



**Clackmannanshire  
Council**

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**Local Transport Strategy 2010 - 2014**

**Strategic Environmental Assessment**

**Environmental Report**

**November 2010**

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## **NON-TECHNICAL SUMMARY**

### **Outline of the Clackmannanshire Local Transport Strategy 2010 - 2014**

The Clackmannanshire Council Local Transport Strategy 2010 - 2014 (LTS) is an update of the currently adopted Local Transport Strategy 2006 - 2009. The LTS sets out how Clackmannanshire Council intent to reconcile national and regional objectives at a local level and outlines actions, which will achieve these objectives. Contained within the LTS is a series of aims, objectives, policies and actions supporting the overall vision to meet the transport needs of all within Clackmannanshire. The LTS will provide a supporting context for a range of other programmes and strategies in Clackmannanshire.

As part of the LTS a STAG (Scottish Transport Appraisal Guidance) has been undertaken, this included all the alternatives being considered. STAG includes assessing the alternatives against an environmental objective.

### **Strategic Environmental Assessment**

As part of the preparation of the LTS, a Strategic Environmental Assessment (SEA) is required. The first stage in the SEA process involved the production of a Scoping Report which set out the proposed method and detail for the SEA. The Scoping report identified key environmental problems in Clackmannanshire, the relationship with other plans, policies and strategies and outlined the assessment criteria. The report was submitted to the Scottish Government for comment by Scottish Natural Heritage (SNH), Scottish Environment Protection Agency (SEPA) and Historic Scotland. The comments received were taken into account in the assessment and preparation of the Environmental Report.

### **Consideration of Alternatives**

Seven alternatives were derived for the LTS. Each of these alternatives comprises of a package of smaller measures aimed at meeting the aims of the LTS. The following options were considered firstly with STAG then in revised format with SEA.

- Option 1 - Do Minimum
- Option 2 - Improve Travel Choices
- Option 3 - Protect the Environment
- Option 4 - Extend the Network
- Option 5 - Improve Transport Movement
- Option 6 - Improve Travel Safety
- Option 7 - Planning for Transport

### **Assessment of the LTS**

Option 1 was rejected as it would ultimately lead to a decline in the integrity of the existing transport network with no thought for the environmental consequences. Option 4 was also rejected as it had a greater environmental impact than all the other alternatives. However new cycling and walking routes included in the option remain as any environmental issues could be managed and the benefit to human health, air quality and climate change were very positive. Options 2, 3, 5 and 6

were all accepted in a revised form with some of the potential actions that would form the alternatives being rejected due to environmental and other considerations. Option 7 is the only option to be accepted in full as planning for future transport needs was felt to have the most benefit for all considerations including the environment.

### **Monitoring and review of the LTS**

Monitoring is an integral part of SEA and the significant environmental effects of implementing the LTS will be monitored to check the predictions made during the assessment, identify any unforeseen adverse effects and undertake any remedial action required. These will be reviewed at the end of the LTS period and on an interim basis where data is available.

### **Next Steps**

The next steps for consulting on and finalising the LTS Consultation Draft include:

Expected date	Activity
February - March 2010	Public and stakeholder consultation on LTS Consultation Draft and associated Environmental Report (ER).
November 2010	Submit LTS Consultation Draft and associated ER to Consultation Authorities via SEA Gateway.
February 2011	Incorporate comments received from Consultation Authorities and Public/Stakeholder consultation and produce Final Draft LTS.
May 2011	Publication of Post-Adoption SEA Statement.
May 2011	Publication of final LTS.

This consultation process applies to the Local Transport Strategy (LTS) and the Strategic Environmental Assessment (SEA) Environmental Report. The LTS and SEA Environmental Report have been released for comment at the same time and should be read in conjunction with each other.

The consultation period runs for twelve weeks from 17th November 2010 to 9th February 2011. After consideration of comments on both documents, the final LTS will be produced. It will be published as a final version along with a consultation report and SEA post-adoption statement in 2011.

Copies of the LTS and SEA Environmental Report are available from our website at [www.clacksweb.org.uk/transport/localtransportstrategy/](http://www.clacksweb.org.uk/transport/localtransportstrategy/) or our office at:

Clackmannanshire Council  
 Kilncraigs  
 Greenside Street  
 Alloa  
 FK10 1EB

Comments on the draft LTS and the SEA Environmental Report should be sent in writing, hard copy to the address above, no later than 9th February 2011.

## **INTRODUCTION**

### **Purpose of Environmental Report**

The Environmental Report accompanies a consultation draft of the Clackmannanshire Local Transport Strategy 2010 - 2014 (LTS). It presents the findings of a Strategic Environmental Assessment (SEA) to determine the likely significant environmental effects of the Implementation Plans.

The SEA has been carried out in accordance with Section 5(4) of the Environmental Assessment (Scotland) Act 2005 and has followed guidance set out in the Scottish Government's SEA Toolkit. The Post-Adoption SEA Statement will highlight how the SEA and environmental considerations have been taken into account in the adopted Implementation Plans. It will also state how responses to consultation on the draft Implementation Plans, if relevant to the SEA, have been taken into account.

The purpose of this Environmental Report is to:

- provide information on the LTS;
- identify, describe and evaluate the likely significant effects of the LTS and its reasonable alternatives;
- identify, assess and reduce any potential impacts on the environment as a result of the LTS
- provide an early and effective opportunity for the Consultation Authorities and the public to offer views on any aspect of this Environmental Report.

### **Background**

The Clackmannanshire Council Local Transport Strategy 2010 - 2014 (LTS) is an update of the currently adopted Local transport Strategy 2006 - 2009. The updated strategy will not significantly change in terms of the aims, policies and objectives. Where the strategy will differ will be in the action plan to be delivered over the next five years. Therefore reference should also be made to the previous environmental report and LTS.

The LTS covers a wide range of topics from individual modes to more general transport issues. Separate sections cover transport and the environment, road safety and traffic reduction. The use of the Scottish Transport Appraisal Guidance (STAG) is also being applied to the LTS, which includes appraisal of the strategy for its environmental impact.

## Key Facts about the LTS

**Name of the responsible authority:**

Clackmannanshire Council

**Title of the PPS:**

Clackmannanshire Council Local Transport Strategy 2010 -2014  
(including Transport and the Environment Report, Road Safety Plan and Road Traffic Reduction Report)

**What prompted the PPS?:**

Local Transport Strategies have a statutory basis in the Transport (Scotland) Act 2001. The Council is also required to submit a Road Traffic reduction Report under the Road Traffic Reduction Act 1997. Under the Road Traffic Regulation Act 1984 and the Road Traffic Act 1988 Local Authorities have a duty to promote road safety.

**Subject:**

Transport

**Period covered by the PPS:**

2010 - 2014

**Frequency of updates:**

5 years

**The area covered by the PPS:**

Clackmannanshire (Appendix A)

**Purpose and/or objectives of the PPS:**

Sets out the future direction of transport

**Contact point:**

Principal Transportation Planner  
Clackmannanshire Council  
Kilncraigs  
Greenside Street  
Alloa  
FK10 1EB

### SEA activities to date

A full SEA was carried out for the previous LTS. However as the alternatives being considered are new, a new SEA is being undertaken for the update of the LTS. A Scoping Report was prepared in October 2009. The Scoping Report was submitted to the SEA Gateway on 14th October 2009. Responses were received from all the statutory consultees, a summary of the main points raised and any changes as a result are summarised in Appendix B.

## THE CONTEXT FOR THE SEA

### Outline and objectives of the LTS

The LTS provides the main framework for implementation of local transport policies in Clackmannanshire. The LTS informs and provides a supporting context for a range of other programmes and strategies in Clackmannanshire including:

- Transport and Environment Report
- Road Safety Plan
- Road Traffic Reduction Plan
- Road Asset Management Plan
- Local Development Plan
- Sustainability & Climate Change Strategy
- Corporate Plan.

The LTS covers a wide range of topics from individual modes to more general transport issues. The LTS for Clackmannanshire:

- Outlines the strategy for roads and transportation for the next five years
- Looks to how the roads and transportation system will develop in the short and long term
- Acts as support for future roads and transportation improvements
- Sets out measures aimed at providing travel choices for all
- Works to ensure that job opportunities are not restricted to only those with a car
- Seeks to protect the environment

The LTS consists of an action plan designed to deliver transport across Clackmannanshire. The action plan is supported by a monitoring regime to assess the success or otherwise of the LTS.

The proposed reworded over arching aims of the LTS are:

- Support and enhance the local economy
- Manage travel to reduce its environmental impact
- Improve the transport environment to reduce actual and perceived safety issues
- Work towards a seamless transport system to reduce social exclusion
- Remove barriers to accessibility
- Integrate land use and transport planning
- Maintain and improve the existing infrastructure

## **Relationship to other plans and policies**

The LTS sits below the National Transport Strategy (NTS) and the SEStran Regional Transport Strategy (RTS). The NTS sets out three strategic outcomes:

- Improve journey times and connections
- Reduce emissions
- Improve quality, accessibility and affordability

The RTS sits below the NTS and sets out four key objectives:

- Economy - to ensure transport facilities encourage economic growth, regional prosperity and vitality in a sustainable manner
- Accessibility - to improve accessibility for those with limited transport choice or no access to a car, particularly those who live in rural areas
- Environment - to ensure development is achieved in an environmentally sustainable manner
- Safety and Health - to promote a healthier and more active SEStran area population.

The LTS will link into other existing plans and strategies, whilst at the same time it is intended that it will be influenced and have an influence on future strategic planning within the Council. When the new Local Development Plan is being formulated, the LTS will be a key document that will provide the strategic framework for transport within Clackmannanshire.

The LTS is directly and indirectly influenced by a number of international, national and regional plans, policies and strategies. Appendix A contains a list of relevant legislation, policies and directives that will influence the LTS. Figure 1 shows the relationship of the LTS within the Council and to higher regional, national and international objectives.



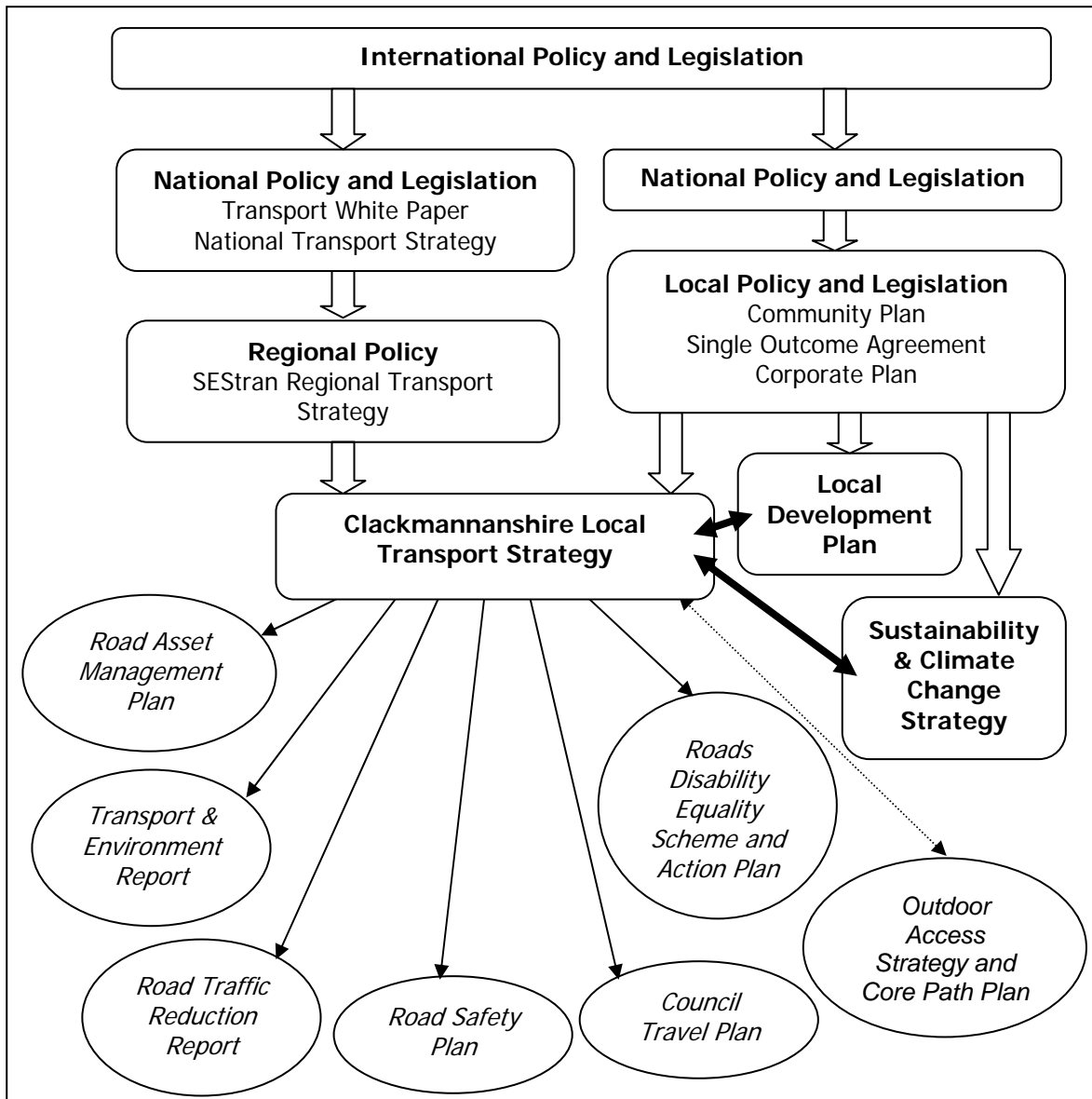


Figure 1: The relationship between the LTS and other International, National and Regional plans, policies and strategies.

## Relevant aspects of the current state of the environment

The LTS contains a report on Transport and the Environment, which outlines the environmental baseline.

The environmental baseline for Clackmannanshire was determined in 2005 to develop the 'State of the Clackmannanshire Environment' report. This information was used and updated, where needed, to undertake the SEA on the LTS. Environmental baseline information provides the basis for predicting, evaluating and monitoring the environmental effects of the LTS. It highlights some of the environmental problems identified and has informed the setting of SEA objectives.

Table 1 below summarises the key environmental baseline information gathered for this report and also lists the sources of this information. Further information on the environmental baseline can be found within the Transport and the Environment report.

Environmental Issue	Baseline Information	Data	Source
<b>Biodiversity, Flora &amp; Fauna</b>	Sites of Special Scientific Interest	9 with 30 notified features	Local Authority; SNH
	Special Protection Areas	1	Local Authority ; SNH
	Ramsar Site	1	Local Authority ; SNH
	Local nature reserve	1 - Gartmorn Dam	Local Authority
	Country Parks	1 - Gartmorn Dam	Local Authority
	Local Wildlife Sites	26	Local Authority
	Woodland	- Total woodland area 2,446 Ha (16.2% of county). - Two thirds of woodland is broadleaved. - 0.2% is ancient , 1.2% is long established.	Local Authority
Introduced species	Grey squirrel, American mink, rhododendron ponticum, Japanese knotweed, Himalayan balsam.	Local Authority	
High profile native species	Otter, brown trout, pine marten, salmon, red squirrel	Local Authority	
<b>Population</b>	Size of population	49,900 resident population in 2007.	Local Authority and General Register Office for Scotland
<b>Human Health</b>	General Health	Good = 65.75% Fairly Good = 23.40% Not Good = 10.85%	General Register Office for Scotland SCROL
	Limiting Long Term Illness	21.60% of residents having a limiting long term illness	General Register Office for Scotland SCROL

<b>Environmental Issue</b>	<b>Baseline Information</b>	<b>Data</b>	<b>Source</b>
<b>Water</b>	Rivers	2 main rivers and a number large burns feed into the river Forth. Significant areas prone to flooding	Local Authority & SEPA flood maps
	Standing water	1 small loch (Gartmorn Dam)	Local Authority
	Water quality	Freshwater is generally of high quality – most water bodies are classified as Class A (excellent) or B (good) One small section of Foulbutts Burn classified as Class C (poor).	SEPA water quality classification maps
	Flooding	Total no. of properties at risk of flooding = 752.	SEPA's flood maps
<b>Air</b>	Air quality	Good air quality – NO <sub>2</sub> , SO <sub>2</sub> and particulate levels below National Air Quality Strategy (NAQS) objectives.	Clackmannanshire Council Air Quality Monitoring
<b>Noise &amp; Vibration</b>	Noise and Vibration	No baseline established yet	Local Authority
<b>Landscape</b>	Area of Great Landscape Value	2	Local Authority

Table 1: Environmental Baseline data

### **Environmental Issues**

Existing environmental problems were identified during the Scoping stage to ensure that relevant issues are taken into account in the assessment. Existing environmental problems of relevance to the LTS have been identified through analysis of the baseline information. Table 2 highlights the environmental issues that relate to the preparation of the LTS and aims to identify the opportunities for the production of the plan to assist in addressing them.

<b>Environmental Issues</b>	<b>Supporting Data (where available)</b>	<b>Implications for LTS</b>
Continued loss of biodiversity	UK Biodiversity Indicators 2009 reports a reduction in biodiversity in a range of habitats. Monitoring of CBAP (first edition) and monitoring carried out by Biodiversity Steering Group.	Early consideration of biodiversity required in all new transport schemes.
River system status and flood management  Lack of landscape/catchment scale action, as a buffer against climate change.	SEPA data shows that watercourses within Clackmannanshire are generally in good health.  2008 report produced by the Centre for River Ecosystem Science at the University of Stirling.	The status of these watercourses requires to be preserved or enhanced, including the promotion of natural flood management. Introduce ecological SUD's.
Climate Change leading to flooding and adverse weather	High flood risk at the principle crossings of the River Devon, including C101 Menstrie, B908, A908, B913, Marchglen and Shavelhaugh Loan.  Severe freezing and thawing during winter 2009/10 lead to damage of public roads.	Avoidance of new infrastructure in areas prone to flooding without mitigation measures. Study dynamics of Hillfoot burns for culvert and bridge design.
Reduced air quality due to increasing traffic volumes and congestion	Traffic growth within Clackmannanshire between 2006 & 2009 was z%.	Behavioural change required to reduce reliance on the private car in favour of sustainable modes of transport.  Integration with land use planning and improved public transport facilities required.
Decreasing levels of physical activity and health	72% of Clackmannanshire residents travel by private vehicle compared to 64% for Scotland (2007/08).  Low levels of walking and cycling compared to national figures.	Encouragement of walking and cycling as a mode of transport is required to improve physical health and air quality.  Infrastructure to facilitate walking and cycling may be required.

Table 2: Environmental issues relevant to the LTS

## Likely evolution of the environment without the LTS

The LTS is intended to have a direct influence on travel and transportation trends. As part of the LTS, the Transport and the Environment report aims to develop the transport network in such a way as to enhance and protect the natural environment. Without the LTS, the local environment may be at greater risk of decline or less likely to improve in extent, quality, distribution or numbers. Table 3 considers the likely evolution of the environment without the LTS.

SEA category	Environmental changes
Biodiversity, Flora and Fauna	Biodiversity conservation and enhancement would be undertaken within the Council by the Biodiversity Officer and would continue without the requirement for the LTS. However the LTS provides an opportunity to take account of potential biodiversity issues at an early stage.
Population & Human Health	The LTS provides an opportunity to benefit the physical and mental wellbeing of the local community, through active and sustainable transport. Without the LTS the opportunity to maximise these benefits would be missed.
Water	In the absence of the LTS other PPS would provide a strategic direction for the conservation of water status. The potential to maximise multiple benefits are reduced in the absence of the LTS.
Air	Air quality is managed through other Council services. However transport plays a key part in air quality and without the LTS opportunities to improve air quality could be missed.
Climate	Climate change presents the single most significant factor affecting our planet and its effects are likely to manifest at a local levels through severe weather events. Without the LTS there would be no opportunity reduce the impact of transport on climate change.
Landscape	The impact of transport on the landscape is likely to be limited to new infrastructure. Without the LTS the potential impacts on the landscape may not be identified at an early stage.

Table 3: Potential Environmental Changes without the LTS

## SEA Objectives

The SEA objectives are separate from the LTS objectives although they can influence each other and even overlap. The SEA objectives are provided in Table 4 and relate solely to SEA issues 'scoped in' to the assessment. The SEA objectives and indicators have been derived from the key environmental issues, baseline data and the environmental protection objectives of other relevant PPS.

<b>SEA category</b>	<b>Objective</b>
Biodiversity, Flora & Fauna	Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species
	Maintain and enhance biodiversity, avoiding irreversible losses
	Provide opportunities for people to come into contact with and appreciate wildlife and wild places
Population & Human Health	Promote healthy living and active travel
	Reduce and prevent crime; reduce fear of crime
	Improve quality of life for present and future generations
Water	Contribute to sustainable flood risk management
	Protect and enhance the status of the water environment from potential transport related impacts
Air	Maintain and improve air quality levels.
Climate	Reduce vulnerability to the effects of climate change
Noise & Vibration*	Minimise the noise and vibration associated with transport
Landscape	Protect and enhance the landscape

Table 4: SEA objectives in relation to the assessment of LTS

\*Not a SEA Objective

## ASSESSMENT OF THE ENVIRONMENTAL EFFECTS

### Alternatives considered

#### Option 1 - Do Minimum

This assumes that the Council only carry out the statutory requirements under the Roads (Scotland) Act 1984. This would include essential maintenance of roads, bridges, street lighting, signing and lining, winter service provision, National Entitlement Card, Blue Badge, road safety analysis and investigation, and Roads Disability Equality Scheme and Action Plan.

#### Option 2 - Improve Travel Choices

Improve travel choices through investment in public transport, walking and cycling networks. Look to reducing community severance. Implement travel plans and travel planning measures in new and existing developments. Better integration between transport and land-use planning. Improved management of town centre car parks.

#### Option 3 - Protect the Environment

Protect the environment by promoting public transport and active travel. Implement travel plans and travel plan measures in new and existing developments. Reduce the need to travel. Promote eco-driving techniques and other soft measures. Promote recycling and the use of eco-friendly construction materials/techniques in roads construction/maintenance. Reduce the CO<sub>2</sub> emissions from transport.

#### Option 4 - Extend the Network

Extend the transport network and enhance the asset by building town bypasses. Look to utilising the River Forth for passenger and freight transport. Extend the rail network in Clackmannanshire for both passengers and freight. Provide street lighting on rural roads and paths. Extend the walking and cycling network to connect with existing routes.

#### Option 5 - Improve Transport Movement

Keep the transport network free flowing through freight routes and bans. Implement winter service treatment on priority routes. Reduce the need to travel to reduce congestion. Implement traffic management, bus priority and road user charging as methods to manage traffic flows and volumes.

#### Option 6 - Improve Travel Safety

Work towards a safe network when travelling through rural road safety schemes. Look to reducing vehicle speeds, through traffic management measures. Continue to maintain roads, signing and bridges to a safe standard. Provide safe walking and cycling networks.

## Option 7 - Planning for Transport

Improve the quality and provision of transport within Clackmannanshire through guidelines, plans, strategies, assessments, monitoring and modelling.

### Assessment methods

The assessment of the environmental effects and their significance are based on a consideration of how the alternatives are likely to affect the environmental baseline and whether any anticipated changes to the environmental baseline will help or hinder the SEA objectives being achieved. The assessment will identify reversible or irreversible environmental effects, risks, duration, magnitude and significance of the potential effects (positive, negative, short to long term) and the potential cumulative effects (direct, indirect, secondary and synergistic) associated with implementing the LTS.

Table 5 shows the assessment matrix that has been used. The environmental assessment has been carried out on the alternatives of the LTS that are likely to result in significant environmental impacts.

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
1. Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species					
2. Maintain and enhance biodiversity, avoiding irreversible losses					
3. Provide opportunities for people to come into contact with and appreciate wildlife and wild places					
4. Promote healthy living and active travel					
5. Reduce and prevent crime; reduce fear of crime					
6. Improve quality of life for present and future generations					
7. Contribute to sustainable flood risk management					
8. Protect and enhance the status of the water environment from potential transport related impacts					
9. Maintain and improve air quality levels.					
10. Reduce greenhouse gas emissions					
11. Reduce vulnerability to the effects of climate change					



SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
12. Minimise the noise and vibration associated with transport					
13. Protect and enhance the landscape					

Table 5: Example matrix for assessing the alternatives in the LTS

### Key

++	very positive impact	/	neutral or no impact
+	positive impact	?	unknown
+ -	positive and negative impacts	Short	within 1st year
- -	very negative impact	Medium	within life of LTS
-	negative impact	Long	impacts beyond the LTS

### Summary of assessment of the LTS and alternatives

Each of the alternatives have first been assessed using Scottish Transport Appraisal Guidelines (STAG), which incorporates the environment as an assessment criteria. Following on from this assessment a decision has been taken on whether or not to progress with the option in full or part. In the interest of completeness each of the options has been assessed using SEA.

#### Option 1 - Do Minimum

By undertaking the minimum it would be difficult to maintain the network at the current high standard. This may lead to an increase in CO<sub>2</sub> emissions and reduced water quality from surface run off as a result of declining transport infrastructure. There may be an increase in noise and air pollution as a result of vehicles using unsuitable roads due to avoidance of declining conditions on alternative routes.

#### Option 2 - Improve Travel Choices

By providing opportunities to travel by a variety of modes, particularly sustainable modes, there will be a positive impact on the environment and health. Promoting the use of sustainable modes, managing the existing transport network and increasing access to a variety of transport modes will reduce the number of vehicle trips, thus reducing transport emissions. There are potential negative impacts arising as a result of new developments on the landscape and noise and vibration associated with bus/rail travel.

#### Option 3 - Protect the Environment

Protecting the environment when planning, constructing and using the transport network will have a positive impact on all aspects of the environment and health. Promoting sustainable travel and implementing eco-techniques to reduce car use or the need to travel will improve local and national air quality. Implementing eco-techniques in construction may reduce the volume of waste going to land fill, reduce the consumption of raw materials or reduce the impact on air quality.

However extending the sustainable transport network (bus/rail) may have a negative impact on the landscape and noise and vibration.

#### Option 4 - Extend the Network

Extending the network will require new Infrastructure, which is likely to have negative impacts on the environment. An increased network will lead to increased traffic and therefore increased emissions. Any transport in the Forth Estuary may impact on water quality, RAMSAR sites and SSI's. However there is the potential for mitigation measures to be introduced as a result of new infrastructure, particularly in relation to flood management and water quality. New infrastructure aimed at walking and cycling may have positive impacts on human health, air quality and climate change.

#### Option 5 - Improve Transport Movement

By enabling traffic to flow freely there may be some reduction in emissions and reduced delays thus improving the attractiveness of bus services. However an uncongested network can attract new additional vehicle movements and decrease the apparent benefit to the traveller of sustainable modes. Better management of freight can improve air quality in sensitive areas. However some measures to improve the movement of transport will have significant impacts on the environment, including the run-off of salt into watercourses through winter maintenance.

#### Option 6 - Improve Travel Safety

Measures required to improve road safety may have some impact on the environment. However there may be some reduction in emissions by improving air quality in sensitive areas and reducing vehicle speeds or vehicle use. The majority of road safety schemes will involve an element of roads construction which may have an impact on the environment. Reducing vehicle speeds may reduce emissions, but some traffic management measures may in turn increase these. New infrastructure schemes provide the potential for environmental mitigation.

#### Option 7 - Planning for Transport

Consideration of environmental impacts at an early stage in all proposals and long terms plans can lead to better integration between transport and the environment. Thus bringing about an overall enhancement to the environment. However there may be some environmental impacts in the short term to bring about long term gains. By identifying the future transport needs, the environmental concerns can be addressed at an early stage and either be avoided, designed out or mitigated. Integrating with land use planning can help to avoid sensitive areas at an early stage.

The results of the STAG and SEA assessments has lead to a revised strategy. Option 1 has been rejected as it would ultimately lead to a decline in the integrity of the existing transport network with no thought for the environmental consequences. Option 4 has also been rejected as it had a greater environmental impact than all the other alternatives. However new cycling and walking routes included in the option remain as any environmental issues could be managed and the benefit to human health, air quality and climate change were very positive. Options 2, 3, 5 and 6 were all accepted in a revised form with some of the potential actions that

would form the alternatives being rejected due to environmental and other considerations. Option 7 is the only option to be accepted in full as planning for future transport needs was felt to have the most benefit for all considerations including the environment. These revised alternatives have been use to derive the action plan for the LTS.

As a result of the preferred strategy there are likely to be negative secondary and cumulative impacts on noise and vibration from traffic management measures and increased use of the bus and rail network. Secondary and cumulative positive impacts have been identified for air quality and health by reducing the need to travel, promoting active and sustainable travel and removing transport from sensitive areas No synergistic impacts have been identified.

### Mitigation and modification of the LTS

The LTS has carefully considered the environment in its development and therefore many of the environmental concerns will be addressed. However other potential mitigation measures or modifications to the LTS regarding the environment are summarised in Table 6 below.

<b>SEA category</b>	<b>Mitigation</b>
Biodiversity, Flora & Fauna	Work with Biodiversity Officer is issues arise
	Manage invasive species in roadside verges
	Environmental assessment of all new transport and drainage infrastructure
	Investigate for protected species and other environmental protection designations on new infrastructure and maintenance work
	Work with the Central Scotland Green Network where appropriate to protect and enhance.
Population & Human Health	Work with partnership organisation to identify issues
	Promote the use of sustainable transport as a mode of travel
	Introduce recycling and eco-friendly techniques in roads maintenance
	Integrate transport and land use planning
Water	Avoid development on flood plains
	Design new culverts and other structures to ensure no impact on hydrological processes
	Implement ecological SUD's in new infrastructure and developments
	Design in measures for ecology
	Remove engineering measures such as culverts
Air	Implement Air Quality Management Areas if required
	Regulate bus services if issues arise
Climate	Monitor sever weather and impacts
	Work with emergency planning
	Reduce the use of new resources and reuse aggregates
Noise & Vibration	Monitor noise and vibration complaints
	Enhance network conditions where noise and vibration is identified as a contributing factor
Landscape	Work with Landscape Partnership Office where issues arise

Table 6: Mitigation and modification of the LTS

\*Not a SEA Objective

## MONITORING

### Monitoring the environmental effects of LTS implementation

Monitoring is an integral part of SEA and the significant environmental effects of implementing the LTS should be monitored to check the predictions made during the assessment, identify any unforeseen adverse effects and undertake any remedial action required. The monitoring approach outlined below in Table 7 has been established.

SEA category	Indicator	Data source
Biodiversity, Flora & Fauna	Reported condition of locally and nationally important wildlife sites.	SNH
	Achievement of Local Biodiversity Action Plan targets	CC
	Number of people actively engaged in biodiversity conservation and events	CC
Human Health	Years of healthy life expectancy / infant mortality rate	GROS
	SIMD	Scottish Government
	Recorded crime	Police
	Fear of crime surveys	TBC
	Resident perception surveys	TBC
Air	Air Quality	CC
Water	Ecological status	SEPA
	Groundwater quality	SEPA
	Flood Map (Scotland)	SEPA
	Otter status	Clacks Rangers
Climate	Mode of Transport	Scottish Statistics
	Flood Risk	SEPA
	Number of road closures due to weather events	Roads & Transportation
Noise & Vibration	Number of complaints regarding transport associated noise and vibration	TBC
Landscape	Number and area of designated landscape areas	SNH

Table 7: Proposed Monitoring Framework

## NEXT STEPS

### Anticipated milestones

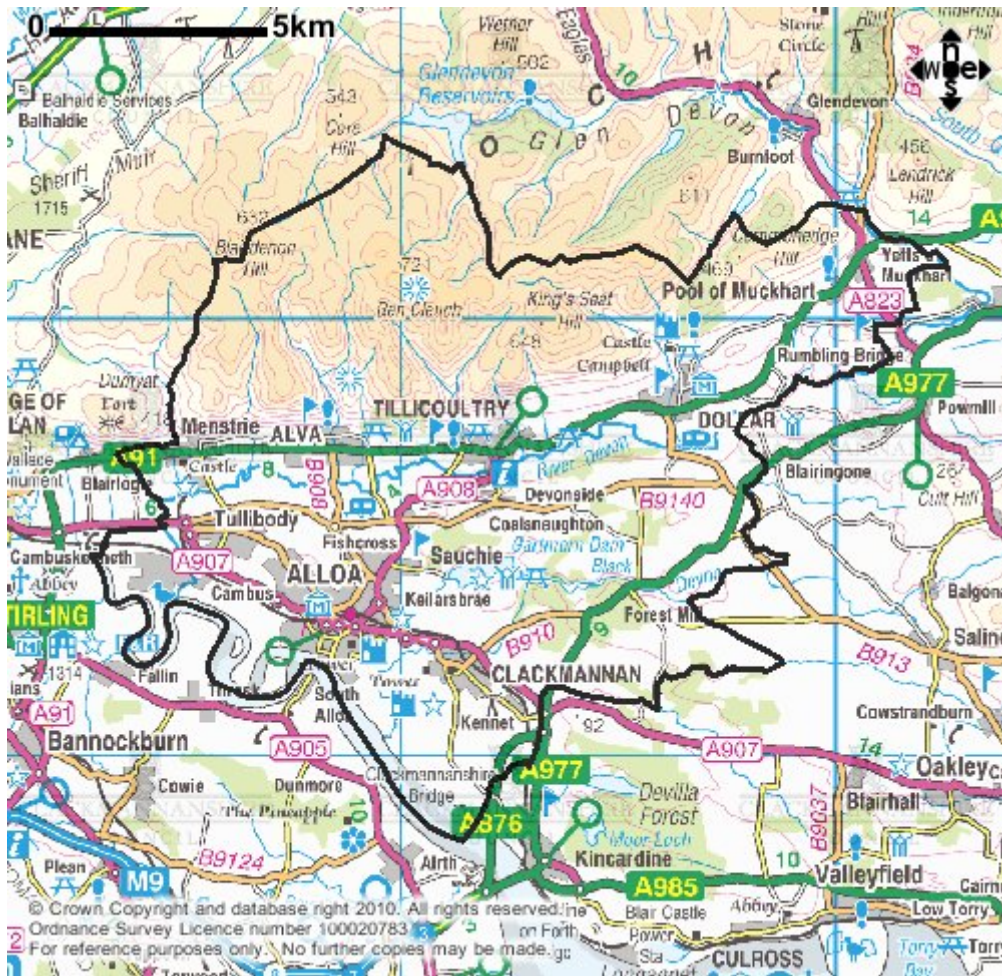
The future key stages and milestones for the preparation of the LTS are provided in Table 8 below.

<b>Expected date</b>	<b>Activity</b>
February - March 2010	Public and stakeholder consultation on LTS Consultation Draft and associated Environmental Report (ER).
February 2010	Submit LTS Consultation Draft and associated ER to Consultation Authorities via SEA Gateway.
April 2010	Incorporate comments received from Consultation Authorities and Public/Stakeholder consultation and produce Final Draft LTS.
May 2010	Publication of Post-Adoption SEA Statement.
May 2010	Adoption of final LTS.

Table 8: LTS Programme

# Appendix A

## Map of Clackmannanshire



## Appendix B

### Scoping report outcomes

#### Scottish Natural Heritage

Comment	Action
Include reference to National Planning Framework 2	Now included in Appendix C
Scope in Landscape	Landscape assessed as part of the ER
Biodiversity objective - LTS should aim to enhance biodiversity through management of green transport corridors	As part of the mitigation measures reference has been made to the use of Green Networks
Green Networks to be included	Now included as a mitigation measure
ER should include monitoring of SEA objective	Monitoring included in ER

#### Scottish Environment Protection Agency

Comment	Action
Include reference to Climate Change (Scotland) act 2009, Flood Risk Management (Scotland) Act 2009, National Planning Framework 2, Strategic Transport Projects Review and Zero Waste Scotland. (SSP Part 3 if available)	Now included in Appendix C, except SSP Part 3.
Consider River Basin Management Planning	Now included in Appendix C
Current state of the environment report out of date	This is most recent state of the environment report, however Transport and the Environment report provides as updated position where possible. Table 1 includes an up to date summary of baseline data.
Identify bus and HGV congestion as a source of air pollution	This is noted, however there are currently no air quality issues anticipated within Clackmannanshire
Consider the inclusion of noise in the assessment	Noise and vibration both now assessed in the ER
Amendments suggested for objectives	Human health objective amended to include active travel. Air quality objective simplified to improving air quality. Water objectives revised to two objectives - sustainable flood management and protect & enhance water environment. Noise and vibration objective now included
Set out mitigation measures	Included in the ER

<b>Comment</b>	<b>Action</b>
Mitigation measures hierarchy	Consideration will be given to hierarchy in due course when alternatives are developed further
Consider cumulative and synergistic effects	Included in the ER assessment
Early consideration of monitoring indicators	Indicators and sources of data have been identified
Include a summary of scoping outcomes	Included as Appendix B

### **Historic Scotland**

Scope of assessment and level of detail acceptable, reference to be made to the historic environment if an issue arises.



## Appendix C

### Relevant international, national, regional and local strategies and plans

Plan/Programme	Legislation/Requirements	Relationship with the LTS
<b>International</b>		
United Nations Framework Convention on Climate Change and its Kyoto Protocol	Reduce emissions of greenhouse gases – amended to - stabilise greenhouse gases to prevent interference with climate system	<b>Air/Climatic Factors</b> UK target to reduce greenhouse gases by 12.5% by 2008-2012 and reduce CO <sub>2</sub> by 20% by 2010. Require road traffic reduction
The Convention on Biological Diversity	Promotion of sustainable development	<b>Biodiversity</b> Integration of transport and biodiversity needs
The Johannesburg Declaration on Sustainable Development	Commitment to sustainable development to improve people's lives and conserve natural resources	<b>Material Assets/Health/Population</b> Integration of land-use planning and transport to reduce the need to travel
Directive 2008/50/EC (Air)	Protect the environment and human health. Concentration of air pollutants should be avoided, prevented or reduced.	<b>Air/Climatic Factors/Health</b> Reduce car dependency and the need to travel
Directive 2002/49/EC (Noise)	Protection against noise to achieve high level of health and environmental protection	<b>Population/Health</b> Avoid traffic growth in areas sensitive to noise
Directive 2000/60/EC (Water)	Clean polluted waters and ensure waters remain clean. No deterioration of water bodies.	<b>Water</b> Adopt SUDS to prevent transport run-off impacting on watercourses
Directive 79/409/EEC (Wild Birds)	Protection of species of wild birds	<b>Biodiversity/Fauna</b>
Directive 92/43/EC (Habitats)	Conserve flora and fauna habitats	<b>Biodiversity/Fauna/Flora</b> Protect sensitive sites through positive design and management
<b>National</b>		
Scotland's Transport Future	Transform Scotland's transport, making it more reliable, accessible and customer friendly	<b>Population/Health/Material Assets</b> Develop high quality, safer, better integrated services that respect the environment

<b>Plan/Programme</b>	<b>Legislation/Requirements</b>	<b>Relationship with the LTS</b>
Climate Change (Scotland) Act 2009	Places duties on public bodies to contribute to the delivery of set targets	<b>Climatic Factors</b> Reduce transport's contribution to climate change
Flood Risk Management (Scotland) Act	Integrated and sustainable approach to flood risk management	<b>Climatic Factors/Water</b> Reduce overall flood risk
National Planning Framework 2	Strategic development priorities	<b>Population</b> Improve infrastructure to support long term development
Strategic Transport Projects Review	Delivery of strategic outcomes set in NTS	<b>Population/Climatic Factors/Air</b> Contribute to sustainable economic growth
UK Sustainable Development Framework	Deliver better quality of life through sustainable development	<b>Climatic Factors</b> Reduce transport's contribution to climate change
UK Air Quality Strategy 2000 (Air Quality Strategy for England, Scotland, Wales and Northern Ireland)	Environment Act 1995 – improving air quality, protect health and environment without significant economic or social cost	<b>Air/Climatic Factors</b> Reduce the need to travel and increase modal share of sustainable modes
Scottish Sustainable Development Strategy 2002	Promote sustainable development across Scotland	<b>Population/Material Assets</b> Build an integrated transport system that meets the needs of all
SPP17 (Transport)	Reduce the need to travel and create conditions for greater use of sustainable transport modes. Avoid and mitigate adverse environmental impacts	<b>Air/Climatic Factors/Population/Health</b> Land-use planning to maximise sustainable modes. Introduction of maximum parking standards and use of travel plans.
PAN 75 (Transport)	Raise awareness and managing linkages between planning and transport	<b>Air/Climatic Factors/Population/Health</b> Provide genuine choice of modes
NPPG 11 (Sport, Physical Recreation and Open Space)	Make provision for sports and physical recreation and protecting and enhancing open spaces	<b>Health/Material Assets/Population</b>
SPP15 (Rural Development)	Need for sustainable development in rural areas	<b>Material Assets</b> Integrating land use planning and transport

<b>Plan/Programme</b>	<b>Legislation/Requirements</b>	<b>Relationship with the LTS</b>
PAN 58 (Environmental Impact Assessment)	1997 European Council Directive 97/11/EC – assessment of certain public and private projects on the environment	<b>All</b> EIA carried out at project level on those schemes likely to have an environmental impact
PAN 65 (Planning and Open Space)	Protecting areas of value and ensuring provision of appropriate quality within easy reach of new developments	<b>Health/Material Assets/Landscape</b>
UK Biodiversity Action Plan	Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity	<b>Biodiversity/Flora/Fauna</b> Create habitats along transport corridors
Nature Conservation (Scotland) Act 2004	Make provision in relation to the conservation and enhancement of Scotland's natural features	<b>Biodiversity/Flora/Fauna</b> Manage the transport system to protect the local environment
Scottish Biodiversity Strategy	Conserve and enhance biodiversity for health, enjoyment and well-being of the people of Scotland	<b>Biodiversity/Flora/Fauna/Health/Population</b> Create habitats along transport corridors
NPPG 5 (Archaeology)	Protecting ancient monuments and archaeological sites and landscapes	<b>Cultural Heritage</b>
NPPG 18 (Historic Environment)	Protecting, conserving and enhancing the historic environment	<b>Cultural Heritage</b> Sensitive design of new road schemes in conservation areas
Ground Water Protection Policy (SEPA 19)	Prevent pollution and manage watercourses in a sustainable way	<b>Water</b> Introduction of SUDS in transportation schemes
Policy on the Culverting of Watercourses (SEPA 26)	Avoid inappropriate enclosure of watercourse, address environmental damage culverting causes. Protect, resource and enhance the natural heritage value of sites	<b>Water</b> Use of bridging in place of culverting. Actively discourage culverting
SPP 7 (Flooding)	Prevent further development which would have a significant probability of being affected by flooding or increase probability of flooding elsewhere	<b>Water/Climatic Factors</b> Introduction of SUDS in transportation schemes

<b>Plan/Programme</b>	<b>Legislation/Requirements</b>	<b>Relationship with the LTS</b>
Zero Waste Scotland	Conserve and utilises valuable resources and reduce waste going into landfill	<b>Material Assets/Climatic Factors</b> Use of recycling in roads maintenance and construction
<b>Regional</b>		
Clackmannanshire and Stirling Structure Plan inc. alterations	Conserving and improving the physical environment and managing traffic	<b>All</b> Integration of land use planning with transport
SEStran Regional Transport Strategy	Provide genuine choice of transport to fulfil needs and provide travel opportunities on a sustainable basis	<b>Air/Climatic Factors/Population/Health</b> Reduce car dependency and maximise public transport provision and integration between modes
River Basin Management Planning	Impact of human activity on surface and ground water,	<b>Water</b> Identify water bodies where transport may impact.
<b>Local</b>		
Clackmannanshire Local Plan 2004	Work towards sustainable development through a local land use framework that facilitates positive social and economic development whilst maintaining and enhancing environmental quality	<b>All</b> Promotion of integrated transport and healthy lifestyles
Clackmannanshire Council – Local Biodiversity Action Plan	Protecting local biodiversity	<b>Biodiversity/Flora/Fauna</b> Utilise the transport network as habitats
Access Strategy	Land Reform (Scotland) Act 2003 – responsible access to land and inland water	<b>Population/Health</b> Promotion of walking and cycling as a mode of transport
The Clackmannanshire Core Paths Plan	Section 17 of the Land Reform (Scotland) Act 2003	<b>Population/Health</b> Promotion of walking and cycling as a mode of transport
Stirling Local Transport Strategy	Providing choice of transport for all. Promoting sustainable transport	<b>Air/Climatic Factors/Population/Health</b> Integration of transport policies and approaches for compatibility – reducing the need to travel by car

**Appendix D**  
**Full assessment results**

## Option 1 - Do-minimum

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
1. Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species	/	/	-	Maintaining existing infrastructure and services only. There may be long term implications if the network conditions decline.	Work with Biodiversity Officer and Green Networks if issues arise
2. Maintain and enhance biodiversity, avoiding irreversible losses	/	/	-	Maintaining existing infrastructure and services only. There may be long term implications if the network conditions decline.	Management of invasive (flora) species
3. Provide opportunities for people to come into contact with and appreciate wildlife and wild places	/	/	-	Existing access maintained, however no opportunities do provide additional access.	Work with Biodiversity Officer if issues arise
4. Promote healthy living and active travel	/	/	-	Maintain barrier free access. Possibility of subsidised bus services being withdrawn leading to increased car use.	Promote the use of walking and cycling as modes of transport.
5. Reduce and prevent crime; reduce fear of crime	+	+	+	Maintain existing street lighting.	Monitor situation with Police and Community Wardens
6. Improve quality of life for present and future generations	-	-	--	Condition of transport network likely to deteriorate in the long term. Difficult to react to future needs.	Work with transport partners.
7. Contribute to sustainable flood risk management	+	+	+	Working closely with the upcoming local and area flood risk map processes. Working closely with land use planning to ensure that development does not adversely impact on flood plains or watercourses.	Avoid flood plains. Design new culverts and other structures to ensure no impact on hydrological processes.

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

?

Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

## Option 1 - Do-minimum

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
8. Protect and enhance the status of the water environment from potential transport related impacts	/	/	-	Maintaining existing infrastructure and services only. There may be long term water quality implications if the network conditions decline and essential maintenance cannot be undertaken.	Ecological SUD's. Work with Biodiversity Officer/ Countryside Rangers to identify physical barriers to wildlife.
9. Maintain and improve air quality levels.	/	/	-	Maintaining existing infrastructure and services only. In long term if no action is taken on car use then air quality may deteriorate.	Monitor air quality levels and implement air quality management areas if required.
10. Reduce greenhouse gas emissions	/	/	-	Maintaining existing infrastructure and services only. Declining conditions may impact on driving techniques and public transport reliability.	Monitor air quality and traffic growth.
11. Reduce vulnerability to the effects of climate change	/	/	-	Maintaining existing infrastructure and services only. Difficulties in dealing with impacts of severe weather flooding and frost heave etc.	Monitor severe weather and impacts.
12. Minimise the noise and vibration associated with transport	/	-	-	Deteriorating roads conditions may increase noise associated with road traffic.	Monitor noise and vibration complaints.
13. Protect and enhance the landscape	/	/	/	Maintaining existing infrastructure and services only. No change is anticipated	Work with Landscape Partnership Officer if issues arise

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

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Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

## Option 2 - Improve Travel Choices

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
1. Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species	+	+	+	Integrating land use planning and transport in new developments and through careful design impacts can be avoided.	Environmental assessment of all new developments inc. transport infrastructure
2. Maintain and enhance biodiversity, avoiding irreversible losses	/	/	/	No significant impact on existing biodiversity as option is limited to network and facility improvements. Continued management of existing roadside verges.	Management of invasive (flora) species
3. Provide opportunities for people to come into contact with and appreciate wildlife and wild places	+	+	+	Improving travel choices provides opportunities to provide additional access to wildlife areas.	Identify access opportunities
4. Promote healthy living and active travel	+	+	+	Integrating land use planning and transport can ensure that services are located next to people, thus enabling walking and cycling to be used as the primary modes of transport. Increases opportunities to use public transport.	Promote the use of walking and cycling as modes of transport.
5. Reduce and prevent crime; reduce fear of crime	+	+	+	Increasing access opportunities to public transport will encourage more people to use these modes increasing real and perceived security.	Monitor situation with Police and Community Wardens
6. Improve quality of life for present and future generations	+	+	+	Provide increase access opportunities by public transport and other modes.	Work with transport partners.
7. Contribute to sustainable flood risk management	+	+	+	Working closely with land use planning to ensure that development does not adversely impact on flood plains or watercourses.	Avoid flood plains. Design new culverts and other structures to ensure no impact on hydrological processes.

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

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Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS



## Option 2 - Improve Travel Choices

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
8. Protect and enhance the status of the water environment from potential transport related impacts	/	/	+	New developments will include SUD's. By providing increased access to alternative modes, car use may be reduced and therefore surface run off from transport may be reduced.	Ecological SUD's. Promote public transport.
9. Maintain and improve air quality levels.	+	+	+	By integrating transport and land use planning the need to travel may be reduced. Increasing opportunities to use alternative sustainable modes may reduce emissions from private vehicles.	Monitor air quality levels and implement air quality management areas if required. Regulate buses if required.
10. Reduce greenhouse gas emissions	+	+	+	Increasing opportunities to use alternative sustainable modes may reduce greenhouse gas emissions from private vehicles.	Monitor air quality and traffic growth.
11. Reduce vulnerability to the effects of climate change	/	/	/	Small negligible impact. Potential for increased access to sustainable modes to provide alternative methods of transport in the event of a severe weather event.	Monitor severe weather and impacts. Emergency planning.
12. Minimise the noise and vibration associated with transport	-	-	-	An increase in the use of public transport (bus and rail) may lead to increased noise and vibration from these modes.	Monitor noise and vibration complaints.
13. Protect and enhance the landscape	/	-	-	Improving travel choices may lead to new services using the existing network to negligible effect. However new development and its associated transport infrastructure may impact on the landscape.	Environmental assessment of all new developments.

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

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Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

### Option 3 - Protect the Environment

### Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
1. Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species	+	+	+	Promoting public and active transport will reduce the use and therefore reduce the risk of damage to wildlife.	Work with Biodiversity Officer and Green Networks if issues arise
2. Maintain and enhance biodiversity, avoiding irreversible losses	+	+	+	Promoting public and active transport will reduce the use and therefore reduce the risk of damage to biodiversity. Continued management of existing roadside verges.	Management of invasive (flora) species. Work with Biodiversity Officer if issues arise
3. Provide opportunities for people to come into contact with and appreciate wildlife and wild places	+	+	+	Promoting active and sustainable travel provides opportunities to provide additional access to wildlife areas.	Identify access opportunities
4. Promote healthy living and active travel	+	+	++	Promoting active travel and public transport as a mode of transport has a positive impact on the environment and health.	Promote the use of walking and cycling as modes of transport. Travel plans.
5. Reduce and prevent crime; reduce fear of crime	+	+	+	By promoting active and public transport this will encourage more people to use these modes increasing real and perceived security.	Monitor situation with Police and Community Wardens. Mode share.
6. Improve quality of life for present and future generations	+	+	++	Reducing car use and increasing the use of sustainable modes will improve the quality of our local environment and reduce future harmful impacts. Promote recycling in transportation.	Recycling and eco friendly construction techniques to be used where appropriate.
7. Contribute to sustainable flood risk management	/	/	+	No direct impact on flood risk management, however promoting active travel may provide long term benefits to climate change and therefore reduce the risk of flooding.	Work with Flooding Officer, monitor situation

#### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

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Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

### Option 3 - Protect the Environment

### Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
8. Protect and enhance the status of the water environment from potential transport related impacts	/	/	+	By providing increased access to alternative modes, car use may be reduced and therefore surface run off from transport may be reduced.	Promote public and active transport.
9. Maintain and improve air quality levels.	+	+	++	Increasing opportunities to use alternative sustainable modes may reduce emissions from private vehicles. Promoting eco-driving techniques aim to reduce emissions of those who choose to drive.	Monitor air quality levels and implement air quality management areas if required.
10. Reduce greenhouse gas emissions	+	+	+	Promoting the use alternative sustainable modes may reduce greenhouse gas emissions from private vehicles. Recycling in construction will reduce impacts from raw materials and manufacture.	Monitor air quality and traffic growth.
11. Reduce vulnerability to the effects of climate change	/	/	/	Small negligible impact. Potential for increased access to sustainable modes to provide alternative methods of transport in the event of a severe weather event.	Monitor severe weather and impacts. Emergency planning.
12. Minimise the noise and vibration associated with transport	+ -	+ -	+ -	An increase in the use of public transport (bus and rail) may lead to increased noise and vibration from these modes. May be reduced overall due to less cars on the network.	Monitor noise and vibration complaints.
13. Protect and enhance the landscape	/	-	-	The increased use of sustainable modes is unlikely to have a significant impact on the landscape as these modes would use the existing infrastructure	Work with Landscape Partnership Officer if issues arise

#### Key

++ very positive impact  
 - - very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

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Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

## Option 4 - Extend the Network

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
1. Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species	-	-	--	Extending the transport network may have significant impacts on designated wildlife (SSSI, protected species/habitats etc.). Introduction of river based transport could impact on RAMSAR sites.	Environmental assessment of all new significant transport infrastructure
2. Maintain and enhance biodiversity, avoiding irreversible losses	-	-	+ -	New infrastructure could have a significant impact on biodiversity. Opportunities arise however to improve existing biodiversity conditions.	Environmental assessment of all new significant transport infrastructure. Careful design of new schemes.
3. Provide opportunities for people to come into contact with and appreciate wildlife and wild places	+	+	+	Provides new opportunities to access previously inaccessible areas.	Work with Biodiversity Officer to develop opportunities.
4. Promote healthy living and active travel	+ -	+ -	+ -	Active travel and healthy living only likely as a result of increase walking and cycling network. Measure to increase road network may lead to increased use of the private car.	Promote new walking and cycling routes.
5. Reduce and prevent crime; reduce fear of crime	+	+	+	Opportunities to reduce actual and perceived crime through introducing street lighting in rural areas and increasing access to the existing transport network.	Monitor situation with Police and Community Wardens. Undertake safety checks on new transport schemes.
6. Improve quality of life for present and future generations	+	+	+	Increase provision and quality within the transport network to meet the future needs.	Work with transport partners. Increase access to public transport networks (bus and rail)
7. Contribute to sustainable flood risk management	+	+	++	May be opportunities to positively contribute to flood risk management in new transport schemes.	Avoid flood plains. Design new culverts and other structures to ensure no impact on hydrological processes.

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

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Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

## Option 4 - Extend the Network

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
8. Protect and enhance the status of the water environment from potential transport related impacts	+	+	++	May be opportunities to positively contribute to water quality, water environment and managing river banks in new transport schemes.	Ecological SUD's. Design in measures for ecology
9. Maintain and improve air quality levels.	+ -	+ -	+ -	New sustainable transport options may be developed (river/rail). However measures to increase road network coverage or conditions may increase the use of the private car decreased air quality.	Monitor air quality levels. Avoid new roads construction where possible.
10. Reduce greenhouse gas emissions	+ -	+ -	+ -	New sustainable transport options may be developed (river/rail). However measures to increase road network coverage or conditions may increase the use of the private car leading to increased greenhouse gas emissions.	Monitor air quality and traffic growth. Avoid new roads construction where possible.
11. Reduce vulnerability to the effects of climate change	/	/	+	Small negligible effect. Potential for increased access to sustainable modes to provide alternative methods of transport in the event of a severe weather event.	Monitor severe weather and impacts.
12. Minimise the noise and vibration associated with transport	-	-	--	Increased transport provision (all modes) will lead to noise and vibrations being generated, particularly in areas previously undisturbed.	Monitor noise and vibration complaints.
13. Protect and enhance the landscape	-	-	--	Depending on the scheme details, any new transport provision is likely to have an impact on the local landscape.	Consider landscape impacts in any new schemes. Work with Landscape Partnership Officer if issues arise

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

?

Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

## Option 5 - Improve Transport Movement

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
1. Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species	/	/	/	No significant impacts anticipated as improving and maintaining existing infrastructure and services only.	Work with Biodiversity Officer and Green Networks if issues arise
2. Maintain and enhance biodiversity, avoiding irreversible losses	/	/	/	No significant impacts anticipate as improving and maintaining existing infrastructure and services only.	Continued management of invasive (flora) species
3. Provide opportunities for people to come into contact with and appreciate wildlife and wild places	/	/	/	Existing access maintained, limited opportunities to provide additional access.	Work with Biodiversity Officer if issues arise
4. Promote healthy living and active travel	/	+	+	Measures to discourage car use may encourage travel by active modes.	Road user charging and traffic management measures.
5. Reduce and prevent crime; reduce fear of crime	/	/	/	No significant impacts anticipated.	Monitor situation with Police and Community Wardens
6. Improve quality of life for present and future generations	+	+	+	Improving the condition of transport network to meet the future needs of all. Maintaining network conditions in a useable state at all times.	Roads maintenance and winter service treatment. Traffic management and freight routes/bans.
7. Contribute to sustainable flood risk management	/	/	/	No direct impact on flood risk management, however discouraging car use may provide long term benefits to climate change and therefore reduce the risk of flooding.	Work with Flooding Officer, monitor situation. Road user charging

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

?

Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

## Option 5 - Improve Transport Movement

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
8. Protect and enhance the status of the water environment from potential transport related impacts	-	-	-	Impacts on water quality through regular and winter maintenance of the transport network through run off.	Manage in conjunction with Flooding Officer
9. Maintain and improve air quality levels.	+ -	+ -	+	Generally improving transport movement and avoiding sensitive locations should reduce emissions. However there may be localised areas where air quality decreases.	Monitor air quality levels. Divert traffic from sensitive locations. Reduce car use.
10. Reduce greenhouse gas emissions	/	/	+	In the longer term there may be some overall decrease in greenhouse gas emissions.	Monitor air quality and traffic growth.
11. Reduce vulnerability to the effects of climate change	/	/	/	Minimal impact.	Monitor severe weather and impacts.
12. Minimise the noise and vibration associated with transport	/	+ -	+ -	Improving transport movement through the removal of traffic will have a positive effect. However some measures such as traffic management and freight routes may increase these impacts.	Monitor noise and vibration complaints.
13. Protect and enhance the landscape	/	/	/	Limited impact anticipated to the local landscape.	Work with Landscape Partnership Officer if issues arise

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

?

Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

## Option 6 - Improve Travel Safety

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
1. Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species	-	-	-	Potential for impacts on road accident remediation sites and new infrastructure proposals. Any bridge maintenance works may impact on protected species.	Environmental assessment/ investigation of all new significant transport infrastructure and bridge works.
2. Maintain and enhance biodiversity, avoiding irreversible losses	/	+ -	+ -	Potential for impacts on road accident remediation sites and new infrastructure proposals. Potential to improve biodiversity conditions. Loss of habitat possible due to removal of trees.	Incorporation of SUD's in new schemes
3. Provide opportunities for people to come into contact with and appreciate wildlife and wild places	/	+	+	Potential to increase access opportunities through new walking and cycling routes	Work with Biodiversity Officer to develop opportunities.
4. Promote healthy living and active travel	/	+	+	Improving the safety for those travelling by vulnerable modes (walking and cycling) may encourage more active travel.	Develop safe walking and cycling routes.
5. Reduce and prevent crime; reduce fear of crime	/	+	+	Improving the safety for those travelling by vulnerable modes (walking and cycling) may encourage people to travel by these modes, thus increasing real and perceived safety.	Monitor situation with Police and Community Wardens
6. Improve quality of life for present and future generations	+	+	+	Improving the safety of the transport network will help to meet the future needs of all.	Monitor road safety.
7. Contribute to sustainable flood risk management	/	/	/	No direct impact on flood risk management.	Work with Flooding Officer, monitor situation.

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

?

Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS



## Option 6 - Improve Travel Safety

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
8. Protect and enhance the status of the water environment from potential transport related impacts	/	+	+	Potential to improve water quality in designing road safety schemes.	Design in conjunction with Flooding Officer
9. Maintain and improve air quality levels.	+	+	++	Improving road safety may provide air quality benefits from removing vehicles from sensitive locations and reducing the speed of vehicles, thus reducing emissions.	Monitor air quality levels. Divert traffic from sensitive locations. Reduce car speeds.
10. Reduce greenhouse gas emissions	/	/	+	In the longer term there may be some overall decrease in greenhouse gas emissions.	Monitor air quality and traffic growth.
11. Reduce vulnerability to the effects of climate change	/	/	/	Minimal impact.	Monitor severe weather and impacts.
12. Minimise the noise and vibration associated with transport	-	-	-	Minimal impact, however some traffic management measure may increase noise.	Monitor noise and vibration complaints.
13. Protect and enhance the landscape	/	-	-	Some impact to the local landscape is possible as a result of new road safety and walking/cycling schemes. Removal of trees may impact on landscape quality.	Work with Landscape Partnership Officer if issues arise

### Key

++ very positive impact  
 -- very negative impact  
 unknown

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

?

Short - within 1st year

Medium - Within life of LTS

Long - Impacts beyond the LTS

## Option 7 - Planning for Transport

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
1. Ensure the sustainable management of, and avoid damage to, designated wildlife sites and protected species	+	+	+	Planning for future transport allows for all potential impacts to be addressed and avoided or designed out at an early stage.	Work with Biodiversity Officer and Green Networks if issues arise
2. Maintain and enhance biodiversity, avoiding irreversible losses	+	+	+	Planning for future transport allows for all potential biodiversity impacts to be addressed and measure to enhance can be incorporated at an early stage..	Work with Biodiversity Officer if issues arise
3. Provide opportunities for people to come into contact with and appreciate wildlife and wild places	+	+	+	Planning for access opportunities will allow for any links with wildlife to be made.	Identify access opportunities
4. Promote healthy living and active travel	+	+	++	Promoting travel plans in new and existing development will encourage a greater use of active travel modes.	Promote the use of travel plans.
5. Reduce and prevent crime; reduce fear of crime	+	+	+	By carefully planning schemes any security issues can be identified and addressed.	Monitor situation with Police and Community Wardens. Mode share.
6. Improve quality of life for present and future generations	+	++	++	By planning for the future needs of all at an early stage, provision can be made for future generations.	Integrate land use and transport planning
7. Contribute to sustainable flood risk management	/	/	+	Working closely with the upcoming local and area flood risk map processes. Working closely with land use planning to ensure that development does not adversely impact on flood plains or watercourses.	Work with Flooding Officer and partnership agencies

### Key

++ very positive impact  
 -- very negative impact

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

? unknown

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## Option 7 - Planning for Transport

## Assessment Matrix

SEA objective	Likely environmental impact			Comments	Mitigation or further improvement
	Short	Medium	Long		
8. Protect and enhance the status of the water environment from potential transport related impacts	/	/	+	Through integrated transport plans, water quality can be maintained or improved.	Work with Flooding Officer and partnership agencies
9. Maintain and improve air quality levels.	+	+	++	Developing plans and strategies aimed at reducing the need to travel and the use of the private car can have a positive impact on air quality.	Monitor air quality levels and implement air quality management areas if required.
10. Reduce greenhouse gas emissions	+	+	++	Developing plans and strategies aimed at reducing the need to travel, use of the private car, eco driving techniques, recycling etc. can have a positive impact on air quality.	Monitor air quality, traffic growth and eco techniques.
11. Reduce vulnerability to the effects of climate change	+	+	++	Transport is considered one of the largest sources of emissions leading to climate change. Through planning for a more sustainable transport network is one way to use our vulnerability to its effects.	Monitor severe weather and impacts. Work with Emergency Planning.
12. Minimise the noise and vibration associated with transport	+	+	+	Any increases in noise and vibration can be identified at an early stage with planning with remedial actions sought.	Monitor noise and vibration complaints.
13. Protect and enhance the landscape	+	+	+	Planning for new transport infrastructure may have impacts on the landscape, by advance planning many of the issues can be identified and ameliorated.	Work with Landscape Partnership Officer if issues arise

### Key

++ very positive impact  
 -- very negative impact

+ positive impact  
 - negative impact

+ - positive and negative impacts  
 / neutral or no impact

? unknown

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If you have any comments about this document, please contact:

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