

**South Yorkshire Local Transport Plan  
No.2 (2006-11)**

**Strategic Environmental Assessment  
Environmental Report**

**Volume 1**

**June 2005**

**Scott Wilson Kirkpatrick & Co Ltd**

# South Yorkshire Local Transport Plan No.2 (2006-11)

## Strategic Environmental Assessment Environmental Report

### Volume 1

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## 1.0 INTRODUCTION

### 1.1 Context and Aims

1.1.1 European Directive 2001/42/EC<sup>1</sup>, known as the Strategic Environmental Assessment or SEA Directive, applies to a wide range of plans and programmes, including the South Yorkshire Local Transport Plan (LTP) No.2 2006-11. The SEA Directive was transposed into UK law on 20th July 2004 as the Environmental Assessment of Plans and Programmes Regulations 2004, SI No. 16332. In accordance with the requirements of this legislation, the effects of the policies and programmes of the LTP need to be assessed, and measures to prevent, reduce or offset adverse environmental effects need to be established.

1.1.2 The objective of the SEA Directive is:

‘to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans ... with a view to promoting sustainable development’

1.1.3 Appendix A provides more detailed information with regard to the requirements of Directive 2001/42/EC.

### 1.2 Previous Reports

1.2.1 In November 2004, the South Yorkshire Local Transport Plan Partnership (herein referred to as the Partners) commissioned Scott Wilson to undertake a scoping exercise and prepare a Scoping Report for the Strategic Environmental Assessment (SEA) of the South Yorkshire LTP No.2 2006-11. This was the first stage in the SEA process and aimed to set the context and scope of the SEA, establish the baseline, and prepare for consultation through the following stages:

- identify other relevant plans and programmes;
- identify existing environmental protection objectives, and their relation to the LTP;
- propose SEA objectives;
- propose indicators;
- identify options or reasonable alternatives;
- define/collect baseline data, including data on likely future trends;
- identify environmental and sustainability problems and opportunities; and
- propose the scope and approach of the SEA.

1.2.2 The Final Scoping Report was issued in March 2005 and was distributed to the four statutory consultees - English Nature, the Environment Agency, English Heritage and the Countryside Agency – and to the Council for the Protection of Rural England (CPRE), for their comments.

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<sup>1</sup> European Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, Article 1.

<sup>2</sup> The Environmental Assessment of Plans and Programmes Regulations, 2004, SI No.1633, Parts 3 & 4.

### 1.3 The Environmental Report

- 1.3.1 Subsequent to the issue of the Final Scoping Report, the Partners commissioned Scott Wilson to undertake the SEA and to produce the Environmental Report, presented herein.
- 1.3.2 In preparing this Environmental Report, consideration has been given to the responses received from the consultees in respect of the Final Scoping Report. Further baseline data collation has been undertaken and the proposed SEA objectives, indicators and targets further refined to reflect the available baseline data, the environmental problems and opportunities identified during the scoping exercise and through the additional data review and collation, and comments received from the consultees.
- 1.3.3 The Environmental Report represents the output from the third stage (Stage C) of the SEA (refer to Section 3.0, Table 3.1 – The Stages of SEA and LTP Production). The Final LTP will be produced following full public consultation on the draft LTP and Environmental Report (Stage D, Table 3.1). Once that the LTP is implemented, the SEA Directive requires the effects of the LTP on the environment to be monitored. The definition of SEA indicators and targets presented within this Environmental Report has therefore also taken into consideration those monitoring requirements and the applicability and practicality, with respect to future monitoring, of the indicators and targets proposed.

### 1.4 South Yorkshire Local Transport Plan (LTP) No.2 (2006-11)

- 1.4.1 The South Yorkshire LTP No.2 will provide a 5 year integrated transport strategy from 2006 to 2011. It is the means by which overall policy direction is translated into a detailed and costed programme of transport schemes and initiatives, and will include:
- local objectives consistent with Government's overarching objectives for transport;
  - an analysis of problems and opportunities;
  - a coherent, integrated strategy to tackle the problems and deliver the LTP objectives;
  - a 5 year implementation programme of schemes and policy measures; and
  - targets, performance indicators and other outputs which can be used to assess whether the plan is delivering its objectives.
- 1.4.2 The LTP will address the four Government/Local Government Association shared priorities of congestion, safety, air quality and accessibility. It is the means by which the South Yorkshire Partners can move towards securing the longer-term vision for transformational growth in the county over the next five year period. A draft LTP will be submitted to the Department for Transport (DfT) in July 2005. DfT will regard the LTP as provisional. The Partners will then have the opportunity to produce a revised and finalised LTP for submission by the end of March 2006. The first round LTP will remain in force until March 31 2006.
- 1.4.3 Whilst the role of public transport will continue to be important, the LTP will assess the respective roles of bus, rail and tram in order to develop each mode to its fullest potential. Public transport proposals involving significant investment or requiring

greater local transport authority control over public transport will need to be supported by demand management proposals. Addressing the link between transformational economic growth and rising traffic levels is perhaps the most significant issue for the LTP, as the need to improve the accessibility of services, goods and opportunity for all may lead to an increased need for travel.

## 2.0 REPORT STRUCTURE

2.1 This structure of this report is as follows:

- Section 3.0 SEA programme and scope
- Section 4.0 Relevant policies, plans and programmes.
- Section 5.0 Environmental baseline data
- Section 6.0 Environmental problems and opportunities
- Section 7.0 SEA objectives, indicators and targets
- Section 8.0 Identifying alternatives and assessment
- Section 9.0 Environmental assessment
- Section 10.0 Recommendations and Mitigation
- Section 11.0 Monitoring
- Section 12.0 Future Stages

2.2 We are currently at Stage C of the SEA process. Stage C builds on earlier stages of the SEA and presents the Environmental Report. Stage D provides for consultation on the Draft Plan and Environmental Report (refer to Table 3.1, Section 3.0 SEA Scope and Programme).

### 3.0 SEA SCOPE AND PROGRAMME

#### 3.1 SEA Study Area

3.1.1 The study area for the SEA is that covered by LTP No.2, i.e. the entire area of the South Yorkshire Metropolitan County, which occupies a land area of around 155, 203 ha. This includes the major urban conurbations of Barnsley, Doncaster, Rotherham and Sheffield and includes a section of the Peak District National Park, as depicted in **Figure 1**.

#### 3.2 Temporal Scope

3.2.1 The temporal scope of the SEA is the five year period of the LTP, namely 2006 to 2011. In recognising the LTP's dual role as a strategic document and 'bidding document', the SEA will focus upon two components of the LTP, namely the LTP strategies and the costed 5 year programme of measures.

3.2.2 The stages of SEA and LTP production are summarised in **Table 3.1**.

#### 3.3 Environmental Issues

3.3.1 The Environmental Assessment of Plans and Programmes Regulations 2004 require that the significant effects of the LTP on the environment include short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues including:

- biodiversity;
- population;
- human health;
- fauna;
- flora;
- soil;
- water;
- air;
- climatic factors;
- material assets;
- cultural heritage, including architectural and archaeological heritage;
- landscape; and
- the inter-relationship between the issues listed above.

**Table 3.1 The Stages of SEA and LTP Production**

SEA Stage	LTP Stage
<b>Stage A: Setting the context and establishing the baseline</b>	
<p>Identify relevant plans, policies and programmes. Identify environmental protection objectives, and state their relation to the LTP. Devise SEA objectives, indicators and targets. Collect baseline data. Establish issues and problems.</p>	<p>Prepare Issues and Options Report. Identify the issues and options, including environmental considerations. Prepare for consultation.</p>
<b>Stage B: Deciding the scope of SEA and developing alternatives</b>	
<p>Identify alternatives and choose preferred alternatives. Prepare SEA Scoping Report. Consult authorities with environmental responsibilities and other interested parties. <b>Output: Scoping Report</b></p>	<p>Consult on Issues and Options Report. Develop draft strategies and broad-brush programme options.</p>
<b>Stage C: Assessing the effects of the LTP and mitigation</b>	
<p>Predict the effects of the LTP. Evaluate the effects of the LTP. Propose measures to prevent, reduce or offset adverse environmental effects (including implementation of proposed mitigation measures). <b>Output: Draft Environmental Report.</b></p>	<p>Develop strategies and programme options in detail.</p>
<b>Stage D: Consulting on the draft LTP and the Environmental Report</b>	
<p>Present the results of the SEA. Seek inputs from the public and authorities with environmental responsibilities. Take consultation results into account. Show how the results of the Environmental Report were taken into account in finalising the LTP.</p>	<p>Full public consultation on draft LTP No.2. Consider and document consultation responses. Prepare revised LTP No.2 in light of consultation responses. Notify consultees of changes. Consider need for any inquiry. Set up inquiry if required. Consider outcome of Examination in Public (EIP). Notify consultees of intention to adopt plan. Formal adoption by Partners and submission to DfT. Distribute and make available adopted LTP.</p>
<b>Stage E: Monitoring the significant effects on the environment of implementing the LTP</b>	
<p>Prepare and implement programme to monitor the significant effects of the LTP on the environment, and link to other LTP implementation and review activities.</p>	<p>Monitor implementation of the adopted LTP through proposed programme.</p>

### 3.4 The New Approach to Appraisal (NATA)

- 3.4.1 NATA is an approach for improving the consistency and transparency with which transport decisions are made. It presents the key economic, environmental and social impacts of decisions in a clear, consistent and balanced way using an Appraisal Summary Table and associated worksheets. NATA is the basis for appraising multi-modal studies, Highways Agency road schemes, local transport plans, major road and public transport schemes, Strategic Rail Authority schemes, seaports and the Government's airports strategy.
- 3.4.2 The relationship between the NATA sub-objectives and topics to be addressed within the SEA of LTP No.2 are detailed in the DfT guidance document TAG Unit 2.11<sup>3</sup>. This document explains how SEA should be integrated into the New Approach to Appraisal (NATA). The relationship between the NATA objectives and the topics included in the Environmental Assessment of Plans and Programmes Regulations, 2004 is illustrated in Table 3.2.
- 3.4.3 For the purposes of clarity and consistency with the NATA methodology, the SEA topics of human health and population, as defined in the Environmental Assessment of Plans and Programmes Regulations 2004, will include: noise, local air quality, physical fitness, accidents, security, community severance and access to the transport system.

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<sup>3</sup> Department for Transport, December 2004, op cit.

**Table 3.2 NATA Sub-Objectives and Other Topics to be Assessed within the SEA.**

NATA Objective	NATA Sub- Objective	SEA Topic
Environment	Noise	Human health, population <sup>1</sup> , inter-relationships
	Local air quality <sup>2</sup>	Air, human health, population
	Greenhouse gases	Climatic factors
	Landscape	Landscape
	Townscape	
	Heritage	Cultural heritage including architectural and archaeological heritage
	Biodiversity <sup>3</sup>	Biodiversity, fauna, flora, soil <sup>4</sup>
Safety	Water environment	Water
	Physical fitness	Human health, population
Accessibility	Accidents	Human health, population
	Security	
Economy	Community severance	Population
	Access to the transport system	
Economy	Public accounts	Material assets <sup>5</sup>
	Business users and providers	
	Consumer users	

Source: TAG Unit 2.11, DfT (December 2004)

Notes:

<sup>1</sup> Population is interpreted broadly, referring to effects on people and quality of life. Many NATA indicators incorporate population.

<sup>2</sup> The NATA local air quality indicator does not cover regional air quality, though guidance is given on its assessment. Where regional air quality is likely to be an issue, a local objective may be formulated.

<sup>3</sup> Biodiversity also covers geological interests.

<sup>4</sup> Soil is not explicitly covered by NATA sub-objectives, but is an underlying factor affecting landscape, heritage, biodiversity and the water environment. Where effects on soil are likely to be important, a local objective should be formulated.

<sup>5</sup> Material assets are not explicitly covered by NATA sub-objectives, but are reflected in the money costs incurred when they are consumed. Where effects on material assets such as infrastructure and property are expected to be of particular importance, a local objective should be formulated.

## 4.0 OTHER PLANS AND PROGRAMMES

4.1 As indicated in the Scoping Report for the SEA, the LTP will be affected by, and will affect, a wide range of other relevant plans, programmes and environmental objectives. It is therefore important to identify relevant plans and programmes, any potential conflicts with the LTP, and any existing environmental objectives that are pertinent to the LTP and SEA objectives.

4.2 A thorough review of relevant plans and programmes at national, regional, county and sub-regional and local level was undertaken as part of the Scoping Study. The aim of this review was to identify which plans and programmes may influence the development and implementation of LTP No.2 and how, and to record any environmental objectives they contain. The objectives identified from relevant plans and programmes have been taken into account when developing the SEA objectives, as presented in **Section 7.0: Objectives and Indicators**.

4.3 The objectives, requirements, guidance and environmental objectives contained within the documents reviewed, and any implications for LTP No.2, were detailed in Appendix B of the Scoping Report and are included in Appendix F of this report. **Table 4.1** below lists the plans and programmes reviewed, in addition to further international plans referred to during the preparation of the Environmental Report. **Appendix E** of this report provides a network diagram indicating the relationship between LTP No.2 and the related plans and programmes reviewed.

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4.4 The primary focus of the sub-regional strategy for South Yorkshire, which will form the basis of spatial policy in South Yorkshire for 2006-2016 and which contributes to the new Regional Spatial Strategy for Yorkshire and Humberside, is the development and growth of the main urban centres. To this end radical improvement to transport infrastructure has been identified as one of the key issues for the spatial strategy, with a need for renewed and concentrated effort to improve transport connectivity both within South Yorkshire and externally.

4.5 In general, the main objectives from transport policy legislation and planning guidance include the following of relevance to the LTP:

- reducing the distances people have to travel;
- directing new development towards sites that are readily accessible from the main transport (and specifically road) network;
- promoting public transport with corresponding measures to reduce levels of private car use;
- managing the capacity of the road network and parking provision alongside public transport services to encourage modal shift;
- looking at opportunities to invest in new transport solutions or expanding current ones, such as Park & Ride schemes;
- improved accessibility for the disabled and others; and
- maintaining and where possible improving public safety.

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4.6 With respect to environmental protection, the New Approach to Traffic Assessment (NATA) appraisal, as referred to in Section 3.4 of this report, requires, under the Environment Objective, that plans should seek to reduce the direct and indirect impacts of transport facilities on the environment of users and non-users. For the

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purposes of developing the LTP and undertaking the SEA, due regard must also be given to international and national policy legislation, and to other policies and guidance at the regional and local level. All Unitary Development Plans contain broad, overarching statements covering environmental protection, maintaining landscape and townscape quality, and the need to ensure that there are appropriate measures in place for mitigation and/or compensation where development is permitted.

- 4.7 Over-arching themes and issues drawn from the plans and programmes reviewed, and implications for LTP No.2 were presented in Section 7.0 of the Scoping Report. The link between these and the SEA objectives have been further developed in **Section 7: Environmental Issues** of this report, which identifies the environmental problems and opportunities.

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**Table 4.1 Plans and Programmes**

International Level Policy & Strategy
The World Summit on Sustainable Development (WSSD), Johannesburg Declaration on Sustainable Development (2002)
European Spatial Development Perspective (1999)
European Biodiversity Strategy (2001)
EU 6 <sup>th</sup> Environmental Action Programme (1998)
European Landscape Convention (though the UK has yet to formally sign the convention)
Water Framework Directive (2002)
Habitats Directive (1992)
Kyoto Protocol (2005)
Rio Declaration (1992)
National Level Policy & Strategy
New Approach to Appraisal (NATA) (2000, amended 2003) DfT
The Future of Transport: A Network for 2030 (2004) DfT
A New Deal for Trunk Roads (1998) – DfT
Guidance on Full Local Transport Plans (2000)- DfT
Transport Ten Year Plan (2000) – DfT
Road Traffic Reduction Act (1997) – DfT
Breaking the Logjam (1999 – consultation paper)- DfT
Aviation White Paper (2003) – DfT
Targeted Programme of Improvements (2002) - HA
Strategic Plan (2003) – Strategic Rail Authority
Freight Interchange Strategy (2004) – Strategic Rail Authority
From Workhorse to Thoroughbred (1999 – consultation draft) – DfT
Sustainable Distribution (1999, modified 2004) - DfT
National Air Quality Strategy (2000) – DEFRA
National Cycling Strategy (2003) – DfT
Rural Strategy (2004) – DEFRA
Climate Change –UK Programme (2003) – DEFRA
Good Practice Guidance on LTPs (2002) – Countryside Agency
The Role of the Highways Agency in Air Quality Management (2003) – HA
Encouraging Travel Change – Working Together on Road to Rail Campaigns
Sectoral Analysis: Inland Transport (2002) – English Nature
National Planning Guidance
PPG1 – General Policy & Principles (1997)- ODPM (paras. 5, 7, 12, 21, 28)
PPS1 – Creating Sustainable Communities (2003) – ODPM (paras 1.22, 1.39)
PPG3 – Housing (2000) – ODPM (paras. 47, 48, 50, 51, 61)
PPG6 – Town Centres & Retail Development (1996) – ODPM (paras. 2.29, 2.30)

PPS6 – Planning & Town Centres (2003 – consultation draft) – ODPM
PPS7 – Sustainable development in rural areas (2004) – ODPM (Key Principles 1-ii, 2, 3, 4, and the Countryside paras. 15, 16)
PPG9 – Nature conservation (1995) – ODPM (paras. 12, 18, 25, 24, 36, 47, 30, 31, 38, 39)
PPS11 – Regional Spatial Strategies (2004) – ODPM (Annex B)
PPG 13 – Transport (2001) – ODPM (paras. 1.4, 1.6, 45, 48, 50, 51, 66, 70, 72, 75-77, 78- 80)
PPG15 – Planning & the Historic Environment (1994) – ODPM (paras. 5.2, 5.4, 5.5, 5.7, 5.16- 5.18)
PPG 17 – Planning for open space, sport & recreation (1991/2001) – ODPM (paras. 17, 18(ii), 20 (i))
PPS17 – Planning for open space, sport & recreation (2002) – ODPM
PPG 21 – Tourism (1992) – ODPM (paras. 17, 33)
<b>Regional Level Policy &amp; Strategy</b>
Regional Spatial Strategy for Yorkshire and the Humber (2004) – GOYH
Yorkshire and Humber Regional Sustainable Development Framework (update 2003-2005)
South and West Yorkshire Multi-Modal Study (2000) – GOYH
Yorkshire and the Humber: Strategic Transport Priorities (2003) – YHRDA
Yorkshire and the Humber Experimental Regional Transport Board – Final Report (2004) – GOYH
Freight and Logistics intelligence for the Regional Transport Strategy (2004) – RAYH
M60 Junction 18 to 12 Multi-Modal Study (2002) – DfT
<b>Sub-Regional and Local Policy &amp; Strategy</b>
Unitary Development Plan for Sheffield (1998) – Sheffield City Council
Barnsley Unitary Development Plan (2000) – Barnsley Metropolitan Borough Council
Rotherham Unitary Development Plan (1999) – Rotherham Metropolitan Borough Council
Doncaster Unitary Development Plan (1998) – Doncaster Metropolitan Borough Council
Doncaster Unitary Development Plan Review 2001-2006 (2002) – Doncaster Metropolitan Borough Council
Barnsley Integrated Development Plan (2001) – Barnsley Metropolitan Borough Council
Sheffield Integrated Development Plan (2001) – Sheffield One Partnership
Draft Regeneration Plan for Rotherham 2003-2008 (2003) – Rotherham Metropolitan Borough Council
The Doncaster Renaissance Town Charter (2002) – Doncaster Metropolitan Borough Council
Sub-regional Action Plan for South Yorkshire (2001) – South Yorkshire Partnership
South Pennines Integrated Transport Strategy- SPITS (2002) – Peak District National Park Transport Forum
SPITS' South Pennines Transport Project 2005-2016 (2005) CPRE
Peak District National Park Management Plan 2000-2005 (2000) – Peak District National Park Authority
Ex Ante Sustainable Development Appraisal of the South Yorkshire Integrated Development Plans (2001) – Objective One Partnership

DfT – Department for Transport

ODPM – Office of the Deputy Prime Minister

DEFRA – Department for the Environment, Food and Rural Affairs

HA – Highways Agency

GOYH – Government Office of Yorkshire & Humberside

YHRDA – Yorks & Humber Regional Development Authority

RAYH – Regional Assembly for Yorkshire & Humberside

CPRE – Council for the Protection of Rural England

## 5.0 ENVIRONMENTAL BASELINE

### 5.1 Introduction

5.1.1 Baseline data is used to provide the basis for forecasting and monitoring of environmental effects and also aids identifying environmental problems. Data of relevance to the SEA objectives and indicators were presented in the Baseline Data Table in Appendix A of the Scoping Report. The Baseline Data Table provides a basis to which further data have been added during the preparation of this Environmental Report (refer to **Appendix B**), and to which additional data may be added in the future, beyond completion of the SEA.

### 5.2 Data availability and “gaps”

5.2.1 In collecting baseline data, “gaps” in data coverage are inevitably encountered. Where gaps exist in the available data, it is important to record any resulting uncertainties and/or risks in the appraisal. Indicators for which data is currently lacking at a National, Regional or County level are summarised in **Appendix C**.

### 5.3 Current Baseline and Predicted Future Trends Without Implementation of the LTP No. 2

5.3.1 The SEA Directive requires the process to identify *“the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme”*.

5.3.2 The Baseline Data Table identifies, using available data, the current state of the environment in the South Yorkshire Metropolitan County area. Extrapolation of this data can provide an indication as to the likely evolution of the environment within South Yorkshire in the absence of the new LTP No. 2, though such prediction is complex and fraught with uncertainty, being dependent upon global and national economic climate and decisions made at national, regional and county level.

5.3.3 On the basis of the available data, it appears likely that the following trends are likely to continue:

- the population within South Yorkshire is expected to remain static over the next 6 years. Figures from the 1991 and 2001 census indicate that overall there was a 3.6% reduction in population over the County, with only Sheffield showing a minor increase (0.1%) in population. Of approximately 0.5 million people who work in South Yorkshire, about 50% of those work in Sheffield;
- the current trend, in terms of travel by people living and working within South Yorkshire, is for high and increasing car use, increasing travel distances and higher car ownership;
- within South Yorkshire, road traffic has increased from 7930 thousand vehicle kilometers in 1993, to 9709 thousand vehicle kilometers in 2003, an increase

of 18% over 10 years. Road traffic growth can be expected to continue, unless measures to severely reduce car usage are introduced;

- 62% of journeys to and from work within South Yorkshire are made by car. Since 1991 there has been an increase of 29.0% in the number of households in South Yorkshire with access to a car or van. Although the percentage of households without access to a car or van (32.8%) is slightly higher than the national average (26.8%), the increase is similar to the national average and may be expected to reflect the national average in the future<sup>4</sup>;
- between 1997/98 and 2003/04 there was an increase in the number of journeys in the County made by tram, from 9.1 million to 11.99 million, with a slight increase in rail journeys from 4.4 million to 4.86 million. There was, however, a decrease in journeys made by bus, from 144 million to 120.1 million. The fall in bus patronage is anticipated to continue as long as car ownership increases and motoring costs continue to fall in comparison with bus fares, though measures such as the extension of Quality Bus Corridors and concessionary fares may slow or halt the fall. In contrast, patronage of the tram system is expected to continue to rise;
- there has been an increase in the number of journeys made by cycle, and an increase in the level of walking<sup>5</sup>;
- within the County, there has been an overall increase in the number of fatalities/serious injuries due to road accidents (from 686 in 2000 to 740 in 2002), though there has been a slight reduction in fatalities/serious injuries to cyclists. There has also been a slight reduction in the number of child casualties, however there is generally a higher incidence of casualties involving children in areas of deprivation within South Yorkshire. As traffic volumes rise, the numbers of accidents, potentially resulting in fatalities or serious injuries, are also likely to rise;
- 93% of the rural population within South Yorkshire currently live within 800m of an hourly or better public transport service<sup>6</sup>. This already exceeds the national target for the proportion of the rural population living within 10 minutes of an hourly or better bus service to increase from 37% to 50% by 2010;
- fourteen Air Quality Management Areas have been declared in South Yorkshire, compared to 19 in Yorkshire and Humberside. Five of South Yorkshire's AQMAs are solely related to the trunk road network (M1, M18, A1(M)), particularly along the M1 corridor in South Yorkshire. It is estimated that there would need to be a reduction of 25 to 30% in traffic volumes to meet the national Air Quality Objectives<sup>7,8</sup>. In the urban centres it is estimated that there would need to be a 13% reduction in 2005 traffic volumes to achieve the national air quality objective for nitrogen dioxide<sup>9</sup>, by December 2005. As traffic volumes continue to increase, air quality will continue to deteriorate;

<sup>4</sup> South Yorkshire Local Transport Plan 2006-2011 Strategic Context Report;

<sup>5</sup> South Yorkshire Local Transport Plan 2001-2006, Fourth Annual Progress Report 2004

<sup>6</sup> [www.rurallinks.co.uk/local\\_transport\\_plan\\_rural\\_links\\_network\\_and\\_ltp.htm](http://www.rurallinks.co.uk/local_transport_plan_rural_links_network_and_ltp.htm)

<sup>7</sup> Report of the Programme Director – Strategic Direction for LTP2, 26 November 2004

<sup>8</sup> Development Control: Planning for Air Quality. NSCA, November 2004.

<sup>9</sup> Provisional South Yorkshire Second LTP 2006-2011. Draft for Consultation. Spring 2005

- on a regional level, total emissions of greenhouse gases were reduced by 6.6% between 1990 and 2001, however carbon dioxide emissions increased by 1.1% and emissions from transport increased by 17% - twice the rate of increase for the UK;
- in 2003, 91% of rivers in the Yorkshire and Humber region were of good or fair biological quality, with 89% being of good or fair chemical quality, compared to 88% and 90%, respectively, in 2000. These figures are generally slightly lower than national figures, though the trends are similar. The trend suggests that there is only likely to be minor improvement in water quality in Yorkshire's rivers over the next five year period, but that any improvement is likely to reflect national trends;
- there are 34 SSSIs within the County, 54% of which are meeting Public Service Agreement (PSA) targets, that 95% should be in favourable or recovering condition by 2010. Within Yorkshire and Humberside, 56% of SSSIs were meeting PSA targets in 2003/4, whilst 59% are meeting PSA targets in 2005. If a similar trend occurs within S Yorkshire, it would be anticipated that 69% of SSSIs would be in favourable or recovering condition by 2010;
- it is assumed that protected woodland and farmland species and/or their habitats would continue to be protected under statutory processes;
- over 50,000 ha of South Yorkshire is covered by Community Forest. It is anticipated that there will be an increase in woodland cover in the future, helped by the South Yorkshire Forest Plan 2002, part of an initiative to increase woodland cover across the UK by 30% over the next 30 years;
- between the 1960s and the 1990s, there was a 21% reduction in the area of land within Yorkshire and Humberside that was described as "tranquil", from 11,385 sq km to 9,300 sq km. In the 1960s 74% of the total land area within Yorkshire and Humberside was described as tranquil, which had reduced to 60% of the total land area by the 1990s. New methodology for identifying tranquil areas was publicised this year by the Council for the Protection of Rural England (CPRE), hence the above figures may alter, however, if the previous trends are indicative, a further 2% loss of tranquil areas could be expected over the next five year period;
- it is assumed that existing Listed Buildings, built heritage conservation areas and sites of archaeological interest and Scheduled Monuments would continue to be protected through the statutory planning processes;
- areas of the County that lie within the Peak District National Park would continue to be protected through statutory processes and legislation relating to National Parks.

## 6.0 ENVIRONMENTAL PROBLEMS AND OPPORTUNITIES

- 6.1 The identification of environmental problems and opportunities of relevance to the LTP assisted in the definition of key transport issues for the LTP No. 2. Initial collation of baseline data and the review of other plans and programmes identified a number of over-arching issues, which were presented in Table 7.1 of the SEA Scoping Report. The over-arching themes and implications for LTP No. 2 identified at the scoping stage, were considered when formulating the SEA objectives and indicators listed in **Section 7: Objectives and Indicators**.
- 6.2 Further collation of baseline data and identification of future trends has further highlighted problems and opportunities that are related to the over-arching issues. These are presented in **Table 6.1** of this report, together with the over-arching issues previously identified in the Scoping Report.
- 6.3 Indicators and targets for each of the SEA objectives have been further reviewed and amended or elaborated upon on the basis of the environmental opportunities and problems identified. In undertaking the review of indicators and targets, comments provided by consultees in response to the Scoping Report were also taken into consideration.

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**Table 6.1 Environmental Themes, Issues, Problems and Opportunities of Relevance to LTP No. 2**

Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
<p><i>Traffic Growth and Congestion</i></p>	<ul style="list-style-type: none"> <li>Land to be redeveloped for regeneration is largely restricted to brownfield sites in existing urban areas and to specific corridors along major strategic routes. In accordance with planning guidance, (PPS1), new development should be focused on existing centres. This is likely to increase traffic levels (or demand for access) in areas that are already congested.</li> <li>There is a need to tackle congestion on the Strategic Road Network. This may have knock-on impacts on traffic within the region.</li> <li>Land use and transport planning needs to be integrated.</li> <li>South Yorkshire is part of a wider, sub-regional economy, which affects traffic patterns. Integration is needed within the South Yorkshire area, within the South and West Yorkshire sub-region, and across the Pennines and down into the East Midlands. Strategies needs to be coordinated with neighbouring LTP areas.</li> <li>There is a need for greater consideration of freight sector transport requirements.</li> </ul>	<ul style="list-style-type: none"> <li>Current trends in car ownership and use predict that traffic volumes will continue to rise.</li> <li>People no longer live where they work, hence there is an increase in the numbers of people commuting.</li> <li>There has been an increase in the number of people in work and moving into the area, linked to an improvement in the economy of South Yorkshire through successful regeneration policies.</li> <li>Unchecked traffic growth could have a negative effect on South Yorkshire's economic viability.</li> <li>There is likely to be an increase in demand for freight movements around the sub-region. Opportunities for transferring freight from road to other modes of transport, e.g. rail, canal, should be considered, taking into account the practicalities involved.</li> </ul>
<p><i>Alternative Modes of Transport</i></p>	<ul style="list-style-type: none"> <li>Provision of a high quality public transport system across the sub-region is required to enable attractive alternatives to travel by private car, to improve the competitiveness of the overall South Yorkshire</li> </ul>	<ul style="list-style-type: none"> <li>Whilst rail and tram patronage has increased recently, bus patronage has generally declined in South Yorkshire. Given the potential for the</li> </ul>

Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
	<p>spatial mix and to link key settlements that could otherwise decline into uncompetitiveness and unsustainability.</p> <ul style="list-style-type: none"> <li>• An integrated approach to improving public transport is required, to include bus, tram and heavy rail. Bus is currently the main public transport mode and is likely to achieve benefits sooner than heavy and light rail, which require longer term planning.</li> <li>• There is a need for improved interchange facilities to support transport regeneration in all town centres. There may be opportunities to build multi-modal systems from scratch rather than attempting to retrofit existing systems.</li> <li>• Lack of information may currently be a barrier to public transport use.</li> <li>• There is a need to switch reliance from the private car to public and other healthier forms of transport, however, the private car may remain the principal mode of choice in some circumstances. The impacts of any area-wide fiscal measures on areas where car use will continue to be important must also be considered.</li> <li>• Intra-urban transport plans should include expansion of tram networks. Light rail expansion needs to be integrated with other modes in urban areas.</li> <li>• Prospective development sites should be included in plans for improved multi-modal access.</li> <li>• Use should be made of existing rail infrastructure, with derelict and disused facilities being safeguarded for possible future reinstatement. Expansion of light and heavy rail should be coordinated.</li> <li>• Improvements to locally accessible air travel (eg Robin Hood Airport Doncaster) are required, in addition to improvements to links to other key destinations (eg Manchester International Airport). Integrated multi-modal access (including freight access) to Robin Hood Airport is</li> </ul>	<p>bus to reach most areas, options to deliver improved bus services and to encourage modal shift towards increased bus patronage are required.</p> <ul style="list-style-type: none"> <li>• The Supertram provides a high quality, reliable service and has increasing patronage. Potential improvements to, or expansion of the existing Supertram system that can support regeneration, accessibility and congestion objectives should be considered. Extensions of the Supertram to Rotherham and to the Broomhill area have already been the subject of feasibility studies.</li> <li>• Provision of mini-interchanges during the period of the current LTP has resulted in increased patronage of these facilities and in the percentage of onward connections made (e.g. at Adwick and Dinnington). This demonstrates that provision of such facilities, to replace non-existent or poorer facilities, encourages increased public transport patronage.</li> <li>• Within urban areas, there may be potential for improving off-peak public transport services. Similarly, public transport services to areas such as the Peak District, other rural areas and old mining areas might be improved, to improve accessibility by non-car drivers and/or to reduce private car journeys.</li> <li>• Provision of an effective transport link between the South Yorkshire conurbations and Robin Hood Airport could contribute to relieving some of the traffic travelling through the Peak District</li> </ul>

Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
	required.	National Park to access Manchester Airport. This, however, needs to be balanced against any potential adverse effects associated with construction of the new transport link.
<b>Cross-Boundary Issues</b>	<ul style="list-style-type: none"> <li>Regional transport patterns are greatly influenced by what is done to the Strategic Road Network (SRN). LTP proposals need to be coordinated with the Highways Agency to insulate new infrastructure within the county from changes to the SRN, as far as is possible.</li> <li>Inter- and intra-regional use of rail may be greatly affected by improvements to the national rail network, in particular the East Coast Mainline and Midland Main Lines. LTP proposals therefore need to be coordinated with Strategic Rail Authority (SRA) plans.</li> </ul>	<ul style="list-style-type: none"> <li>The sub-region as a whole requires better connections into the national road and rail network, to improve east-west links to Greater Manchester and the ports, and to improve north-south links to the East Midlands, West Yorkshire and Leeds City region.</li> <li>Implementation of demand management measures, such as road charging, has potential for cross-boundary effects. Introduction of road charging needs to be addressed in liaison with other authorities.</li> </ul>
<b>Safety Issues</b>		<ul style="list-style-type: none"> <li>Tackling congestion and creating freer-flowing roads has potential to increase traffic speeds; reducing traffic speeds is fundamental to reducing road casualties.</li> <li>Improved accessibility to goods, services and opportunities has potential to adversely affect road safety.</li> <li>Road safety schemes should be prioritised.</li> <li>Passenger perception of safety and fear of crime when using public transport and public transport facilities may be a deterrent to public transport patronage. By utilising opportunities</li> </ul>

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Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
		<p>to improve public transport safety, and perceived safety, public transport patronage may be encouraged.</p> <ul style="list-style-type: none"> <li>Similarly, improved safety of the pedestrian and cycling environments may encourage greater use of these transport modes.</li> </ul>
<p><b>Air Quality</b></p>	<ul style="list-style-type: none"> <li>Air quality issues are directly related to traffic growth and congestion and to the use of alternative modes of transport and thence to over-arching issues identified under these headings.</li> </ul>	<ul style="list-style-type: none"> <li>Air quality in the County has deteriorated over the past five years. To achieve National Air Quality Standards, an estimated 25-30% reduction in traffic volumes is required. In the urban centres it is estimated that there would need to be a 13% reduction in 2005 traffic volumes to achieve the national air quality objective for nitrogen dioxide. Any significant increase in traffic volumes is likely to further reduce air quality.</li> <li>Whilst traffic congestion has a deleterious effect on local air quality, it should be recognised that removal of congestion, without significant reduction in traffic volumes, will not necessarily result in an overall improvement in air quality, and could have a further adverse effect on air quality.</li> <li>Improved accessibility to goods, services and opportunities has potential to adversely impact upon air quality, particularly if associated with an increase in private vehicular usage.</li> <li>Construction of new roads may provide opportunities to remove congestion and improve local air quality in certain locations.</li> </ul>

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Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
		<p>This needs to be balanced, however, with the potential to transfer traffic flows to other routes thereby resulting in increased adverse impacts on air quality in new locations, and the potential to increase total traffic volumes by removing congestion and thus encouraging greater private car use.</p> <ul style="list-style-type: none"> <li>• Initiatives to encourage non-vehicular modes of transport within urban centres (e.g. safe cycle routes, cycle park facilities, cycle lifts, safe pedestrian routes) and to encourage multi-occupancy vehicular journeys (eg public transport, car share schemes) would provide opportunities to contribute to a reduction in pollutant emissions to air.</li> <li>• Initiatives to encourage/enforce replacement of older, less efficient vehicles (both public and private) by newer, more efficient vehicles incorporating “cleaner engine technology” can contribute to a reduction in the emission of air pollutants.</li> <li>• Initiatives to encourage/support the use of alternative energy sources could contribute to an improvement in local air quality. Use of electric vehicles would reduce impacts on local air quality, though there would be emissions of greenhouse gases associated with electricity power stations.</li> <li>• The introduction of “low emission zones,” wherein goods/commercial vehicles are required to meet more stringent emissions standards, has potential to contribute to the</li> </ul>

Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
		reduction of air pollutant emissions. <ul style="list-style-type: none"> <li>• Transfer of freight from road to other forms of transport, e.g. rail, canal, would contribute to a reduction in the adverse impact of transportation on air quality.</li> </ul>
<p><i>Climate Change (Regional Air Quality - Greenhouse Gas Emissions)</i></p>		<ul style="list-style-type: none"> <li>• Reduction of greenhouse gas emissions is a key priority for sustainable development. The UK Government has set a target for a 20% reduction in the 1990 carbon dioxide (CO<sub>2</sub>) levels to be achieved by 2010. The Yorkshire and Humberside Regional Spatial Strategy sets a further target to achieve a cut of 25% in 1990 CO<sub>2</sub> levels by 2015.</li> <li>• As for local air quality, schemes to remove congestion may contribute to a reduction in greenhouse gas emissions, however, this is also dependent upon traffic speeds and journey distances. For example, for a given road speed, a new link road may reduce emissions if it reduces total vehicle journeys (as a function of vehicle numbers and distance), or it may increase emissions where it results in a greater journey distance or a greater number of vehicles using the road.</li> <li>• There is potential to contribute to a reduction in greenhouse gas emissions through promoting the use of more efficient engines and fuels.</li> <li>• Monitoring of air quality at selected locations is unlikely to provide a meaningful indicator of regional air quality. More appropriate indicators are likely to be indirect indicators, e.g. number</li> </ul>

Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
		<p>of car share schemes, number of multi-occupancy journeys versus single occupancy journeys.</p>
<p><i>Other Environmental and Quality of Life Issues</i></p>	<ul style="list-style-type: none"> <li>• Land to be redeveloped for regeneration is largely restricted to brownfield sites in existing urban areas and to specific corridors along major strategic routes.</li> <li>• Use should be made of existing rail infrastructure, with derelict and disused facilities being safeguarded for possible future reinstatement.</li> </ul>	<ul style="list-style-type: none"> <li>• Utilisation of existing infrastructure and/or development on brownfield sites (including development of transport interchanges) may reduce the potential for adverse impacts on the environment, provided that appropriate consideration is given to addressing:                         <ul style="list-style-type: none"> <li>▪ potential historic land contamination issues;</li> <li>▪ potential industrial cultural heritage value;</li> <li>▪ the potential for unique habitats and/or rare species to become established on such sites.</li> </ul> </li> <li>• The County includes a section of the Peak District National Park. The sustainability of the National Park needs to be maintained. Any proposals to improve access to this area must ensure a balance between demand for access and potential adverse impacts on the environment that may be associated with increased visitor numbers and/or transport interchanges. Any proposed measures should be aimed at restricting, rather than increasing, travel into the National Park by private car.</li> <li>• Rural transport needs differ to those of urban areas. There may be potential for enhancement of rural transport provision.</li> <li>• There are a notable number of designated nature conservation sites within the County,</li> </ul>

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Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
		<p>including SPAs, cSACs and SSSIs, whilst approximately one third of the County land area is occupied by Community Forest.</p> <ul style="list-style-type: none"> <li>• The primacy of nature conservation objectives should be recognised when determining the locations and design of transport schemes within or close to designated nature conservation sites.</li> <li>• Whilst new transport schemes have potential to damage the natural environment, they can also provide opportunities to enhance biodiversity, particularly in an urban or semi-urban environment, by e.g. judicious planting, planting of native species alongside verges, creation of ecology ponds adjacent to road drainage systems.</li> <li>• Development of new transport interchanges provides opportunities for features to be made of the local built environment, and for built heritage to be enhanced, e.g. by the creation of “land-mark” features within urban areas.</li> <li>• Whilst new schemes have potential to destroy certain features of cultural heritage value, for example buried archaeology, they also provide opportunity for investigation and recording of features that otherwise would have remained hidden from public knowledge.</li> <li>• Measures to encourage walking and cycling, by improving the environment for these modes of transport and the perception of safety, provide opportunities to improve physical fitness of the</li> </ul>

Theme	Over-Arching Issues <sup>1</sup>	Related Environmental Problems and Opportunities <sup>2</sup>
		<p>population.</p> <ul style="list-style-type: none"> <li>• South Yorkshire has recently experienced problems with roads where slag material was used in new road construction during the 1990s. Whilst the use of recycled materials can be successful e.g the use of Glasfelt on St Mary's Gate, Sheffield, and should be promoted wherever practicable, the use of potentially unsuitable materials should be avoided.</li> <li>• Incentives to replace older vehicles by vehicles with more efficient engines (lower fuel consumption) would contribute to a reduction in the use of material resources.</li> <li>• Development of new transport schemes, including new routes, car parking areas, transport interchanges, should take account of flood risk and sustainable drainage principles.</li> </ul>

<sup>1</sup> Taken from Table 1 of the SEA Scoping Report for South Yorkshire LTP No.2, March 2005;

<sup>2</sup> Based on information obtained during the further baseline data collation process, the Report of the Programme Director – Local Transport plan, November 2004, and the Provisional South Yorkshire Second LTP Draft for Consultation, Spring 2005.

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## 7.0 OBJECTIVES AND INDICATORS

- 7.1 The SEA Directive does not specifically require the use of objectives or indicators in SEA. However, they are a recognised way in which environmental effects can be described, analysed and compared. The SEA objectives state what is intended. Performance of the LTP against the set objectives may be measured through the use of indicators and a defined monitoring programme.
- 7.2 **Table 7.1** presents the proposed objectives and indicators for the SEA of LTP No.2. The objectives have been established taking into account:
- relevant legislation<sup>10</sup> and guidance<sup>11</sup>;
  - environmental protection objectives included in relevant plans and programmes;
  - NATA objectives and sub-objectives presented in **Table 3.2** (refer to Section 3.0- SEA Programme and Scope); and
  - key objectives as set out in the Regional Spatial Strategy for Yorkshire and Humber<sup>12</sup>; and
  - an overview of the environmental baseline for South Yorkshire, and the environmental problems and opportunities identified (refer to Sections 5.0 and 6.0).
- 7.3 The objectives listed are as proposed in the Scoping Report and are presented under each of the SEA topic headings as shown in **Table 3.2**. For each objective, a series of sub-objectives have been identified to assist in the assessment of the LTP strategies and measures.
- 7.4 The indicators presented in the Table 7.1 are based on a review of the indicators proposed in the Scoping Report, taking into account further baseline data investigation and collation and comments from consultees. Where appropriate, the indicators presented in the Scoping Report have been amended and/or added to, in order to increase their applicability to the state of the environment within South Yorkshire and taking into consideration the practicability of the indicators in terms of future monitoring of the performance of the LTP against the SEA objectives.
- 7.5 In some cases, the same indicator is used as an indicator for more than one of the SEA objectives, for example, road traffic growth and the number of journeys made using sustainable modes of transport are used for both SEA Objective 3 (Air Quality) and SEA Objective 10 (Climate Change).
- 7.6 It should be noted that the SEA objectives and indicators listed in **Table 7.1** have been developed to be compatible with the four central objectives of sustainable development and supporting key objectives of the Regional Spatial Strategy (RSS) for Yorkshire and the Humber. The relationship between key objectives of the RSS compatible with each SEA objective is shown in **Appendix D**.

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<sup>10</sup> The Environmental Assessment of Plans and Programmes Regulations, 2004

<sup>11</sup> Strategic Environmental Assessment for Transport Plans and Programmes, TAG Unit 2.11, December 2004, DfT, Transport Analysis Guidance (TAG); and The Strategic Environmental Assessment Directive: Guidance for Planning Authorities, October 2003, Office of the Deputy Prime Minister (ODPM).

<sup>12</sup> Regional Spatial Strategy for Yorkshire and the Humber, 2004.

Table 7.1 SEA Objectives and Indicators.

SEA Objective	Sub-Objectives/issues	Indicator
<b>Biodiversity, Flora, Fauna, Soil</b>		
1. Conserve and enhance biodiversity at all levels	<ul style="list-style-type: none"> <li>Conserve natural/semi-natural habitats.</li> <li>Minimise fragmentation of nature corridors and networks.</li> <li>Ensure consistency with Local Biodiversity Action Plans.</li> <li>Seek to promote biodiversity through habitat creation and appropriate planting, particularly as part of new and/or improvement schemes.</li> </ul>	<ul style="list-style-type: none"> <li>Achievement of LBAP<sup>a</sup> targets.</li> <li>Area of Community Forest.</li> <li>No. of areas of ancient and semi-natural woodland, including replanted woodlands.</li> <li>Woodland cover.</li> <li>Areas of grasslands.</li> <li>No. and area of Local Nature Reserves.</li> <li>No. of Protected Species.</li> <li>No. of RSPB and Important Bird Areas.</li> </ul>
2. Adopt the principle of no net loss of designated habitats, and attach highest priority to conserving and improving designated sites	<ul style="list-style-type: none"> <li>Avoid loss of designated habitats, or provide compensatory habitat.</li> <li>Consider opportunities for creation of new habitat or improvement of existing habitat.</li> <li>Consider opportunities to encourage new species or promote existing species.</li> </ul>	<ul style="list-style-type: none"> <li>Number and condition of (c)SACs<sup>b</sup>.</li> <li>Number and condition of SSSIs<sup>c</sup>.</li> <li>Number and condition of SBIs and SINCs.</li> </ul>
<b>Population &amp; Human Health: Air</b>		
3. Reduce the negative impacts of the transportation network on air quality	<ul style="list-style-type: none"> <li>Promote walking and cycling and use of public transport as alternatives to private car use.</li> <li>Reduce road traffic volumes; as a minimum reduce growth in traffic volumes.</li> </ul>	<ul style="list-style-type: none"> <li>Levels of transport-related pollutants, particularly in AQMAs<sup>d</sup>.</li> <li>No. of AQMAs.</li> <li>Road traffic growth.</li> <li>No. of journeys made using sustainable forms of transport, including walking, cycling and public transport.</li> </ul>

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SEA Objective	Sub-Objectives/issues	Indicator
3. Reduce the negative impacts of the transportation network on air quality (contd)	<ul style="list-style-type: none"> <li>Promote use of alternative fuels.</li> <li>Reduce emissions of air pollutants attributable to transport.</li> </ul>	<ul style="list-style-type: none"> <li>No. of employers actively promoting car share schemes and cycle/walk to work schemes (through Work Travel Plans).</li> <li>Volume of freight transported by road versus other modes of transport, e.g. rail.</li> <li>Number of days of poor or moderate air quality.</li> </ul>
<b>Population &amp; Human Health: Noise and Vibration</b>		
4. Introduce measures which minimise noise and vibration impacts on people and property	<ul style="list-style-type: none"> <li>Reduce HGV movements through villages.</li> <li>Implement management of freight movements in rural or quiet areas, e.g. through promotion of selected routes away from residents, susceptible buildings and nature conservation areas.</li> <li>Promote use of quiet surfacing materials where appropriate.</li> <li>Improve highway maintenance and road surfaces.</li> <li>Promote use of National Cycle Network for local journeys.</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of designated tranquil areas<sup>e</sup>.</li> </ul>
<b>Population &amp; Human Health: Safety</b>		
5. Improve road safety and make people feel safer when using all forms of transport	<ul style="list-style-type: none"> <li>Improve public waiting facilities.</li> <li>Promote appropriate traffic calming measures</li> <li>Improve pedestrian facilities.</li> <li>Improve safety of designated cycle routes.</li> <li>Design for reduced speed, particularly within builtup areas.</li> </ul>	<ul style="list-style-type: none"> <li>No. and category of transport accidents.</li> <li>No. of accidents involving pedestrians or cyclists.</li> <li>Breath test failure rates.</li> </ul>

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SEA Objective	Sub-Objectives/issues	Indicator
5. Improve road safety and make people feel safer when using all forms of transport (contd)	<ul style="list-style-type: none"> <li>Promote "don't drink and drive" message.</li> <li>Improve safety and security of car park areas, including lighting and CCTV where appropriate.</li> </ul>	
6. Reduce levels of transport-related crime	<ul style="list-style-type: none"> <li>Promote provision of appropriate security measures at bus and tram stops and stations.</li> <li>Provide, or promote provision of, secure cycle parking facilities, particularly at transport interchanges and at key locations within town centres.</li> <li>Promote liaison with police to improve and maintain security measures.</li> </ul>	<ul style="list-style-type: none"> <li>Incidence of crime on public transport and/or in public transport areas</li> </ul>
<b>Population &amp; Human Health: Accessibility</b>		
7. Improve access to key services and facilities using sustainable modes of transport wherever possible	<ul style="list-style-type: none"> <li>Provision of services that take account of the needs of less able-bodied people, eg. the disabled, the elderly, parents with pushchairs.</li> <li>Provision of services that take account of the needs of young people.</li> <li>Provision of services to improve access for all to cultural heritage areas, the natural environment, leisure facilities.</li> </ul>	<ul style="list-style-type: none"> <li>Proportion of rural population living within ten minutes walk of an hourly or better bus or train service.</li> <li>No. of journeys made using sustainable modes of transport.</li> <li>Use of public transport/modal split.</li> <li>% of public transport services accessible to the less able-bodied.</li> <li>Numbers of bus stops adapted for easy access buses.</li> </ul>
<b>Population &amp; Human Health : Physical Fitness</b>		
8. Encourage healthier lifestyles through travel choices	<ul style="list-style-type: none"> <li>Provide and enhance opportunities for walking and cycling.</li> <li>Promote cycling/walking as alternative transport modes, particularly for short trips.</li> </ul>	<ul style="list-style-type: none"> <li>No. of walking or cycling trips.</li> <li>No. of new or improved cycleways and footpaths.</li> </ul>
<b>Water</b>		
9. Minimise the impact of the transport network on the quality and quantity of the County's water resources	<ul style="list-style-type: none"> <li>Implement SUDS.</li> <li>Ensure maintenance of natural surface water flows.</li> </ul>	<ul style="list-style-type: none"> <li>% of rivers of chemical/biological quality fair or better (GQA Grade C to A).</li> <li>Number of water pollution incidents attributable to transport</li> </ul>

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SEA Objective	Sub-Objectives/issues	Indicator
9. Minimise the impact of the transport network on the quality and quantity of the County's water resources (contd)	<ul style="list-style-type: none"> <li>Minimise adverse effects of road drainage.</li> <li>Avoid adverse effects on floodplains when siting new transport schemes.</li> <li>Mitigate and avoid impacts on wetland SSSIs</li> </ul>	<ul style="list-style-type: none"> <li>Number of Source Protection Zones.</li> </ul>
<b>Climatic Factors</b>		
10. Reduce the contribution of transportation to greenhouse gas emissions	<ul style="list-style-type: none"> <li>Reduce vehicle numbers.</li> <li>Increase public transport patronage.</li> <li>Encourage walking and cycling.</li> <li>Incorporate/allow for tree planting and/or green areas within transport schemes where practicable.</li> </ul>	<ul style="list-style-type: none"> <li>Greenhouse gas emissions.</li> <li>Road traffic growth.</li> <li>Numbers of journeys made using sustainable forms of transport.</li> <li>No. of employers actively promoting car share schemes and cycle/walk to work schemes (through Work Travel Plans).</li> </ul>
<b>Landscape and Cultural Heritage</b>		
11. Preserve and enhance the County's landscapes and townscapes	<ul style="list-style-type: none"> <li>Protect and enhance the County's landscape and townscape, maintaining and strengthening local distinctiveness and sense of place.</li> <li>Avoid change inconsistent with Countryside Character Areas.</li> </ul>	<ul style="list-style-type: none"> <li>No. and area of Environmentally Sensitive areas (eg National Parks).</li> <li>Number of Countryside Character (CC) Areas where there has been change consistent with or inconsistent with CC type.</li> <li>Proportion of brownfield versus greenfield land-take for new transport schemes.</li> </ul>
12. Preserve or enhance the County's cultural heritage, including architectural and archaeological assets	<ul style="list-style-type: none"> <li>Ensure transport schemes preserve (in-situ or by record) or enhance: archaeological sites, historic buildings, conservation areas, historic parks and gardens, other culturally important features and areas and their settings.</li> </ul>	<ul style="list-style-type: none"> <li>Cultural heritage features (including scheduled monuments, listed buildings and other historic sites : % or number adversely affected / benefitted by, traffic and/or transport schemes.</li> <li>Number of registered historic parks and gardens.</li> </ul>

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SEA Objective	Sub-Objectives/issues	Indicator
<b>Material Assets</b>		
13. Preserve those assets of economic value to an area	<ul style="list-style-type: none"> <li>Maintain quality of tourist areas.</li> <li>Seek to ensure that schemes do not adversely affect economic viability, including viability of agricultural areas.</li> <li>Maintain/enhance transport links to areas of education, employment, etc.</li> <li>Provide adequate transport links to new regeneration areas.</li> </ul>	<ul style="list-style-type: none"> <li>Agricultural land resource: % land of Grade 3 or better</li> <li>Proportion of greenfield versus brownfield landtake for transport projects.</li> <li>Volume of new aggregates used for transport projects versus volumes of recycled aggregates used.</li> </ul>
<b>Regeneration</b>		
14. Promote regeneration in areas of low income and social exclusion	<ul style="list-style-type: none"> <li>Improve accessibility to employment and other services for people in rural, outlying and other isolated or low income areas or areas of social exclusion</li> </ul>	<ul style="list-style-type: none"> <li>Proportion of population living in low income urban areas who live within ten minutes walk of an hourly or better bus, tram or train service</li> <li>Proportion of population living in rural or outlying areas living within ten minutes walk of an hourly or better bus or train service</li> </ul>

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Note:

<sup>a</sup> Local Biodiversity Action Plan

<sup>b</sup> Candidate Special Area of Conservation

<sup>c</sup> Site of Special Scientific Interest

<sup>d</sup> Air Quality Management Area - excludes AQMAs due to trunk roads.

<sup>e</sup> Tranquil areas are designated by the Council for the Protection of Rural England (CPRE), the Countryside Commission and the Countryside Council for Wales. Arbitrary definitions are used to map areas defined as unspoilt by the noise or sight of development or traffic.

7.7 Both the ODPM and DfT guidance suggest the use of a compatibility matrix to test the internal compatibility of the SEA objectives. **Table 7.2** presents a matrix identifying potential compatibilities and incompatibilities between SEA Objectives. The main potential for incompatibilities arise in relation to:

- land-take related to infrastructure improvements related to public transport improvements or to footpath and cycle route improvements (favours SEA Objectives 3, 4, 5, 6, 7, 8, 10, 11, 14 but may not favour SEA Objectives 1, 2, 11 and 12);
- measures to reduce private car use and promote sustainable transport alternatives (favours SEA Objectives 3, 4, 7, 8, 10, 11, 12, but may not favour

SEA Objectives 13 and 14 where alternative transport modes may be inadequate).

- 7.8 Potential conflicts between SEA Objectives need to be resolved via mitigation measures incorporated into the LTP, or recommended for implementation during the period of the LTP (refer to Chapter 10 – Recommendations and Mitigation.)

## 8.0 IDENTIFYING ALTERNATIVES AND ASSESSMENT

### 8.1 Introduction

- 8.1.1 The SEA Directive requires an assessment of the 'likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme'. Identifying and comparing appropriate strategic alternatives is therefore a key aspect of SEA and NATA.
- 8.1.2 As shown in Section 3.0: SEA Programme and Scope, in producing the LTP, the Partners have considered alternative scenarios and evaluated their effects through the SEA assessment. The alternative scenarios were developed on the basis of round-table discussions, held in December 2004, that considered the current transport situation within South Yorkshire, the strategies and measures that have been adopted during the period of the first LTP and the effects that these have had on the transport situation, and consideration of alternative measures that could be implemented in the future, including types of measures that have been implemented elsewhere in the UK.
- 8.1.3 The LTP No. 2 aims to address the four Government/Local Government Association shared priorities of: congestion; safety; air quality; and accessibility. Addressing the link between transformational economic growth and rising traffic levels is perhaps the most significant issue for the LTP, as the need to improve the accessibility of services, goods and opportunities for all may lead to an increased need for travel.
- 8.1.4 In developing the LTP, three broad alternative scenarios have been addressed. These can be summarised as follows:
- **Alternative 1: Rolling Forward the Current Strategy** (The "Carrot Approach")
  - **Alternative 2: The Stick Approach** (adopting a proactive approach to public transport provision linked to measures to manage demand for private car use)
  - **Alternative 3: The Proactive Approach** (combining the Carrot Approach with clear criteria to precipitate implementation of the Stick Approach)
- 8.1.5 The three alternative scenarios are not necessarily mutually exclusive, but have been treated as such to facilitate the SEA. In addition to the broad strategies applicable to the three alternatives, a series of major schemes has also been assessed by the SEA. These schemes have been developed during the course of the first LTP period and generally support the objectives of LTP2. Some of these have been subject to separate feasibility studies and are not, in themselves, considered as alternatives, as they would be common to each of the main alternatives 1 to 3.
- 8.1.6 An outline of each of the three alternative approaches is presented in the sections below.

## **8.2 Alternative 1: Rolling Forward the Current Strategy (The Carrot Approach)**

- 8.2.1 This alternative strategy assumes no basic change to the existing arrangements in the current LTP. The strategy aims to reduce car use by promoting sustainable transport alternatives to the private car and thereby reduce the amount of car travel and improve air quality. The strategy, however, includes relatively few direct measures to restrict private car use and adopts a relatively hands-off approach to the provision of public transport services.
- 8.2.2 Measures included in this approach to restrict private car use primarily revolve around parking restrictions and constraints, particularly aimed at reducing long-stay commuter parking within the urban centres, whilst maintaining short-stay parking and expanding park and ride facilities.
- 8.2.3 Measures to widen travel choice focus on a rolling programme of Quality Bus Corridors, expansion of the Supertram network, working with partners to develop public transport initiatives, including community and rural bus services, improving transport interchange facilities and improving the reliability of public transport, particularly buses, through real-time information systems. The strategy would also continue a programme of measures to continue to improve and develop networks of cycle routes and cycle facilities and provide/improve walking links, for example to public transport.
- 8.2.4 Work and School Travel Plans would continue to be developed and promoted as part of this alternative strategy, to encourage environmentally friendly modes of transport, particularly cycling and walking, through Safe Routes to School projects, car sharing and reduction in the number of car journeys to schools.
- 8.2.5 With regard to road safety, there would be increased emphasis on addressing safety at locations with poor casualty records and in areas of deprivation. The Road Safety Improvement Plan, developed under LTP1, would be used to enable resources to be targeted in areas of greatest need by providing a consistent, county-wide approach to analysis of accident data to identify where resources can best achieve casualty reduction. At the scheme level, schemes would generally combine a mixture of measures aimed at reducing the priority of vehicular traffic and raising the profiles of more vulnerable road users, such as sheltered parking, parking free areas, pedestrian refuges, safer road crossing, for example at school entrances, traffic calming measures and the creation of Child Safety Zones, i.e. 20mph zones, in areas of deprivation, in addition to measures implemented under Safe Routes to School projects.
- 8.2.6 In addition to the above measures, further speed cameras would be introduced under the South Yorkshire Safety Camera Partnership.

## **8.3 Alternative 2: The Stick Approach**

- 8.3.1 This alternative is linked to a more robust approach to demand management as a means to restrict traffic growth and to support public transport investment. The strategy would require a significant change in the quality and reliability of public transport provision, particularly buses.

8.3.2 Both “wide-area” and local demand management measures would be implemented and could include:

- road tolling or congestion charging on main cross-region routes, or on main access routes into city/town centres;
- traffic restraint measures, eg. removal of extraneous traffic (“segregation”);
- physical restrictions on car use, e.g. extension of bus lanes, banning through traffic from specific areas;
- regulatory restrictions on car use, e.g. two-person only lanes, local congestion charging (eg within Sheffield city centre);
- parking controls.

8.3.3 With respect to public transport, there would be greater intervention by the local authorities in the specification of service standards. This approach could include the introduction of measures such as statutory Quality Bus Contracts. The proactive approach to the provision of public transport services would be actively coordinated with regeneration initiatives in Barnsley, Doncaster, Rotherham and Sheffield.

8.3.4 This alternative focusses on the issue of reducing car use in order to reduce congestion, and on achieving a shift to public transport, particularly buses, by introduction of the types of measures described above within the period of LTP2.

#### **8.4 Alternative 3: The Proactive Approach**

8.4.1 This approach would combine measures to encourage increased use of public transport, such as bus priority measures and increased investment in public transport, with the potential for progressive introduction of more robust demand management measures, such as congestion charging, road user pricing and working place levies. Under this approach, a variety of measures would be proposed to encourage use of public transport and non-vehicular forms of transport and there would be liaison with public transport service providers, for example through voluntary or statutory Quality Bus Partnerships, to enhance the quality and reliability of service provision.

8.4.2 Under this approach, measures introduced under LTP1 would be continued where these have been shown to produce positive results, however, there would also be a change in the way in which the effects of the measures, for example those aimed at reducing congestion, would be monitored.

8.4.3 Rather than monitoring the amount of car travel to the main urban centres and from households, the existing LTP monitoring regime would be developed to extend the coverage of existing methods of collecting and analysing traffic volume data, and would measure congestion by addressing issues relating to journey time and delay and modal shift.

8.4.4 Under this approach there would be greater emphasis on measures to encourage and facilitate use of public transport as a means of reducing congestion, improving accessibility and improving air quality. This approach recognises that easing congestion per se., in the absence of achieving a shift to public transport use, or non-vehicular modes of transport, is likely to be detrimental to the objective of improving air quality. However, it also recognises the detrimental effects that early introduction of robust demand management measures could have on accessibility and therefore on the economy of the region if appropriate alternative means of transport are not put in place.

- 8.4.5 Under this alternative, the proposed approach to the introduction of demand management measures would be to assess, during the course of LTP2, the economic conditions that must prevail before progressively more robust forms of demand management measures can be introduced.

## 8.5 Assessment of Alternatives

- 8.5.1 The assessment of the different alternatives has been undertaken at a broad strategic level, which reflects the strategic nature of the alternative approaches proposed. The results of the assessment of the alternative approaches 1 to 3 are presented in **Tables 8.1 to 8.3**.
- 8.5.2 Tables 8.1 to 8.3 provide information on the relative performance of the broad alternatives against the stated SEA objectives. It is not the purpose of the SEA to decide which alternative should be chosen for the plan or programme (in this case LTP No. 2). Rather, it is the role of the decision-makers to select the preferred alternative, taking into account the findings of the SEA, as presented in this Environmental Report. The assessment of the alternatives was necessarily affected by the level of detail included within each alternative.
- 8.5.3 The assessment of the alternatives against the SEA objectives indicates that Alternative 3 would be expected to result in the greatest number of positive medium to long-term effects. Alternative 1- rolling forward the current strategy – would be likely to have continuing adverse impacts on air quality and climate change, and, in the longer term could adversely affect economic assets in the County, due to increased traffic congestion. Alternative 2, whilst having potential to have a positive effect on air quality and climate change in the medium to long term, does not include any measures that would have positive effects in terms of the other SEA objectives. It could also adversely affect regeneration and the value of economic assets in the short-term.

**Table 8.1 Assessment of Alternative 1 - Rolling Forward the Current Strategy (The Carrot Approach)**

<b>Scale/Assessment categories:</b> P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
<b>SEA Objective</b>	<b>Performance</b>			<b>Comments</b>
	<b>Short-term</b>	<b>Medium-term</b>	<b>Long-term</b>	
1. Conserve and enhance biodiversity	0/X	0/X	0/X	Measures do not contribute to conserving or enhancing biodiversity in the short, medium or long term.
2. Adopt the principle of no net loss of designated habitats, and attach the highest priority to conserving and improving designated sites	0/X	0/X	0/X	Measures do not contribute to conserving or improving designated sites.
3. Reduce the negative impacts of the transportation network on air quality	X	X	X	Existing measures have not resulted in a reduction in traffic growth and air quality has worsened during the period of LTP1. Although fourteen Air Quality Management Areas have been identified in South Yorkshire, and air monitoring procedures have been revised, it is considered likely that rolling forward the current strategy may result in a further worsening of local air quality along transport routes.
4. Introduce measures that minimise noise impacts on people and noise sensitive properties	0	0/P	0/P	The strategy allows for noise reducing surfaces to be utilised during road reconstruction/resurfacing, however reconstruction/resurfacing undertaken for maintenance or road improvement purposes rather than for the purpose of noise abatement.
5. Improve road safety and make people feel safer when using all forms of transport	P	P	P	The proposed measures are likely to reduce road accident casualties, particularly among children and in more deprived areas. Increased coverage by safety cameras is likely to

<b>Scale/Assessment categories:</b> P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
<b>SEA Objective</b>	<b>Performance</b>			<b>Comments</b>
	Short-term	Medium-term	Long-term	
				further reduce casualties related to speeding in camera locations.
6. Reduce levels of transport -related crime and fear of crime	0	0	0	The strategy does not include any new measures to reduce transport-related crime, other than increases in safety cameras (see objective 5 above).
7. Improve access to key services and facilities using sustainable modes of transport wherever possible	P	P	0	Whilst there has been a general decrease in bus patronage, there has been an increase in patronage of the Supertram within the period of LTP1. Continued progression of Quality Bus Corridors may contribute towards encouraging bus patronage, whilst current developments, including improvements to Sheffield railway station and environs and proposed extensions to the tram system would further encourage use of sustainable transport. However, access to facilities using buses in particular may be still be hindered in the longer term by increasing congestion due to growth in the number of private cars.
8. Encourage healthier lifestyles through travel choice	P	P	P	Measures including School Travel Plans and Cycling Improvement Action Plans, should increase the number of cycling trips, provided that funding is made available to continue the programme of new cycling schemes within the County.
9. Minimise the impact of the transport network on the quality and quantity of the County's water resources	0	0	0	The strategy contains no specific measures to address the impacts of the network on water resources.

<b>Scale/Assessment categories:</b> P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
<b>SEA Objective</b>	<b>Performance</b>			<b>Comments</b>
	<b>Short-term</b>	<b>Medium-term</b>	<b>Long-term</b>	
10. Reduce the contribution of transportation to greenhouse gases	X	X	X	Traffic volumes increased within the County during the period of LTP1. Reduction in greenhouse gases emitted by road traffic is subject to reductions in vehicle journeys, as a product of vehicle numbers and distance travelled, in addition to other factors such as traffic speed.
11. Preserve and enhance the County's landscapes and townscapes	0	0	0	At a strategic level, the proposed measures would not have a significant effect on landscape and townscape. Individual projects may have implications, however this would be considered, and mitigated as necessary, at project development and design stage.
12. Preserve or enhance the County's cultural heritage, including architectural and archaeological heritage	0	0	0	At a strategic level, the proposed measures would not have a significant effect on cultural heritage. Individual projects may have implications, however this would be considered, and mitigated as necessary, at project development and design stage.
13. Preserve/promote those assets of economic value to an area	P	P	X	Further development of assets such as Supertram and public transport facilities, including interchanges, would have positive effects in the short to medium term.  Unrestricted traffic growth and congestion could, however, have a negative effect on economy within the County in the longer term. Existing measures have not resulted in a significant reduction in traffic growth.

<b>Scale/Assessment categories:</b> P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
<b>SEA Objective</b>	<b>Performance</b>			<b>Comments</b>
	Short-term	Medium-term	Long-term	
14. Promote regeneration in areas of low income and social exclusion	0	P	P	The strategy would have potential positive effects by continuing to address community transport and rural transport issues.

**Table 8.2 Assessment of Alternative 2 – The Stick Approach**

<b>Scale/Assessment categories:</b> P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
<b>SEA Objective</b>	<b>Performance</b>			<b>Comments/explanation</b>
	Short-term	Medium-term	Long-term	
1. Conserve and enhance biodiversity	0	0	0	Measures do not contribute to conserving or enhancing biodiversity in the short, medium or long term.
2. Adopt the principle of no net loss of designated habitats, and attach the highest priority to conserving and improving designated sites	0	0	0	Measures do not contribute to conserving or improving designated sites.
3. Reduce the negative impacts of the transportation network on air quality	0	0/P	P	Introduction of stringent demand management measures would have a positive short to long-term effect on local air quality, subject to a reduction in road traffic volumes being achieved. A reduction in road traffic growth, rather than road traffic volumes, would not result in improved air quality though it could reduce the extent to which air quality worsened in the medium to long-term.
4. Introduce measures that minimise noise impacts on people and noise sensitive properties	0/X	X	X	The strategy does not include any specific measures to reduce traffic related noise. Traffic volumes would need to reduce by > 20% to have a significant impact on traffic noise. Increases in traffic volumes and congestion would increase noise impacts on noise and property, particularly along the most congested routes.
5. Improve road safety and make people feel safer when using all forms of transport	X	X	X	The strategy does not include any specific measures to improve road safety, or people's perception of road safety. Increasing traffic volumes may increase accident potential

<b>Scale/Assessment categories:</b> P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
<b>SEA Objective</b>	<b>Performance</b>			<b>Comments/explanation</b>
	Short-term	Medium-term	Long-term	
6. Reduce levels of transport -related crime and fear of crime	0	0	0	The strategy does not include any new measures to reduce transport -related crime.
7. Improve access to key services and facilities using sustainable modes of transport wherever possible	0/P	0/P	P	This strategy would be proactive in determining the level and location of bus services. In conjunction with stringent demand management measures to restrict private car use, this strategy would be expected to improve public transport services. The positive effects would, however, be subject to effective identification of service requirements and may require, at least initially, additional funding to support services along certain routes.
8. Encourage healthier lifestyles through travel choice	0	0	0	Whilst use of public transport would be actively encouraged as part of this strategy, there are no specific measures within this strategy to increase levels of cycling and walking.
9. Minimise the impact of the transport network on the quality and quantity of the County's water resources	0	0	0	The strategy contains no specific measures to address the impacts of the network on water resources.
10. Reduce the contribution of transportation to greenhouse gases	0	0/P	0/P	Reduction in greenhouse gases emitted by road traffic is subject to reductions in vehicle journeys, as a product of vehicle numbers and distance travelled, in addition to other factors such as traffic speed. Introduction of stringent demand measures to restrict private car use has potential to have a positive effect, subject to appropriate travel alternatives being available.

Scale/Assessment categories: P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
SEA Objective	Performance			Comments/explanation
	Short-term	Medium-term	Long-term	
11. Preserve and enhance the County's landscapes and townscapes	0	0	0	At a strategic level, the proposed measures would not have a significant effect on landscape and townscape. Individual projects may have implications, however this would be considered, and mitigated as necessary, at project development and design stage.
12. Preserve or enhance the County's cultural heritage, including architectural and archaeological heritage	0	0	0	At a strategic level, the proposed measures would not have a significant effect on cultural heritage. Individual projects may have implications, however this would be considered, and mitigated as necessary, at project development and design stage.
13. Preserve/promote those assets of economic value to an area	X/P	P	P	Stringent demand measures may reduce traffic growth, reduce congestion and improve journey times. Bus services may also improve and experience an increase in patronage – benefitting both the transport service providers and the services/facilities/places of employment being served.  Demand management measures may, however, adversely affect non-urban communities that are currently reliant on private car use, and reduce accessibility to services, facilities and employment areas, unless appropriate public transport service provision is provided, including weekend and evening services.

<b>Scale/Assessment categories:</b> P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
<b>SEA Objective</b>	<b>Performance</b>			<b>Comments/explanation</b>
	Short-term	Medium-term	Long-term	
14. Promote regeneration in areas of low income and social exclusion	X	P	P	Greater local authority control over provision of bus services may benefit deprived areas, though additional funding may be required to subsidise route operation and ticket prices. It is assumed that there would be a higher proportion of non-car users in these areas, such that demand management measures would have fewer implications for these communities. It is also recognised, however, that certain outlying communities may currently be reliant on car use, due to an absence of adequate public transport, such that introduction of stringent demand management measures prior to adequate and affordable transport provision could have severe adverse effects.

**Table 8.3 Assessment of Alternative 3 – The Proactive Approach**

<b>Scale/Assessment categories:</b> P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
<b>SEA Objective</b>	<b>Performance</b>			<b>Comments/explanation</b>
	Short-term	Medium-term	Long-term	
1. Conserve and enhance biodiversity	0/X	0/X	0/X	Measures do not contribute to conserving or enhancing biodiversity in the short, medium or long term.
2. Adopt the principle of no net loss of designated habitats, and attach the highest priority to conserving and improving designated sites	0/X	0/X	0/X	Measures do not contribute to conserving or improving designated sites.
3. Reduce the negative impacts of the transportation network on air quality	P/0	P	P	Reduction in road traffic growth would benefit local air quality. Positive effects of strategy dependent upon significant modal shift away from private car use and towards sustainable forms of transport being achieved.
4. Introduce measures that minimise noise impacts on people and noise sensitive properties	P/0	P/0	P/0	The strategy includes coordination of road maintenance operations and use of lower maintenance materials, which are likely to reduce noise impacts associated with roadworks. Strategy also allows for use of low noise surfaces to be utilised during road reconstruction/resurfacing, though reconstruction/resurfacing undertaken for purposes other than noise abatement.
5. Improve road safety and make people feel safer when using all forms of transport	P	P	P	The proposed measures are likely to reduce road accident casualties, particularly among children and in more deprived areas. Increased coverage by safety cameras is likely to further reduce

Scale/Assessment categories: P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
SEA Objective	Performance			Comments/explanation
	Short-term	Medium-term	Long-term	
6. Reduce levels of transport -related crime and fear of crime	P	P	P	casualties related to speeding in camera locations. The strategy includes measures that are likely to enhance passenger confidence when using public transport facilities, including improved journey information and waiting facilities.
7. Improve access to key services and facilities using sustainable modes of transport wherever possible	P/0	P	P	Subject to effective identification and provision of public transport service requirements, the strategy focuses on measures to enhance accessibility using sustainable forms of transport.
8. Encourage healthier lifestyles through travel choice	P/0	P	P	Measures including School Travel Plans and Cycling Improvement Action Plans, should increase the number of cycling trips, provided that funding is made available to continue the programme of new cycling schemes within the County.
9. Minimise the impact of the transport network on the quality and quantity of the County's water resources	P/0	P/0	P/0	Whilst there is potential for new transport infrastructure, including park and ride schemes, to adversely impact water resources, such impacts would generally be expected to be minimised by adherence to best practice procedures during construction, and good design. Measures to improve public transport vehicle maintenance and condition and to improve highway maintenance (including drainage) has potential to reduce impacts on

Scale/Assessment categories: P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
SEA Objective	Performance			Comments/explanation
	Short-term	Medium-term	Long-term	
10. Reduce the contribution of transportation to greenhouse gases	0	0/P	X/P	<p>water resources. Measures to reduce road traffic growth and increase the use of the Supertram would also contribute to a reduction in the potential for the network to impact water resources.</p> <p>Reduction in greenhouse gases emitted by road traffic is subject to reductions in vehicle journeys, as a product of vehicle numbers and distance travelled, in addition to other factors such as traffic speed. Positive effects in the longer term subject to growth in traffic volumes being restricted, through effective introduction of demand management measures.</p>
11. Preserve and enhance the County's landscapes and townscapes	0	0	0	<p>At a strategic level, the proposed measures would not have a significant effect on landscape and townscape. Individual projects may have implications, however this would be considered, and mitigated as necessary, at project development and design stage.</p>
12. Preserve or enhance the County's cultural heritage, including architectural and archaeological heritage	0	0	0	<p>At a strategic level, the proposed measures would not have a significant effect on cultural heritage. Individual projects may have implications, however this would be considered, and mitigated as necessary, at project development and</p>

Scale/Assessment categories: P positive; X negative; P/X range of positive and negative effects; 0 negligible effect				
SEA Objective	Performance			Comments/explanation
	Short-term	Medium-term	Long-term	
				design stage.
13. Preserve/promote those assets of economic value to an area	P	P	P	<p>Measures aimed at removing congestion and improving accessibility to services, facilities and areas of employment are key to this strategy. The positive effects are dependent upon the effective integration of measures to reduce traffic volumes and enhance effective, affordable, alternative modes of transport.</p> <p>Further development of assets such as Supertram and public transport facilities, including interchanges, would inherently have positive effects on this area of economic assets, assuming patronage is maintained/increased.</p>
14. Promote regeneration in areas of low income and social exclusion	P/X	P	P	<p>The strategy would have potential positive effects by continuing to address community transport and rural transport issues.</p> <p>There is potential for adverse effects in the short term if provision of public transport falls behind demand management measures that would restrict private car use and be of disbenefit to outlying communities.</p>

## 9.0 ENVIRONMENTAL ASSESSMENT

### 9.1 Introduction

9.1.1 This section of the report summarises the effects of the proposed measures included within the LTP No. 2, in relation to the fourteen SEA objectives. The detailed assessment is presented in the Summary Assessment Tables and Appraisal Worksheets contained in Volume 2 of this report, which can be provided on request.

9.1.2 The assessment has considered the likely significant effects of the plan on the environment, including short, medium and long-term, permanent and temporary effects and cumulative and synergistic effects. Where practicable, measures have also been identified that may prevent, reduce or offset any potentially adverse effects on the environment of implementing the plan.

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### 9.2 Draft Local Transport Plan No. 2

9.2.1 The measures assessed are those presented in the Draft Local Transport Plan No. 2, as presented in the *Provisional South Yorkshire Second Local Transport Plan, 2006-2011, Draft for Consultation, Spring 2005*. Several strategies within this document were under development at the time of the assessment and will be revisited when they become available. These include, in particular, rural strategies.

9.2.2 The approach adopted within the draft LTP No.2 broadly reflects, and builds upon, that of Alternative 3 – the Proactive Approach (refer to Chapter 8). An overview of the relationship between the key elements of Alternative 3 and the objectives and strategies included in LTP No.2 is presented in Table 9.1 below. Key elements of Draft LTP No. 2, the LTP objectives and the LTP strategies, and how these perform against the SEA objectives, are discussed in the later sections of this chapter.

**Table 9.1 Relationship Between LTP No. 2 Strategies and Alternative 3 – the Proactive Approach**

Alternative 3 – Key Element	LTP No. 2 Objective (refer to Section 9.3)	Measures included under LTP No.2 Strategies as follows (refer to Section 9.3)
Encourage increased use of public transport	Objective C	Accessibility Strategy; Congestion Strategy, Bus Strategy, Air Quality Strategy
Progressive introduction of more robust demand management measures	Objective B	Congestion Strategy
Encourage use of public transport as means of reducing congestion	Objective B, Objective C	Congestion Strategy, Bus Strategy,
Encourage use of public transport as means of increasing accessibility	Objective A, Objective B, Objective C,	Accessibility Strategy, Bus Strategy, Rail Plan
Encourage use of public transport as means of improving air quality	Objective E	Air Quality Strategy, Congestion Strategy, Accessibility Strategy
Continue implementation of measures included in LTP1 relating to road safety	Objective D	Road Safety Strategy, Maintenance Strategy
Continue implementation of measures included in LTP1 relating to development of Quality Bus Corridors	Objective B	Bus Strategy, Congestion Strategy

### 9.3 Draft LTP No. 2 Vision and Objectives

9.3.1 The LTP strategy is built around a vision and six overarching objectives. The broad vision for transport is:

“..that by 2020 South Yorkshire’s transport network will have linked all areas through a high quality, integrated transport network, the essential elements of which include:

- excellent road, rail and air links from South Yorkshire that build on the County’s relatively strong position on the motorway network, and on crucial north-south and Transpennine rail routes;
- a core, high quality public transport system that links the main centres and the new international airport;
- first class public transport feeding into the main centres and the Strategic Economic Zones, which could include the extension of Supertram;
- a well-maintained, effectively managed road network that supports and develops in a sustainable way the county’s freight and commercial position;
- environmental and land use policies that radically improve the quality of town and city centres, that encourage cycling and walking. “

9.3.2 The six overarching objectives, which have informed the LTP are:

- Objective A: To improve access to services and opportunities, especially for those members of the community experiencing disadvantages.
- Objective B: To reduce congestion and improve the efficiency of the transport network.
- Objective C: To provide choices of travel mode that act as genuine alternatives to the private car.
- Objective D: To improve safety for all travellers.
- Objective E: To protect and enhance the environment, and in particular to minimise air pollution from transport emissions.
- Objective F: To maintain the transport network to ensure the safe and efficient movement of people and goods.

9.3.3 The LTP addresses the above objectives through measures included under the following key strategies:

#### The Accessibility Strategy:

To address accessibility by:

- cooperative working across agencies to understand and address access problems;
- revenue-based actions to resolve issues, e.g. provision of tendered buses, funding of community transport schemes, integration of “ambulance” services, ticketing and information provision;
- capital funding to improve access, eg. redesignation and surfacing of footpaths for school access, provision of interchanges, shelters, new vehicles, provision of journey planning information;

- a core network linking directly to bus, rail, and tram public transport strategies, to which communities will link directly or indirectly through improved walking routes, feeder bus services, or Park and Ride;
- identification of local access requirements not provided by the “core” network.

#### The Congestion Strategy:

To continue to reduce congestion by:

- continuing to improve public transport, cycling and walking whilst making the most of the existing highway capacity;
- support for public transport improvements by a more progressive approach to demand management measures in response to known and predicted increases in traffic and its effects on economic performance;
- bus priority measures, including Quality Bus Corridors;
- integrated public transport ticketing, building on the pilot Yorcard Smartcard project;
- improved waiting environments, including easier bus boarding;
- making best use of the existing highway network through Intelligent Transport Systems, variable message signing, urban traffic control measures, decriminalised parking enforcement and coordinated vehicle recovery;
- sub-regional parking strategy incorporating Park and Ride, extensions to Controlled Parking Zones;
- walking and cycling improvements, especially for shorter trips;
- a structured approach to Travel Planning, with better monitoring and enforcement;
- delivering short and medium term improvements at railway stations.

#### The Road Safety Strategy:

To set a coherent approach to reducing road casualties and improving safety and well-being of vulnerable road users in South Yorkshire, through:

- driver education;
- road safety training;
- traffic calming;
- speed enforcement.

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#### The Air Quality Strategy:

To address air quality by tackling traffic volumes through encouraging more sustainable travel by more people and through traffic management by:

- reducing the need to travel through land use policies that focus on sustainable settlement patterns;
- promoting sustainable alternatives to the car, including cycling and walking for shorter trips and greater use of public transport;
- improving partnership with fleet operators to ensure South Yorkshire has a high proportion of low emission, cleaner vehicles that replace older, high polluting vehicles as quickly as possible;
- supporting the countywide media campaign “Care4Air” and other publicity and general awareness-raising campaigns.

### The Asset Management Strategy:

- to manage transport infrastructure across the county through the Transport Asset Management Plan, to enable transport and highways to be managed and investment decisions taken in a more informed and coordinated manner;
- to address, through the maintenance programme, issues to include: winter maintenance, safety and security, signage, signals and road markings, public transport infrastructure, drainage and gulleys.

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### The Bus Strategy

- to improve delivery of action plans to improve the quality of service;
- improve efficiency with which resources are used to finance the overall network;
- to target specific market segments and journey purpose combinations, specific geographic areas or corridors;
- to ensure the bus network provides reasonable opportunities for people to access the places they want to get to.

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### The Rail Plan

- to improve the reliability and general performance of the network through new franchises, particularly the Northern franchise;
- to provide faster links between Leeds and Sheffield;
- to improve access, standards and upgrading facilities at existing local stations;
- to facilitate ease of interchange between services;
- to evaluate provision of better connections between Barnsley and Doncaster, from Rotherham to strategic rail routes and to Robin Hood Doncaster Airport from the rest of South Yorkshire;
- to extend the capacity and coverage of Sheffield Supertram.

### The Freight Strategy

- to identify, through LDFs and RSS, opportunities for road/rail freight interchange and improvements of facilities for freight within South Yorkshire;
- to develop policies for routing of heavy goods vehicles along the most appropriate roads to minimise environmental impact, improve road safety and reduce inefficient freight movement;
- to continue to develop Freight Quality Partnership, but review the level at which this can operate most effectively within South Yorkshire;
- to develop programmes in collaboration with the freight industry, to encourage take-up of cleaner engine technology by freight operators to address air quality problems arising from HGV fleets.

## 9.4 Assessment of Draft LTP No. 2 Vision and Objectives

- 9.4.1 The LTP vision and objectives as a whole are broadly compatible with the fourteen SEA objectives. The main compatibilities and non-compatibilities between LTP objectives and the SEA Objectives are considered in the sections below.

**Objective A: Improve access to services and opportunities, especially for those members of the community experiencing disadvantage**

- 9.4.2 Objective A has a strong positive effect in terms of SEA Objectives 13 and 14. This relates to the improvement of access to services, facilities and employment areas.

**Objective B: Reduce congestion and improve the efficiency of the transport network.**

- 9.4.5 This objective has potential for either positive or negative effects in relation to SEA Objectives 3 (local air quality) and 10 (greenhouse gases), subject to effects on the number of vehicle journeys and traffic speeds. Removal of congestion has potential to encourage greater private car use. However, this may be counteracted, to some extent, by improvements to the transport network, including public transport services, as a whole. Reductions in queuing traffic has potential to reduce emissions, subject to vehicle speeds.
- 9.4.6 Objective B would be anticipated to have positive effects in relation to SEA Objectives 7 (access to key services using sustainable modes of transport) and 13 (preserve/promote assets of economic value) and may also have positive effects in terms of Objectives 4 (noise impact) and 5 (road safety).

**Objective C: Provide choices of travel mode that act as genuine alternatives to the private car.**

- 9.4.7 Objective C has potential for positive effects in relation to SEA Objectives 3 (local air quality), 7 (access to services using sustainable modes of transport), 8 (healthier lifestyles) and 10 (greenhouse gases). Positive effects on Objectives 3 and 10 will be dependent upon the degree of modal shift that may result from measures implemented to address this objective. Objective C may also have positive effects on SEA Objectives 13 (preserve/promote economic assets) and 14 (regeneration in areas of low income and social exclusion) by improving accessibility for all members of the community, including those without use of a car. There are also potential benefits with respect to SEA Objective 9, relating to water resources, where promotion of alternative travel modes may reduce vehicular road traffic and reduce the potential for impacts on water resources associated with road drainage and accidental release of oil/diesel or other pollutants from older vehicles and as a result of accidents.

**Objective D: Improve safety for all travellers.**

- 9.4.8 This objective has a direct positive effect on SEA Objective 5 relating to road safety and may also have a positive effect on SEA Objective 6, relating to transport-related crime.

**Objective E: Protect and enhance the environment, and in particular to minimise air pollution from transport emissions.**

- 9.4.9 Objective E inherently supports SEA Objectives 3 and 10 relating to air pollution from transport emissions. It may also have positive effects in terms of Objectives 1, 2, 9, 11 and 12, relating to biodiversity, water resources, landscape and townscape and cultural heritage, though these are not specifically identified. It is recognised that particular schemes may have potential to adversely affect the environment. This will only be determined by detailed assessment during the development and detailed design of schemes.

Objective F: Maintain the transport network to ensure the safe and efficient movement of people and goods.

9.4.10 This objective has potential positive effects in terms of SEA Objectives 5 and 13 in particular.

## 9.5 Assessment of LTP Strategies and Measures

9.5.1 The key findings of the appraisal are summarised in the sections that follow.

## 9.6 Assessment Method

9.6.1 The assessment work was primarily undertaken by the assessment team during an internal workshop, during which each of the proposed strategies and sub-components or measures were assessed for their effects in terms of the SEA objectives.

9.6.2 An initial assessment of each of the sub-components or measures was made by completing a series of Summary Assessment Tables, wherein each measure under a particular strategy was assessed against each SEA objective to determine whether there would be a positive or negative effect. For each measure that had positive or negative effects in terms of the SEA objective, a separate table – or Appraisal Worksheet -was completed, in which the nature, and magnitude of the perceived impacts/effects was identified, together with any recommended mitigation.

9.6.3 The Major Schemes assessed by the SEA are as follows:

- Supertram extension;
- Yorkshire Bus project;
- Yorcard;
- A61 Penistone Road/Upper Don Valley Quality Bus Corridor;
- Doncaster Finningley and Rossington Route Regeneration Scheme (FARRRS);
- Sheffield Waverley Link Road;
- Barnsley M1 Town Centre Link.

9.6.4 Brief details of the above schemes are included in **Appendix G** of this report.

9.6.5 The significance of effects and possible mitigation has been systematically documented for each SEA objective, as detailed in Table 5.1 of DfT Guidance TAG Unit 2.11 and presented as Table 9.2 of the SEA Scoping Report.

## 9.7 Limitations

9.7.1 The assessment was informed by the contents and level of detail provided in the plan at the time of the assessment, *as detailed in the Consultation Draft, Spring 2005*. With the exception of the assessment of the Major Schemes, for which more specific details regarding locations are available, the assessment is necessarily a high order, strategic level assessment and cannot take account of environmental receptors at specific locations.

9.7.2 In several instances, the sub-components or measures proposed are strategic statements and are not supported by additional information on possible

implementation strategies, whilst the effects of certain measures may also be subject to successful implementation of other measures.

## 9.8 Assessment Results

9.8.1 The following sections consider the positive and negative effects of the draft LTP proposals in terms of each of the SEA objectives. A summary of the overall effects on each SEA objective is provided at the end of each section.

### SEA Objective 1: Conserve and enhance biodiversity

9.8.2 This SEA objective aims to ensure that the impact of transport on biodiversity and nature conservation is minimised and, where practicable, enhanced. It relates to biodiversity and nature conservation as a whole and is not restricted to statutory and non-statutory designated nature conservation sites (refer to SEA Objective 2).

#### Accessibility Strategy

*Sub-components:* integration of accessibility planning into land use planning; Travel Plans for new developments; improvement of pedestrian and cycling facilities; improvements to PROW for mobility impaired.

9.8.3 There are potential short to long-term adverse effects associated with new infrastructure, including improvements to Public Rights of Way for mobility and sensory impaired and improvements to, or construction of, new facilities. It is assumed that the magnitude of potential effects would be minimised by adoption of best practice mitigation measures, adherence to statutory requirements, promotion of conservation and enhancement of biodiversity through design.

9.8.4 Where new facilities are proposed, careful consideration needs to be given to the location of these due to the potential for impacts on biodiversity. More detailed assessment will be required at the detailed proposal/scheme development and design stages.

#### Congestion Strategy

*Sub-components:* making best use of existing highway network; demand management measures; improving travel choice

9.8.5 There are potential adverse effects associated with new infrastructure to facilitate public transport utilisation, including, for example, new Park and Ride areas and road improvement schemes. Limiting the development of new transport routes, however, has potential for positive effects in terms of conserving biodiversity by limiting new land-take.

9.8.6 Again, the magnitude of potential impacts associated with any new infrastructure would be dependent upon scheme locations and more detailed assessment will be required during scheme development and design.

## Road Safety Strategy

*Sub-components:* all measures

- 9.8.7 No significant effects have been identified in terms of conserving and enhancing biodiversity and the road safety measures proposed within the road safety strategy. Measures under other strategies within the LTP (e.g. the Maintenance Strategy) may have impacts on biodiversity. These are discussed under the relevant sections.

## Air Quality Strategy

*Subcomponents:* reduce travel need; promote sustainable transport alternatives; endorsement of AQMAs; improvements to road vehicle stock

- 9.8.8 There is potential for indirect adverse impacts local to specific projects, primarily during construction works, for example construction of new link roads associated with development of employment areas. Within existing areas of poorer air quality, measures to improve air quality may have potential, in the longer term, to enhance the occurrence of more air pollution sensitive species, subject to other conditions being favourable. In general, however, any effects associated with measures proposed under the air quality strategy are considered to be of low significance.

## Maintenance Strategy

*Sub-components:* safety and security measures, winter maintenance measures

- 9.8.9 There is potential for short-term adverse effects associated with physical improvements to address safety and security, e.g. improvements to footways and cycleways. There may also be adverse impacts on biodiversity as a result of winter maintenance measures, where salt applied to roads, cycleways and footpaths can affect vegetation and watercourses within the immediate vicinity. In general, however, it is assumed that any potential effects would be minimised through adoption of appropriate best practice and adherence to statutory requirements.

## Bus Strategy

*Sub-component:* improvements to waiting environment

- 9.8.10 Most measures under this strategy are “soft” measures that are unlikely to impact upon biodiversity. Physical works, however, such as the development of interchanges, have potential to result in short to long-term adverse effects, subject to scheme locations. There may also be opportunities to promote conservation and enhancement of biodiversity during scheme development and design, for example, by incorporation of appropriate planting/landscaping in areas where existing biodiversity may be poor.

## Rail Plan

*Sub-components:* facilitate ease of interchange between services and between transport modes; improve access and standards and upgrade facilities at existing local stations

- 9.8.11 Measures that include the construction of new transport interchanges or new construction works to upgrade/improve existing stations or interchange facilities have potential for short to long-term adverse effects on biodiversity, through land-take and disturbance of habitats in the vicinity of schemes. Again, there may be opportunities

to enhance biodiversity through the scheme design and more detailed assessment will be required during scheme development and design.

### Freight Strategy

*Sub-components:* all measures

- 9.8.12 No significant effects have been identified in terms of the measures included under the freight strategy and the need to enhance and conserve biodiversity.

### Major Schemes

- 9.8.13 The three new road schemes proposed have potential for adverse effects on biodiversity through land-take and the potential disturbance of habitats and/or protected species. This would also apply to other new infrastructure such as bus interchanges. Any adverse effects should, however, be mitigated during the statutory planning processes that require detailed assessment and adherence to statutory legislation during scheme design and construction.

### Summary

- 9.8.14 There is potential for cumulative direct short to long-term adverse effects associated with the potential development of new and/or improved infrastructure, under the Accessibility and Congestion strategies and the Rail Plan. The Maintenance Strategy may also give rise to short-term, direct adverse impacts. There are indirect, short to long-term effects associated with measures to reduce travel need under the Air Quality Strategy. However, there is also potential to identify opportunities to enhance biodiversity through the design of new and improvement schemes, resulting in medium to long-term positive effects.

**SEA Objective 2: Adopt the principle of no net loss of designated habitats, and attach the highest priority to conserving and improving designated sites.**

- 9.8.15 SEA Objective 2 is concerned primarily with the conservation and improvement of both statutory and non-statutory designated nature conservation sites, including, for example, Special Areas of Conservation (cSACs), Sites of Special Scientific Interest (SSSIs), Sites of Importance for Nature Conservation (SINCs), Sites of Biological Importance (SBIs) and County Wildlife Sites. Effects on the environment in terms of this objective therefore relate to specific sites. With the exception of the Major Schemes, the draft LTP No. 2 does not identify scheme locations. Hence the impacts and effects identified during the SEA are generally similar to those identified under Objective 1.

### Accessibility Strategy

*Sub-components:* integration of accessibility planning into land use planning; Travel Plans for new developments; improvement of pedestrian and cycling facilities; improvements to PROW for the mobility impaired

- 9.8.16 There are potential medium to long-term adverse effects associated with new infrastructure, including improvements to Public Rights of Way for the mobility and sensory impaired and improvements/construction of new facilities. The magnitude of

effects would depend upon scheme locations, however, it is assumed that potential effects would be minimised by adherence to statutory requirements, in addition to adoption of best practice mitigation measures and the promotion of conservation and enhancement of biodiversity through design.

- 9.8.17 Where a scheme may affect a cSAC an Appropriate Assessment will be required, under the Habitats Directive<sup>13</sup>, in addition to any Environmental Impact Assessment.

### **Congestion Strategy**

*Sub-components:* making best use of existing highway network; demand management measures; improving travel choice

- 9.8.18 There are potential adverse effects associated with new infrastructure to facilitate public transport utilisation. Limiting the development of new transport routes will minimise new land-take and hence is considered to have a positive effect in terms of the principle of no net loss of designated habitats.

### **Road Safety Strategy**

*Sub-components:* all measures

- 9.8.19 The road safety measures proposed are primarily soft measures and hence no significant effects have been identified in terms of adopting the principle of no net loss of designated habitats.

### **Air Quality Strategy**

*Subcomponents:* reduce travel need; promote sustainable transport alternatives; endorsement of AQMAs; improvements to road vehicle stock

- 9.8.20 There are potential short to long-term adverse impacts associated with construction of new schemes, subject to location and nature of schemes. Reduction in vehicle journeys and improvements to road stock may result in an overall improvement in air quality, however it is unknown, at this stage, whether any measurable changes in biodiversity would result.
- 9.8.21 More detailed assessment will be required for individual schemes. Where schemes may affect a cSAC an Appropriate Assessment will be required. An assessment of air quality impacts on any cSACs or SSSIs within 200m of any new road or road improvement scheme will also be required<sup>14</sup>. Compensatory habitat creation may be required where statutory designated sites are likely to be affected.

### **Maintenance Strategy**

*Sub-components:* safety and security measures; winter maintenance measures

- 9.8.22 There are potential short-term adverse effects associated with physical improvements to address safety and security eg. improvements to footways and cycle ways. There may also be adverse impacts on biodiversity as a result of winter maintenance measures, where salt applied to roads, cycleways and footpaths can affect vegetation

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<sup>13</sup> Directive on Conservation of Natural Habitats and of Wild Fauna and Flora 92/43/EEC

<sup>14</sup> Interim Advice Note 61/04. Guidance for undertaking Environmental Assessment of air quality for sensitive ecosystems in internationally designated nature conservation sites and SSSIs (Supplement to DMRB 11.3.1), March 2005

and watercourses within the immediate vicinity. It is assumed that potential effects would be minimised through adoption of appropriate best practice and adherence to statutory requirements .

### **Bus Strategy**

*Sub-components:* all measures

- 9.8.23 No significant effects have been identified in terms of the measures proposed under the Bus Strategy and SEA Objective 2. This is based on the assumption that there would be no major development of interchanges within or close to statutory designated sites, although there may be development close to non-statutory sites. More detailed assessment will be required for individual schemes. As indicated above, where schemes may affect a cSAC an Appropriate Assessment would be required. Assessment of air quality impacts on any cSACs or SSSIs within 200m of a scheme would also be required. In the event that statutory designated sites are likely to be affected, compensatory habitat creation may be required.

### **Rail Plan**

*Sub-components:* all measures

- 9.8.24 As for the Bus Strategy, no significant effects have been identified in terms of the measures proposed under the Rail Plan and SEA Objective 2 on the basis of the same assumption and caveats.

### **Freight Strategy**

*Sub-components:* all measures

- 9.8.25 No significant effects have been identified in terms of the measures included under the freight strategy and SEA Objective 2.

### **Major Schemes**

- 9.8.26 The FARRRS scheme has potential to adversely affect a number of non-statutory sites (SSIs), including the River Torne, and, dependent upon the route selected, could affect the Potteric Carr SSSI or a proposed extension to this site. Areas of semi-natural and ancient woodland may also be affected. This should be reviewed at scheme development and design stage. With respect to the other new road schemes, no statutory designated sites have been identified as likely to be affected, though there may be other non-statutory designated sites that could be affected and that have not, as yet been identified.

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### **Summary**

- 9.8.27 There are potential cumulative, direct, short-term to long-term adverse effects associated with the development of new infrastructure, or improvements to transport infrastructure, associated with the Accessibility, Congestion and Maintenance Strategies, and the Rail Plan, with short to long-term indirect adverse effects associated with measures to reduce travel need, under the Air Quality Strategy.

**SEA Objective 3: Reduce the negative impacts of the transportation network on air quality.**

- 9.8.28 Air quality is a significant issue in some parts of South Yorkshire. Fourteen Air Quality Management Areas have been declared in South Yorkshire, compared to 19 in Yorkshire and Humberside. Whilst five of South Yorkshire's AQMAs are solely related to the trunk road network (M1, M18, A1(M)), particularly along the M1 corridor in South Yorkshire, the other nine are related to local traffic. It is estimated that there would need to be a 25% to 30% reduction in traffic volumes to meet the national Air Quality Objectives. In the urban centres it is estimated that there would need to be a 13% reduction in 2005 traffic volumes to achieve the national air quality objective for nitrogen dioxide by December 2005. As traffic volumes continue to increase, air quality will continue to deteriorate.
- 9.8.29 It is recognised that as long as there is traffic growth, air quality can be expected to worsen. SEA Objective 3 seeks to ensure that, whilst achieving an overall improvement in air quality may not be feasible within the period of LTP No. 2, the measures proposed within the plan are compatible with reducing the adverse impacts of transport on air quality. This may be achieved, for example, by: measures that contribute towards a reduction in road traffic volumes; measures that contribute towards a reduction in the growth of road traffic; and reductions in emissions by road traffic - by reducing the amount of standing traffic or increasing the proportion of vehicles using low emission technology.
- 9.8.30 Whilst air quality monitoring provides useful information in terms of comparing emissions at selected locations, e.g. within AQMAs, to national targets, the information obtained does not necessarily provide a sufficiently broad picture at the strategic level. For this reason, additional indicators and targets other than concentrations of air pollutants have been included in the monitoring proposals (refer to Section 7.0 – Objectives and Indicators).

**Accessibility Strategy**

*Sub-components:* integration of accessibility planning into land use planning; Travel Plans for new developments; improvement of pedestrian and cycling facilities; deliver improved bus services

- 9.8.31 There are potential medium to long-term positive effects associated with measures to reduce travel and encourage modal shift away from private car use, together with improved maintenance and newer technology for public transport vehicles (included as part of the Bus Strategy). The magnitude of any potential benefits is, however, subject to the extent of modal shift that may be achieved and will be affected by measures included under other strategies within the LTP.

**Congestion Strategy**

*Sub-components:* making best use of existing highway network; demand management measures; improving travel choice

- 9.8.32 There are potential medium to long-term benefits, dependent upon achieving modal shift away from private car use. The provision of alternative transport modes in conjunction with other measures is key to achieving modal shift.

- 9.8.33 It is recognised that measures to improve traffic flows on the existing network have the potential to encourage private car use rather than to reduce it. The introduction of some form of demand management measures may be required to encourage modal shift. At this stage, the LTP No. 2 does not clearly demonstrate what these measures might be and when or how they would be introduced.

### **Road Safety Strategy**

*Sub-components:* speed management

- 9.8.34 Where speed calming measures are adopted, there is potential for short- to long-term adverse impacts on local air quality, associated with increases in emissions at low vehicle speeds together with the potential for queues to form during busy periods. The magnitude of potential effects would depend upon the locations at which speed calming measures are employed, the types of speed calming measure and the likely traffic flows.

### **Air Quality Strategy**

*Subcomponents:* reduce travel need; promote sustainable transport alternatives; endorsement of AQMAs; improvements to road vehicle stock

- 9.8.35 There are potential medium to long-term benefits associated with measures that reduce the need to travel and encourage modal shift away from private car use, together with replacement of older vehicle stock by cleaner technology vehicles.
- 9.8.36 It is recognised that measures that reduce levels of traffic travelling through areas currently affected by poor air quality may have positive effects at that locality, however there will be no overall benefit if local air quality along an alternative route worsens as a result (refer to Major Schemes). This emphasises the need to have indicators and targets that provide a means to monitor the effects of the LTP at a more strategic level, rather than focussing only on areas, such as AQMAs, where air quality is known to be problematic.

### **Maintenance Strategy**

*Sub-components:* coordination of maintenance operations; use of low maintenance materials; public transport maintenance

- 9.8.37 Maintenance measures that reduce vehicle stock emissions and that reduce the length of time required to undertake maintenance works (with knock-on effects on traffic queues & congestion) have potential medium to long-term benefits in terms of reducing the adverse impacts of transportation on air quality.

### **Bus Strategy**

*Sub-components:* improved journeys; improved efficiency with which resources used to finance and deliver improved services

- 9.8.38 There are potential medium to long-term benefits associated with measures to encourage modal shift away from private car use and on to public transport. The effectiveness of the Bus Strategy with respect to reducing adverse impacts of transportation on air quality is dependent upon achieving modal shift, rather than simply increasing bus patronage. The introduction of some form of demand management measures may be required to encourage modal shift.

## Rail Plan

*Sub-components:* all measures

- 9.8.39 There are potential medium to long-term positive effects associated with measures to improve rail services and to improve and extend the Sheffield Supertram system, thereby potentially encouraging modal shift away from private car.

## Freight Strategy

*Sub-component:* encourage freight operators to take-up cleaner engine technology through collaboration with freight industry; develop policies for routing HGVs along most appropriate roads, to minimise environmental impacts and improve road safety.

- 9.8.40 There are potential medium to long-term positive effects associated with measures that reduce emissions produced by freight traffic. Routing HGVs away from smaller roads and residential areas could also have benefits in improving local air quality at particular locations, though it may not improve overall emissions. The practicality of routing HGVs away from selected routes, however, needs to be considered, as HGVs using smaller roads may need to do so to gain access to their destinations.

## Major Schemes

- 9.8.41 Schemes that encourage traffic growth along particular transport corridors may have adverse effects on local air quality. This applies particularly to FARRRS. However, where new link roads result in the diversion of traffic away from sensitive properties, there can be benefits in those areas. Conversely, traffic may divert onto new routes to access the link roads, with resultant adverse effects on other sensitive receptors.

## Summary

- 9.8.42 There are potential cumulative medium to long-term benefits associated with measures proposed under the Accessibility, Congestion, Air Quality, Maintenance, and Bus strategies, and the Rail and Freight plans, though the magnitude of the benefits is dependent upon the extent of modal shift away from single-occupancy private car use.

### **SEA Objective 4: Introduce measures that minimise noise impacts on people and noise sensitive receptors.**

- 9.8.43 Noise and vibration impacts from transport can affect the quality of life of human receptors. Vibration impacts from transport may also have a structural effect, for example, on listed buildings. Noise and vibration disturbance can be caused by operational traffic (road, rail, etc) or during construction and maintenance works. Related to the issue of noise, is the concept of tranquility and tranquil areas.
- 9.8.44 People's perception of noise is highly variable. Different people are more sensitive to different noise frequencies and there may be other factors, eg. visual impacts, night time versus day time, that can affect people's perception of noise. Guidance given in WebTAG Unit 3.3.2 (the Noise Sub-objective) states that '*it should be recognized that, in many situations, relatively large changes in traffic flows are required to bring*

*about perceivable changes in noise levels. For freely flowing traffic, a difference of about 3 dB is required before there is a perceivable change in the noise level". Generally an increase of 25% or a decrease of 20% in traffic flows is required to bring about a change in noise levels of 1 dB, provided speed and other factors remain unchanged. For comparison, a doubling of rail movements could bring about a change of 3dB.*

### **Accessibility Strategy**

*Sub-components:* integration of accessibility planning into land use planning; Travel Plans for new developments; improvement of pedestrian and cycling facilities

- 9.8.45 There is potential for minor benefits through achieving reduced traffic growth associated with measures that reduce the need to travel and encourage modal shift away from private car use. The magnitude of any effects is likely to be greater where road traffic is removed from, or diverted away from particular locations. Conversely, there may be new noise impacts where transport links are provided into new locations. Whether or not any significant changes in noise levels would be achieved is highly uncertain.

### **Congestion Strategy**

*Sub-components:* making best use of existing highway network; improving travel choice

- 9.8.46 There are potential short-term (during construction works) and long-term adverse effects associated with the development of any new transport nodes, such as interchanges and Park & Ride areas. There may be potential minor benefits associated with achieving reduced traffic growth through measures that encourage modal shift away from private car use and new infrastructure to facilitate public transport utilisation, though the magnitude of these benefits may not be significant. More detailed assessment will be required of individual schemes at the development and design stage, as impacts will be dependent upon the nature and location of each scheme.

### **Road Safety Strategy**

*Sub-components:* all measures

- 9.8.47 Route management schemes have potential to give rise to benefits in terms of reducing noise impacts. Speed management schemes that utilise traffic calming measures may have localised adverse effects as vehicles travel over speed bumps, though this is considered unlikely to be significant at a strategic level.

### **Air Quality Strategy**

*Subcomponents:* reduce travel need; promote sustainable transport alternatives

- 9.8.48 There may be potential indirect, localised benefits associated with a reduction in the growth of vehicular traffic in the vicinity of sensitive receptors, subject to modal shift occurring and the locations of schemes/development areas.

### **Maintenance Strategy**

*Sub-components:* coordination of maintenance operations; use of low maintenance materials; public transport maintenance

- 9.8.49 There is potential for medium to long-term localised benefits associated with maintenance measures that reduce noise from vehicle stock and the amount of maintenance time.

### **Bus Strategy**

*Sub-component:* improved journeys

- 9.8.50 There are potential benefits associated with improved bus maintenance and replacement of older vehicle stock, however the benefits are considered unlikely to be significant at a strategic level.

### **Rail Plan**

*Sub-components:* all measures

- 9.8.51 In general, the measures included within the rail plan would not be expected to give rise to any significant effects in term of noise impacts, however, there may be potential adverse effects associated with the Supertram route extensions if these are in proximity to residential areas, or to other sensitive receptors.

### **Freight Strategy**

*Sub-components:* develop policies for routing HGVs along most appropriate roads, to minimise environmental impact and improve road safety

- 9.8.52 There are potential medium to long-term positive effects where proposed measures divert freight traffic away from noise sensitive areas.

### **Major Schemes**

- 9.8.53 Schemes that move traffic away from sensitive receptors (or which achieve a reduction in traffic of > 20%) can have benefits in terms of reducing disturbance due to traffic noise. However, where schemes move roads closer to sensitive receptors, or increase traffic along new routes, there may be adverse impacts.

### **Summary**

- 9.8.54 Whilst measures incorporated into the above strategies that are aimed at reducing road traffic volumes, or growth in volumes, redirecting traffic away from sensitive receptors, such as residential areas, reducing the extent and frequency of roadworks, or constructing low noise road surfaces, have potential for cumulative, medium to long-term benefits, the construction of new road links or generation of traffic flows in new areas of sensitive receptors could have medium to long-term adverse effects.

**SEA Objective 5: Improve road safety and make people feel safer when using all forms of transport**

- 9.8.55 Improvements to road safety are an important element in any transport plan. With respect to South Yorkshire's LTP No. 2, proposed road safety measures focus on the safety of non-private car users, including children, bus passengers, walkers and cyclists, and on speed management measures. Improvements to the safety of using public transport and non-vehicular modes of transport is aimed at encouraging use of these alternative modes of transport.

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**Accessibility Strategy**

*Sub-components:* Integration of accessibility planning into land use planning; Travel Plans for new developments; improvement of pedestrian and cycling facilities; improve accessibility to PROW for mobility and sensory impaired; deliver improved bus services; provide funding for community transport; improve public transport ticketing and journey information

- 9.8.56 Improvements to the condition of transport routes, accessibility to transport facilities and ease of use of transport services are likely to have positive benefits in making people feel safer when using public transport. Measures to improve services should, however, ensure that the needs of rural/fringe/socially deprived communities and other user groups e.g the elderly, young people and the disabled, are addressed.

**Congestion Strategy**

*Sub-components:* making best use of existing highway network; improving travel choice

- 9.8.57 As for the accessibility strategy, there are potential benefits associated with improvements to the condition of transport routes, the reliability of transport systems and ease of use of transport services. Routing of HGVs away from less appropriate routes may also have benefits.
- 9.8.58 Improvements to cycling and pedestrian routes, however, should also address security issues. For example, landscape planting along routes that would encourage crime against individuals should be avoided.
- 9.8.59 An enhanced perception of safety should have a knock-on effect by encouraging modal shift, in addition to increasing public transport patronage, thus contributing to the success of the measures proposed to combat congestion.

**Road Safety Strategy**

*Sub-components:* All measures

- 9.8.60 There are potential short term to long term benefits associated with the proposed measures within the road safety strategy. It is assumed that the Road Safety Improvement Plan, developed under LTP No.1, would be used to enable resources to be targeted in areas of greatest need by providing a consistent, county-wide approach to analysis of accident data to identify where resources can best achieve casualty reduction.

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### **Air Quality Strategy**

*Sub-components:* All Measures

- 9.8.61 No significant effects have been identified in terms of measures in terms of improving road safety.

### **Maintenance Strategy**

*Sub-components:* security and safety measures; winter maintenance measures; public transport maintenance

- 9.8.62 There are potential benefits associated with improving the condition of transport routes and vehicle stock, and ensuring maintenance of pedestrian and cycle routes.

### **Bus Strategy**

*Sub-component:* journey planning and travel information provision; improvements to waiting environment; improved journeys

- 9.8.63 Improved passenger facilities, improved information provision and improved road stock are likely to give rise to greater passenger confidence and hence a greater feeling of safety when using bus services. The benefits achieved through these measures are likely to encourage greater use of public transport (buses) and will therefore also contribute to achieving the objectives of the Congestion and Accessibility strategies.

### **Rail Plan**

*Sub-components:* improve access and standards and upgrade facilities at existing local stations; facilitate ease of interchange between services and between transport modes

- 9.8.64 Upgrade of facilities for road users at existing stations will improve traffic management and road safety at these locations. The development of new interchanges would also provide opportunities to improve passenger perception of safety when using public transport.

### **Freight Strategy**

*Sub-components:* develop policies for routing HGVs along most appropriate roads, to minimise environmental impact and improve road safety

- 9.8.65 There are potential positive effects associated with identification of suitable freight routes that may divert freight away from areas where there are vulnerable road users. Routing freight away from selected routes whilst maintaining access to required destinations, however, may not always be feasible.

## Major Schemes

- 9.8.66 No significant effects have been identified in relation to road safety. The major schemes proposed are generally aimed at providing new links, promoting public transport and relieving congestion and are not specifically safety related schemes

## Summary

- 9.8.67 With the exception of the Air Quality Strategy and the Major Schemes, the measures proposed under the above strategies, would have cumulative short to long-term benefits.

### **SEA Objective 6: Reduce levels of transport-related crime and fear of crime**

- 9.8.68 Public perception of crime may be a deterrent to the use of public transport, particularly use of such transport by more vulnerable groups and at certain times of day, e.g. during the evening. Designing out crime when undertaking improvements to transport facilities, or proposing new facilities, should therefore be considered as an aid to encouraging use of public transport. Similarly, measures that reduce fear of crime among pedestrians and cyclists is likely to contribute towards encouraging greater use of walking and cycle routes.

## Accessibility Strategy

*Sub-components:* Travel Plans for new developments; improvement of pedestrian and cycling facilities; deliver improved bus services; provide funding for community transport; improve public transport ticketing and journey information

- 9.8.69 Improved facilities and information are likely to give rise to increased passenger confidence, which in itself may deter personal crime against individuals. Physical improvements that remove opportunities for crime, or act as a deterrent, and which may be incorporated into facility improvements, would also have positive effects. Measures to improve services and facilities should address the needs of more vulnerable user groups e.g. the elderly, young people and the disabled.

## Congestion Strategy

*Sub-components:* all measures

- 9.8.70 No significant effects have been identified in terms of the measures proposed to tackle congestion and reduction of transport-related crime.

## Road Safety Strategy

*Sub-component:* speed management

- 9.8.71 Speed management measures may have potential benefits through reducing speeding offences, provided that the measures are successful. Previous experience during the period of LTP No. 1 indicate that provision of safety cameras reduces the occurrence of speed-related accidents at these locations.

### **Air Quality Strategy**

*Sub-components:* all measures

- 9.8.72 No significant effects have been identified in terms of the measures proposed to address air quality and reduction of transport -related crime.

### **Maintenance Strategy**

*Sub-components:* security and safety measures

- 9.8.73 There are potential short to long-term benefits associated with measures to design out crime, such as improved lighting and application of good urban design principles.

### **Bus Strategy and Rail Plan**

- 9.8.74 The assessments of these strategies against SEA Objective 6 reflect those for SEA Objective 5, in that generally, improvements to facilities and information relating to transport services and waiting areas would increase passenger knowledge and confidence and is likely to result in a reduction in crime and fear of crime.

### **Freight Strategy**

*Sub-component:* all measures

- 9.8.75 No significant effects have been identified in terms of the freight strategy measures and reduction in transport-related crime and fear of crime.

### **Major Schemes**

- 9.8.76 No significant effects have been identified. New schemes are generally aimed at providing new links, promoting public transport and relieving congestion and are not related to crime issues

### **Summary**

- 9.8.77 Measures proposed under the Accessibility, Maintenance and Bus Strategies, and the Rail Plan, would be anticipated to have short to long-term cumulative benefits.

**SEA Objective 7: Improve access to key services and facilities using sustainable modes of transport wherever possible.**

- 9.8.78 Provision of more sustainable forms of transport as alternatives to use of the private car to access services and facilities, including employment areas, is essential if there is to be any significant modal shift and reduction in road traffic, or road traffic growth. Measures that have positive effects in terms of SEA Objective 7 are also likely to have positive effects in terms of SEA Objectives 3 and 10, relating to local air quality and greenhouse gases.

## Accessibility Strategy

*Sub-components:* all measures

- 9.8.79 Measures to improve public transport service provision and access should have positive effects in terms of SEA Objective 7. Successful improvement in service provision and access is dependent upon there being effective collaboration between relevant bodies, including service providers, user groups and other agencies representing travel destination, eg. employers, public facilities – hospitals, colleges, etc. Measures to improve services should include the needs of rural/fringe / socially deprived communities and other user groups e.g the elderly, young people and the mobility impaired.
- 9.8.80 At this stage, LTP No. 2 does not address how the required collaboration between the different stakeholders would be achieved, both in urban areas and in rural areas and how service requirements would be implemented. Identification of how these issues would be dealt with should be included in the strategy.

## Congestion Strategy

*Sub-components:* all measures

- 9.8.81 There would be potential benefits associated with the proposed improvements in transport systems, particularly public transport provision. The introduction of demand management measures may, have adverse effects if measures are too stringent or introduced before adequate alternative transport provision is in place, however, some form of demand management measures may be required to stimulate modal shift.

## Road Safety Strategy

*Sub-components:* all measures

- 9.8.82 No significant effects have been identified in relation to SEA Objective 7.

## Air Quality Strategy

*Subcomponents:* reduce travel need; promote sustainable transport alternatives; endorsement of AQMA action plans

- 9.8.83 There are potential benefits associated with measures to provide and promote sustainable forms of transport. The magnitude of the benefits realised is subject to success in achieving modal shift away from private car use and in meeting the needs of all communities – both urban and non-urban. LTP No. 2 needs to ensure that the needs of both urban and non-urban communities are addressed, through effective liaison and collaboration between all stakeholders, i.e. service providers and user groups.

## Maintenance Strategy

*Sub-components:* security and safety measures; winter maintenance measures; public transport maintenance

- 9.8.84 There would be potential short to long-term benefits associated with measures to improve footways and cycle ways and ensure their maintenance, and through

improved public transport maintenance -with knock-on effects associated with improvements in reliability.

### **Bus Strategy**

*Sub-component:* ticketing; improvements to waiting environment; improved journeys; improved utilisation of resources

- 9.8.85 The proposed measures have potential benefits in terms of improved access using sustainable forms of transport, subject to effective identification of user group requirements and the implementation of appropriate services to meet those requirements. Consideration should be given to the costs of using public transport versus the costs of using the private car. Public transport needs to be perceived as affordable and value for money if it is to be utilised by current car users. Public transport also needs to be affordable for non car users if it is to be utilised.

### **Rail Plan**

*Sub-components:* all measures

- 9.8.86 Measures to improve rail services and to improve and extend the Sheffield Supertram system inherently have a positive effect in terms of improving access by sustainable forms of transport. Most benefit will be gained where rail services can be integrated with other sustainable forms of transport, e.g. bus services, cycle routes and pedestrian access, rather than requiring access to rail facilities by private car.

### **Freight Strategy**

*Sub-component:* identify opportunities for road/rail freight interchange and improvement for facilities for freight within S Yorkshire. No specific reference is made, within the LTP documents reviewed, to the potential use of the canal network for freight transport. Further consideration should be given as to whether transfer of some road freight onto the canal network would be practicable, and whether it would reduce HGV journeys within the County.

- 9.8.87 There are potential positive effects related to the movement of freight between freight facilities.

### **Major Schemes**

- 9.8.88 There are potential cumulative benefits associated with all of the proposed major schemes, with the exception of the FARRRS scheme, which does not promote the use of sustainable forms of transport, and the Waverley scheme. The FARRRS scheme has potential to adversely affect use of sustainable forms of transport.

### **Summary**

- 9.8.89 There are potential cumulative medium to long-term benefits associated with measures under the Accessibility, Congestion, Air Quality, Maintenance, and Bus strategies, and with the Rail and Freight Plan. With the exception of the Freight Plan, in general, the benefits are subject to the effective improvement to public transport services, including identification of appropriate service requirements, and the extent of modal shift away from private car use.

**SEA Objective 8: Encourage healthier lifestyles through travel choice.**

- 9.8.90 The most obvious way in which healthier lifestyles can be encouraged is to encourage people to walk or cycle rather than use the car, especially for short er trips. Encouraging people to use public transport may also result in short walks to and from the station, bus or tram stop, with secondary health benefits. People are more likely to walk, cycle, or use public transport if they feel safe and there are convenient end of trip facilities, for example secure cycle lockers, shower facilities, etc.

**Accessibility Strategy**

*Sub-components:* all measures, excluding funding for community transport

- 9.8.91 There would be potential benefits associated with improved access to recreational areas, measures to encourage non-vehicular transport and measures to improve service provision and access, but dependent upon effective collaboration between relevant bodies.
- 9.8.92 LTP No. 2 needs to address the level of current public service provision to outdoor/recreational facilities/countryside and where these can be improved/enhanced. The provision of public transport appropriate for mobility impaired/cycle transport could also be considered.

**Congestion Strategy**

*Sub-components:* all measures, excluding demand management measures

- 9.8.93 There would be potential benefits associated with improved facilities for walking and cycling and promotion of public transport as a means to access outdoor, rural areas for leisure activities. The use of walking/cycle networks will also depend upon how safe they are perceived to be. It should be ensured that cycle/pedestrian routes are well maintained and safe to use. Inappropriate design of cycle routes should be avoided in particular, where ever possible – eg narrow cycle lanes, parking across cycle lanes in urban areas should be avoided/deterred.

**Road Safety Strategy**

*Sub component:* road safety training

- 9.8.94 There are potential indirect benefits associated with pedestrian and cycle training for children, as this would promote safety and may encourage greater use of walking and cycling.
- 9.8.95 Safety training should be supported by driver awareness campaigns to raise awareness of the rights, etc of non-vehicular users, eg use of pedestrian crossings, allowance of adequate clearance when overtaking cyclists, etc. CCTV monitoring of pedestrian crossings on major routes could be considered.

### **Air Quality Strategy**

*Sub-components:* reduce travel need; promote sustainable transport alternatives

- 9.8.96 The provision of facilities that promote walking and cycling as an alternative to vehicular transport would have potential positive effects in terms of encouraging healthier lifestyles.

### **Maintenance Strategy**

*Sub-components:* security and safety measures; winter maintenance measures

- 9.8.97 Measures to improve and maintain footways and cycle ways may encourage use of these routes and hence have positive effects in terms of encouraging healthier lifestyles.

### **Bus Strategy**

*Sub-component:* journey planning and travel information provision; ticketing

- 9.8.98 Improved journey planning and travel information provision would have potential benefits for those utilising bus services to access leisure facilities and the countryside and would thereby have an indirect effect on encouraging healthier lifestyles.

### **Rail Plan and Freight Strategy**

*Sub-components:* all measures

- 9.8.99 No significant effects have been identified in terms of the measures proposed under these plans and encouraging healthier lifestyles.

### **Major Schemes**

- 9.8.100 No significant effects have been identified, although the Barnsley-M1 link road scheme aims to improve the environment for pedestrians and cyclists along Dodworth Road and Pogmoor Road. Measures that encourage use of buses (Yorcard and the Yorkshire Bus project) could make a minor contribution to encouraging healthier lifestyles in that passengers would need to walk to bus stops.

### **Summary**

- 9.8.101 With the exception of the Major Schemes, there would be short- to long-term cumulative benefits associated with measures proposed under each of the above strategies. Of the Major Schemes, the Barnsley Town Centre to M1 Link Road could also have benefits in terms of encouraging healthier lifestyles.

**SEA Objective 9: Minimise the impact of the transport network on the quality and quantity of the County's water resources.**

9.8.102 Transport can have a significant effect on water resources during both construction of new schemes and during operation. Road drainage in particular, contains potential pollutants that may routinely enter water courses, whilst incidents resulting in accidental release of larger quantities of fuels, oils or other substances can result in minor to major pollution incidents. Transport and maintenance depots, including rail and bus depots and road maintenance vehicle depots, and car parks may also be significant sources of pollutants to water resources.

**Accessibility Strategy**

*Sub-component:* all measures

9.8.103 No significant effects have been identified in terms of the proposed measures under the Accessibility Strategy and the objective to minimise impacts on water resources. For individual schemes, scheme specific mitigation would be required – i.e. through flood risk assessment, drainage design and pollution control measures.

**Congestion Strategy**

*Sub-components:* all measures,

9.8.104 No significant effects have been identified in terms of the proposed measures under the Congestion Strategy and the objective to minimise impacts on water resources. The greatest risk of impacts on water resources will be where new infrastructure is proposed, however, it is assumed that any potential impacts at scheme level would be mitigated through adherence to relevant planning policy guidance, Environment Agency guidance and best practice procedures for protection of water resources. Flood risk assessments would also be required for major new construction.

**Road Safety Strategy**

*Sub-components:* all measures

9.8.105 No significant effects on water resources have been identified in relation to the proposed road safety measures.

**Air Quality Strategy**

*Subcomponents:* reduce travel need; promote sustainable transport alternatives

9.8.106 There is potential for medium to long-term benefits associated with a reduction in motorised vehicle journeys, together with the adoption of sustainable drainage and pollution control measures for new transport links.

9.8.107 There is opportunity to increase the benefits achievable by further promoting vehicle maintenance as an active pollution control measure and ensuring appropriate pollution control measures are implemented at public service vehicle depots.

## Maintenance Strategy

*Sub-components:* security and safety measures; winter maintenance measures

- 9.8.108 There is potential for localised negative and positive effects associated with maintenance operations, however, effective management of maintenance operations should minimise any adverse effects and may improve current conditions by reducing risks of pollution. For example, effective maintenance of highway drainage systems will reduce the risks of localised flooding due to blockage.

## Bus Strategy

*Sub-components:* all measure;

- 9.8.109 No significant effects in terms of impacts on water resources have been identified in relation to measures proposed under the Bus Strategy. There is potential for minor benefits associated with improved fleet maintenance. With regards any new infrastructure (e.g. bus interchange facilities), the comments under the Accessibility Strategy assessment above also apply.

## Rail Plan

*Sub-components:* all measures

- 9.8.110 No significant effects have been identified in relation to measures proposed under the Rail Plan. At a scheme level, there is potential for impacts on water resources during construction works to upgrade facilities. There may also be potential opportunities to reduce adverse impacts on water resources by upgrading drainage systems at older facilities, however, any improvements are likely to be at a localised level.

## Freight Strategy

*Sub-components:* all measures

- 9.8.111 There is potential for positive or negative effects, relating to water resources and potential contamination from the transport of freight, by rail or road. Freight routes should be routed away from areas where there might be a detrimental effect on water resources, particularly if there should be an incident that could result in the accidental release of potentially polluting substances. Consideration should be given to the locations of sensitive water resources when planning any new freight interchanges.

## Major Schemes

- 9.8.112 There is potential for short-term to long-term adverse effects associated with schemes involving new road construction and operation. Further detailed assessment is required for individual schemes, including flood risk assessment where appropriate.

## Summary

- 9.8.113 There is potential for medium to long-term indirect benefits associated with measures under the Air Quality Strategy. Measures under the Freight Strategy and Major Schemes could have direct short to long-term adverse effects on water resources, particularly water quality and flood susceptibility. In general, however, any adverse

effects would be mitigated by adherence to statutory requirements, adoption of best practice and through scheme design.

**SEA Objective 10: Reduce the contribution of transportation to greenhouse gases.**

- 9.8.114 The UK is committed to helping to tackle climate change. It has a legally-binding target, agreed at Kyoto, to cut the emissions of a basket of six greenhouse gases by 12.5% by 2008 to 2010 and a domestic goal of a 20% cut in emissions of carbon dioxide (CO<sub>2</sub>), the most important greenhouse gas, below 1990 levels by 2010. The Yorkshire and Humberside Regional Spatial Strategy includes an objective to further reduce CO<sub>2</sub> emissions to 25% of the 1990 levels by 2015.
- 9.8.115 As CO<sub>2</sub> is considered to be the most important greenhouse gas it is generally used as the key indicator for the purposes of assessing the impacts of transport options on climate change. In general, emissions of CO<sub>2</sub> by rail represent a very small proportion of the total transport emissions of CO<sub>2</sub> (about 1%).
- 9.8.116 Two other of the six greenhouse gases of importance to climate change are nitrous oxide (N<sub>2</sub>O) and methane (CH<sub>4</sub>). N<sub>2</sub>O is emitted due to the use of catalytic converters and CH<sub>4</sub> is released from some fuel combustion. A widespread shift from petrol and diesel to other fuels will have implications for CO<sub>2</sub> emissions, as well as other greenhouse gases (e.g. CH<sub>4</sub> emissions from natural gas powered vehicles).

**Accessibility Strategy**

*Subcomponents:* integration of transport planning into land use planning; Travel Plans for new development; improve pedestrian environment and cycling facilities; deliver improved bus services

- 9.8.117 There are potential benefits associated with measures to promote alternatives to private car use. The magnitude of any benefits is dependent, however, upon the extent of modal shift achieved, or the reduction in car journeys, as a product of vehicle numbers and journey distances. Vehicle speeds will also affect the actual level of emissions, as will the proportion of vehicle powered by diesel engines or other fuels.

**Congestion Strategy**

*Sub-components:* all measures,

- 9.8.118 There is potential for medium to long-term benefits where the number and length of vehicle journeys is reduced. This would be dependent upon the successful implementation of, and modal shift to, an effective public transport service and increases in walking and cycling journeys, car shares, etc. Measures to decrease congestion but that increase road speeds or encourage private vehicle use through removal of congestion, will have adverse effects on greenhouse gas emissions.

## Road Safety Strategy

*Sub-components:* Speed management

- 9.8.119 Traffic calming measures have the potential to increase emissions of greenhouse gases due to vehicles slowing down and, in some cases, queuing, to negotiate speed bumps and chicanes. The contribution to greenhouse gases at a regional level associated with traffic calming measures needs would not be anticipated to be significant, however it should be taken into consideration when addressing speed management and congestion issues.

## Air Quality Strategy

*Sub-components:* all measures

- 9.8.120 There are potential benefits associated with measures to reduce motorised vehicular journeys and a gradual shift to cleaner vehicles. The magnitude of potential benefits is dependent upon the extent of modal shift, which in turn is dependent upon measures included within other strategies, to promote the use of alternative forms of transport to the private car. Some form of demand management measures may be required to encourage modal shift, particularly within urban areas.
- 9.8.121 The introduction of cleaner vehicles, i.e. vehicles that emit lower levels of air pollutants, including greenhouse gases, needs to be supported by the concomitant removal of older, more polluting vehicles – both private cars and public service vehicles. The replacement of older public service vehicles with new, low emission vehicles would be a positive measure in terms of reducing greenhouse emissions, and may encourage use of public transport, where it is perceived as clean and comfortable.
- 9.8.122 Where new road links are proposed to divert traffic away from areas that may be currently affected by poor local air quality, consideration should be given to whether the new link road would potentially increase travel distances and thus, potentially, increase greenhouse gas emissions. Schemes that benefit sensitive receptors at one locality may have adverse effects on greenhouse gas emissions.

## Maintenance Strategy

*Sub-components:* coordination of maintenance operations; public transport maintenance

- 9.8.123 There are potential medium to long-term benefits associated with measures that reduce vehicle stock emissions and the amount of road maintenance time (hence reducing potential congestion).

## Bus Strategy

*Journey planning;* improved journeys; improved efficiency of resource allocation

- 9.8.124 No significant effects have been identified, though there is potential for minor benefits associated with improved fleet maintenance.

- 9.8.125 The possible introduction of Quality Bus Partnerships or Contracts may provide opportunities for actively directing the replacement of older, higher emission vehicles.

### **Rail Plan**

*Sub-components:* all measures

- 9.8.126 Improvements to rail and Supertram services, along with the upgrade in station/interchange facilities are likely to promote a modal shift from road to alternative methods of transport resulting in positive medium to long-term effects.
- 9.8.127 The measures include providing faster links between Leeds and Sheffield via Barnsley, improving and extending the Sheffield Supertram system and, in the longer term, providing better connections between Barnsley and Doncaster, from Rotherham, to strategic rail routes and to Robin Hood Airport from the rest of South Yorkshire. These measures should contribute towards removing some of the inter-urban road traffic within South Yorkshire and would have a positive effect on air quality at the regional level, including the emission of greenhouse gases. To maximise the potential positive effects of these measures, effective links, utilising public transport, walking or cycling facilities, between train stations and Supertram terminals and areas of employment and other services should be established.

### **Freight Strategy**

*Sub-components:* identify opportunities for road/rail freight interchange and improvement of facilities for freight within South Yorkshire; encourage freight operators to take-up cleaner engine technology through collaboration with the freight industry

- 9.8.128 Where freight can be transferred from road to rail there is potential for medium to long-term positive effects associated with a potential reduction in greenhouse gas emissions. The introduction of a higher proportion of freight vehicles using cleaner engine technology would further enhance the potential to reduce greenhouse gas emissions. It is unclear, however, what measures would be employed by the local authorities, to encourage the freight industry to replace older, more polluting vehicles.

### **Major Schemes**

- 9.8.129 There are potential positive medium-term cumulative effects associated with measures to increase modal shift away from private car use and on to public transport, subject to the magnitude of the modal shift. Modal shift may, however, be insufficient to counter effects of traffic growth in the longer term unless it is linked to incentives and demand management measures to cap traffic growth.
- 9.8.130 Effects associated with new road links are subject to the effects on vehicle journeys (as a product of vehicle numbers and journey lengths), vehicle speeds and % HGVs. Construction of shorter, more direct link roads may have positive effects by reducing journey lengths and reducing congestion, but may encourage greater private vehicle use.

## Summary

9.8.131 There are potential cumulative medium to long-term benefits associated with measures proposed under the Accessibility, Congestion, Air Quality, Maintenance and Bus strategies and with the Rail and Freight plans. In most cases, however, the magnitude of those benefits is dependent upon the effectiveness and magnitude of modal shift away from single-occupancy, private car use. Those Major Schemes that are aimed at encouraging or facilitating use of public transport or non-vehicular modes of transport (Yorcard, Yorkshire Bus project) would also contribute to the medium to long-term benefits. New road schemes may have benefits in terms of reducing travel distances, however they may equally encourage private vehicle use.

### **SEA Objective 11: Preserve and enhance the County's landscapes and townscapes.**

- 9.8.132 South Yorkshire includes both major urban centres and a significant area of semi-urban and rural land. The LTP therefore affects both landscape and townscape – where townscape is generally used to refer to urban, built environments.
- 9.8.133 Land within the county falls into the Countyside Character Areas of the Dark Peak, the Yorkshire Southern Pennine Fringe, Southern Magnesian Limestone, Humberside Levels and the Nottinghamshire Derbyshire and Yorkshire Coalfield.
- 9.8.134 Although there are no Areas of Outstanding Natural Beauty within the county, part of the Peak District National Park lies within South Yorkshire and around 50,000 ha of land in and around Sheffield, Barnsley and Rotherham lie within the South Yorkshire Community Forest. The South Pennine Moors, within the National Park, is a Special Area of Conservation, as are Thorne and Hatfield Moors in the north-east of the county (for biodiversity purposes). There are numerous SSSIs, nature reserves, areas of ancient woodland, grasslands, and registered parks and gardens, all of which contribute to the value of the landscape within the county and have potential to be affected by transport schemes. Features of cultural heritage interest, which also contribute to the landscape and townscape are covered under SEA Objective 12.

## Accessibility Strategy

*Subcomponents:* integration of transport planning into land use planning; Travel Plans for new development; improve pedestrian environment and cycling facilities; improve accessibility to PROW network; deliver improved bus services

9.8.135 Improvements to footpaths and cycle ways have potential for localised landscape enhancement, however, where new infrastructure is to be developed there is potential for adverse effects on the landscape and/or townscape. More detailed assessment of individual schemes will be required at the stage of scheme development and design, however the integration of accessibility planning into land use planning provides the opportunity to minimise potential adverse effects on a regional scale. Consideration of the existing landscape/townscape character and preservation or improvement of this character should be inherent in any land use and access planning processes.

### **Congestion Strategy**

*Subcomponent:* making best use of existing highway network; demand management measures

- 9.8.136 There are potential benefits associated with minimising the development of new transport infrastructure, in that this minimises land-take and minimises the introduction of new large structures into the landscape/townscape on a wider scale. Conversely, this measure may restrict opportunities to potentially enhance the urban landscape/townscape by creating new transport links to declutter urban centres. For example, there may be opportunities to re-route transport links across otherwise derelict or brownfield sites, thereby allowing green, traffic free, areas to be created. At a local level, making best use of the existing network may also have adverse effects associated with route modifications, additions to road furniture, etc.
- 9.8.137 With regards demand management measures, there is potential for adverse effects to be associated with the development of Park & Ride areas and new transport interchanges. Such schemes would require more detailed assessment at scheme development and design stage, as the magnitude of any effects would be dependent upon location and nature of the development. The location of such new infrastructure on existing green field sites should be avoided wherever possible. Otherwise, it would be anticipated that adverse effects would be minimised through the adoption of good landscape and/or urban design principles.

### **Road Safety Strategy**

*Sub-component:* all measures

- 9.8.138 No significant effects have been identified in terms of impacts on landscape and townscapes.

### **Air Quality Strategy**

*Subcomponents:* reduce travel need; promote sustainable alternatives

- 9.8.139 There is potential for indirect benefits associated with the control of development and assuming the adoption of good design principles

### **Maintenance Strategy**

*Sub-components:* security and safety measures

- 9.8.140 No significant effects have been identified, although at a local level, there may be potential negative or positive effects associated with street lighting improvements.

### **Bus Strategy**

*Subcomponents:* improvements to waiting environment

- 9.8.141 There is potential for positive or negative effects associated with the development of new infrastructure such as interchanges, provision of security lighting, etc, subject to the location of particular developments. In general, effects will tend to be localised.

## Rail Plan

*Sub-components:* upgrade facilities at existing local stations; extend Sheffield Supertram system;

- 9.8.142 Where physical improvements to existing facilities, or new construction schemes are proposed, there is potential for adverse effects on landscape/townscape, particularly the latter where it is assumed that most works would be concentrated in urban/semi-urban areas. These measures may also, however, provide opportunities to improve existing townscapes through the implementation of good urban design principles or the incorporation of “landmark” features that contribute to the identity of the local area. The effects associated with any particular scheme would usually be expected to be localised.

## Freight Strategy

*Sub-components:* identify opportunities for road/rail freight interchange and improvement for facilities within South Yorkshire

- 9.8.143 No direct significant effects have been identified in terms of the measures proposed, however there may be indirect effects where the above measure results in proposals for the construction of new freight interchanges. In this case, subject to location, there is potential for major adverse effects, which would need to be assessed in detail at the scheme development stage.

## Major Schemes

- 9.8.144 There are potential adverse medium to long-term effects associated with new build schemes (both light rail and roads). It is assumed that these would be mitigated wherever possible, by design, eg. through amendments to route alignments/elevations, use of low impact lighting, use of landscape planting. The FARRRS scheme has potential for the greatest adverse effects due to location of the scheme through greenfield areas and the potential to affect semi-natural and ancient woodland

## Summary

- 9.8.145 There is potential for indirect medium to long-term benefits associated with measures under the Air Quality Strategy that would control development. Measures under the other strategies, including the Major Schemes, could have positive or negative medium to long-term effects, subject to the nature and locations of individual schemes. Cumulative effects arising from different schemes within the County could have an overall effect on the Countryside Character Areas.

**SEA Objective 12 Preserve or enhance the County’s cultural heritage, including architectural and archaeological assets.**

- 9.8.146 SEA Objective 12 aims to ensure that the County’s historic heritage, including built heritage and buried archaeology, is considered and is not adversely affected by measures proposed within LTP No. 2.

9.8.147 Features of historic heritage value are encountered county-wide throughout South Yorkshire, in both the urban areas, where there is a history of industrial heritage, and in the more rural areas. By its nature, historic heritage, once disturbed or lost, is irreplaceable. In general, the potential effects in term of this sub-objective are similar to those associated with SEA Objective 11.

### **Accessibility Strategy**

*Subcomponents:* integration of transport planning into land use planning; Travel Plans for new development; improve pedestrian environment and cycling facilities; deliver improved bus services

9.8.148 There is potential for negative or positive effects, subject to the nature and location of particular schemes. New construction, eg for interchanges, has the greatest potential to adversely affect buried archaeology. The settings of built heritage features may be enhanced through development of "landmark" structures that compliment the local built environment and that may reflect the past history of the area.

9.8.149 Consideration of the potential effects on historic heritage is a requirement for the Environmental Impact Assessment of any new construction scheme, hence adverse impacts would generally be addressed by means of this assessment and through any associated mitigation measures required by the statutory bodies.

### **Congestion Strategy**

*Subcomponent:* making best use of existing highway network

9.8.150 Potential effects on cultural heritage are similar to those identified for landscape and townscape. Making best use of the existing network would limit potential effects associated with new development. Greater adverse effects may be associated with development of Park & Ride areas or interchange facilities, both in greenfield areas, where there may be buried archaeology, and in urban areas, where both buried archaeology and built heritage may be affected. There is also potential for localised adverse effects associated with route modifications, addition of road furniture, etc.

### **Road Safety Strategy**

*Sub-component:* all measures

9.8.151 No significant effects have been identified in terms of effects associated with proposed road safety measures.

### **Air Quality Strategy**

*Sub-components:* reduce travel need; promote sustainable alternatives

9.8.152 There is potential for indirect benefits associated with the control of development and opportunities to enhance built environment by creation of new landmark structures that reflect and compliment existing settings.

## Maintenance Strategy

*Sub-components:* security and safety measures

- 9.8.153 No significant effects have been identified, although there is potential for negative or positive effects associated with street lighting improvements.

## Bus Strategy

*Subcomponents:* improvements to waiting environment

- 9.8.154 There is potential for positive or negative effects associated with the development of new infrastructure such as interchanges, provision of security lighting, etc, subject to the location of particular developments. In general, effects will tend to be localised.

## Rail Plan

*Sub-components:* upgrade facilities at existing local stations; extend Sheffield Supertram system;

- 9.8.155 Where physical improvements to existing facilities, or new construction schemes are proposed, there is potential for adverse effects on landscape/townscape, particularly the latter where it is assumed that most works would be concentrated in urban/semi-urban areas. These measures may also, however, provide opportunities to improve existing townscapes through the implementation of good urban design principles or the incorporation of "landmark" features that contribute to the identity of the local area. The effects associated with any particular scheme would usually be expected to be localised.

## Freight Strategy

*Sub-components:* identify opportunities for road/rail freight interchange and improvement for facilities within South Yorkshire

- 9.8.156 No direct significant effects have been identified in terms of the measures proposed, however there may be indirect effects where the above measures result in proposals for the construction of new freight interchanges. In this case, subject to location, there is potential for major adverse effects, which would need to be assessed in detail at the scheme development stage.

## Major Schemes

- 9.8.157 There are potential adverse effects associated with new build projects and new infrastructure, including signage. There are known Scheduled Ancient Monuments in the vicinity of the FARRRS route, though whether or not these would be affected by the scheme would require further investigation and would depend upon the preferred route alignment.

## Summary

- 9.8.158 As for SEA Objective 11, there is potential for indirect medium to long-term benefits associated with measures under the Air Quality Strategy that would control development. Measures under the other strategies, including the Major Schemes,

could have positive or negative medium to long-term effects, subject to the nature and locations of individual schemes.

**SEA Objective 13 Preserve or promote those assets of economic value to an area.**

9.8.159 SEA Objective 13 supports the over-arching theme of continued economic regeneration within South Yorkshire. Under this objective, economic assets have been taken to include the employment areas, both urban and non-urban, economic resources (e.g. agricultural land, aggregates), service industries (eg tourism, schools, hospitals,) and public transport providers (in that these are businesses and provide employment). Positive effects in terms of this objective are likely to be achieved through measures that: improve access to services and employment, support the potential expansion of businesses and support sustainable use of natural resources.

**Accessibility Strategy**

*Subcomponents:* integration of transport planning into land use planning; Travel Plans for new development; improve pedestrian environment and cycling facilities; deliver improved bus services

9.8.160 There are potential benefits associated with improved accessibility to employment areas and services, including industry commerce, agriculture, tourism, service industries and transport service provision.

**Congestion Strategy**

*Subcomponents:* all measures;

9.8.161 There are potential benefits associated with improving accessibility and traffic flows, however, adequate alternative transport must be in place prior to the introduction of more stringent demand management measures that are aimed at reducing congestion.

**Road Safety Strategy**

*Subcomponents:* all measures

9.8.162 No significant effects have been identified in terms of the measures proposed under the road safety strategy.

**Air Quality Strategy**

*Subcomponents:* reduce travel need; promote sustainable transport alternatives

9.8.163 There are potential indirect benefits associated with reduced travel need (via the integration of land use planning with accessibility planning), however this is highly dependent on other factors, including the availability of an appropriately skilled workforce in the locality of employment areas, or the ability of the area to attract in an appropriate workforce. (e.g. general living environment, schools, other facilities).

- 9.8.164 The promotion of sustainable transport alternatives has potential for indirect benefits, again subject to there being a population able and willing to utilise the alternative forms of transport to access employment areas and other services. Other measures, for example those under the Accessibility and Bus Strategies are required to support the promotion of sustainable transport alternatives.

### **Maintenance Strategy**

*Sub-components:* coordination of maintenance operations; use of low maintenance materials; public transport maintenance

- 9.8.165 There are potential benefits associated with a reduction in the number and length of road works and service improvements and maintenance.

### **Bus Strategy**

*Subcomponents:* journey planning and travel information provision; ticketing; improved journeys; improved efficiency of resource allocation

- 9.8.166 There are potential benefits for transport service providers through encouraging use of bus services, and benefits for employment areas served by buses through improved service provision and reduction in travel delays.
- 9.8.167 Liaison with user groups and transport service providers will be essential to identify service requirements and ensure provision of effective and appropriate services. The LTP No. 2 should identify how such liaison will be addressed.

### **Rail Plan**

*Subcomponents:* all measures

- 9.8.168 Improvements to rail and Supertram services and facilities will promote and enhance those areas of economic activity that are considered important to the local/regional economy, with medium to long-term positive effects.

### **Freight Strategy**

*Subcomponents:* identify opportunities for road/rail freight interchange and improvement for facilities for freight within S Yorkshire; develop and review Freight Quality Partnership

- 9.8.169 The development of new facilities or improvement of existing facilities for freight transport could actively contribute to the protection and enhancement of economic assets in the region. There is potential for positive effects also through development of the Freight Quality Partnership, dependent upon any recommendations made.

### **Major Schemes**

- 9.8.170 The proposed major schemes would improve accessibility to employment areas, which would result in medium to long-term benefits.

## Summary

- 9.8.171 With the exception of measures proposed under the Road Safety Strategy, which would not have any significant effects, it is anticipated that there would be potential cumulative medium to long-term effects associated with measures proposed under all of the above strategies, including the Major Schemes.

### **SEA Objective 14 Promote regeneration in areas of low income and social exclusion.**

- 9.8.172 SEA Objective 14 has been included to ensure that the requirements of deprived communities are considered. These include former coalfields areas, rural areas and deprived urban areas. This objective relates directly to Objective A of LTP No. 2.

## Accessibility Strategy

*Subcomponents:* integration of transport planning into land use planning; cooperative working with other agencies; Travel Plans for new development; improve pedestrian environment and cycling facilities; deliver improved bus services; provide funding for community transport; improve public transport ticketing and journey information

- 9.8.173 Provided that local communities are involved in the planning of transport provision and that transport provision is appropriate to the needs and means of the communities, the measures included under the Accessibility Strategy have potential benefits.
- 9.8.174 The LTP needs to address how it will be ensured that the needs of the various user groups are identified.

## Congestion Strategy

*Subcomponents:* demand management measures; improving travel choice

- 9.8.175 There could be adverse effects associated with the introduction of demand management measures if these are not integrated with, and preceded by, the introduction of improved and effective alternative transport provision (public transport, walking and cycling facilities).

## Road Safety Strategy

*Subcomponents:* all measures

- 9.8.176 No significant effects have been identified in terms of proposed road safety measures.

## Air Quality Strategy

*Subcomponents:* reduce travel need; promote sustainable transport alternatives; improvements to road vehicle stock

- 9.8.177 There are potential benefits associated with the provision of transport to local areas of employment and to other services and facilities, but subject to the development of local employment/educational opportunities, provision of appropriate and affordable public transport, and provision of safe walking and cycling routes.

### **Maintenance Strategy**

*Sub-components:* security and safety measures; public transport maintenance

- 9.8.178 There are potential benefits associated with safety and security measures and the increased accessibility for low income areas, subject to the provision of appropriate, affordable, public transport.

### **Bus Strategy**

*Subcomponents:* all measures

- 9.8.179 Measures to improve bus services, information and ticketing are likely to have benefits, provided that the bus services are perceived as being reliable, safe and affordable and the level of service provision meets the needs of the communities that they are intended to serve.

### **Rail Plan**

*Subcomponents:* all measures

- 9.8.180 The regeneration of areas that suffer from deprivation and social exclusion is likely to be promoted by increased and improved rail and Supertram provision as economic investment will be encouraged by this additional servicing.

### **Freight Strategy**

*Subcomponents:* all measures

- 9.8.181 The development of freight facilities may create employment opportunities, which if located in areas of deprivation, can contribute to promoting social inclusion, hence measures associated with developing freight transport facilities may have positive effects.

### **Major Schemes**

- 9.8.182 Where the major schemes provide improved accessibility to, and job creation within, deprived wards, there would be medium to long-term benefits.

### **Summary**

- 9.8.183 With the exception of the Congestion strategy and the Road Safety strategy, all of the above strategies have potential for cumulative medium to long-term benefits, subject to the transport requirements of the various user groups being effectively identified and addressed. The Congestion strategy could have adverse effects if demand management measures are not integrated with, and preceded by, the introduction of effective alternative transport provision. Measures included under the Road Safety strategy are not anticipated to have any significant effects in terms of regeneration in areas of low income and social exclusion.

## 10.0 RECOMMENDATIONS AND MITIGATION

- 10.1 Mitigation is viewed as one of the key outputs of the SEA. Where a strategy is considered likely to have significant adverse effects on the environment, measures to prevent, reduce, or off-set these effects have been considered. Opportunities to enhance the environment have also been considered during the appraisal process.
- 10.2 Although the SEA is, by definition, a strategic assessment, it is recognised that, in implementing the LTP, there will be requirements for mitigation at the scheme or site specific level. Mitigation measures therefore include strategic level measures and scheme specific measures:
- Strategic level mitigation: amendments or additions to strategies within the plan; recommendations on implementation of the plan; strategic monitoring recommendations; integration with other plans and policies.
- Scheme level mitigation: adherence to statutory requirements associated with planning processes; adherence to statutory requirements relating to environmental protection; “best practice” measures
- 10.3 Whilst strategic level mitigation is of most relevance to influencing the content and/or implementation of the LTP, for the purposes of completeness, the recommendations and mitigation strategies suggested as a result of the appraisal process and documented in **Table 10.1** below, in relation to each of the SEA objectives, include both strategic level measures and generic scheme level mitigation. Note that measures that have already been identified in the Provisional Second LTP Draft for Consultation, and that can, in themselves, be considered to be environmental mitigation measures, are not reiterated in Table 10.1.

Table 10.1 Recommendations and Mitigation

SEA Objective	Strategic Level Mitigation	Scheme Level Mitigation
All objectives	Establish GIS system to facilitate recording and monitoring of environmental features and receptors, in liason with other internal County and District departments	
1. Conserve and enhance biodiversity	Liaise with County and District Ecology and Nature Conservation Departments to monitor the status of biodiversity indicators (refer to Baseline Table and <i>Monitoring Protocol</i> ) ( <i>nb the monitoring protocol is under development and to be agreed with SYLTPP</i> )	Adhere to requirements of statutory legislation relating to the assessment and protection of habitats and species.
	Maintain a habitats register. This can be incorporated into the GIS system and built up through the acquisition of survey results, undertaken through the statutory process for individual schemes.  Link strategies for improvement schemes to local, county and regional biodiversity plans, to ensure schemes are appropriate to objectives of those plans.	Ensure that detailed baseline assessment is undertaken before a scheme moves to the delivery phase, whether or nor required under the statutory planning process.  Take into account all areas and types of natural habitat, that could be affected by a scheme, whether statutorily protected or not and seek to conserve and/or enhance these.
	Seek to promote habitat and wildlife sensitive engineering design concepts as a matter of policy, for all new transport schemes or improvement schemes.	Apply scheme objective that there should be no net loss of vegetation.
	Consider preparation of a County Transportation Biodiversity Strategy, which could inform future LTPs and to provide a reference for implementation of strategies and measures included in LTPs.	Ensure that all new planting is representative of the natural habitats and/or would enhance biodiversity in the locality.
		Promote management of roadside verges as habitats and recognise their value as wildlife corridors
2. Adopt the principle of no net loss of designated habitats, and attach the highest priority to conservng and imprvoving designated sites.	Liaise with County and District Ecology and Nature Conservation Departments to monitor the status of statutory and non-statutory designated sites, through reference to national, regional and local data bases relating to S Yorkshire, and through local monitoring (refer to Baseline Data Table and Monitoring Protocol)	As for SEA Objective 1, adhere to requirements of statutory legislation relating to the assessment and protection of habitats and species. This will include adhering to the requirements of the Habitats Directive for cSAC areas.

SEA Objective	Strategic Level Mitigation	Scheme Level Mitigation
	Liaise with County and District Ecology and Nature Conservation Departments to identify sensitive sites. These can be incorporated into the GIS system, and should regularly be updated. It is assumed that the County and District Departments would liaise, as appropriate, with other statutory bodies, i.e. English Nature, the Environment Agency, to ensure data is up to date.	
<b>3. Reduce the negative impacts of the transportation network on air quality</b>	Liaise with other County and District departments to monitor air quality, traffic volumes and travel practices (refer to Monitoring Protocol), such that these data can be related to assess whether LTP measures, particularly relating to modal shift, are having the desired effects in contributing towards a reduction in transport-related emissions to air.	Ensure detailed assessments of effects of schemes on local air quality are undertaken and that these encompass a sufficiently wide geographic area, to allow for shifts in traffic flows onto other link roads/routes as a consequence of the scheme.
	Review Air Quality Management Plans and assess whether additional measures are required to achieve objectives within AQMAs. Assess whether measures within Air Quality Management Plans could beneficially be applied to non AQMAs.	
	Undertake studies to assess theoretical effects of various demand management measures, such as congestion charging, work place parking levies, on traffic volumes and hence on air quality. These studies will need to be integrated with economic, accessibility and congestion assessments to determine potential conflicts with other SEA objectives. <u>It is strongly recommended that the LTP makes a clear commitment to undertake such studies</u> and that these studies consider both the short-term and the longer-term effects, in order to inform future LTPs. The studies should also take into account potential cross-boundary effects, e.g. of road charging measures.	

SEA Objective	Strategic Level Mitigation	Scheme Level Mitigation
	Subject to the results of the above studies and the performance of the LTP, consider introduction of demand management measures within this LTP to support LTP objectives A, B, C and E, and the SEA objectives on air quality, accessibility, economic assets and social exclusion.	
	Consider introduction of low emission zones in urban centres and assess potential effects of these on air quality.	
	Assess potential to reduce road freight by encouraging transfer of freight transport onto rail or canal (e.g. Sheffield and South Yorks Canal) wherever practicable.	
	Monitor against recommended indicators and targets - refer to Baseline Data Table and Monitoring Protocol	
<b>4. Introduce measures that minimise noise impacts on people and noise sensitive properties.</b>	Review effects of different types of traffic-calming measures. If appropriate, introduce reductions in speed limits rather than physical traffic calming measures (speed bumps, shicanes). Support reduced speed limit zones by monitoring, e.g. safety cameras.	Ensure detailed assessments of traffic noise impacts are undertaken and that these encompass a sufficiently wide geographic area, to allow for shifts in traffic flows onto other link roads/routes as a consequence of the scheme.
	Monitor against recommended indicators and targets - refer to Baseline Data Table and Monitoring Protocol	
<b>5. Improve road safety and make people feel safer when using all forms of transport.</b>	Monitor against recommended indicators and targets - refer to Baseline Data Table and Monitoring Protocol. No other mitigation measures are proposed in relation to this SEA objective and the effects of the LTP.	No mitigation measures are proposed in relation to this SEA objective and the effects of the LTP.
<b>6. Reduce levels of transport-related crime and fear of crime.</b>	Monitor against recommended indicators and targets - refer to Baseline Data Table and Monitoring Protocol. No other mitigation measures are proposed in relation to this SEA objective and the effects of the LTP.	No mitigation measures are proposed in relation to this SEA objective and the effects of the LTP.
<b>7. Improve access to key services and facilities using sustainable modes of transport wherever possible.</b>	The LTP should identify the means by which collaboration between transport service providers, user groups and other agencies would be achieved, in relation to identifying service provision requirements and ensuring effective and appropriate improvements in services.	

SEA Objective	Strategic Level Mitigation	Scheme Level Mitigation
<p><b>8. Encourage healthier lifestyles through travel choice</b></p>	<p>Ensure that effective provision for alternative modes of transport are in place prior to the introduction of new demand management measures that have potential to adversely affect access in the absence of alternative transport modes (refer to studies recommended under SEA Objective 3 above).</p>	
	<p>Review Major Scheme proposals for road schemes to ensure that alternative transport modes have been considered at the strategic level.</p>	
	<p>Monitor against recommended indicators and targets - refer to Baseline Data Table and Monitoring Protocol.</p>	<p>Avoid inappropriate design of facilities for walking and cycling, by taking into consideration safety and perception of safety and perceived convenience.</p>
<p><b>9. Minimise the impact of the transport network on the quality and quantity of the County's water resources</b></p>	<p>Maintain database of transport-related pollution incidents to water resources – by reference to Environment Agency and to internal departments. Include “near misses” in addition to actual incidents (refer to Monitoring Protocol)</p>	<p>Adhere to statutory legislation and planning policy and guidance during scheme development and implementation, and adopt best practice procedures for the protection and prevention of pollution of water resources. Issues that should be addressed include , but are not limited to: flood risk assessment, drainage systems, including the promotion, where appropriate, of sustainable urban drainage systems, risks to water resources as a result of transport accidents, risks of pollution during construction works.</p>
	<p>Adopt policy to promote principles of SUDS, wherever practicable, for new transport schemes, including interchanges, Park &amp; Rides areas, and new transport routes.</p>	
	<p>Liase with other County and District Ecology and Nature Conservation departments to include riverine and other aquatic habitats on GIS system, to inform future transport development/improvement schemes.</p>	

SEA Objective	Strategic Level Mitigation	Scheme Level Mitigation
<p><b>10. Reduce the contribution of transportation to greenhouse gases.</b></p>	<p>Liaise with other County and District departments to monitor traffic volumes and travel practices (refer to Monitoring Protocol), such that these data can be related to assess whether LTP measures, particularly relating to modal shift, are having the desired effects in contributing towards a reduction in transport-related greenhouse gas emissions.</p>	<p>Ensure that more sustainable forms of transport are considered as alternatives during the development of new transport schemes.</p>
	<p>Identify when more stringent demand management measures can and should be introduced (refer to studies recommended under SEA Objective 3 above).</p>	
	<p>Review Major Scheme proposals for road schemes, to ensure that alternative modes of transport have been considered at the strategic level.</p>	
	<p>Adopt a policy that more sustainable forms of transport are to be preferred over road transport schemes, where either would meet the objectives of the scheme.</p>	
	<p>Consider introducing policy whereby the public are provided with incentives for the use of more fuel efficient vehicles. This could be related to work travel plans. Consider introduction of low emission zones in urban centres.</p>	
<p><b>11. Preserve and enhance the County's landscapes and townscapes.</b></p>	<p>The LTP policies should recognise and reflect the differences between rural, semi-rural and urban landscapes/townscape and the different effects that transport policy may have on these areas.</p>	<p>Undertake detailed assessment of individual scheme proposals during scheme development and incorporate mitigation to minimise or avoid adverse impacts on landscape/townscape. Adopt good landscape/urban design principles and seek to enhance the landscape/townscape wherever practicable.</p>

SEA Objective	Strategic Level Mitigation	Scheme Level Mitigation
<p><b>12. Preserve or enhance the County's cultural heritage, including architectural and archaeological assets</b></p>	<p>Consider preparation of a County Landscape Strategy for Transportation, which distinguishes between rural, semi-urban and urban landscapes and identifies landscape objectives for these areas. The strategy could be prepared in liaison with County and District landscape departments, and with reference to the Countryside Agency and the Council for the Protection of Rural England (CPRE). The strategy should include indicators for landscape quality against which schemes or proposals may be assessed.</p>	
	<p>Monitor area and proportion of land-take, within the County, for transport projects from greenfield land versus brownfield land (refer to Monitoring Protocol)</p>	
	<p>Monitor status of Countryside Character areas throughout the period of the LTP. Note, however, that this is dependent upon information provided in the Country-side Quality Counts (refer to Baseline Data Table) and will be subject to data therein provided.</p>	
	<p>Liase with the County and District cultural heritage departments to incorporate data on cultural heritage assets into the GIS system, and to monitor the effects of measures implemented under the LTP policies.</p>	<p>Adhere to statutory legislation and planning policy and guidance during scheme development and implementation, to minimise adverse impacts on cultural heritage. Mitigation measures to be agreed with the relevant statutory bodies (English Heritage, County Archaeologist)</p>
<p><b>13. Preserve or promote those assets of economic value to an area.</b></p>	<p>Include cultural heritage in the proposed County Landscape Strategy (refer to Sea Objective 11) and incorporate overarching design principles into the strategy, to ensure that schemes seek to respect and enhance, where appropriate, cultural heritage assets in both rural and urban environments.</p>	
	<p>Link proposals to enhance transport networks with economic development plans within the County. Ensure that transport proposals consider workforce locations as well as employment locations.</p>	<p>Monitor land-take and use of other material assets for individual schemes (refer to Monitoring Protocol) and minimise these wherever practicable.</p>
	<p>Monitor land-take and use of other material assets for transport projects (refer to Monitoring Protocol)</p>	

SEA Objective	Strategic Level Mitigation	Scheme Level Mitigation
	Adopt a policy of recycling materials, or of using recycled materials, wherever practicable, for new transport schemes and transport improvement schemes, to minimise use of new raw materials and minimise wastage.	
	Ensure that effective provision for alternative modes of transport are in place prior to the introduction of new demand management measures that have potential to adversely affect access in the absence of alternative transport modes (refer to studies recommended under SEA Objective 3 above).	
<b>14. Promote regeneration in areas of low income and social exclusion</b>	Monitor against recommended indicators and targets - refer to Baseline Data Table and Monitoring Protocol.	No scheme level mitigation measures identified.
	Ensure that effective provision for alternative modes of transport are in place prior to the introduction of new demand management measures that have potential to adversely affect access in the absence of alternative transport modes (refer to studies recommended under SEA Objective 3 above).	

## 11.0 MONITORING

- 11.1 The SEA Directive explicitly requires monitoring of the significant environmental effects of the LTP. **Appendix H** of this Environmental Report presents a draft Monitoring Protocol. This may be refined by SYLTTP in response to comments for consultees.
- 11.2 The Monitoring Protocol takes into consideration the following:
- what needs to be monitored in order to assess the environmental performance of the strategies and measures contained within the LTP. This is based on the SEA objectives and indicators identified in the Baseline Data Table (refer to Appendix B);
  - the type of information/monitoring data required, including the applicability of environmental data to the monitoring of environmental effects associated with transport schemes – as reflected in the indicators and targets identified in the Baseline Data Table;
  - existing sources of environmental information;
  - any gaps in existing information;
  - the practicability of obtaining information that is not currently monitored, either by the County authorities or by others;
  - who will undertake the monitoring and when; and
  - when remedial action would be required (i.e the LTP is under-performing or having adverse effects in terms of the SEA objectives;
- 11.3 A key tool in the on-going monitoring of the environmental effects of the LTP is considered to be a GIS system, ideally with shared access by all planning departments within the County, which would provide a means of recording monitoring data as it is collated and could be used, over the longer term, to inform future plans.

## 12.0 FUTURE STAGES

### 12.1 Consultation

12.1.1 The SEA Directive states that:

- “The authorities {with relevant environmental responsibilities} and the public ... shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan.... and the accompanying Environmental Report before the adoption of the plan”(Article 6(2)); “
- “The Environmental Report,... the opinions expressed {by consultees} and the results of any transboundary consultations ... shall be taken into account during the preparation of the plan.... and before its adoption...” (Article 8); and
- “When a plan.... is adopted, the {environmental} authorities {and} the public .... are informed and the following items {shall be} made available to those so informed: (a) the plan.... as adopted, (b) a statement summarising how environmental considerations have been integrated into the plan.... and (c) the measures decided concerning monitoring “ (Article 9(1).

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12.1.2 The Environmental Assessment of Plans and Programmes Regulations 2004 required that the Scoping Report be issued to the following statutory bodies:

- The Countryside Agency;
- English Heritage;
- English Nature; and
- The Environment Agency.

The Final Scoping Report was issued to the above consultees in April 2005. In addition, it was issued to the Council for the Protection of Rural England (CPRE).

12.1.4 The draft LTP No. 2 and Environmental Report will be issued, by the South Yorkshire Local Transport Plan Partnership (SYLTTP), to the above consultees and to other bodies with an interest in the impacts, on the environment, of the policies and programmes contained within the draft LTP No. 2.

### 12.2 Incorporating SEA Findings into the Final LTP No. 2

12.2.1 Following consultation on the draft LTP and accompanying Environmental Report, recommendations and mitigation strategies and consultee comments, will be taken into account during development and refinement of the LTP No. 2.

12.2.2 In order to formalise this process, SYLTTP will state how they have taken the findings of the SEA into account.

12.2.3 A written statement will be made available to all stakeholders and will cover the following:

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- any changes to the LTP No. 2 in response to information in the Environment Report;
- details of incorporation of responses to consultation;
- reasons for choosing the LTP as adopted, and rejection of other reasonable alternatives; and
- monitoring measures in the light of consultation responses.



<b>Requirements</b>
<p><b>Preparing an Environmental Report</b> in which the likely significant effects on the environment of implementing the plan are identified, described and assessed. Reasonable alternatives taking into account the objectives and geographical scope of the plan should also be described. The information to be given is (Article 5 and Annex I):</p> <ol style="list-style-type: none"> <li>a) An outline of the contents, main objectives of the plan, and relationship with other relevant plans and programmes;</li> <li>b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan;</li> <li>c) The environmental characteristics of areas likely to be significantly affected;</li> <li>d) Any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;</li> <li>e) The environmental protection objectives, established at international, Community or national level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation;</li> <li>f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. (These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects);</li> <li>g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan;</li> <li>h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;</li> <li>i) a description of measures envisaged concerning monitoring in accordance with Article 10;</li> <li>j) a non-technical summary of the information provided under the above headings</li> </ol> <p>The report must include the information that may reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in that process to avoid duplication of the assessment (Article 5.2).</p>
<p><b>Consulting:</b></p> <ul style="list-style-type: none"> <li>• authorities with environmental responsibilities, when deciding on the scope and level of detail of the information which must be included in the environmental report (Article 5.4);</li> <li>• authorities with environmental responsibilities and the public, to give them an early and effective opportunity within appropriate time frames to express their opinion on the draft plan and the accompanying Environmental Report before the adoption of the plan (Article 6.1, 6.2);</li> <li>• other EU Member States, where the implementation of the plan is likely to have significant effects on the environment in these countries (Article 7).</li> </ul>
<p><b>Taking the Environmental Report and the results of the consultations into account in decision-making</b> (Article 8)</p>
<p><b>Providing information on the decision:</b> When the plan is adopted, the public and any countries consulted under Article 7 must be informed and the following made available to those so informed:</p> <ul style="list-style-type: none"> <li>• the plan as adopted;</li> <li>• a statement summarising how environmental considerations have been integrated into the plan and how the environmental report of Article 5, the opinions expressed pursuant to Article 6 and the results of consultations entered into pursuant to Article 7 have been taken into account in accordance with Article 8, and the reasons for choosing the plan as adopted, in the light of the other reasonable alternatives dealt with; and</li> <li>• the measures decided concerning monitoring (Article 9).</li> </ul>
<p><b>Monitoring the significant environmental effects of the plan's implementation</b> (Article 10).</p>

Note: Shading indicates activity already carried out as part of good practice transport appraisal (source: Strategic Environmental Assessment Guidance for Transport Plans and Programmes, TAG Unit 2.11, Department for Transport, 2004).

**APPENDIX B    BASELINE DATA TABLE**

## APPENDIX C – DATA AVAILABILITY AND GAPS

## DATA AVAILABILITY AND GAPS

The following table summarises those indicators for which data is currently lacking (June 2005) at National, Regional or County (local) level – as indicated by an asterisk in the relevant column.

SEA Objective	Indicator	County Level (local)	Regional Level	National Level
1.	Achievement of LBAP targets			*
	No. of areas of ancient and semi-natural woodlands, including replanted woodlands		*	
	Area of grasslands			*
	No. of Protected Species	*		
2.	Number and condition of (c)SACs			*
	No. and condition of Sites of Biological Importance (SBI) and Sites of Importance for Nature Conservation (SINC)		*	*
3.	Levels of transport-related pollutants, particularly in AQMAs	*	*	
	No. of journeys made using sustainable forms of transport, including walking, cycling and public transport		*	
	No. of employers actively promoting car share schemes and cycle/walk to work schemes (through Work Travel Plans)	*	*	*
	Volume of freight transported by road versus other modes of transport, e.g. rail	*	*	
	(no rail data)	(no rail data)		
	Number of days of moderate or poor air quality	*	*	
4.	Percentage of tranquil areas	*		
5.	{No data gaps}			
6.	Incidence of crime on public transport and/or in public transport areas	*		
7.	Number of journeys made using sustainable modes of transport		*	
	Percentage of public transport services accessible to the less able-bodied (e.g. low-rise buses; community bus services)	*	*	*

SEA Objective	Indicator	County Level (local)	Regional Level	National Level
	Number of bus stops adapted for easy access buses	*	*	*
8.	Number of trips made by walking/ cycling	*		
	Number of new or improved cycleways and footpaths	*	*	*
9.	Percentage of rivers of chemical/biological river water quality fair or better (GQA Grade C to A)	*		
	Water pollution incidents attributable to transport	*		
	Number of Source Protection Zones		*	*
10.	Greenhouse gas emissions (CO <sub>2</sub> )	*		
	Road traffic growth		*	
	No. of employers actively promoting car share schemes and cycle/walk to work schemes (through Work Travel Plans)	*	*	*
11.	Proportion of greenfield versus brownfield land-take for new transport projects	*	*	*
12.	Cultural heritage features (including scheduled monuments, listed buildings, and other historic sites. % or no. adversely affected/ <del>benefited</del> by, traffic and/or transport schemes). Number of registered historic parks and gardens	NB. Baseline data applies to current status	NB. Baseline data applies to current status	*
				*
13	Agricultural land resource (% land of grade 3 or better)			*
	Proportion of greenfield versus brownfield land-take for transport projects	*		*
	Volume of new aggregates used for transport projects versus volumes of recycled aggregates used	*		
14.	Proportion of population living in low income urban areas who live within ten minutes walk of an hourly or better bus, tram or train service	*	*	*

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SEA Objective	Indicator	County Level (local)	Regional Level	National Level
	Proportion of population living in rural or outlying areas who live within ten minutes walk of an hourly or better bus, tram or train service		*	

**APPENDIX D      ISSUES AND OBJECTIVES IN SOUTH YORKSHIRE**

## Compatibility of SEA Objectives with RSS Key Objectives.

SEA Objective	RSS Key Objective
<b>Biodiversity, Flora, Fauna, Soil</b>	
1. Conserve and enhance biodiversity at all levels	Minimising the loss of the rural landscape, maintaining and where possible enhancing its diverse character
2. Adopt the principle of no net loss of designated habitats, and attach the highest priority to conserving and improving designated sites	Minimising the loss of the rural landscape, maintaining and where possible enhancing its diverse character
<b>Population &amp; Human Health: Air</b>	
3. Reduce the negative impacts of the transportation network on air quality	Tackling urban traffic congestion and reducing transport related emissions
<b>Population &amp; Human Health: Noise and Vibration</b>	
4. Introduce measures which minimise noise impacts on people and property	Tackling urban traffic congestion and reducing transport related emissions
<b>Population &amp; Human Health: Safety</b>	
5. Improve road safety and make people feel safer when using all forms of transport 6. Reduce levels of transport-related crime	Making urban areas attractive, high quality, safe places where people chose to live Making urban areas attractive, high quality, safe places where people chose to live
<b>Population &amp; Human Health: Accessibility</b>	
7. Improve access to key services and facilities using sustainable modes of transport wherever possible	Seeking social equity and inclusion
<b>Population &amp; Human Health: Physical Fitness</b>	
8. Encourage healthier lifestyles through travel choices	Seeking to extend travel choice, with better facilities for walking and cycling
<b>Water</b>	
9. Minimise the impact of the transport network on the quality and quantity of the County's water resources	Protecting and enhancing natural resources
<b>Climatic Factors</b>	
10. Reduce the contribution of transportation to greenhouse gas emissions	Addressing the causes of and responding to the effects of climate change
<b>Landscape and Cultural Heritage</b>	
11. Preserve and enhance the County's landscapes and townscapes	Protect and enhance natural resources. Minimise the loss of the rural landscape, maintaining and where possible enhancing its diverse character. Make urban areas attractive, high quality, safe places where people choose to live.
12. Preserve or enhance the County's cultural heritage, including architectural and archaeological assets	Preserving, enhancing cultural heritage assets.
<b>Material Assets</b>	
13. Preserve those assets of economic value to an area	Reducing resource consumption and encouraging use of renewable energy
<b>Regeneration</b>	
14. Promote regeneration in areas of low income and social exclusion	Identifying South Yorks and Dearne Valley as priorities for regeneration, together with the four urban centres. Better public transport access required rather than just improved roads.

**APPENDIX E      RELATIONSHIP BETWEEN PLANS AND POLICIES**

**APPENDIX F PLANS AND PROGRAMMES OF RELEVANCE TO THE  
LTP**

## APPENDIX G PROPOSED MAJOR SCHEMES

## **Supertram Extension**

The proposed Supertram Extensions seek to build on the increasing success of the existing network to provide a high quality, high capacity public transport route linking Sheffield and Rotherham centre to each other and to sites along the Lower Don Valley and the M1 corridor, and helping to remove traffic from the congested junction 34 of the M1. An additional extension to Broomhill, which would service areas to the west of the city centre, including the University of Sheffield and the hospitals in the Weston Park area, is also proposed.

## **Yorkshire Bus Project**

The Yorkshire Bus Initiative, developed following the "Bus Summit" hosted by the Minister for Transport in Summer 2002, seeks to bring about a step change in bus services to meet modal choice and social inclusion objectives, and to consolidate recent reversals in the long-term decline in bus patronage. The Initiative is a public/private partnership of local authorities in South and West Yorkshire, and local bus operators. As part of the initiative, it is proposed that, in addition to focussing on the core networks, complementary networks would be designed to reduce social exclusion. The proposals include: capital funding for buses; capital funding for interchange and waiting facilities; capital funding for bus priority measures; revenue support for supported service enhancements.

## **Yorcard**

Yorcard is aimed at providing a smartcard ticketing system for South and West Yorkshire and is supported by the two PTEs in South and West Yorkshire and the bus, rail and tram operators, who believe that the smartcards can provide significant benefits to the transformation of public transport. The scheme would: facilitate the provision of better ticketing offers for passengers; speed up boarding times; help enhance the image of public transport in combination with other initiatives, thus making public transport a more attractive and realistic option for passengers; provide data that would assist in developing and marketing public transport services; reduce administrative costs; and reduce fraud.

## **A61 Penistone Road/Upper Don Valley Quality Bus Corridor (QBC)**

This scheme would provide online capacity improvements along this corridor, giving priority to public transport vehicles. Peak hour time savings of around 4 minutes in the morning peak and 9 minutes in the evening peak are forecast for public transport vehicles between Leppings Lane and the Sheffield Inner Ring Road, supplemented by a bus-based park and ride scheme near to Leppings Lane roundabout. Additional junction improvements along the A61 road corridor would not only allow improved bus progression along the corridor but would also enhance access opportunities for development sites at Claywheels Lane and Herries Road.

## **Doncaster Finningley and Rossington Route Regeneration Scheme (FARRRS):**

The FARRRS scheme would provide a direct link from the M18 at junction 3 to Rossington (a deprived ward) and Robin Hood Doncaster Airport at Finningley. As such, it would improve accessibility to the whole of the south east of the Borough including the deprived ward and the airport. This would, in turn, stimulate investment with the estimated creation of 7,000 jobs. Linkage to the M18 would improve regional connectivity from the international airport to major centres and reduce cross boundary

trips, for example to Manchester Airport, thus relieving congestion on the regional road network, including the transpennine routes.

### **Sheffield Waverley Link Road**

This scheme would provide a new access from Sheffield Parkway/M1 into the Waverley brownfield regeneration area. The scheme would provide a link road between the existing road network serving the Waverley development area, from the A630 Parkway/Catcliffe Interchange and M1 motorway at junction 33, and would provide improved access to the area from the south via junction 31 and the A57/B6200, as well as relieving existing communities from traffic currently using existing roads in the area. The scheme is a Regional Transport Priority and is supported by the South and West Yorkshire Multi Modal Study and the Coalfield Communities Campaign.

### **M1 to Barnsley Town Centre Link Road**

This scheme was proposed as a result of the A628 Corridor Study, which was undertaken in response to a number of issues affecting residents and businesses in Barnsley, including local congestion, poor air quality, unacceptable road safety and unreliable bus services associated with access to the M1 at junction 37, along the existing Dodworth Road with its extensive residential frontage. The scheme would put a new single carriageway road along the route of the former Barnsley to Penistone railway and provide a direct link between the M1 and the town centre, in addition to providing an orbital/distributor route around the northern side of the town centre, creating new links and routes to the A637 Huddersfield Road and the A61 Wakefield Road. As part of the scheme, traffic management, including bus priorities, and environmental management and improvement measures would be installed along Dodworth Road and Pogmoor Road to create a more attractive route for cyclists, pedestrians and bus users and, as a result, offer greater transport options.

**APPENDIX H      DRAFT MONITORING PROTOCOL**

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Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [20] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.07 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.57 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [21] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [22] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.07 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.57 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [23] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [24] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 2.54 cm		

<b>Page 28: [25] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.07 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.57 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [26] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + A ligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [27] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [28] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.07 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.58 cm, List tab + Not at 1.27 cm + 2.54 cm		
<b>Page 28: [29] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Hanging: 1.19 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.58 cm, List tab + Not at 1.27 cm + 2.52 cm		
<b>Page 28: [30] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 2.52 cm		
<b>Page 28: [31] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.58 cm, List tab + Not at 1.27 cm + 2.52 cm		
<b>Page 28: [32] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 2.52 cm		
<b>Page 29: [33] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 1.9 cm		
<b>Page 29: [34] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 1.9 cm		
<b>Page 29: [35] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.58 cm, List tab + Not at 1.27 cm + 1.9 cm		
<b>Page 29: [36] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 1.9 cm		

<b>Page 29: [37] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.58 cm, List tab + Not at 1.27 cm + 1.9 cm		
<b>Page 29: [38] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.58 cm, List tab + Not at 1.27 cm + 1.9 cm		
<b>Page 29: [39] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.04 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 1.9 cm		
<b>Page 29: [40] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 1.9 cm		
<b>Page 29: [41] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.58 cm, List tab + Not at 1.27 cm + 1.9 cm		
<b>Page 29: [42] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.54 cm, List tab + Not at 1.27 cm + 1.89 cm		
<b>Page 29: [43] Formatted</b>	<b>Craig Tyler</b>	<b>10/13/2005 1:04:00 PM</b>
Indent: Left: 0.08 cm, Hanging: 0.5 cm, Bulleted + Level: 1 + Aligned at: 0.63 cm + Tab after: 1.27 cm + Indent at: 1.27 cm, Tabs: 0.58 cm, List tab + Not at 1.27 cm + 1.89 cm		