Greenhouse gas emissions	?	+	?	I	N	P	The INTRA-SIM model predicts a reduction of 13.95% in CO_2 emissions from this scenario (16,999 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.	A more widespread and intensive programme of Smarter Choices type promotions and demand management is likely to be successful in increasing the uptake of more carbon efficient travel (public transport, walking and cycling) within large towns where there is significant opportunity because of the relative close proximity of various services.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
13	Adapting to climate change	+	+	?	R	L	P	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 during the floods in 2007 and in Cumbria (Cockermouth) in 2009.	Tree planting along routes would increase shade and be beneficial during heat waves.
14	Landscape character	X	X	X	I	L	P	New elements in the landscape such as relief roads and park & ride are likely to have an adverse effect on landscape character.	The design of the new infrastructure should take account of the landscape character and seek to minimise visual intrusion. This would be done through a detailed scheme level environmental impact assessment.
15	Built environment	?	+	?	R	L	P	It is likely that improved pedestrian facilities and some reallocation of road space would improve the built environment in the medium-term. Construction during the short term is likely to cause disruption to the built environment. However, it is not certain that traffic growth would be curbed under this scenario and therefore the long term effects are uncertain.	Wherever traffic congestion in town centres is reduced it is recommended that the benefits are locked in through reallocation of road space to enhance the public realm.
16	Cultural heritage	X	?	?	I	L	?	It is likely that there would be some negative effects upon cultural heritage from highway improvements and park & ride measures. However, in the medium and long term there may be benefits if air pollution and vibration is reduced in towns – this is currently unknown.	Detailed archaeological appraisal of schemes should be carried out to minimise effects during construction and ensure protection of cultural heritage.

SEA Objective (abridged)	Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
	Short term	Medium term	Long term	Reversibility	Scale	Permanence		
Cumulative, synergistic and secondary effects: Based upon the current understanding of this scenario it is likely that the trend in increased car use would continue despite measures to improve public transport and walking and cycling. The park & ride and highway improvements support the convenience of the car and therefore there may be a continued cumulative effect on the environment associated with traffic (noise, land take, increasing trends in obesity, wildlife road kills, and impacts upon landscape character). However, the development of the Bicester Eco-Town may lead to secondary effects if its facilities such as bus rapid transit are found to be successful and rolled out to other towns within Oxfordshire.								
Summary: The introduction of some of the higher investment measures associated with the Bicester Eco-Town does not significantly affect the assessment since it is assumed that the additional benefits for the Eco-Town would be local to that town and not enough to off-set the wider impacts associated with the general scenario for large towns in Oxfordshire. The scenario is likely to give rise to a number of construction related impacts such as land take, loss of habitats, resource use and impacts upon cultural heritage. Some positive effects are identified such as reductions in greenhouse gas emissions and noise and improvements to accessibility and built environment. However it is likely that more significant benefits could be gained from more intensive investment in walking, cycling and public transport, coupled with demand management since towns offer opportunity for successful uptake of these more efficient travel modes.								

Smaller towns: Preferred Scenario

Smaller towns includes Carterton, Chinnor, Chipping Norton, Faringdon, Henley-on-Thames, Kidlington, Thame and Wallingford. Under the preferred scenario there would be medium investment in measures related to walking, cycling and low emission vehicles. There would be a low level of investment in bus, demand management and behavioural change

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	N	?	?	R	R	T	Assuming that there would be no significant investment in new highways or other transport facilities 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 which may lead to long term effects on biodiversity.	Biodiversity could be enhanced through a long term programme of verge management, for example to encourage more species rich grassland.
2	Green infrastructure	N	N	N	R	L	T	No significant effects are anticipated on this objective.	Should car use be reduced within towns such as through the demand management measures and behavioural change, benefits could be locked in by converting more areas to public space or other green infrastructure.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	?	+	?	R	R	T	The overall assessment is uncertain. Although there would be some investment in cycling, walking and behavioural change under this scenario, it is not certain whether the investment would be sufficient enough to accrue major health benefits associated with active travel therefore a minor positive effect is assumed. There may not be enough intervention under this scenario to reverse the rising trend in car use which contributes to fear of accidents among pedestrians and cyclists and suppresses these types of travel.	Traffic calming in small towns may help to create safer road conditions which would encourage more active travel and increase the likelihood of health benefits from the LTP3.
4	Noise pollution	N	N	?	R	L	T	The INTRA-SIM model predicts a negligible effect on noise and vibration from this scenario. In the long term the effect is uncertain as traffic growth may result in an increase in noise effects.	Slower speeds through small towns may help reduce the effects of noise.
5	Vitality of town centres	N	N	N	R	L	P	No significant effect is anticipated on this SEA objective from the implementation of this scenario. It is considered that the scenario would neither benefit nor undermine the SEA objective.	Favourable public transport fares are likely to encourage greater use of town centres for shopping and leisure.
6	Accessibility	+	++	?	R	R	P	The INTRA-SIM model predicts 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 certain whether service investment would continue or whether congestion may increase with traffic growth	Where traffic congestion is reduced as a result of traffic management it would be beneficial to lock in the benefits through the reallocation of road space in order to avoid induced traffic congestion in the longer term.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
7	Water quality	N	N	N	-	R	-	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.	None identified.
8	Flood risk	N	N	N	-	R	-	No significant effects upon flood risk are anticipated. It is assumed that new infrastructure would be designed with appropriate drainage to mitigate flood risk.	None identified.
9	Minerals and soils	N	+	+	R	R	T	This scenario is unlikely to result in significant additional resource usage in itself. 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.	Where traffic congestion is reduced as a result of traffic management it would be beneficial to lock in the benefits through the reallocation of road space in order to avoid induced traffic congestion in the longer term.
10	Land use	+	+	+	I	L	P	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 beneficial.	This scenario should prioritise making the best use of existing infrastructure, in order to make prudent use of existing land, before introducing new schemes.
11	Air quality	N	N	N	R	L	T	The INTRA-SIM model predicts negligible changes under this scenario and therefore the effect has been assessed as neutral.	None identified.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	+	?	I	N	P	The INTRA-SIM mode 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.	Where traffic congestion is reduced as a result of traffic management it would be beneficial to lock in the benefits through the reallocation of road space in order to avoid induced traffic congestion in the longer term.
13	Adapting to climate change	?	?	?	R	L	P	This scenario does not provide for significant investment in new infrastructure and therefore it is not clear how climate change adaptations would be made.	Maintenance requirements should take into account climate change predictions in seeking to make adaptations such as more temperature resilient surfacing.
14	Landscape character	+	+	+	R	R	P	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.	None identified.
15	Built environment	+	+	?	I	R	P	The improvement 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.	Without measures to lock in the benefits of reduced congestion, it is possible that the reduction in congestion would be short lived as population growth would lead to further car use.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
16	Cultural heritage	?	?	?	?	L	?	Further information is required on the proposed locations of developments associated with this scenario to assess the nature and likely significance of impact.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.
Cumulative, synergistic and secondary effects: No significant cumulative effects have been identified.									
Summary: This scenario is unlikely to have a significant negative effect upon the environment since it makes use of existing infrastructure and softer solutions (marketing for behaviour change and traffic management). However, it is not certain whether the reduced congestion would be maintained in the long term since it depends upon behaviour change rather than physical restrictions to private car use.									

Rural Oxfordshire: Preferred Scenario

Under the preferred scenario there would be medium investment in measures related to bus services, walking, cycling and slower speeds and low investment in rail, behavioural change and freight management.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	+	+	+	R	L	T	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.	Biodiversity could be enhanced through a long term programme of verge management, for example to encourage more species rich grassland.
2	Green infrastructure	+	+	+	R	L	P	The scenario would improve access to green spaces for residents of Oxfordshire although not necessarily add to green infrastructure.	None identified.
3	Physical and mental wellbeing and safety.	+	++	++	R	L	T	The overall effect of this scenario on health is likely to be beneficial 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.	20mph limits or zones through villages would further improve safety for residents, particularly children and elderly who tend to more at risk as pedestrians.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
4	Noise pollution	+	+	+	R	L	T	INTRA-SIM predicts 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.	None identified.
5	Vitality of town centres	N	N	N	-	-	-	No significant effects on this SEA objective are anticipated.	
6	Accessibility	+	++	?	R	L	T	INTRA-SIM predicts 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 dynamics beyond the timescale for LTP3.	Traffic growth due to population increase may undermine improvements to accessibility unless benefits are locked in and investment in behaviour change continues.
7	Water quality	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	None identified.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	None identified.
9	Minerals and soils	N	+	+	R	R	T	This scenario is unlikely to result in significant additional resource usage in itself. 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.	Where traffic congestion is reduced as a result of traffic management it would be beneficial to lock in the benefits through the reallocation of road space in order to avoid induced traffic congestion in the longer term.
10	Land use	+	+	?	I	L	P	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.	This scenario should prioritise making the best use of existing infrastructure, in order to make prudent use of existing land, before impacting undeveloped land.
11	Air quality	+	+	+	R	L	T	INTRA-SIM 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.	Encouragement of lower emission bus fleets and restrictions on more heavily polluting vehicles would improve air quality further.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	+	?	R	L	T	The INTRA-SIM model predicts a 9.50% reduction (243,893 tonnes) in CO_2 in the medium term. This is likely to be in part due to the 50mph speed limits.	Focus should be on making the most of the benefits in towns where facilities are close enough for more journeys to be undertaken by modes other than the car (walking, cycling and public transport).
13	Adapting to climate change	?	?	?	R	L	P	This scenario does not provide for a significant investment in new infrastructure and therefore it is not clear how climate change adaptations would be made.	Maintenance requirements should take into account climate change predictions in seeking to make adaptations such as more temperature resilient surfacing.
14	Landscape character	+	+	+	R	R	P	Improved rights of way and connections between them is likely to be of minor positive to the SEA objective through enabling more access to and enjoyment of the countryside.	None identified.
15	Built environment	N	N	N	R	L	T	No significant effect is anticipated upon this SEA objective as a result of this scenario.	

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
16	Cultural heritage	+	+	+	?	L	?	It is unlikely that significant negative effects would arise from this scenario. However there may be cumulative local benefits to the cultural heritage of villages (such as village churches, crosses and other features) from reduced vibration.	None identified.
Cumulative, synergistic and secondary effects: This scenario may have a synergistic effect on human health through the cumulative effect of improved air quality, reduced noise, reduced fear of accidents, more opportunities for active travel and access to green space. The reduction of HGVs through sensitive villages may have a cumulative benefit on cultural heritage relating to the character of villages in Oxfordshire.									
Summary: Positive effects are identified on 11 of the SEA objectives and no significant negative effects were identified. This scenario makes good use of existing infrastructure.									

Appendix D4: Final Assessment of Preferred Option

Appendix D4
Final Assessment of Preferred LTP3 Scenarios

September 2010

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed
01	00	Assessment of preferred scenarios	7/7/10	J Wade
01	01	Revised to address client queries	8/7/10	J Wade
02	02	Assessment amended to take account of additional information in Area Strategies. To be included in Environmental Report.	8/9/10	J Wade

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This Document

This document presents the final assessment of the preferred Scenarios that form the draft LTP3. Note that the interpretation of the timescales has been altered to reflect the uncertainty in funding over the initial years of the draft LTP3.

Key to the Assessment

++ Major Positive	The option would be significantly beneficial to the SEA objective by resolving an existing environmental issue and/or maximising opportunities for environmental enhancement.
+ Minor Positive	The option would be partially beneficial to the SEA objective by contributing to resolving an existing environmental issue and/or offering opportunity for some environmental enhancement.
N Neutral	The option would not significantly affect the SEA objective.
? Uncertain	There is insufficient detail available on the option or the baseline situation in order to assess how significantly the SEA objective would be affected by the option.
X Minor Negative	The option would partly undermine the SEA objective by contributing to an environmental problem and/or partially undermine opportunities for environmental enhancement.
XX Major Negative	The option would severely undermine the SA objective by contributing to an environmental problem and/or undermining opportunities for environmental enhancement. This effect is considered to be significant.

- Nature: whether they are anticipated to be:
    - **Positive** (+)
    - **Neutral** (N)
    - **Negative** (X) or
    - **Uncertain** (?)

- Duration: the duration of potential effects are presented in terms of the timescale over which they are anticipated:
    - **Short term** (ST): effects expected during implementation.
    - **Medium term** (MT): effects expected up until 2030.
    - **Long term** (LT): effects expected beyond 2030.

- Reversibility:
    - A **reversible** effect is an environmental effect that can be reversed, for example an incident of water pollution can be cleaned up over time.
    - An **irreversible** effect is an environmental effect that cannot be reversed such as the loss of a historic feature or the loss of agricultural soil due to permanent development.
- Spatial Scale:
    - **Local**: effect is restricted to the immediate location of the proposal or to a specific site within one of the four areas – Oxford, Larger Towns, Smaller Towns, Rural Oxfordshire
    - **Regional**: effect is anticipated to cover a significant proportion or all of Oxfordshire.
    - **National:** effect covers the whole of England and/or the UK (also includes international).
- Permanence:
    - A **permanent** effect is one which results from a physical change that is anticipated to last beyond the life of the LTP.
    - A **temporary/intermittent** effect is one which results from an operational change which could change if there is a change of policy, or a short term condition such as a construction phase related impact.

Assessment Approach and Limitations

This assessment has been made mainly by using expert judgement based assessment that is supported by appropriate evidence. Evidence includes the lists of measures from the Area Strategies which is presented on the next page. This list has been drawn up from Halcrow's interpretation of the Area Strategies and may not reflect the full intentions of Oxfordshire County Council. For some of the SEA objectives, evidence has been drawn from INTRA-SIM which predicts potential changes on a number of indicators from the scenarios. The INTRA-SIM model considers changes in the medium term (up to 2026).

The assessment is a qualitative assessment based upon descriptions about the scenarios provided by Oxfordshire County Council. Any inconsistencies between this assessment and the assessments of alternative scenarios and preliminary assessment of the preferred scenario presented in Appendices D2 and D3 are likely to be due to the availability of new information on the potential transport provision under each of the scenarios.

Preferred Scenarios

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 areas.

Level of investment:
✓ = Low ✓✓ = Medium ✓✓✓ = High
(Additional ticks in brackets would apply if the Eco-Town in Bicester proceeds)

	PREFERRED SCENARIOS			
	Oxford	Larger Towns (Bicester)	Smaller Towns	Rural Oxfordshire
Rail	✓✓	✓✓		✓
Bus	✓	✓✓(✓)	✓	✓✓
Walking	✓✓✓	✓✓	✓✓	✓✓
Cycling	✓✓✓	✓✓(✓)	✓✓	✓✓
Highway Infrastructure		✓✓		
Traffic Management	✓	✓	✓	
Park & Ride	✓✓	✓✓		
Behavioural Change	✓	✓(✓✓)	✓	✓
Low Emission Vehicles	✓✓✓	✓✓	✓✓	
Slower Speeds	✓			✓✓
Freight Management	✓✓✓			✓

Larger Towns = Abingdon, Banbury, Bicester, Science Vale UK (including Didcot and Wantage & Grove) and Witney
Smaller Towns = Carterton, Chinnor, Chipping Norton, Faringdon, Henley-on-Thames, Kidlington, Thame and Wallingford

Oxfordshire County Council has prepared a series of Area Strategies for the settlements within the four geographic reasons. These have been examined by Halcrow and a matrix has been used to list the combination of measures that are likely to be applied in each area based upon Halcrow's interpretation of information in the draft Area Strategies. The measures in the Area Strategies are as follows:

Transport initiatives	Oxford	Abingdon	Banbury	Bicester	Science Vale	Witney	Carterton	Chinnor	Chipping Norton	Faringdon	Henley-on-Thames	Kidlington	Thame	Wallingford	Rural (including inter-urban corridors)
Improve signage & waymarking/legibility of pedestrian routes	●	●	●	●	●		●	○	●	○	●	●	●	●	
Improve pedestrian links between services/employment	●			●		●	●	●	●	○	●	○	●	○	
Improve footway conditions/crossing points/pedestrian facilities		●	●	●	●	●		●	●	○	●	●	●	○	
Improve connections to rural rights of way/access to countryside		●	●	●	●		●	●	●	●	●	●	●		○
Improve information/publicity/mapping		●	●	●		●	●	●	●	●	●	●	●		
Support zero carbon block in specific locations				●											
Improve cycle routes between services/employment sites/education	●	●	●	●	●	●	○	●	●	●	●	●	●	●	
Improve cycle facilities (cycle parking, cycle racks)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Provide/extend off road cycle routes			●		○										
Improve connections to rural rights of way/access to countryside		●	●		●	●	●	●	●	●		●	●	●	○
Promote opportunities for bikes to be taken on trains and coaches															●
Improve information/publicity/mapping	●	●	●	●		●	●	●	●	●	●	●	●		
Facilitate introduction of electric car charging points				●											
Encourage use of low emission vehicles	●	●		●	●				●		●	●		●	
Develop low emission zones	●														
Encourage use of alternative existing routes to reduce congestion hotspots		●	●	●									○		●
Develop new highway links/routes/relief roads			○	●	●	●									
Redevelop or reallocate road space to improve movement on foot/by cycle or public transport			○	○		○				○				○	
Junction/highway improvements to ease congestion/improve pedestrian or cycle access/improve safety	●	○	○	○	○	●		○		○	○				●
Traffic calming/pedestrian & child safety improvements		●				○				●		○			
Signage improvements or intelligent transport systems				○		●		○	○	○	●	○	○	○	●
Public realm enhancements/town centre redvelopments	●		●	●		●	●								
Work with bus companies to improve services	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Electric/hybrid bus services				○											
Develop rapid transit services	●			●											
Improve bus shelters/waiting areas/bus stations			●	●	●	●		●	●		●		●	●	●
Maintain existing good services		●						●							●
Improve bus priority measures & bus lanes & routing			●	●	●	●			●	○	●	●	●		●
Improve passenger information/promote services			●	●	●	●	●	●	●	●	●	●	●	●	●
Improve pedestrian/cycle access to bus services	●		●		●	●	●		●	●		●	●		●
Improve ticketing schemes/linkages with rail services			●	●			●		●		●	●	●		
Improve flexibility of service															●
Provide new/extend existing park & ride facilities	●			○		○									
Work with rail companies to improve services	●			●		○					●	●			●
Provide new rail stations	●				○										
Improve rail stations/facilities at stations	●		●	●											●
Improve pedestrian/cycle access to rail services	●	●	●	●	●										●
Improve bus access to rail services	●		●	●		○		●				●			●
Station travel plan				●							●				
Improve parking at rail stations							●								●
Encourage use of low emission vehicles	●	●							●		●	●		●	
Delivery/loading restrictions		○							●		○				
Traffic calming/vehicle activated signage/other signage		●					○		○			●		○	
Parking controls/restrictions	●	●									○		○		
Improve information/publicity/awareness		●		●	●							●		●	●
School and employer travel plans	●	●	●	●	●	●	●		●			●		●	
New development travel plans		●			●	●							●	●	
Promoting car share schemes	●		●	●	●	●	○		○			○			
Car clubs			○			○	○		○			○			
Encourage working from home															●
Reduce need to travel (by ensuring services and employments are near home)															○
Road safety education & training			○												
20mph limits or zones	●														
50mph limits on rural roads															●
Improve freight route mapping															○
Redirect freight movements away from sensitive locations															○

Key	
Transport intiative is proposed for plan period	●
Transport intiative is to be investigated for feasibility	○

Assessment of Preferred LTP3 Scenarios

Oxford: Preferred Scenario

The preferred scenario is for high investment in walking, cycling, low emission vehicles and freight management, medium level in park & ride and rail and low investment in bus, traffic management, behavioural change and slower speeds.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	x	?	?	I/R	L	P	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. Similar potential impacts would occur for any other proposed infrastructure affecting the urban fringe or established habitats. 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 unknown.	Irreversible habitat loss associated with new railway facilities and park & ride may be partially or wholly offset by habitat enhancements/creation. A detailed EIA would inform an appropriate level of mitigation where required. Pedestrianisation and cycle network proposals may provide opportunity to include native peripheral tree and shrub planting in the design which would provide improved habitats for birds, invertebrates and small mammals.
2	Green infrastructure	+	+	+	R	L	P	The pedestrianisation and cycle network elements of this scenario would help to link existing and proposed elements of green infrastructure such as parks and play spaces and therefore be beneficial.	As above. In line with guidance from Natural England (2009), new transport developments should be planned to integrate green infrastructure into the design. The demand management element may help to reduce traffic and open up more possibility to convert space otherwise occupied by roads or parking to new elements of green infrastructure.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	+	++	++	R	L	P	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 (based upon INTRA-SIM).	No further enhancements identified.
4	Noise pollution	X	+	+	R	L	T	The INTRA-SIM model predicts a slight decrease (-2.08%) in noise levels from the scenario and a more significant reduction in vibration (-13.21%). However in the short term it is likely to be negative due to noise associated with construction activities.	Construction activities should be planned to minimise disturbance to pedestrians and workers within Oxford, for example through the use of temporary acoustic screening where appropriate.
5	Vitality of town centres	++	++	++	R	L	P	The INTRA-SIM model predicts improved accessibility to Oxford's centre by bicycle, bus and on foot. The enhanced pedestrian experience is likely to encourage more retail and leisure activity within Oxford.	None identified.
6	Accessibility	+	++	++	R	L	P	The INTRA-SIM model predicts improved accessibility to town centres, work places and hospitals by bus, bicycle and on foot. The scenario therefore has a major positive benefit upon the SEA objective. It is assumed that the full significance of this would take place in the medium term onwards.	None identified.
7	Water quality	+	+	+	R	L	T	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.	The integration of SuDS into the design of the new cycle and pedestrian facilities would provide opportunity to enhance the existing drainage network in Oxford and help improve water quality further.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	L	-	It is assumed that any new infrastructure under this scenario would be designed in accordance with PPS 25 or equivalent planning policy guidance so that any risk of flooding would be fully mitigated through appropriate drainage design standards.	The integration of SuDS into the design of the new cycle and pedestrian facilities would provide opportunity to enhance the existing drainage network in Oxford and help improve water quality further. The planting of trees and vegetation along new cycle routes would also help to reduce surface run-off rates.
9	Minerals and soils	X	+	+	I	L	P	In the short term the effect on soils is likely to be negative as there is likely to be some impact arising from new Park & Ride and the other associated infrastructure is likely to generate some waste. In the longer term the scenario is likely to be positive as it would reduce dependence upon fossil fuels and the demand for space required by high levels of car usage.	Secondary materials should be promoted to reduce the amount of resource consumption in new designs. Where possible, existing infrastructure should be used or incorporated into designs to minimise the generation of waste.
10	Land use	X	N	?	I	L	P	In the short term the effect on soils is likely to be 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 Oxford. In the long term the effect is uncertain as there may be opportunity to remediate brownfield sites currently occupied by parking into other public realm enhancements which would be positive.	Wherever possible, new park & ride sites should be located where there would be the least impact upon soils, particularly productive agricultural soils. Where this is not feasible, soils should be recovered and used taking into account relevant legislation.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
11	Air quality	?	?	+	R	L	T	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 INTRA-SIM 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.	The application of restrictions on more polluting vehicles within Oxford would help to encourage a cleaner fleet. Consideration could be given as to how to apply a "polluter pays" principle into demand management measures. Some types of trees filter out pollutants and therefore urban tree planting can be beneficial to air quality.
12	Greenhouse gas emissions	?	++	?	I	N	T	The INTRA-SIM model predicts a 37. 43% reduction in CO_2 (95,021 96,011 tonnes) from the application of this scenario. The model does not predict the short term impacts and the long term effects are uncertain due to uncertainty over population size and traffic volumes.	Park & Ride provision should be planned to minimise the likelihood of people driving greater distances than they would otherwise have done if parking in Oxford.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
13	Adapting to climate change	N	+	+	I	L	P	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.	Tree planting along key pedestrian walkways and cycleways would create shade and have a cooling effect (Huang et al. 1987). Modelling work in Greater Manchester suggested that if we increase our green cover in towns and cities by 10 per cent, we can keep surface temperatures at current levels despite climate change. The use of SuDs (described under SEA objective 8) and temperature resilient surfaces for new networks would help to meet this SEA objective.
14	Landscape character	X	N	N	I	L	P	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.	The design of the new infrastructure should take account of the landscape character and seek to minimise visual intrusion. This would be done through a detailed scheme level environmental impact assessment.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
15	Built environment	+	++	++	R	L	P	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.	Measures to restrict access of polluting vehicles would help to preserve building facades which are vulnerable to particulate pollution.
16	Cultural heritage	?	+	+	I	L	P	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 positive.	Detailed archaeological assessment as part of a scheme level environmental assessment is recommended to ensure the protection of cultural heritage during construction.
Cumulative, synergistic and secondary effects: A synergistic positive effect on human health is possible based upon the combined benefits of the scenario's support of increased physical exercise (which is associated with a reduction in all cause mortality and improved mental wellbeing, DoH 2004), reductions in certain air pollutants and noise, as well as improved public realm (improving community interaction and mental wellbeing) and access to health care.									
Summary: In the medium term the preferred scenario would have major positive effects upon the SEA objectives for built environment, accessibility, vitality of town centres and health, safety and wellbeing. Slight positive effects are anticipated upon green infrastructure, water quality, minerals and soils, adapting to climate change and cultural heritage. The identified negative effects and some uncertain effects are associated with the potential effects during construction such as impacts upon biodiversity (habitat loss), land use and noise.									

Larger towns: Preferred Scenario

Larger towns includes Abingdon, Banbury, Bicester, Science Vale UK (including Didcot and Wantage & Grove) and Witney. Under the preferred scenario there would be medium investment in measures related to rail and bus services, walking, cycling, low emission vehicles, highway infrastructure and park & ride. There would be a low level of investment in traffic management and behavioural change

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	XX	X	X	I	L	P	This scenario provides for a number of new roads (Bicester, Science Vale and Witney Area Strategies) which are likely to have an overall adverse effect upon biodiversity through the loss and fragmentation of habitats. It is 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.	Each new scheme is likely to be subject to a detailed EIA which would identify the sensitive habitats and species that would be impacted and develop measures to help minimise adverse effects on biodiversity.
2	Green infrastructure	++	+	+	I	L	P	The majority of Area Strategies include proposals to improve linkages to rural rights of way which is a significant positive effect. The scenario is likely to provide for improvements to footways and cycle ways although much of this would be through reallocation of existing road space.	It is recommended that footpaths and cycleways are improved to link green infrastructure, especially play spaces, which would support safer access by children and improved physical activity.
3	Physical and mental wellbeing and safety.	+	++	++	?	R	?	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	Physical traffic calming is likely to be more successful in managing speed in towns than signage only. 20mph zones in residential areas would have a significant positive effect upon safety and is likely to encourage more active travel, supporting overall health improvements.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
4	Noise pollution	?	+	+	R	R	P	The INTRA-SIM model 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.	None identified.
5	Vitality of town centres	?	?	?	R	R	T	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.	Highway improvements would allow those with cars to travel greater distances to access facilities. An intensive educational programme encouraging local journeys on foot or by bicycle or public transport may be required to help support use of town centre facilities.
6	Accessibility	+	+	?	R	R	P	INTRA-SIM predicts significant improvements in public transport accessibility 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. The long term effect is uncertain and depends upon transport provision in future plans.	Overall investment in transport improvements should take account of those without access to cars and should seek to provide equality of opportunity. This is likely to become more of an issue as the general population continues to age.
7	Water quality	N	N	N	-	R	-	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.	None identified.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
8	Flood risk	N	N	N	-	R	-	No significant effects upon water quality are anticipated. It is assumed that new infrastructure would be designed with appropriate drainage to address potential flood risk.	None identified.
9	Minerals and soils	XX	X	X	R	L	P	The potential highway schemes are likely to 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 high 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.	Measures to counteract traffic growth would help to reduce the maintenance requirements on the road network.
10	Land use	X	X	N	I	R	P	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 overall the effect is likely to be minor negative.	The effects on land use of individual highway schemes and park & ride should be a material consideration in site selection and considered as part of detailed environmental impact assessment.
11	Air quality	?	?	?	R	L	T	The INTRA-SIM model predicts increases for three air pollutants and slightly lower decreases in the other three air pollutants measured. Therefore the overall effect is uncertain and depends upon the sensitivity of the population to the pollutants involved.	Measures to counteract traffic growth would help to reduce overall air pollution. This may require more demand management in towns than currently indicated by the scenario.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	+	?	I	N	P	The INTRA-SIM model predicts a reduction of 14.27% in CO_2 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 a increase in CO_2 emissions during construction but it is not certain whether benefits from the public transport service improvements would counteract this increase.	A more intensive programme of Smarter Choices type promotions and demand management is likely to be successful in increasing the uptake of more carbon efficient travel (public transport, walking and cycling) within large towns where there is significant opportunity because of the relative close proximity of various services.
13	Adapting to climate change	+	+	?	R	L	P	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.	Tree planting along routes would increase shade and be beneficial during heat waves.
14	Landscape character	XX	XX	?	I	L	P	New elements in the landscape such as relief roads and park & ride are likely to have an adverse effect on landscape character.	The design of the new infrastructure should take account of the landscape character and seek to minimise visual intrusion and if possible enhance the landscape. This would be done through a detailed scheme level environmental impact assessment.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
15	Built environment	?	++	+	R	L	P	It is likely that improved pedestrian facilities, town centre redevelopments and some reallocation of road space would have a significant improvement on the built environment. However, it is assumed that traffic would be managed under this scenario to reduce its adverse effects in town centres.	Wherever traffic congestion in town centres is reduced it is recommended that the benefits are locked in through reallocation of road space to enhance the public realm.
16	Cultural heritage	XX	?	?	I	L	?	It is likely that there would be some negative effect upon cultural heritage from highway improvements and park & ride measures. It is assumed this would be significant although it is not certain. However, in the medium and long term there may be benefits if air pollution and vibration is reduced in towns.	Detailed archaeological appraisal of schemes should be carried out to minimise effects during construction and ensure protection of cultural heritage.
Cumulative, synergistic and secondary effects: Based upon the current understanding of this scenario it is likely that the trend in increased car use would continue despite measures to improve public transport and walking and cycling. The park & ride and highway improvements support the convenience of the car and therefore there may be a continued cumulative effect on the environment associated with traffic (noise, land take, increasing trends in obesity, wildlife road kills, and impacts upon landscape character).									
Summary: This scenario is likely to give rise to a number of construction related impacts such as land take, loss of habitats, resource use and impacts upon cultural heritage. Some positive effects are identified such as reductions in greenhouse gas emissions, noise and improvements to accessibility and built environment. Significant benefits could be gained from the investment in walking, cycling and public transport, coupled with demand management since towns offer opportunity for successful uptake of these more efficient travel modes.									

Larger towns (with Bicester Eco-Town):

This scenario is similar to the Larger Towns scenario but also includes some additional transport provision should the proposed Bicester Eco-Town go ahead. Under the preferred scenario there would be high investment in bus (such as electric/hybrid buses and rapid transit), cycling (with on and off road routes) behavioural change, medium investment in measures related to rail, walking, low emission vehicles, highway infrastructure and park & ride. There would be a low level of investment in traffic management.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	XX	X	X	I	L	P	It is assumed that this scenario provides for a number of new roads which are likely to have an overall adverse effect upon biodiversity through the loss and fragmentation of habitats. It is 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 air pollution effects on biodiversity and therefore ongoing negative effects.	Each new highway scheme is likely to be subject to a detailed EIA which would identify the sensitive habitats and species that would be impacted and develop measures to help minimise adverse effects on biodiversity.
2	Green infrastructure	?	+	+	R	L	P	In addition to the improvements to footways and cycle ways through reallocation of existing road space, this scenario is likely to include some off-road cycle infrastructure associated with the Bicester Eco-Town which would help to link areas of green infrastructure. The Eco-Town would benefit from the provision of extensive new green infrastructure. However this effect would be local within the context of Oxfordshire and therefore only a minor positive effect overall.	It is recommended that footpaths and cycleways are improved in all towns to link green infrastructure, especially play spaces, which would support safer access by children and improved physical activity.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	+	++	++	?	R	?	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	Physical traffic calming is likely to be more successful in managing speed in towns than signage only. 20mph zones in residential areas would have a significant positive effect upon safety and is likely to encourage more active travel, supporting overall health improvements.
4	Noise pollution	?	+	+	R	R	P	The INTRA-SIM model 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 and bring benefits to residents, particularly from reduced vibration.	None identified.
5	Vitality of town centres	?	?	?	R	R	T	The overall effect upon town centres by this scenario is difficult to predict. Accessibility by public transport would be improved but this may be undermined by the programme of highway improvements, which would support the convenience of out of town retail developments. Positive effects are anticipated for Bicester itself with its associated Eco-Town but this is likely to be localised.	Highway improvements would allow those with cars to travel greater distances to access facilities. An intensive educational programme encouraging local journeys on foot or by bicycle or public transport may be required to help support use of town centre facilities.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
6	Accessibility	+	++	?	R	R	P	INTRA-SIM predicts 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.	Overall investment in transport improvements should take account of those without access to cars and should seek to provide equality of opportunity. This is likely to become more of an issue as the general population continues to age.
7	Water quality	N	N	N	-	R	-	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.	None identified.
8	Flood risk	N	N	N	-	R	-	No significant effects upon water quality are anticipated. It is assumed that new infrastructure would be designed with appropriate drainage to address potential flood risk.	None identified.
9	Minerals and soils	xx	x	?	R	L	P	The potential new infrastructure schemes are likely to be resource intensive. While 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 high mineral use, the potential investment in bus rapid transit may help to counteract some traffic growth and help reduce dependence on fossil fuels. In the long term it is uncertain whether the new public transport infrastructure and services would counteract the resources used due to the convenience of car use.	Further measures to counteract traffic growth would help to reduce the maintenance requirements on the road network.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
10	Land use	x	x	N	I	R	P	The proposed highways schemes and links with the proposed Bicester Eco-Town 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 overall the effect is likely to be minor negative.	The effects on land use of individual highway schemes and park & ride should be a material consideration in site selection and considered as part of detailed environmental impact assessment.
11	Air quality	?	?	?	R	L	T	The INTRA-SIM model predicts 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 INTRA-SIM currently models. 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.	Measures to counteract traffic growth would help to reduce overall air pollution. This may require more demand management in towns than currently indicated by the scenario.
12	Greenhouse gas emissions	?	+	?	I	N	P	The INTRA-SIM model predicts a reduction of 13.95% in CO_2 emissions from this scenario (16,999 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.	A more widespread and intensive programme of Smarter Choices type promotions and demand management is likely to be successful in increasing the uptake of more carbon efficient travel (public transport, walking and cycling) within large towns where there is significant opportunity because of the relative close proximity of various services.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
13	Adapting to climate change	+	+	?	R	L	P	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 during the floods in 2007 and in Cumbria (Cockermouth) in 2009.	Tree planting along routes would increase shade and be beneficial during heat waves.
14	Landscape character	XX	XX	X	I	L	P	New elements in the landscape such as relief roads and park & ride are likely to have an adverse effect on landscape character.	The design of the new infrastructure should take account of the landscape character and seek to minimise visual intrusion. This would be done through a detailed scheme level environmental impact assessment.
15	Built environment	?	++	+	R	L	P	It is likely that improved pedestrian facilities, town centre redevelopments and some reallocation of road space would have a significant improvement on the built environment. However, it is assumed that traffic would be managed under this scenario to reduce its adverse effects in town centres.	Wherever traffic congestion in town centres is reduced it is recommended that the benefits are locked in through reallocation of road space to enhance the public realm.
16	Cultural heritage	XX	?	?	I	L	?	It is likely that there would be some negative effects upon cultural heritage from highway improvements and park & ride measures. It is likely that there would be some negative effect upon cultural heritage from highway improvements and park & ride measures. It is assumed this would be significant although it is not certain. However, in the medium and long term there may be benefits if air pollution and vibration is reduced in towns – this is currently unknown.	Detailed archaeological appraisal of schemes should be carried out to minimise effects during construction and ensure protection of cultural heritage.

SEA Objective (abridged)	Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
	Short term	Medium term	Long term	Reversibility	Scale	Permanence		
Cumulative, synergistic and secondary effects: Based upon the current understanding of this scenario it is likely that the trend in increased car use would continue despite measures to improve public transport and walking and cycling. The park & ride and highway improvements support the convenience of the car and therefore there may be a continued cumulative effect on the environment associated with traffic (noise, land take, increasing trends in obesity, wildlife road kills, and impacts upon landscape character). However, the development of the Bicester Eco-Town may lead to secondary effects if its facilities such as bus rapid transit are found to be successful and rolled out to other towns within Oxfordshire.								
Summary: The introduction of some of the higher investment measures associated with the Bicester Eco-Town does not significantly affect the assessment since it is assumed that the additional benefits for the Eco-Town would be local to that town and not enough to off-set the wider impacts associated with the general scenario for large towns in Oxfordshire. The scenario is likely to give rise to a number of construction related impacts such as land take, loss of habitats, resource use and impacts upon cultural heritage. Some positive effects are identified such as reductions in greenhouse gas emissions and noise and improvements to accessibility and built environment. However it is likely that more significant benefits could be gained from more intensive investment in walking, cycling and public transport, coupled with demand management since towns offer opportunity for successful uptake of these more efficient travel modes.								

Smaller towns: Preferred Scenario

Smaller towns includes Carterton, Chinnor, Chipping Norton, Faringdon, Henley-on-Thames, Kidlington, Thame and Wallingford. Under the preferred scenario there would be medium investment in measures related to walking, cycling and low emission vehicles. There would be a low level of investment in bus, demand management and behavioural change

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	N	+	?	R	R	T	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 which may lead to long term effects on biodiversity.	Biodiversity could be enhanced through a long term programme of verge management, for example to encourage more species rich grassland.
2	Green infrastructure	++	+	+	R	L	T	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.	Should car use be reduced within towns such as through the demand management measures and behavioural change, benefits could be locked in by converting more areas to public space or other green infrastructure.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	+	++	+	R	R	T	The overall assessment is positive. The medium level of investment in cycling, walking and behavioural change is assumed to contribute to health benefits associated with active travel therefore a signficiant positive effect is assumed for the medium term when the combination of improved facilities together with publicity is achieved. It is assumed that the demand management proposals would combat rising trend in car use which contributes to fear of accidents among pedestrians and cyclists and suppresses these types of travel.	Traffic calming in small towns may help to create safer road conditions which would encourage more active travel and increase the likelihood of health benefits from the LTP3.
4	Noise pollution	N	N	?	R	L	T	The INTRA-SIM model predicts a negligible effect on noise and vibration from this scenario. In the long term the effect is uncertain as traffic growth may result in an increase in noise effects.	Slower speeds through small towns may help reduce the effects of noise.
5	Vitality of town centres	+	+	+	R	L	P	The majority of the smaller towns are relatively self-contained. It is anticipated the combination of measures to encourage local journeys of 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.	Favourable public transport fares are likely to encourage greater use of town centres for shopping and leisure.
6	Accessibility	+	++	?	R	R	P	The INTRA-SIM model predicts 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 certain whether service investment would continue or whether congestion may increase with traffic growth	Where traffic congestion is reduced as a result of traffic management it would be beneficial to lock in the benefits through the reallocation of road space in order to avoid induced traffic congestion in the longer term.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
7	Water quality	N	N	N	-	R	-	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.	None identified.
8	Flood risk	N	N	N	-	R	-	No significant effects upon flood risk are anticipated. It is assumed that new infrastructure would be designed with appropriate drainage to mitigate flood risk.	None identified.
9	Minerals and soils	N	+	+	R	R	T	This scenario is unlikely to result in significant additional resource usage in itself. 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.	Where traffic congestion is reduced as a result of traffic management it would be beneficial to lock in the benefits through the reallocation of road space in order to avoid induced traffic congestion in the longer term.
10	Land use	+	+	+	I	L	P	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 beneficial.	This scenario should prioritise making the best use of existing infrastructure, in order to make prudent use of existing land, before introducing new schemes.
11	Air quality	N	N	N	R	L	T	The INTRA-SIM model predicts negligible changes under this scenario and therefore the effect has been assessed as neutral.	None identified.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
12	Greenhouse gas emissions	?	+	?	I	N	P	The INTRA-SIM mode 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.	Where traffic congestion is reduced as a result of traffic management it would be beneficial to lock in the benefits through the reallocation of road space in order to avoid induced traffic congestion in the longer term.
13	Adapting to climate change	?	?	?	R	L	P	This scenario does not provide for significant investment in new infrastructure and therefore it is not clear how climate change adaptations would be made.	Maintenance requirements should take into account climate change predictions in seeking to make adaptations such as more temperature resilient surfacing.
14	Landscape character	+	+	+	R	R	P	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.	None identified.
15	Built environment	+	+	?	I	R	P	The improvement 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.	Without measures to lock in the benefits of reduced congestion, it is possible that the reduction in congestion would be short lived as population growth would lead to further car use.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
16	Cultural heritage	?	?	?	?	L	?	Further information is required on the proposed locations of developments associated with this scenario to assess the nature and likely significance of impact. However there is very little infrastructure development proposed under this scenario therefore it is likely that effects would be negligible provided new facilities were designed and maintained sensitively.	Specific archaeological appraisal should be carried out as part of detailed environmental assessments of schemes to ascertain whether there are likely to be significant impacts on cultural heritage and whether alternative locations or designs would be more suitable.
Cumulative, synergistic and secondary effects: No significant cumulative effects have been identified.									
Summary: This scenario is unlikely to have a significant negative effect upon the environment since it makes use of existing infrastructure and softer solutions (marketing for behaviour change and traffic management). However, it is not certain whether the reduced congestion would be maintained in the long term since it depends upon behaviour change rather than physical restrictions to private car use.									

Rural Oxfordshire: Preferred Scenario

Under the preferred scenario there would be medium investment in measures related to bus services, walking, cycling and slower speeds and low investment in rail, behavioural change and freight management.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
1	Biodiversity	+	+	+	R	L	T	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.	Detailed investigations of the biodiversity of roadside verges should be undertaken to inform proposals for extending footways and cycleways alongside roads. Biodiversity could be enhanced through a long term programme of verge management, for example to encourage more species rich grassland.
2	Green infrastructure	+	+	+	R	L	P	The scenario may lead to improved access to green spaces for residents of Oxfordshire although not necessarily add to green infrastructure.	None identified.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
3	Physical and mental wellbeing and safety.	+	++	++	R	L	T	The overall effect of this scenario on health is likely to be beneficial 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.	20mph limits or zones through villages would further improve safety for residents, particularly children and elderly who tend to more at risk as pedestrians.
4	Noise pollution	+	++	+	R	L	T	INTRA-SIM predicts 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.	None identified.
5	Vitality of town centres	N	N	N	-	-	-	No significant effects on this SEA objective are anticipated.	
6	Accessibility	+	++	?	R	L	T	INTRA-SIM predicts 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 dynamics beyond the timescale for LTP3.	Traffic growth due to population increase may undermine improvements to accessibility unless benefits are locked in and investment in behaviour change continues.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
7	Water quality	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	None identified.
8	Flood risk	N	N	N	-	-	-	No significant effect is anticipated upon this SEA objective as a result of this scenario.	None identified.
9	Minerals and soils	N	+	+	R	R	T	This scenario is unlikely to result in significant additional resource usage in itself. 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.	Where traffic congestion is reduced as a result of traffic management it would be beneficial to lock in the benefits through the reallocation of road space in order to avoid induced traffic congestion in the longer term.
10	Land use	+	+	?	I	L	P	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.	This scenario should prioritise making the best use of existing infrastructure, in order to make prudent use of existing land, before impacting undeveloped land.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
11	Air quality	+	+	+	R	L	T	INTRA-SIM 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.	Encouragement of lower emission bus fleets and restrictions on more heavily polluting vehicles would improve air quality further.
12	Greenhouse gas emissions	?	+	?	R	L	T	The INTRA-SIM model predicts a 9.50% reduction (243,893 tonnes) in CO_2 in the medium term. This is likely to be in part due to the 50mph speed limits.	Focus should be on making the most of the benefits in towns where facilities are close enough for more journeys to be undertaken by modes other than the car (walking, cycling and public transport).
13	Adapting to climate change	?	?	?	R	L	P	This scenario does not provide for a significant investment in new infrastructure and therefore it is not clear how climate change adaptations would be made.	Maintenance requirements should take into account climate change predictions in seeking to make adaptations such as more temperature resilient surfacing.
14	Landscape character	+	+	+	R	R	P	Improved rights of way and connections between them is likely to be of minor positive to the SEA objective through enabling more access to and enjoyment of the countryside.	None identified.

SEA Objective (abridged)		Assessment of effect						Commentary	Suggested mitigation and enhancement measures or further studies
		Short term	Medium term	Long term	Reversibility	Scale	Permanence		
15	Built environment	N	N	N	R	L	T	No significant effect is anticipated upon this SEA objective as a result of this scenario.	
16	Cultural heritage	+	+	+	?	L	?	It is unlikely that significant negative effects would arise from this scenario. However there may be cumulative local benefits to the cultural heritage of villages (such as village churches, crosses and other features) from reduced vibration.	None identified.
Cumulative, synergistic and secondary effects: This scenario may have a synergistic effect on human health through the cumulative effect of improved air quality, reduced noise, reduced fear of accidents, more opportunities for active travel and access to green space. The reduction of HGVs through sensitive villages may have a cumulative benefit on cultural heritage relating to the character of villages in Oxfordshire.									
Summary: Positive effects are identified on 11 of the SEA objectives and no significant negative effects were identified. This scenario makes good use of existing infrastructure.									

Appendix E: Environmental Trends

Trends in SEA Topics

This appendix includes baseline data and trends. It has been updated since the scoping stage. Some of the indicators included in this baseline data may be useful to take forward in monitoring proposals for the SEA.

SEA TOPIC/ISSUE	QUANTITATIVE OR QUALITATIVE DATA (DATA SOURCE IN BRACKETS)	COMPARATORS AND TARGETS	TRENDS/FUTURE BASELINE ↑↗→↘↓?	ISSUES, PROBLEMS AND OPPORTUNITIES IDENTIFIED	ACTIONS OR ISSUES FOR THE OXFORDSHIRE LTP
AIR QUALITY					
NUMBER OF DECLARED AQMAS	**Oxfordshire (2009):** Oxford: 2 Cherwell: 0 South Oxfordshire: 3 West Oxfordshire: 2 Vale of White Horse: 2 (UKAQA, 2009)	**Oxfordshire**: Action Plans are being prepared for AQMAs which will have targets within them.	? Of the two AQMAs where Action Plans were available and progress report (City of Oxford and Henley) one was on course to meet its target, the other was not. However there appears to be a requirement for further AQMAs within Oxford, suggesting an overall decline in air quality.	Improvement works within Oxfordshire may reduce congestion and associated air quality problems, such as the proposed Access to Oxford and the Abingdon Integrated Transport Strategy.	LTP to ensure AQMA Action Plan requirements taken into account and policies support the improvement of air quality.
NUMBER OF PEOPLE LIVING IN AQMAS	Not known	-	-	-	Could be suggested for future data collection
CLIMATIC FACTORS, INCLUDING GREENHOUSE GAS EMISSIONS AND ADAPTATION TO THE EFFECTS OF CLIMATE CHANGE					
CO_2 EMISSIONS IN KILO TONNES (KT)	**Oxfordshire** Regional Data released in 2008 indicate the following CO_2 emissions for 2006: Cherwell: 1,592 (632 from road transport) (2005: 632/1592)	**UK:** The same data set indicates that the total CO_2 emissions for the UK are 531,736 (of which 135,007 is attributed to road transport). This equates to a contribution of 25% from road transport.	? Only two sets of comparable data are currently available. These are for 2005 and for 2006. Although the overall CO_2	Since 1990, UK emissions of CO_2 from road transport have increased by 11 per cent.	The LTP should seek to make real progress in reducing transport's contribution to CO_2 emissions. This can be done through improving opportunities for more walking, cycling and public transport, by

SEA TOPIC/ISSUE	QUANTITATIVE OR QUALITATIVE DATA (DATA SOURCE IN BRACKETS)	COMPARATORS AND TARGETS	TRENDS/FUTURE BASELINE ↑↗→↘↓?	ISSUES, PROBLEMS AND OPPORTUNITIES IDENTIFIED	ACTIONS OR ISSUES FOR THE OXFORDSHIRE LTP
	Oxford: 1,075 (189 from road transport) 2005: 193/1067 South Oxfordshire: 1,322 (474 from road transport) 2005: 481/1286 Vale of White Horse: 1,162 (410 from road transport) 2005: 416/1153 West Oxfordshire: 818 (248 from road transport. 2005: 253/816 Total for Oxfordshire: 5,969 (1,954 from road transport). This equates to a contribution from road transport of 32.7%. Source: AEA 2008	Records 2005 indicate a total of 532,373 of which 137,044 was from road transport). The Climate Change Act 2008 places a legally binding target on the UK Government to reduce greenhouse gas emission by at least 80% by 2050, and reductions in CO_2 emissions of at least 26% by 2020, against a 1990 baseline.	emissions were recorded as down for each district and overall, there are not enough data to identify this as a trend. Data for 2007 is likely to be made available by AEA in autumn 2009.		encouraging lower carbon technology and greater fuel efficient vehicles and through traffic management.
CHANGE IN EMISSIONS OF BASKET OF GREENHOUSE GASES SINCE 1990.	**UK:** Provisional figures for 2008 estimate UK emissions of the basket of six greenhouse gases covered by the Kyoto Protocol were 623.8 million tonnes carbon dioxide equivalent. The baseline 1990 figure is 773 million tonnes of carbon equivalent. (Department of Energy and Climate Change, March 2009, Statistical Release: UK Climate Change Sustainable Development Indicator: 2008 Greenhouse Gas Emissions, Provisional Figures. Available at: http://www.defra.gov.uk/environment/statistics/globatmos/download/ghg_ns_20090326.pdf) The basket of greenhouse gases consists of	**UK:** The new figures show overall greenhouse gas emissions have fallen by almost 19% since 1990. This compares to the Kyoto target of a 12.5% cut between 1990 and 2008-2012.	↗ The overall basket of greenhouse gas emissions from the UK is declining.	The rate of decline for CO_2, the largest component of greenhouse gases, is slower than for other greenhouse gases (8.5% since 1990). The setting of domestic carbon budgets as part of the Climate Change Act may assist in improving the rate of decline of CO_2. The percentage of CO_2 emissions attributed to road transport is increasing over time to estimates of between 25 and 28%.	

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	carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, all of which are weighted by global warming potential (GWP). The GWP for each gas is defined as its warming influence relative to that of carbon dioxide.				
ANNUAL MEAN TEMPERATURE	**Central England:** 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. Central England Temperature (CET) has increased by about a degree Celsius since the 1980s. The annual mean CET of 10.82 ºC in 2006 was 1.35 ± 0.18 ºC above the 1961-90 average, and was the warmest in the 348-year series. The fifteen warmest calendar years in the series are, in order: 2006, 1990/1999, 1949, 2002, 1997, 1995, 1989/2003, 1959/2004, 1733/1834/1921 and 2005. Several of these high ranking years are too long ago to have had any significant contribution from man-made warming. This reflects the large natural variability of climate over a small area such as that of the Central England Temperature. (UK Climate Change Projections, 2009, http://ukclimateprojections.defra.gov.uk/content/view/751/9/)	**Central England:** 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.	↓ Temperatures continue to increase in central and south east England	Increased temperature related impacts on the transport network	LTP3 should factor in temperature increases and their possible impacts on transport infrastructure
NOISE					
NOISE LEVELS	**England & Wales 2000 / 2001:** LA eq 24 hour: 55.1 dB - 0.58 dB decrease on 1990 levels	**International:** International guidelines recommend that a continuous noise level of 55dB is not	? Overall trend is not clear, however,	Regional noise data mapping (DEFRA) should be utilised to inform transport policy.	Potential future increases in noise levels should be a consideration during the preparation of transport

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	LA 10 24 hour:: 52.9 - 0.31 dB decrease on 1990 levels LA 90 24 hour:: 41 dB - 0.34 dB increase on 1990 levels (BRE 2000 / 2001)	exceeded in outside living areas (WHO, Fact Sheet 258, Feb 2001)	environmental noise levels are likely to increase due to increasing traffic levels.		policy.
PERCENTAGE OF POPULATION HEARING/BEING AFFECTED BY TRANSPORT NOISE/VIBRATION	**England & Wales 2000 / 2001:** An estimated 87% +/- 4% of the population was exposed to general road traffic noise in their homes. An estimated 2% +/- 1% of the population were exposed to noise from motorways in their homes. An estimated 12% +/- 4% of the population were exposed to noise from railways in their homes. (BRE 2000 / 2001)		↗ The data indicates a general improvement on 1990 figures.	Regional noise data mapping (DEFRA) should be utilised to inform transport policy.	Potential future increases in noise levels should be a consideration during the preparation of transport policy.
NOISE COMPLAINTS	**England, Wales & N. Ireland 2007/2008:** In 2007/2008 there were 139 complaints per million people relating to traffic noise (CEIH, 2007/2008)	-	? 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	Regional noise data mapping (DEFRA) should be utilised to inform transport policy.	Potential future increases in noise levels should be a consideration during the preparation of transport policy.

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			2003/4. (http://www.cieh.org/ehn/ehn3.aspx?id=4226&terms=noise+statistics)		
BIODIVERSITY, FAUNA AND FLORA					
NUMBER AND SIZE OF DESIGNATED AREAS	**Oxfordshire:** Ramsar Sites/SPAs: 0 SACs: 7 (1852.5ha)[1] SSSIs: 105 (4364ha) National Nature Reserves: 1 (192ha) Community Forests: 1 (43,512ha – majority in Wiltshire) Local Nature Reserves: 11 (48.7ha) Local Wildlife Sites: 344 (4928.1ha) Regionally Important Geological or Geomorphological Sites (RIGS): 32 (plus 12 sites unmapped) (48.7ha) (JNCC (a), 2009, Natural England, 2009, Thames Valley Environmental Records Centre, 2006)	**Wiltshire:** Ramsar Sites: 0 SPAs: 2 SACs: 10 SSSIs: 134 National Nature Reserves: 1 **England:** Ramsar Sites: 66 designated + 3 proposed SACs: 244 SPAs: 78 + 2 potential SSSIs: 4217	↗ Condition of component SSSIs improving. See below.	Main issue affecting condition is grazing. No transport related issues identified, but sites such as Oxford Meadows SAC vulnerable to water table changes and sites such as Chilterns Beechwoods SAC vulnerable to air pollution. All sites vulnerable to habitat fragmentation by new roads.	Any negative impacts of transport infrastructure should be mitigated and avoided.

[1] Some of this area is outside the Oxfordshire county boundary

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CONDITION OF SSSIS	**Oxfordshire** 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. (Oxfordshire Data Observatory, 2009)	**English SSSIs**: Favourable condition: 43.65% Unfavourable recovering: 44.45% Unfavourable no change: 7.79% Unfavourable declining: 4.07% Destroyed/ part destroyed: 0.05% (Natural England (b), 2009)	↗ The condition of SSSIs in Oxfordshire is generally improving. 62% are in favourable condition and 31.5% are in unfavourable recovering condition. A further three SSSIs were classified as being destroyed, seven in unfavourable declining condition and five in unfavourable no change condition. 88% of SSSI area in favourable or recovering favourable condition, up from 84% in 2007. (Oxfordshire Data Observatory, 2009).	The condition of some SSSIs is poor but this is primarily due to undergrazing.	Negative impacts of transport on SSSIs and other designated sites should be mitigated and avoided.
LOCAL BIODIVERSITY ACTIONS PLANS	**Oxfordshire:** 25 Species Action Plans 20 Habitat Action Plans (UKBAP, 2009)	**UK:** The UK Biodiversity Action Plan contains: 1150 Species Action Plans	→ Habitats and species in the region face a number of threats. Action Plans are being completed	**Issue:** Oxfordshire has a range of nationally and internationally important habitats and species. Those of international importance are protected as SACs.	The need to conserve the range of important species and habitats in the region should be a consideration in transport planning.

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		65 Habitat Action Plans (UKBAP, 2007)	that identify these threats and detail actions and targets for their conservation.		
HABITAT SEVERANCE/ FRAGMENTATION ATTRIBUTABLE TO TRANSPORT PROJECTS	Not known	-	-	Not known	Could be suggested for future data collection. Defra/ UK Biodiversity Partnership are collecting data on woodland connectivity. (JNCC (b), 2009)
PERCENTAGE OF TRANSPORT NETWORK UNDER ACTIVE WILDLIFE MANAGEMENT	Not known	-	-	Not known	Could be suggested for future data collection
POPULATION, INCLUDING SEVERANCE AND ACCESSIBILITY					
TOTAL POPULATION	**Oxfordshire (2007):** 635,500 (OCC, 2009)	**Bucks:** 490,600 (Bucks CC) **UK:** 60 975 000 in mid 2007 (ONS, 2009)	↓ Population increase can put pressure on the environment	**Problem:** Population increases will place increasing pressure on transport infrastructure.	Transport policy needs to adapt and respond to demographic trends.
POPULATION DENSITY	**Oxfordshire :** **<u>Persons per km^2 (2007)</u>** West Oxfordshire: 100-249	**England (2003):** 383 persons per km^2 ONS, 2005	As above	**Issue:** Most of the county has a relatively low population density whereas Oxford has as a very high population density.	Different parts of the county place very different demands on transport infrastructure. Policy needs to recognise and address this.

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	Vale of White Horse: 100-249 Cherwell: 100-249 South Oxfordshire: 100-249 Oxford: 2500 or over (ONS, 2007)				
AGE SPLIT/AVERAGE AGE	**Oxfordshire (2001):** Under 19: 149,896 (24.75%) Over 65: 87,900 (14.5%) (calculated from ONS, 2001)	**England (2001):** Under 19: 123104 18 (25%) Over 65: 7808000 (16%) (calculated from ONS, 2001)	? It is recognised that across the UK, the percentage of the population of pension age is increasing.	**Issue:** The percentage of the population aged 65+ in the county is increasing.	The LTP needs to recognise and meet the different transportation needs of the region's population.
NUMBER OF CARS PER HOUSEHOLD	**Oxfordshire (2001):** 1.3 (OCC, 2009)	**England (2001):** 1.1 (calculated from ONS, 2001)	? No trend identified. Vehicle ownership likely to be higher in more rural areas.	**Issue:** Oxfordshire has a higher number of cars per household than the UK average, which increases the pressure on the county's roads	Improving accessibility by widening the choice of transport methods available. Reducing car use generally has environmental benefits, such as reduced greenhouse gas emissions.
PEOPLE WHO TRAVEL TO WORK WHO TAKE PUBLIC TRANSPORT, USING BY BICYCLES OR BY FOOT	**Oxfordshire (2001):** 29% (OCC, 2009)	**England (2001):** 30.5%	? No trend identified	**Issue:** Oxfordshire has less people walking and cycling to work than the national average	Improve pedestrian and cycle routes to make them a more attractive option
VOLUME OF ROAD TRANSPORT	**Oxfordshire (2003):**	**England:**	↓ 1992-2003: 0.7%	**Problem:** There are a range of negative environmental impacts	Managing this increase presents a major challenge to transport

SEA TOPIC/ISSUE	QUANTITATIVE OR QUALITATIVE DATA (DATA SOURCE IN BRACKETS)	COMPARATORS AND TARGETS	TRENDS/FUTURE BASELINE ↑↗→↘↓?	ISSUES, PROBLEMS AND OPPORTUNITIES IDENTIFIED	ACTIONS OR ISSUES FOR THE OXFORDSHIRE LTP
	19.66 million km/day (OCC, 2009)	1995-2006 17% increase	increase	associated with the increasing volumes of traffic.	policy. Integrating transport planning with urban spatial design can help to ensure that residential areas are sited close to places of work and civic amenities; therefore reducing the demand for road journeys.
INDEX OF MULTIPLE DEPRIVATION	**Oxfordshire (2007):** In county rankings, Oxfordshire has relatively low levels of deprivation, coming 137th out of 149 counties. (Oxfordshire Data Observatory, 2009)	**Various counties:** Neighbouring county rankings: Bucks: 143rd W Berks: 146th Wilts: 140th Glos: 121st Warwks: 123rd Northants: 111th	↗ County ranking same as in 2004. All Oxfordshire Local authorities rank as less deprived relative to other local authorities in the country in 2007 compared to 2004.	**Issue:** With the exception of education, skills and training, in each area of life the number of Oxfordshire areas ranked in the most deprived 20% nationally has declined.	Needs to ensure that transport can facilitate an improvement in education, skills and training, for example through better access to education institutions
HUMAN HEALTH, INCLUDING PHYSICAL FITNESS, SECURITY AND SAFETY					
LIFE EXPECTANCY AT BIRTH	**Oxfordshire:** 82 yrs to 88.7yrs **Oxford City:** 81.1 yrs to 81.9 yrs **Cherwell:** 82.4 yrs to 84.9 yrs **South Oxfordshire:** 82.2 yrs to 88.7 yrs **Vale of White Horse**: 82.1 yrs to 83.8 yrs	**South East England (2006)**: 78.9 (M), 82.7 (F) (ODO, 2006)	? No trend data obtained.	**Issue:** Life expectancy varies across the county, with lower life expectancy in Oxford:	To ensure that transport is accessible to different sectors of society. Transport policy can promote healthier lifestyles e.g. by promoting a modal shift from driving to walking or cycling.

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	West Oxfordshire: 82 yrs to 85.4 yrs (Oxfordshire Partnership 2007)				Aiming to reduce air pollutant transport emissions in the city centre should have health benefits
LEVEL OF PHYSICAL ACTIVITY	**South East:** **Adults** Across the South East (SE) 38% of men and 27% of women are active at the recommended level (5 or more sessions a week of 30 minutes of at least moderate intensity activity). There is no significant difference between physical activity levels for adults in the SE compared to England, with 37% of men and 24% of women classed as active. **Children** 72% of boys in the SE achieve one hour of physical activity per day compared to 56% of girls. This difference between boys and girls is wider in the South East than any other region of England. There is no difference between children's overall activity levels in the South East and the average for England as a whole. (SEPHO, 2006)	**England:** Mean no. of days spent doing sports and exercise in last week: **2-10 year old boys** SE: 2.2 England average: 2.25 **11-16 year old boys** SE: 2.6 England average: 2.64 (NHS, 2008)	→	**Issue:** Children across the South East travel the longest distance to school of all regions, (1.9 miles for 5–10 year olds and 4 miles for 11–16 year olds). They are less likely to walk to school than children in England as a whole and more likely to travel by car. **Issue:** There is a wide difference between activity levels of boys and girls in the SE. **Problem:** Inactivity is a major contributor to poor health.	Endeavour to make it easier to incorporate exercise into people's daily routine e.g. by making it easier to walk or cycle to work. Ensure that there are good transport links between residential areas and sports amenities.
PERCENT OF ADULTS WHO ARE OVERWEIGHT OR OBESE	**Oxfordshire:** 6.3% **Adderbury:** 6.2% **Cherwell:** 7.6%	**England:** 24% of adults (aged 16 or over) classified as obese (2006).	↓ Obesity levels throughout the UK are increasing and placing an	**Problem:** Obesity rates are rising across localities and age groups. (Oxfordshire Partnership, 2007).	To encourage the use of 'healthier' forms of transport such as walking or cycling. To ensure that there are

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	(Adderbury Joint Strategic Needs Assessment 2008)	(NHS, 2008) South East: almost one in twenty children are obese and a further 15% of boys and 19% of girls are overweight. (Oxford Partnership, 2007)	increasing strain on health resources. In England obesity increased by 15% from 1993 to 2006. (NHS, 2008)	**Issues:** In the South East, almost one in twenty children are obese and a further 15% of boys and 19% of girls are overweight. There are significant inequalities in obesity. Twice the proportion of women in unskilled manual groups are obese compared to those in professional groups. (Oxfordshire Partnership, 2007)	good transport links between residential areas and sports facilities.
ROAD ACCIDENTS	**Oxfordshire (2007):** Fatal: 34 Serious: 340 KSI: 374 Slight: 2276 Total: 2650 (OCC, 2008)	**UK (2008):** Fatal: 2538 Serious: 26, 029 Slight: 202,317 Total: 230,884 (DfT, 2008)	↗ Road casualties relative to the level of traffic have been declining steadily in the UK. In Oxfordshire, total road accidents declined from 3575 in 1999 to 2650 in 2007. (OCC, 2008)	-	To reduce road traffic accidents further.
CRIME RATES PER 1000 POPULATION (VEHICLE CRIME)	**Oxfordshire (2008):** Vehicle crime: 6.6	**UK (2008):** 1,497,000 incidents in total	↗ Vehicle crime declined from 13.7 in 2002/03 to 6.6	**Issue:** On the whole, crime is low in the region when compared to the average for England and	To reduce transport related crime

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	The highest rate of vehicle theft in 2007/08 was recorded in Oxford (10.7 per 1,000 population), the lowest in Vale of White Horse (3.5 per 1,000). (OCC, 2008)	Vehicle crime fell by 11% between 2006/07 and 2007/08 (Home Office, 2008)	in 2007/08	Wales. Opportunities for the LTP to reduce crime are not obvious and require consideration. Examples include careful positioning and design of facilities (e.g. bus stops in well lit areas).	
SAFETY/PERCEPTION OF SAFETY ON THE TRANSPORT SYSTEM	Not known	-	-	Not known	Could be suggested for future data collection
NUMBER OF INITIATIVES TO REDUCE COMMUNITY SEVERANCE	**Oxfordshire:** Fear of crime in Oxfordshire seems disproportionately high given the low levels of criminality in the county. This is particularly the case in rural communities where *difficulties in accessing services, transport and activities* for young people can fuel fears. (OCS, 2007). Oxfordshire Community Strategy: Briefing Paper 2, Community Safety	-	-	Not known	Could be suggested for future data collection
WATER, INCLUDING QUALITY, QUANTITY AND FLOOD RISK					
RIVER WATER QUALITY	*23 per cent of surface waters in the Thames River Basin were classified to be good or better ecological status/potential* *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*	Environment Agency, December 2009.River Basin Management Plan, Thames River Basin District,	? Chemical quality has improved from 71% to 76% between 2000 and 2006	-	To improve the situation regarding water pollution contamination due to transport infrastructure development and accidental spillages.

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	362 for biological status.				
WATER POLLUTION INCIDENTS ATTRIBUTABLE TO TRANSPORT	**England and Wales:** Transport accounted for 3% of serious water pollution incidents in England and Wales in 2007 (EA, 2007)	-	↗ In 2007, the Environment Agency recorded the lowest ever number of pollution events (from all sources) that had a serious impact on water quality. There were 14% less incidents than in 2006 (EA, 2007).	**Issue:** No county level data has been obtained.	See above.
PERCENTAGE OF TRANSPORT INFRASTRUCTURE AT RISK FROM FLOODING	Not known	-	↓ More stormy weather, greater winter rainfall and greater rainfall variability is predicted due to climate change. As a result, the risk of flooding is set to increase. (UKCIP, 2009)	**Problem:** Flooding can cause costly delays to transport networks and damage infrastructure.	Flood risk analyses and future flooding scenarios need to be considered when developing transport plans.
NUMBER OF VEGETATIVE TREATMENT SYSTEMS IMPLEMENTED	Not known	-	-	Not known	Could be suggested for future data collection.

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SOIL					
PERCENTAGE OF COUNTY DESIGNATED AGRICULTURAL LAND	**Oxfordshire** 78% of the land in Oxfordshire is under agricultural management. (ODO, 2008) Oxfordshire (2008): 192,410ha of farmed area in county (Defra, 2009) West Oxfordshire: Agricultural land is generally of grade 3 moderate/good quality with some areas classified as grade 2 (very good), particularly in the Thames floodplain. (WODC, 2008)	**South East** Oxfordshire is the most rural county in the south-east. Over 50% of people in Oxfordshire live in settlements of less than 10,000 people. (ODO, 2008)	↓ Oxfordshire agricultural land has decreased from 195,510ha in 2007 to 192,410ha in 2008 (Defra, 2009)	Agricultural land is being lost, possibly to development	Could be suggested for future data collection. Also seek to protect agricultural land from development.

<table>
<tr><th>SEA TOPIC/ISSUE</th><th>QUANTITATIVE OR QUALITATIVE DATA (DATA SOURCE IN BRACKETS)</th><th>COMPARATORS AND TARGETS</th><th>TRENDS/FUTURE BASELINE
↑↗→↘↓?</th><th>ISSUES, PROBLEMS AND OPPORTUNITIES IDENTIFIED</th><th>ACTIONS OR ISSUES FOR THE OXFORDSHIRE LTP</th></tr>
<tr>
<td>QUALITY OF AGRICULTURAL LAND</td>
<td>Oxfordshire:
<table>
<tr><th>ALC Grade</th><th>Hectares</th><th>%</th></tr>
<tr><td>Grade 1</td><td>1,328</td><td>0.5</td></tr>
<tr><td>Grade 2</td><td>51,021</td><td>19.6</td></tr>
<tr><td>Grade 3</td><td>141,683</td><td>54.4</td></tr>
<tr><td>Grade 4</td><td>50,206</td><td>19.3</td></tr>
<tr><td>Grade 5</td><td>1,161</td><td>0.4</td></tr>
<tr><td>Non-agricultural</td><td>7,022</td><td>2.7</td></tr>
<tr><td>Urban</td><td>8,174</td><td>3.1</td></tr>
</table>
(Natural England, 2009)</td>
<td>England:
<table>
<tr><th>ALC Grade</th><th>Hectares</th><th>%</th></tr>
<tr><td>Grade 1</td><td>354,562</td><td>2.7</td></tr>
<tr><td>Grade 2</td><td>1,848,874</td><td>14.2</td></tr>
<tr><td>Grade 3</td><td>6,290,210</td><td>48.2</td></tr>
<tr><td>Grade 4</td><td>1,839,581</td><td>14.1</td></tr>
<tr><td>Grade 5</td><td>1,100,305</td><td>8.4</td></tr>
<tr><td>Non-agricultural</td><td>655,856</td><td>5.0</td></tr>
<tr><td>Urban</td><td>951,424</td><td>7.3</td></tr>
<tr><td colspan="3">(Natural England, 2009)</td></tr>
</table>
(Natural England, 2009)</td>
<td>Unknown</td>
<td>Agricultural land is being lost, possibly to development.</td>
<td>Seek to protect agricultural land from development.</td>
</tr>
</table>

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PERCENTAGE/PROPORTION OF COUNTY AS CONTAMINATED LAND	**Oxfordshire** Only one site within West Oxfordshire has been identified on the contaminated land register - a bulk fuel installation within the RAF Brize Norton airbase. (WODC, 2008). Cherwell District has no sites on the contaminated land register. (CDC, 2009) South Oxfordshire has no sites on the contaminated land register. (SODC, 2009) The Vale of White Horse (VOWH) has no sites on the contaminated land register (VOWH (a), 2009) VOWH has 1100 previously developed sites that require further investigation, none of which have been done yet. (VOWH (b), 2009) Oxford has no sites on the contaminated land register but has 850 potentially contaminated sites, 43 of which have been investigated. (Oxford City Council, 2009)	No national data found.	?	Remediation may be required if transport infrastructure likely to be in contaminated land areas	Recognise need for possible remediation work at project implementation stage
PERCENTAGE/PROPORTION OF COUNTY AS DEVELOPED LAND	**Oxfordshire** Oxfordshire developed area with 1000 or greater population:	**England:** 2001: 975,965ha developed 1991: 937,938ha	↓ 1991: 13,761ha 2001: 15,630ha	As population size in Oxfordshire increases, rural land and soils will come under increasing development pressure	Seek to protect greenfield land from transport infrastructure development.

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	2001: 15,630ha (CLG, 2008) Total area of Oxfordshire: 638, 162ha Developed area is 2.5% of total county area. (ONS, 2001)	(CLG, 2008) 33,776,035ha total land area (MSN, 2009) 2.89% of total country is developed. <u>Regional PDL</u> Oxon: 13% Berks: 6% Bucks: 11% E Sussex: 3% Kent: 40% Surrey: 7% W Sussex: 6% (NLUD, 2004)	Between 1991 and 2001 an additional 1869ha of rural Oxfordshire was designated as developed with settlements of >1000 people.		
MATERIAL ASSETS, INCLUDING RESOURCE EFFICIENCY AND WASTE					
TOTAL ROAD LENGTH	Not known	**UK:** Motorways: 3500 km (mainly in rural areas) Other rural roads: 243,000km	? No trend data obtained.	Road construction which leads to increased personal car use is in conflict with the principle of sustainable development. An increase in car use has environmental impacts at local, regional and	To carefully consider the environmental impacts of road building proposals.

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		Urban roads: 141,000km (ONS, 2007)		international scales.	
NUMBER OF LICENSED ROAD VEHICLES	**Oxfordshire (2001):** 320,152 cars and vans (ONS, 2001)	**England:** 22,607,629 cars and vans **South East:** 4,271,483 cars and vans (ONS, 2001)	↓ The number of vehicles on the road is steadily increasing. Traffic on all Oxfordshire roads grew from 15.4 million kilometres per day (mk/d) in 1991 to 19.6 mk/d in 2003 (OCC, 2004)	**Issue:** There are over 350,000 licensed vehicles in the county alone. This figure is from the 2001 Census and is likely to be higher now.	To encourage a modal shift away from car use.
PERCENTAGE OF TRUNK ROAD NETWORK REQUIRING CLOSE MONITORING OF STRUCTURAL CONDITION	Not known	-	-	Not known	Could be suggested for future data collection
TONNAGE AND PERCENTAGE OF RECYCLED AND SECONDARY AGGREGATES USED IN TRANSPORT PROJECTS	Not known	-	-	Not known	Could be suggested for future data collection
PERCENTAGE OF VEHICLES USING ALTERNATIVE FUELS	Not known Alternative fuel vehicles potentially available:	**UK**: Not known. 1,200 LPG refuelling sites across the UK.	?/ ↗ No trend data has been obtained. Likely to increase	**Issue:** Vehicles are almost solely reliant on petrol and diesel as a fuel source. **Problem:** Fossil fuels are	LTP to encourage the use of alternative fuels as part of a commitment to reduce vehicle pollutant emissions.

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	• LPG • Natural Gas • Biodiesel • Biogas • Hydrogen vehicles • Electric vehicles • Hybrid vehicles		in the future as technologies advance and incentives are established for their use.	a finite resource and their combustion is the major cause of climate change.	
ECOLOGICAL FOOTPRINT OF COUNTY	**Oxfordshire**: not known. Oxford ranks 6th in British cities with the largest environmental footprint. It is estimated 3.40 planets are needed to support present consumption rates in Oxford. In a sample city (Birmingham) transport accounted for approximately 16% of the overall footprint, although the freight transport of consumer products and food may significantly add to this. (WWF, 2007)	**UK**: 3 planets (WWF, 2007) UK residents are within the top 14 percent of the World's population in terms of the size of their impact on the global environment. (DfT, 2007)	↘ Increasing levels of consumption mean that the national per capita ecological footprint is set to expand.	**Problem:** The current average UK lifestyle is unsustainable.	To encourage more sustainable methods of transport. To reduce resource consumption.
INITIATIVES/ SCHEMES PROMOTING/USING ALTERNATIVE ENERGY (E.G. SOLAR POWERED PARKING METERS)	**Oxfordshire** • Westmill Wind Farm, Watchfield.	**UK:** The Renewables Obligation aims to increase the use of renewable sources of energy:	→ Although renewable sources of energy	**Issue:** There is scope for much more work to decrease the reliance on non-renewable sources of energy in the transport	To promote the use of alternative sources of energy for transport to decrease reliance on fossil fuels.

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	• Oxford Solar Initiative • Several solar and renewable energy companies based in the county. • West Oxfordshire District Council guidance on energy efficiency and renewable energy: http://www.westoxon.gov.uk/environment/envhealth.cfm • Energize Oxford – provides energy audits and advice • Energy efficiency/ loft insulation grants • Low Carbon Buildings Programme (UK)	2010: 10% of licensed electricity sales should be from renewable sources 2015: 15% of licensed electricity sales should be from renewable sources	are increasingly being used, the transport sector continues to be reliant on fossil fuels.	sector. **Problem:** The use of fossil fuels is unsustainable and contributes to climate change. **Opportunities:** Include initiatives that encourage walking to school, cycling and the use of bio-fuels.	To promote walking to school and local facilities.
AMOUNT OF WASTE TRANSPORTED/ LENGTH OF WASTE VEHICLE JOURNEYS	Not known	Not known	↓ The amount of household waste produced is increasing. Between 2003-4 and 2007-8 household waste per person increased a little by just 0.9 per cent, with each person generating about half a tonne on average.	**Problem:** A key way in which waste contributes to climate change is via its transport. Even if recycling rates increase an increasing amount of waste material still requires transportation.	Could be suggested for future data collection To integrate with other strategic policy to seek to reduce the amount of waste transported e.g. by ensuring that recycling facilities are easily accessible.

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			(Defra, 2009)		
AMOUNT OF MUNICIPAL AND HOUSEHOLD WASTE RECYCLED	**Oxfordshire**: In 2007/08, 491.3 kg of household waste per person was collected from households and waste recycling centres in Oxfordshire (Local Government Data Unit 2006) Oxfordshire household waste recycling rate: 43% (Oxfordshire Waste Partnership, 2009)	**England (2006/07):** around 8.0 million tonnes of household waste (31% of total household waste) recycled or composted **South East: (2006/07):** 46% municipal recovery rate 33.1% household recycling rate (Defra, 2008)	↓ Recycling rates have slightly decreased from 491.8kg in 2006/07 to 491.3kg in 2007/08.	**Issue:** There is considerable variation in recycling rates across the county	Seek to reduce transport related waste. Reusing materials when constructing transport infrastructure such as highways and footpaths can reduce the amount of waste that goes to landfill.
CULTURAL HERITAGE AND THE HISTORIC ENVIRONMENT, INCLUDING ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE					
NUMBER OF SCHEDULED ANCIENT MONUMENTS (SAMS)	**Oxfordshire** 284 (English Heritage (a), 2009)	**England:** 19,446 (English Heritage (b), 2009)	?	Not known	Transport infrastructure should aim to protect SAMs when considering new road routes or road widenings.
CONDITION OF SAMS	Not known	Not known	→/↓ The majority of monuments (64%) are in a stable condition but 30% are declining. Of the medium-risk monuments, 40% are in decline and therefore likely to become high risk if no management action is taken in the near future.	The biggest threats to SAMs are arable farming, vegetation growth (including trees, scrub and plants) and animal burrowing. (English Heritage (a), 2009)	Could be suggested for future data collection

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			(English Heritage (a), 2009)		
NUMBER OF CONSERVATION AREAS	**Oxfordshire:** 220 (OCC, 2006)	**England:** 9,080 (English Heritage (b), 2009)	?	Not known	Condition assessment could be suggested for future data collection
NUMBER OF REGISTERED HISTORIC PARKS AND GARDENS	**Oxfordshire** Oxford City: 15 S Oxfordshire: 11 W Oxfordshire: 16 Vale of White Horse: 8 Cherwell: 5 (Oxfordshire Gardens Trust, 2009)	**England:** 1,563 (English Heritage (b), 2009)	?	Not known	Condition assessment could be suggested for future data collection
NUMBER OF LISTED BUILDINGS	**Oxfordshire** 13,000 (OCC, 2006)	**England:** 372,905 (English Heritage (b), 2009)	?	Not known	Condition assessment could be suggested for future data collection
NUMBER OF BUILDINGS AT RISK (DUE TO TRANSPORT)	Not known	Not known	?	Not known	Site count and condition assessment could be suggested for future data collection
NON-DESIGNATED FEATURES	Not known	Not known	?	Non-designated features need to be protected from new transport	Site count and condition assessment could be suggested for future data

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				infrastructure and pollution	collection
HISTORIC LANDSCAPES	**Oxfordshire:** Oxfordshire contains various historic landscapes and trees and hedges. Trees are frequently protected by Tree Preservation Orders (TPOs).	Not known	?	Historic landscapes and trees and hedges need to be protected from new transport infrastructure and pollution	Historic Landscape Character Assessment would aid conservation of landscape. Condition assessment could be suggested for future data collection
LANDSCAPE AND TOWNSCAPE, INCLUDING LIGHT POLLUTION					
AREAS OF OUTSTANDING NATURAL BEAUTY	**Oxfordshire:** 3 AONBs are part within the county: the Cotswolds AONB (2038km^2), the Chilterns AONB (833km^2) and the North Wessex Downs AONB (1730 km^2). (Chilterns AONB.org) (Cotswolds AONB.org) AONBs in the county cover 62,192 ha, or 24% of the county area. A further 13.6% of Oxfordshire is designated as an Area of High Landscape Value (AHLSV). (ODO, 2006)	**UK**: 47 (NAAONB, 2009)	?	No specific issues, problems or opportunities identified	Minimise transport infrastructure development that has an impact on AONBs.
AREA OF NATIONAL PARK	None	-	-	-	-
LIGHT POLLUTION	**South East/ Oxfordshire:** CPRE National Office has used satellite data to create maps which show the extent of light pollution in England. This data shows that light pollution is rapidly increasing in the South East and 'there are no dark skies left in Oxfordshire'.	**South East**: The average amount of light shining up from each square kilometre is higher than anywhere else in England. The South East has the smallest proportion of its	↘ Although methods of 'designing out' light pollution are improving, light pollution is likely to	**Issue:** Lighting associated with transport infrastructure is a source of light pollution. In response to LTP2, CPRE argued OCC should accelerate its current programme to replace or	To reduce and mitigate light pollution by careful design and assessment of the impacts of new infrastructure on the light environment.

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	(CPRE Oxfordshire, 2008)	total land area within the truly dark category – just 1%. (CPRE Oxfordshire, 2008)	increase as development continues. As development in the south-east continues, light pollution is likely to increase further.	remove badly designed street lights. **Problem**: Light can cause a nuisance. It can also disturb bird and animal behaviour and affect the growth of vegetation.	
PROPORTION OF TRANQUIL AREAS/LOSS OF TRANQUILLITY	NATS, the UK's leading air traffic management company, is to conduct a new consultation on revised proposals to redraw the aircraft route map in south-east England. Changing the flight paths over Oxfordshire has led CPRE to object. CPRE have also produced a tranquillity map of Oxfordshire. (CPRE Oxfordshire, 2009)	-	-	**Issue:** urban areas of Oxfordshire have the lowest measured tranquillity	Have regard to areas with poor tranquillity when considering future transport plans in the county.

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