



Tayside and Central Scotland Regional Transport Strategy

SEA Environmental Report

January 2007

SEA Environmental Report

TACTRAN

**Tayside and Central Scotland Regional Transport Strategy
SEA Environmental Report**

January 2007

Natural Capital
13 Coates Crescent
Edinburgh
EH3 7AF
Telephone 0131 220 6121
Facsimile 0131 220 6131
Email info@naturalcapital.co.uk

SEA Environmental Report

TACTRAN

**Tayside and Central Scotland Regional Transport Strategy
SEA Environmental Report**

For and on behalf of
Natural Capital Ltd.

Approved by:

Signed:

Position:

Date:

This report has been prepared by Natural Capital Ltd. with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

In line with our company environmental policy we purchase paper for our documents only from suppliers who supply recycled and/or sustainably sourced paper.

TABLE OF CONTENTS

NON-TECHNICAL SUMMARY	I - VIII
1 INTRODUCTION	1
1.1 STATUTORY CONTEXT FOR THE SEA	1
1.2 PURPOSE OF THE ENVIRONMENTAL REPORT	1
1.3 KEY FACTS ABOUT THE RTS	1
1.4 SUSTAINABLE DEVELOPMENT	4
1.5 SEA ACTIVITIES TO DATE	4
1.6 LAYOUT OF THE REPORT	5
2 APPRAISAL METHODOLOGY	7
2.1 INTRODUCTION	7
2.2 OVERALL APPROACH TO SEA	7
2.3 SEA GUIDANCE	7
2.4 SEA OBJECTIVES	8
2.5 SCOPING THE APPRAISAL	12
2.6 ASSESSMENT METHODS	12
2.6.1 Assessment of Environmental Effects	12
2.6.2 Cumulative Effects	17
2.6.3 Appropriate Assessment	18
2.6.4 European Protected Species	19
2.6.5 Health Effects	19
2.7 ALTERNATIVES CONSIDERED	19
2.7.1 Approach to Alternatives	19
2.7.2 Objectives	20
2.7.3 Measures and Interventions	20
2.7.4 Preferred Strategy	20
2.7.5 Alternative Strategies	21
2.8 CONSULTATION AND RESPONSE TO STATUTORY CONSULTATION	21
2.8.1 Consultation	21
2.8.2 Response to Statutory Consultation	22
3 PLAN CONTEXT	25
3.1 INTRODUCTION	25
3.2 STATUTORY CONTEXT FOR THE RTS	25
3.3 TACTRAN RTS - OUTLINE AND OBJECTIVES	26
3.3.1 Outline	26
3.3.2 RTS Objectives	27
3.3.3 Preferred Strategy Interventions	28
3.3.4 Summary	32
3.4 LINKS TO OTHER RELEVANT POLICIES, PLANS AND PROGRAMMES	33
4 ENVIRONMENTAL BASELINE	41
4.1 INTRODUCTION	41
4.2 SEA TOPICS	41
4.3 BASELINE DATA GATHERING AND ANALYSIS	43
4.4 AREAS LIKELY TO BE AFFECTED BY THE RTS	48
4.5 ENVIRONMENTAL ISSUES AND PROBLEMS	48
4.6 LIKELY FUTURE EVOLUTION OF THE ENVIRONMENTAL BASELINE WITHOUT THE PLAN	54
4.6.1 Introduction	54
4.6.2 Air Quality and Climatic Factors	55
4.6.3 Landscape and Biodiversity	55
4.6.4 Soil, Land and Water	56
4.6.5 Population	56
4.6.6 Human Health and Safety	56

4.6.7	Cultural Heritage	56
4.6.8	Material Assets	56
5	ASSESSMENT OF THE ENVIRONMENTAL EFFECTS AND PROPOSED MITIGATION	59
5.1	INTRODUCTION	59
5.2	ASSESSMENT OF OBJECTIVES	59
5.3	ASSESSMENT OF INTERVENTIONS	60
5.4	ASSESSMENT OF THE DRAFT RTS	73
5.4.1	Assessment of the Combined RTS Interventions and Actions	73
5.4.2	Cumulative Effects of the RTS and other Plans and Strategies	75
5.5	ASSESSMENT OF ALTERNATIVES	79
5.5.1	Delivering Economic Prosperity	79
5.5.2	Connecting Communities and Social Inclusion	81
5.5.3	Environmental Sustainability and Health and Well-being	82
5.6	ENVIRONMENTAL PERFORMANCE OF THE PREFERRED STRATEGY	83
5.7	PROPOSED MITIGATION	84
5.8	MONITORING	89
5.8.1	Monitoring Indicators	89
5.8.2	Timescales for Implementation	90
6	NEXT STEPS	91
6.1	PROPOSED STAGES	91
6.2	ANTICIPATED MILESTONES	91

ANNEXES

ANNEX A	WORKSHOP SUMMARY
ANNEX B	SUMMARY OF CONSULTATION RESPONSES
ANNEX C	ANALYSIS OF OTHER STRATEGIES, PLANS AND PROGRAMMES
ANNEX D	ENVIRONMENTAL BASELINE
ANNEX E	MATRIX COMPATIBILITY OF SEA AND RTS OBJECTIVES
ANNEX F	APPRAISAL MATRICES FOR RTS INTERVENTIONS
ANNEX G	APPRAISAL TABLES FOR RTS THEMED GROUPS FOR MEASURES
ANNEX H	APPRAISAL TABLES FOR ROAD-BASED INFRASTRUCTURE INTERVENTIONS
ANNEX I	APPRAISAL TABLES FOR RTS PREFERRED STRATEGY
ANNEX J	APPRAISAL TABLES FOR ALTERNATIVE STRATEGY SCENARIOS

TAYSIDE AND CENTRAL SCOTLAND REGIONAL TRANSPORT STRATEGY

SEA ENVIRONMENTAL REPORT

NON-TECHNICAL SUMMARY

1 INTRODUCTION

1.1 STATUTORY CONTEXT FOR THE SEA

The Tayside and Central Scotland Regional Transport Partnership (TACTRAN) is preparing a Regional Transport Strategy (RTS) to cover four council areas in the Tayside and Central region of Scotland (Angus, Dundee City, Perth and Kinross and Stirling).

The Environmental Assessment (Scotland) Act 2005 requires some plans and programmes including transport plans developed by public bodies to be subject to strategic environmental assessment (SEA) including the TACTRAN RTS. The findings of the SEA of the Strategy are presented in an Environmental Report. This document is a non-technical summary of that report.

1.2 PURPOSE OF THE ENVIRONMENTAL REPORT

The purpose of this Environmental Report is to set out the findings of an environmental assessment of the draft TACTRAN RTS. In accordance with Part 2 of the Environmental Assessment (Scotland) Act 2005, the Environmental Report identifies, describes and evaluates the likely significant effects on the environment of implementing the RTS and the reasonable alternatives to the RTS which have been assessed.

2 THE REGIONAL TRANSPORT STRATEGY AND ITS CONTEXT

The RTS provides a framework which will guide the future management of, and investment in, transport for the TACTRAN area. The RTS covers a period of between 10 and 15 years from 2007. The draft RTS document sets out the context for the Tayside and Central Scotland region, describing the important transport and accessibility trends and issues across all modes of travel, which draws on the extensive public and stakeholder consultation undertaken during the Strategy development process. The document then sets out, in a series of chapters, the core components of RTS which can briefly be described as:

- RTS Vision and Objectives
- RTS Preferred Strategy and Alternatives Considered
- RTS Interventions packaged into 11 groups to deliver three key strategic aims:
 - Delivering economic prosperity
 - Connecting communities and being socially inclusive
 - Delivering environmental sustainability and health and well-being

The latter sections of the document address delivery, funding and monitoring.

An understanding of the relevance of other legislation, policy and plans to the SEA of the RTS is an essential step in understanding the context for the RTS, the

relationship with other strategies and in deriving the necessary environmental baseline and objectives for the assessment.

A large number of other plans, programmes and environmental strategies have been reviewed as part of the process of developing the RTS and undertaking the SEA.

3 THE SEA PROCESS

3.1 INTRODUCTION

SEA is a structured approach to predicting and assessing the environmental effects which are likely to arise from the Strategy.

The SEA process has been undertaken in three stages:

Stage 1: deciding on the scope of the assessment (which has included defining objectives, developing the assessment framework, establishing the baseline position and consulting with appropriate statutory agencies).

Stage 2: assessing the environmental effects of the policies and interventions within the draft RTS (which has involved assessing the effects of interventions, considering alternatives, identifying residual and cumulative effects, identifying appropriate mitigation and suggesting proposals for monitoring).

Stage 3: preparing the Environmental Report (which has involved bringing together the findings of the scoping exercise, feedback from consultations, the assessment of environmental effects and developing conclusions and recommendations for mitigation and monitoring the effects of the Strategy).

3.2 SEA VISION AND OBJECTIVES

An overall vision for the SEA and a set of objectives have been defined based on:

- A review of relevant plans and programmes;
- Consultations, including an SEA workshop;
- Analysis of the environmental baseline of the region;
- Review of relevant environmental problems and issue; and
- A review of relevant SEA guidance relevant to objectives.

The objectives have been developed to provide a consistent and clear basis for the appraisal of the RTS including its themed groups of measures- and interventions.

4 ENVIRONMENTAL ASSESSMENT OF THE RTS

4.1 ALTERNATIVES

Alternative options have been considered throughout the iterative stages of Strategy development as an integrated part of the process.

Specifically, options have been considered in relation to:

- RTS Objectives;
- RTS Interventions and Measures;
- RTS Preferred Strategy; and
- RTS Alternative Strategies.

Much of the consideration of options was undertaken as part of the staged process of strategy development. However, where alternatives have been explicitly considered in the SEA process, these have been identified in the Environmental Report.

4.2 OBJECTIVES

At an early stage in the development of the RTS a series of objectives was developed through consultation and drawing on relevant other regional strategies and plans and the previous experience of the team. The objectives of the RTS are similar in intention to those in the SEA in that they set the overall framework for the remainder of the strategy. Environmental objectives are included in the RTS objective list and it was important to ensure that these were complementary with the much longer set of SEA environmental objectives. A matrix approach was adopted to assess the consistency of the two sets of objectives. The appraisal indicated that there was generally clear compatibility between the three RTS 'environmental' objectives and many of the SEA objectives. There is also good synergy between a number of the RTS accessibility and safety objectives with the environmental objectives.

4.3 RTS INTERVENTIONS AND MEASURES

The appraisal of the environmental effects of the detailed part of the RTS concentrated on the 11 groups of measures which comprise the Preferred Strategy. These are:

- A: Land use and planning-related measures (including parking strategy);
- B: Information-based measures;
- C: Measures designed to change attitudes and behaviour, including demand management;
- D: Walking and cycling measures;
- E: Bus-based measures;
- F: Rail-based measures;
- G: Measures associated with improving multi-modal interchange;
- H: Community and Demand Responsive Transport;
- I: Road-based measures;
- J: Freight-specific measures; and
- K: Air transport measures.

The approach taken to environmental appraisal has been based on a matrix which has allowed the effects of each individual intervention within each theme to be broadly appraised against each of the SEA objectives. These assessments were necessarily high level due to the limited amount of detail or location-specific information presented in the draft RTS.

The next stage of the environmental assessment involved consideration of the environmental effects of the complete groups of interventions within each of the 11 themes. The findings of the appraisal of each theme are summarised in turn below. The appraisals assume that those groups of interventions that support modal shift and sustainable transport are dependent on effective (and full) implementation of the measures in the RTS.

Land use and planning-related measures

The assessment indicates that the interventions in the land use and planning-related measures theme are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. With regard to the natural and cultural heritage the measures are neutral with no discernible effect.

Information-based Measures

The assessment indicates that the interventions in the information-based measures themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. The interventions proposed in this theme are broadly neutral in their environmental effect on natural and cultural heritage.

Measures designed to change Attitudes and Behaviour

The assessment indicates that the interventions in the measures designed to change attitudes and behaviour themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. The interventions proposed in this theme are broadly neutral in their environmental effect on natural and cultural heritage.

Walking and Cycling Measures

The assessment indicates that the interventions in the walking and cycling measures themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. The interventions proposed in this themed group are broadly neutral in their environmental effect on natural and cultural heritage. Measures are not predicted to result in significant modal shift to directly benefit the National Parks.

Bus-based Measures

The assessment indicates that the interventions in the bus-based measures themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. The interventions proposed in this theme are broadly neutral in their environmental effect on natural and cultural heritage.

Rail-based Measures

The assessment indicates that the interventions in the rail-based measures themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. The interventions proposed in this theme are broadly neutral in their environmental effect on natural and cultural heritage.

Measures associated with improving Multi-Modal Interchange

The assessment indicates that the interventions in the measures associated with the improving interchange themed group are, overall, broadly supportive of the environmental objectives in the SEA for community well-being and material assets and resources. The interventions proposed in this themed group are broadly neutral

in their environmental effect on climate change, natural and cultural heritage. Although in the case of the latter two the initial effect was considered uncertain possibly negative because of the requirement for new infrastructure (e.g. Park and Ride sites) but with mitigation this was likely to be neutral.

Community and Demand Responsive Transport

The assessment indicates that the interventions in the Community and Demand Responsive Transport themed group have, overall, a neutral effect on the environmental objectives in the SEA for all of the SEA objectives. This finding depends upon effective (and full) implementation of the measures in the RTS.

Road-based Measures (Infrastructure-based)

The assessment indicates that the interventions in the road-based infrastructure measures themed group are, overall, uncertain and possibly negative towards most of the SEA environmental objectives. There is the potential for reduction in traffic flows in cities (alleviating congestion) which could benefit local air quality but new roads also have the potential to increase traffic with negative resultant effects on local air quality. Environmental Impact Assessment (EIA) would be required for all new major roads to determine specific effects, inform route choice and the decision making process and identify required mitigation. Also appropriate assessment would be required of all schemes with potential to affect European sites. Implementation of best construction practices would reduce the risk of significant effects.

Road-based measures (Safety and Maintenance-based)

The assessment indicates that the interventions in the road-based health and safety measures themed group are, overall, broadly neutral towards the environmental objectives in the SEA.

Freight-specific Measures

The assessment indicates that the interventions in the freight-specific measures themed group have, overall, a broadly neutral residual effect on the SEA objectives. In some cases the initial assessment indicated an uncertain and possible negative effect if new road infrastructure was needed (e.g. several of the natural and cultural heritage objectives) but with mitigation this was changed to a mainly neutral effect.

Air Transport Measures

The assessment indicates that the interventions in the air transport measures themed group have, overall, a broadly neutral residual effect on the natural and cultural heritage SEA objectives (on the assumption that the level of increase in flight numbers would not be sufficient to cause significant additional disturbance to the Tay SPA and Ramsar site) but are likely to have a negative impact on local air quality and noise. The significance of this cannot be quantified since it would depend on the level of proposed flight increases. Increases in the number of flights would be likely to increase carbon emissions and the effect could only be brought down to a neutral one if a carbon offset scheme was successfully implemented.

4.3 RTS PREFERRED STRATEGY

The Preferred Strategy

It was concluded that when considering the overall Preferred Strategy within the RTS that the effects on carbon emissions, air quality and health were dependant on the reduction in car dependency and promoting more sustainable modes (e.g. cycling and walking). Many interventions in the RTS have the potential to reduce traffic growth (although unlikely to reverse it). Further appraisal of interventions is required to determine the precise effects – some negative effects could result if new road infrastructure leads to traffic growth but some benefits could result from modal shift.

There may be some significant effects on the natural and cultural heritage from new infrastructure projects at some locations. EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Appropriate assessment would be required of all schemes with potential to affect European sites to determine whether the proposals could affect the integrity of the sites. Implementation of best construction practices would reduce the risk of significant effects. Modal shift would have potential to enhance the setting of historic townscapes and features through reductions in traffic flows and congestion etc

It was recommended that TACTRAN should promote information to ensure take-up of more sustainable modes to compensate for potential increases in motorised traffic using new road infrastructure. The majority of the RTS seeks to promote more sustainable transport and achieve modal shift. Success will depend on general raising of awareness on sustainable modes of transport within the region and delivery of committed actions.

Cumulative Effects

The appraisal has highlighted that there is a clear need for joint and co-operative working by the agencies involved in regional planning, development and transport if the potential transport, accessibility and environmental benefits of the RTS are to be realised. The TACTRAN region is predicted to have continued population growth, strong economic development (and associated prosperity) and continued pressure on land, natural and environmental resources. Sustainable allocation of land for development, which is served by accessible and efficient public transport services will be imperative if environmental degradation is to be avoided and the potentially negative effects of increased commuter (and other private) traffic are to be mitigated.

There is a strong potential therefore for the positive environmental effects predicted for the RTS (albeit modest) to be substantially eroded by development resulting from the realisation of other plans and strategies, in particular from structure and local plans. The degree to which this dilution of effect will occur is not possible to accurately predict (hence the high degree of uncertainty reported in the table above) but it is suggested that the relevant regional (and national) agencies involved will need to maintain and develop their plans and strategies in a manner which reflects the priorities placed by the RTS on sustainable forms of transport and reduced traffic-related emissions if the region, and Scotland as a whole, is to achieve internationally and nationally binding commitments on issues such as climate change.

Alternatives

The RTS shows that if certain packages of measures within the Preferred Strategy are given more weight and if some additional interventions are also added then three alternative scenarios could be considered:

- Alternative Strategy 1: Delivering Economic Prosperity
- Alternative Strategy 2: Connecting Communities and Social Inclusion
- Alternative Strategy 3: Environmental Sustainability and Health and Well-being

The appraisal has highlighted that the alternative scenario promoting economic prosperity had a mixed performance with regard to environmental effects. Interventions that promote more air travel and run the risk of increasing road traffic through major new road infrastructure could create problems in delivering RTS environmental objectives although these could be offset by appropriate mitigation. If associated measures in this package achieve modal shift this could help to improve local air quality. The alternative scenario promoting the connection of communities and social inclusion did not create any further issues with regard to the environment and was therefore found to be broadly neutral in terms of the delivery of the RTS Environmental Objectives. As would be expected the scenario promoting environmental sustainability, health and well-being was found to contribute more strongly towards the delivery of the RTS Environmental Objectives in particular the contribution towards reducing greenhouse gas emissions and promoting more sustainable modes of travel.

It was concluded that some measures in the alternative strategies could be added in the Preferred Strategy with additional benefits to the environment.

5 MITIGATION AND MONITORING

5.1 MITIGATION

Mitigation measures, that is, measures to reduce any adverse effects on the environment from measures in the RTS, have been developed throughout the environmental appraisal process. The appraisal of the effects of the RTS assumes implementation of these measures. The approach to mitigation has been to consider measures to avoid, reduce, remedy or compensate for negative and enhancement where possible for positive effects.

The mitigation measures listed in the Environmental Report are necessarily at a strategic level. This reflects the nature of the interventions in the draft RTS on which the SEA has been undertaken. It will be very important, in the implementation of the RTS, that measures and initiatives which have the potential for significant environmental effects are screened for EIA and that Environmental Statements which report the assessments are subsequently produced with robust mitigation measures aimed at avoiding, reducing and where appropriate offsetting significant environmental effects from individual schemes.

In addition, all interventions with the potential to affect sites designated for their European nature conservation importance (Special Protection Areas and Special Areas of Conservation) will be reviewed in more detail and the potential requirement for Appropriate Assessment (that is detailed appraisal of the impacts of proposals on the European sites to check that there would not be significant effects) will be considered by TACTRAN in consultation with Scottish Natural Heritage (SNH).

The responsibility of delivering mitigation will depend on the agreed strategy for responsibility in delivering the measure in the RTS. TACTRAN will, however, take responsibility for ensuring that mitigation is considered as an essential element of any delivery strategy.

5.2 MONITORING

Monitoring indicators have been identified for all of the SEA topics (and relevant SEA objectives) where the assessment of environmental effects has identified that there may be significant, potentially significant or uncertain effects from implementation of the RTS. The purpose of monitoring of the RTS implementation is to ensure the following:

- that the RTS is contributing to the achievement of the SEA objectives;
- that mitigation measures are performing as well as can be expected or require modifying;
- whether any further remedial measures are necessary during the lifetime of the Strategy to mitigate any adverse significant effects which had not been identified previously, or to respond to changes to the RTS in the light of periodic reviews and updates during its lifetime.

It is proposed that the effectiveness and sensitivity of the monitoring indicators is reviewed periodically during the RTS implementation to ensure that the effects and benefits of the Strategy are being appropriately monitored and that monitoring information is proving useful to TACTRAN in its role as the responsible authority for the Strategy.

6 NEXT STEPS

The following stages in the development of the RTS and its environmental assessment will be as follows:

- The Environmental Report, which reports the findings of the SEA of the RTS will be published for consultation around the same time as the draft RTS. This is programmed for late January 2007, and the public consultation period is scheduled to last for eight weeks.
- Following consultation on the draft RTS and the Environmental Report, the RTS will be revised and updated taking account of stakeholder and public comments. If it is necessary, further environmental assessment will be undertaken on revised components of the RTS and the Environmental Report would be amended accordingly.
- Following revision of the RTS, an SEA Statement will be prepared and made available to the Consultation Authorities (and made public) setting out how the findings of public and stakeholder consultation exercise and the environmental assessment have been incorporated into the development of the Regional Transport Strategy.
- It is intended to submit the final RTS and associated documents to the Scottish Ministers by 31st March 2007 for approval and adoption.

7 COMMENTS

Any queries on the SEA of the TACTRAN RTS should be addressed to:

Dr Phil Say, Natural Capital Ltd

1 INTRODUCTION

1.1 STATUTORY CONTEXT FOR THE SEA

The Tayside and Central Scotland Regional Transport Partnership (TACTRAN) is preparing a Regional Transport Strategy (RTS) to cover four council areas (Angus, Dundee City, Perth and Kinross and Stirling) in the Tayside and Central region of Scotland as shown in Figure 1. TACTRAN appointed MVA Consultancy (MVA) as lead consultants to develop the RTS. Natural Capital Limited (NC) is providing environmental support to the team.

The Environmental Assessment (Scotland) Act 2005 requires transport plans and programmes developed by public bodies to be subject to strategic environmental assessment (SEA). Current guidance (specifically the Scottish Executive's March 2006 Guidance on Regional Transport Strategies) also states that SEA will be required for an RTS. The RTS for the TACTRAN region will be a significant plan guiding transport in the area for the following ten to fifteen years and hence there is a clear requirement for SEA of the strategy.

1.2 PURPOSE OF THE ENVIRONMENTAL REPORT

The purpose of this Environmental Report is to set out the findings of an environmental assessment of the draft TACTRAN Regional Transport Strategy. In accordance with Part 2 of the Environmental Assessment (Scotland) Act 2005, the Environmental Report identifies, describes and evaluates the likely significant effects on the environment of implementing the RTS and the reasonable alternatives to the RTS which have been assessed.

The report is intended to provide this information for the SEA Consultation Authorities¹ and the general public during public consultation on the draft Strategy. Further information on consultation for the RTS and SEA is presented in Section 2.8 of this report.

1.3 KEY FACTS ABOUT THE RTS

Name of Responsible Authority	Tayside and Central Scotland Regional Transport Partnership
Title of Plan	TACTRAN Regional Transport Strategy
Requirement of Plan	Section 6 of the Transport (Scotland) Act 2005 requires Regional Transport Partnerships to draw up Regional Transport Strategies in consultation with constituent councils, all health boards wholly or partly owned by the region, and other interested parties.
Plan Subject	The RTS addresses all aspects of transportation, traffic and accessibility
Period Covered by the Plan	The RTS covers a period of between 10 and 15 years from 2007
Frequency of Updates	The Regional Transport Partnership will carry out an annual review of the RTS and it will be refreshed every 4 years

¹ Historic Scotland, Scottish Environmental Protection Agency (SEPA) and Scottish Natural heritage (SNH)

Plan Area	The RTS covers the Local Authority Areas of the TACTRAN Partnership which are Angus, Dundee City, Perth and Kinross and Stirling
Plan Purpose and Objectives	<p>The purpose of the RTS is to outline TACTRAN's transport plans for the region for the future taking account of the national, regional and local context. The RTS addresses a wide range of transport and travel issues and aims to ensure that the future transport needs in the area are addressed by an objective led approach that seeks to contribute to the vision for transport in the TACTRAN area.</p> <p>The TACTRAN vision is: <i>“a transport system, shaped by engagement with its citizens, which helps deliver prosperity and connects communities across the region and beyond, which is socially inclusive and environmentally sustainable and which promotes the health and well-being of all.”</i></p> <p>The draft RTS objectives are as follows:</p> <ul style="list-style-type: none"> • Economy: to ensure transport helps to deliver regional prosperity • Accessibility, Equity and Social Inclusion: to improve accessibility for all, particularly for those suffering from social exclusion • Environment: to ensure the transport system contributes to safeguarding the environment and promotes opportunities for improvement • Health and Well-being: to promote the health and well-being of communities • Safety and Security: to improve the real and perceived safety and security of the transport network • Integration: to improve integration, both within transport and between transport and other policy areas
Contact Point	<p>Queries on the RTS should be addressed to:</p> <p style="text-align: center;">Dr David Connolly, MVA dconnolly@mva.co.uk</p> <p>Queries on the SEA of the RTS should be addressed to:</p> <p style="text-align: center;">Dr Phil Say, Natural Capital Ltd Phil.say@naturalcapital.co.uk (0131 220 6121)</p>

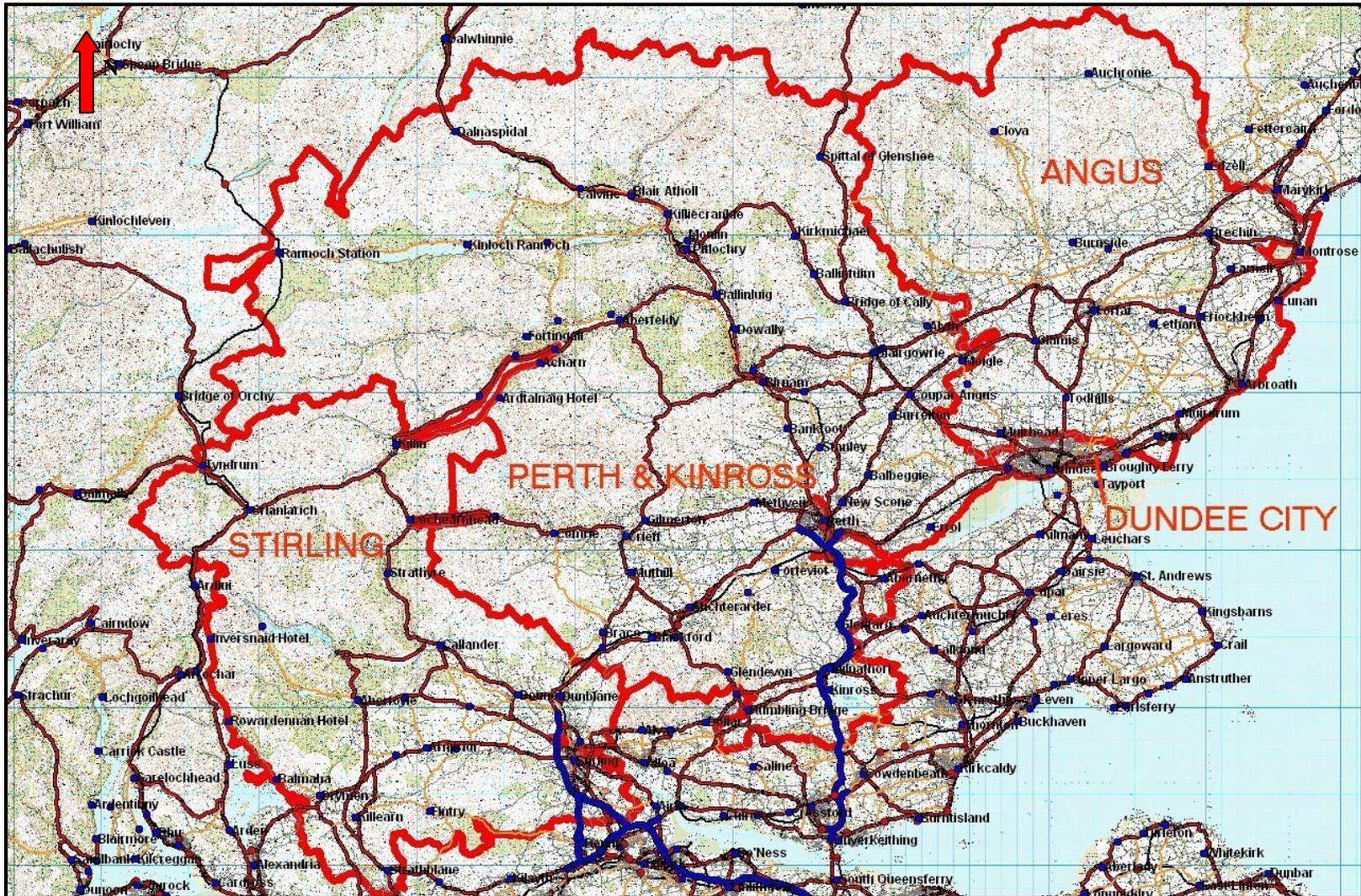


Figure 1: Plan of the TACTRAN Area

© Crown Copyright and/or Database Right. All rights reserved. Licence Number 10013712

natural CAPITAL

mvaconsultancy

DATE:

SEPT 06

DWG SIZE:

A4

DRAWN:

JH

APPROVED:

AS

1.4 SUSTAINABLE DEVELOPMENT

In March 2005 Scotland signed up to a new UK shared framework for sustainable development, *One future – different paths*² which set out a common goal for sustainable development across the UK:

“to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life for future generations”

This framework set out five shared principles of sustainable development:

- *“Living within Environmental Limits”*
- *“Ensuring a Strong, Healthy and Just Society”*
- *“Achieving a Sustainable Economy”*
- *“Promoting Good Governance”*
- *“Using Sound Science Responsibly”*

Scottish Ministers have recently set out their aims for sustainable development in a new strategy *“Choosing our Future – Scotland’s Sustainable Development Strategy”*³. The main thrust of the strategy is enshrined in four key goals:

- *“The well being of Scotland’s people”*
- *“Supporting thriving communities”*
- *“Scotland’s global contribution”*
- *“Protecting Scotland’s natural heritage and resources”*

It is clear that the environmental strand of sustainability will be a key feature within the RTS so testing the strategy against the requirements of the SEA Directive will make sure that the TACTRAN RTS makes a strong contribution to each of these four goals and is effective in protecting the environment whilst supporting sustainable communities.

1.5 SEA ACTIVITIES TO DATE

The following activities have been undertaken to date on the SEA:

- Stakeholder consultation and drafting of proposed objectives for the SEA;
- Preparation of a Scoping Report setting out the proposed approach to the environmental assessment of the RTS and the proposed period for public consultation;
- Submission of the Scoping Report to the Consultation Authorities;
- Review of Consultation Authorities’ responses on the Scoping Report;
- Appraising the consistency of the RTS objectives with the SEA objectives;
- Undertaking the detailed environmental assessment of the policies and interventions in the draft RTS, including alternatives and cumulative effects; and

² One future – different paths – UK Shared Framework for Sustainable Development, DEFRA, 2005

³ “Choosing our Future – Scotland’s Sustainable Development Strategy”, Scottish Executive, December 2005

- Reporting of the environmental assessment in this Environmental Report together with proposals for mitigation measures and monitoring of the implementation of the Strategy.

The next steps for the SEA, including those for public consultation and finalisation and adoption of the RTS are set out in Section 6 of this report.

An extensive process of public and stakeholder consultation on the developing RTS was undertaken to help evolve the RTS with stakeholder inputs. Stakeholder consultation for both the SEA and RTS has been integrated wherever possible to help ensure consistency of feedback and to reflect the importance of addressing environmental issues as a core part of the development of the Strategy. Consultation has been undertaken by various means including:

- Letters to statutory bodies inviting input on sources of information and key issues;
- Feedback from the RTS consultations relevant to the SEA. For example, a series of telephone interviews and stakeholder meetings was held with regional consultees, with environmental issues fed back to the SEA team;
- An SEA workshop was held in August 2006 as part of a larger RTS stakeholder workshop. A range of statutory and non-statutory consultees attended this workshop at which key environmental issues and environmental objectives for the RTS were developed and discussed;
- Statutory consultation with the SEA Consultation Authorities was undertaken in October and November 2006 (via the SEA Gateway) through submission of the SEA Scoping Report. Comments received from the Authorities were reviewed by the SEA team and incorporated where possible into the SEA process. These included amendments to the proposed SEA objectives, baseline information, and issues to take into account in assessment. Further information on the scoping stage of the SEA is presented in Section 2.5 of this report.

Information about the SEA workshop is included in the SEA Scoping Report including the list of attendees, the format of the workshop and a short report of the key outputs obtained from the event. A note of the workshop is presented in Annex A of this report. A summary of comments received from the Consultation Authorities on the SEA Scoping Report, and the way in which these have been reflected in this Environmental Report is presented in Section 2.8 and Annex B.

It is TACTRAN's intention to synchronise the consultation periods for the draft RTS and the Environmental Report in February/March 2007. Both draft documents will be published on the TACTRAN website with the public invited to submit comments. TACTRAN proposals for consultation on the draft RTS and SEA Environmental Report are discussed further in Section 6.

1.6 LAYOUT OF THE REPORT

The remainder of the report is structured as follows:

- Chapter 2 sets out the appraisal methodology;
- Chapter 3 describes the draft RTS setting out its context, outlining the core components that feature in the appraisal and describing the links with other relevant strategies, plans and programmes;

- Chapter 4 presents a summary of the environmental baseline for the Tayside and Central Scotland region which has been used to provide the environmental context for the SEA;
- Chapter 5 reports on the findings of the assessment of the environmental effects and proposed mitigation together with proposals for monitoring; and
- Chapter 6 identifies the remaining stages in the SEA process.

The report has the following associated Annexes:

Annex A	Workshop Summary
Annex B	Summary of Consultation Responses
Annex C	Analysis of Other Strategies, Plans and Programmes
Annex D	Environmental Baseline
Annex E	Matrix Compatibility of SEA and RTS Objectives
Annex F	Appraisal Matrices for RTS Interventions
Annex G	Appraisal Tables for RTS Themed Groups for Measures
Annex H	Appraisal Tables for Road-Based Infrastructure Interventions
Annex I	Appraisal Tables for RTS Preferred Strategy
Annex J	Appraisal Tables for Alternative Strategy Scenarios

A Non Technical Summary of the ER is provided at the front of this document, and is freely available from TACTRAN as a stand alone document.

2 APPRAISAL METHODOLOGY

2.1 INTRODUCTION

This chapter presents the approach which has been adopted for the SEA of the draft RTS. The overall approach and stages in the SEA process are outlined in Section 2.2 and guidance which has been referred to during the process is presented in Section 2.3. Section 2.4 makes brief reference to the process of baseline development and identification of objectives, which have been discussed in more detail in other chapters of this report (see Chapter 4 and Section 2.4 respectively). Sections 2.5 and 2.6 set out the method of appraisal which has been followed for the SEA of the RTS, Section 2.7 discusses the alternatives considered and Section 2.8 evaluates the responses from the statutory consultees on the methodology used.

2.2 OVERALL APPROACH TO SEA

The approach to the SEA has followed a series of defined stages:

- Review of relevant plans and programmes which should underpin the RTS and the SEA of the RTS (see Section 3.3 and Annex C);
- Identification of relevant baseline information for the TACTRAN area (see Section 4.3 and Appendix D);
- Consultation with a wide range of stakeholders to make best use of available relevant environmental information (see Section 2.7 and Annex B);
- Identification of existing and potential future environmental issues and problems which may influence or be influenced by the RTS (see Section 4.5);
- Identification of SEA objectives to guide the RTS appraisal taking account of the objectives in other plans and programmes, the identified issues and the current baseline (see Section 2.4);
- A check for compliance between the developing RTS objectives and the SEA objectives (see Section 5.3 and Annex E);
- Scoping of environmental issues to be appraised in the SEA (see Section 2.5);
- Environmental assessment of the interventions within the draft RTS (the findings of the assessment are reported in Section 5 and in Annexes F to H); and
- Proposals for monitoring of the implementation of the RTS are presented in Section 5.5.

2.3 SEA GUIDANCE

This Environmental Report has been prepared with reference to the following SEA legislation and guidance:

- Environmental Assessment (Scotland) Act 2005;
- Department for Transport (2004) Strategic Environmental Assessment for Transport Plans and Programmes, Transport Analysis Guidance, TAG Unit 2.11;
- European Commission (2001) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites (Oxford Brookes University);

- European Commission DG Environment (2004) Implementation of Directive 2001/42 on the Assessment of the Effects of Certain Plans and Programmes on the Environment;
- Office of the Deputy Prime Minister (2005) A Practical Guide to the Strategic Environmental Assessment Directive;
- Scottish Executive (2003) Environmental Assessment of Development Plans, Interim Planning Advice;
- Scottish Executive (2003) Scottish Transport Appraisal Guidance (STAG); and
- Scottish Executive (2006) Strategic Environmental Assessment Toolkit.

Guidance on the SEA Directive produced by the Office of the Deputy Prime Minister identifies a series of requirements for the SEA, these are summarised in Table 2.1 below along with a comment as to their status on the SEA of the draft RTS.

Table 2.1 SEA Directive Guidance

Requirements		Response within SEA of TACTRAN RTS
a)	Outline of the contents, main objectives of the plan and relationship with other relevant plans	Addressed within the SEA Scoping Report
b)	Relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan	
c)	Environmental characteristics of areas likely to be significantly affected	
d)	Existing environmental problems which are relevant to the plan	
e)	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	
f)	Likely significant effects on the environment	Addressed within this Environmental Report
g)	Measures envisaged to prevent, reduce and as fully as possible offset significant adverse effects on the environment of implementing the plan	
h)	Outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties	
i)	Description of measures envisaged concerning monitoring in accordance with Article 10	
j)	Non-technical summary of the information provided under the above headings	

2.4 SEA OBJECTIVES

SEA objectives were derived at an early stage in the SEA process and refined following the scoping stage taking account of the comments received from the Consultation Authorities. The overall SEA vision and objectives provide the 'framework' for the environmental appraisal and have been drawn up from:

- An extensive review of relevant plans and programmes (see Section 3.3 and Annex B);
- Consultations (see Section 1.6);

- An SEA workshop (see Annex A);
- Analysis of the environmental baseline of the region (see Annex D);
- Review of relevant environmental problems and issues; and
- A review of relevant SEA guidance relevant to objectives.

The SEA vision, objectives and sub-objectives are shown in Table 2.2 below.

Table 2.2 SEA Vision and Objectives**Vision**

To ensure that the RTS contributes to safeguarding the environment, making improvements where possible and promoting sustainable travel choices.

Objectives and Sub-Objectives

Objectives and sub-objectives have been drafted taking account of the issues and trends identified from the review of relevant plans and programmes and those raised in the SEA workshop, and the requirements of SEA and STAG (in terms of environment). Five high level objectives are defined:

1. Climate Change
2. Community Well-being
3. Natural Heritage
4. Cultural Heritage
5. Material Assets and Resources

Sub-objectives have been drafted for each objective:

1. **Climate Change:** *To contribute to reducing carbon emissions through transport measures*
 - To contribute to meeting the Scottish share⁴ in the reduction of carbon emissions
2. **Community Well-being:** *To protect the well being of communities and improve the regional quality of life*
 - To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle
 - To provide sustainable access to employment and essential services
 - To improve air quality in the region and contribute to meeting national air quality and health objectives
 - To reduce transport related noise and vibration pollution
 - To reduce flood risks from transport
 - To reduce the severance effects of traffic and infrastructure on communities
 - To avoid negative impacts from visual intrusion from transport infrastructure

⁴ 1.7M tonnes of carbon in annual savings by 2010

- To contribute to improving health in the region

3. Natural Heritage: *To protect and enhance the natural heritage of the region and beyond*

- To protect and enhance biodiversity
- To minimise the effects of transport on designated areas and protected species
- To protect and enhance the landscape of the region
- To protect watercourses from the impacts of transport and maintain and enhance their water quality
- To protect the region's geomorphology, geology, mineral, soils and peat resources
- To protect the integrity of the region's National Parks against the effects of transport

4. Cultural Heritage: *To protect and enhance the cultural heritage and identity of the region and adjoining areas*

- To protect all (known and unknown) archaeological and historic resources of the region and their settings
- To maintain and enhance townscapes and their settings

5. Material Assets and Resources: *To promote the sustainable use of the region's assets and resources*

- To minimise waste, and recover and recycle, resources efficiently
- To adopt sustainable planning, design and construction methods
- To promote sustainable travel

2.5 SCOPING THE APPRAISAL

In accordance with the Environmental Assessment (Scotland) Act 2005, the study team considered at an early stage in the SEA process whether the environmental effects (positive and negative) of the developing RTS were likely to be significant. An initial scoping assessment was undertaken based on preliminary information about the scope of guidance, measures and interventions in the RTS, the known environmental baseline of the region and the likely environmental issues.

Since there was limited detail available on the nature and proposals for the RTS at the scoping stage, it was not possible to scope out any environmental issues with certainty. All of the environmental topics identified in the scoping report were therefore taken forward for more detailed assessment, the findings of which are presented in Chapter 5 of this Environmental Report.

Although the scoping process did not rule out any environmental issues for analysis, it was based upon significant consultation undertaken early in the RTS development process, including a parallel workshop on the RTS and its SEA. Based on this information, the developing environmental baseline analysis and extensive reviews of other plans and programmes, a series of objectives and sub-objectives were prepared and set out in the Scoping Report. These objectives form the basis of the SEA appraisal framework which is discussed in more detail in Section 2.6 and has been used to assess the various elements of the draft RTS.

2.6 ASSESSMENT METHODS

2.6.1 Assessment of Environmental Effects

A framework approach has been used to evaluate the effects of the RTS. The SEA framework (see Table 2.3) was developed during the scoping stage of the SEA. The SEA objectives and sub-objectives were defined as described above. Appraisal criteria for each objective and sub-objective were identified drawing on feedback from the SEA workshop, the review of baseline information and environmental issues and from the study team's own experience of other SEAs and transport appraisals. These criteria were used to focus the appraisal of the RTS against the SEA objectives. The questions are the basis of those used in each appraisal reported in Chapter 5 and the supporting annexes.

Table 2.3 SEA Appraisal Framework

Objectives	SEA Issues	Sub Objectives	SEA Questions
1. Climate Change <i>To contribute to reducing carbon emissions through transport measures</i>	<ul style="list-style-type: none"> • Climatic factors 	<ul style="list-style-type: none"> • To contribute to meeting the Scottish share in the reduction of carbon emissions 	<ul style="list-style-type: none"> • Does the measure result in a reduction of green house gas emissions? • Will green house gas emissions increase or decrease? • How does the measure affect green house gas emissions? • How will the measure affect traffic flows?
2. Community well being <i>To protect the well being of communities and improve the regional quality of life</i>	<ul style="list-style-type: none"> • Human health • Population • Air 	<ul style="list-style-type: none"> • To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle • To provide sustainable access to employment and essential services • To improve air quality in the region and contribute to meeting national air quality and health objectives • To reduce transport related noise and vibration pollution • To reduce flood risks from transport • To reduce the severance effects of traffic and infrastructure on communities • To avoid negative impacts from visual intrusion from transport infrastructure • To contribute to improving health in the region 	<ul style="list-style-type: none"> • Will the measure result in an increase of NOx and PM10? • Will the measure affect an existing AQMA? • Could the measure result in the designation of additional AQMAs? • Will the measure result in increased traffic in built up areas? • How will the measure affect traffic flows? • How will the measure affect traffic speeds? • Will the measure result in a modal shift from cars and HGVs to more sustainable modes? • Will the measure introduce new or “visually intrusive” infrastructure? • Does the measure promote healthier lifestyles? • Will the measure enhance accessibility? • Will the measure increase community severance?
3. Natural Heritage <i>To protect and enhance the natural heritage of the region and beyond</i>	<ul style="list-style-type: none"> • Biodiversity • Flora and fauna • Landscape • Water • Soil 	<ul style="list-style-type: none"> • To protect and enhance biodiversity • To minimise the effects of transport on designated areas and protected species • To protect and enhance the landscape of the region • To protect watercourses from the impacts of transport and maintain and enhance their water quality • To protect the region’s geomorphology, geology, mineral, soils and peat resources • To protect the integrity of the region’s National Parks against the effects of transport 	<ul style="list-style-type: none"> • Does the measure affect any designated site? • Could the measure affect any protected species? • Could the measure affect any LBAP species or habitats? • Will the measure enhance biodiversity? • How will the measure affect local or regional landscape character? • Will the measure affect any designated sites? • Does the measure enhance regional or local landscape character? • Will the measure give rise to deterioration in water quality? • Will the measure affect the ecological status of the aquatic environment?

Objectives	SEA Issues	Sub Objectives	SEA Questions
			<ul style="list-style-type: none"> • Will the measure adversely affect hydrological or morphological character of watercourses? • Will it result in an increased risk of flooding? • Will the measure be affected by potential flood risk? • Does the measure affect a designated geomorphological site? • Does the measure adversely affect soil quality? • Will the measure affect prime agricultural land? • Will the measure affect or be affected by contaminated land? • Will the measure sterilise an important mineral resource?
<p>4. Cultural Heritage <i>To protect and enhance the cultural heritage and identity of the region and adjoining areas</i></p>	<ul style="list-style-type: none"> • Cultural Heritage 	<ul style="list-style-type: none"> • To protect all (known and unknown) archaeological and historic resources of the region and their settings • To maintain and enhance townscapes and their settings 	<ul style="list-style-type: none"> • Will the measure affect any designated site? • Will it affect the setting of historic sites or resources? • Could it affect any unknown historic and/or archaeological remains? • Will it affect any historic landscapes? • Will the measure adversely affect any important townscapes or conservation areas? • Will it cause loss or damage to a feature of the historic environment? • Will it change surface drainage patterns or local air quality to indirectly affect the setting of an historic site or resource? • Will the measure enhance any townscapes and their settings?
<p>5. Material Assets and Resources <i>To promote the sustainable use of the region's assets and resources</i></p>	<ul style="list-style-type: none"> • Material assets 	<ul style="list-style-type: none"> • To minimise waste, and recover and recycle, resources efficiently • To adopt sustainable planning, design and construction methods • To promote sustainable travel 	<ul style="list-style-type: none"> • Would the measure result in the use of finite resources? • Does the measure result in increased waste generation? • Will the measure encourage recovery and recycling measures? • Will the measure promote waste reduction? • Has sustainability been considered within the measure? • Will the measure promote sustainable design and construction methods? • Will the measure encourage a shift towards more sustainable modes of travel? • Will the measure encourage less of a reliance on fossil fuels?

The framework has been used at different levels of detail according to the nature of the elements of the strategy that have been assessed (i.e. from objectives, through policies, to initiatives and physical measures – see chapter 5). The following approach has been adopted:

- The appraisal of the objectives in the RTS, and testing of their compatibility with SEA objectives was undertaken and is presented in Annex E. This check has been undertaken to ensure initial integration of the issues considered important for the SEA with the RTS. The cells of the matrix have been marked with a tick (✓) where clear compatibility between SEA and RTS objectives has been identified. In cases where there is no clear compatibility, but where there is also no conflict, then the cells have been given a zero (0). In a number of cases the RTS objectives could create either a positive or negative effect on the SEA objective depending on the precise intervention or measures that would be implemented. These are indicated by a question mark followed by both a tick and a cross (?✓/✗).
- The core of the RTS is the series of interventions set out in 11 key categories or groups of measures as follows:
 - A: Land use and planning-related measures (including parking strategy);
 - B: Information-based measures;
 - C: Measures designed to change attitudes and behaviour, including demand management
 - D: Walking and cycling measures;
 - E: Bus-based measures;
 - F: Rail-based measures;
 - G: Measure associated with improving multi-modal interchange;
 - H: Community and Demand Responsive Transport;
 - I: Road-based measures;
 - J: Freight-specific measures; and
 - K: Air transport measures.

Each individual measure, within each group has been assessed using the appraisal matrix and associated questions to determine their compatibility in relation to the SEA objectives and sub-objectives (using the scoring system in Table 2.4). The completed matrices for the interventions are presented in Annex F. The matrix based approach was adopted for the assessment of the individual interventions since the level of detail of many of the interventions was not extensive and there was a limited amount of location-specific information presented in the draft RTS. The evaluation of each specific environmental topic involved review of the intervention and a broadly generic assessment of its environmental effects. The effects recorded in these matrices are the potential environmental effect without consideration of mitigation. It may be helpful for the reader to review these matrices in combination with the information available in the draft RTS Chapter 6 which discusses each intervention within the 11 groups.

- Having appraised each intervention to gain an initial idea of the potential environmental impact a more detailed appraisal worksheet was then used to record the assessment of the environmental effects of the combined

interventions for each of the 11 groups of measures. This worksheet was developed to allow the appraisal team to consider appropriate mitigation and to record the predicted residual effects following mitigation of each group of measures (A to K above) within the draft RTS. The completed worksheets for these combined appraisals are presented in Annex G. When the interventions within Group I, the road-based measures, were considered, there were found to be two further sub-categories of measure – one infrastructure-based (road construction) and one relating to road safety and maintenance. Because these two categories of intervention showed a very different profile during the screening of potential environmental effects (see Annex F) and because it was important not to lose either the positive or negative environmental effects arising from these two sub-categories, Group I was further split into I(1) Infrastructure and I(2) Safety. These were appraised separately (see Annex G).

- The road-based infrastructure related interventions had a degree of site specificity associated with them, and since they came out of the initial screening with negative effects on some of the SEA objectives, it was decided that these three interventions (I1, I2 and I3) should be subject to further more detailed assessment. It was also decided that intervention J2, a freight related measure that includes some road improvements, should also be included in this more detailed assessment since it could involve some road infrastructure work in possibly sensitive locations. The findings for all four appraisals are presented in Annex H. The tables include reference to the SEA objectives and sub-objectives, potential impacts, sensitivity of the resource and scale of impact, mitigation, significance of the effect and associated comments.
- Having completed the assessment of the groups of measures (A to K) and having considered the road-based measures in more detail, the full Preferred Strategy within the RTS was subject to appraisal. The worksheet for the RTS appraisal had a similar format to that used for the groups of measures and is presented in Annex I.
- The draft RTS also presents three alternative strategies. These demonstrate that if certain packages of measures within the Preferred Strategy are given more weight and if some additional interventions are also added then the alternatives that could be considered would be:
 - Alternative Strategy 1: Delivering Economic Prosperity
 - Alternative Strategy 2: Connecting Communities and Social Inclusion
 - Alternative Strategy 3: Environmental Sustainability and Health and Well-being

These three alternatives have been subject to appraisal and the results are presented in Annex J. Again the matrix based approach was adopted for the assessment of the individual additional interventions within the three alternatives since the level of detail of the interventions was not extensive.

In all the appraisals carried out a simple scoring system was used in the matrices and worksheets to assess the environmental effects of the interventions and groups of measures against the SEA framework. This is set out in Table 2.4.

Table 2.4 SEA Framework Scoring System

Clear contribution to the objective (or a strong compatibility/positive effect)	✓✓
Broadly supportive of the objective (or a compatible/positive effect)	✓
Neutral/no effect	0
Negative effect/incompatibility with policy	x
Strongly negative effect/incompatibility with the objective	xx
Uncertain effect (positive/negative)	?✓/x

Environmental effects are generally reported as permanent and/or operational effects from the transport measure, rather than those which might occur during construction (with the exception of very clear potential construction effects e.g. for the Road-based measures which involve the construction of new infrastructure and where a designated site could be affected – see Annex H and Section 2.6.3). All environmental effects reported in the worksheets are presented as residual effects – that is the environmental effect which is predicted following the adoption of the assumed mitigation (see Annexes G to H and Section 5.4).

In undertaking the assessment of specific environmental effects, the appraisal team drew on a number of sources. These included the team’s knowledge of the study area/environmental baseline, best practice guidance for environmental appraisal, and the typical impacts of transport measures on the environment, drawing from previous experience undertaking transport studies.

2.6.2 Cumulative Effects

In undertaking the final appraisals of residual effects it has been important to take account of the scale and nature of the effects. It has been particularly important to consider the potential for indirect and cumulative effects of the measures in the RTS taking account of the likely evolution of the environment without the plan.

The cumulative assessment addresses the following key aspects:

- the cumulative effects arising from the measures in the draft RTS affecting a range of environmental media and receptors (e.g. cumulative effects of transport infrastructure on air quality and tranquillity for groups of receptors); and
- the cumulative effects on one or more environmental resource from implementation of the RTS and any other relevant plan or programme.

The approach to assessing cumulative effects has followed a similar matrix based system to that described above for the appraisal of the themed ‘groups of measures’ (A to K described above).

The matrix used for the analysis of each group of measures (discussed in Section 2.6.1) was developed to undertake an assessment of the cumulative effects of the 11 themed groups of interventions in the draft RTS. This provides an outline assessment of the potential for the combined measures in the draft RTS i.e. the

“Preferred Strategy” to deliver transport and environmental changes which build upon those assessed for each of the groups when taken on an individual basis.

The potential environmental effects of the draft RTS have then been considered in cumulation with those from other strategies and plans. This assessment is necessarily broad brush since the SEA for the draft RTS does not have the resources to undertake a very detailed or quantitative analysis of the effects of other strategies. Since the scope of the RTS is regional, the potential effects of the strategy have been considered in combination with other regional plans and programmes, in particular the land use development plans (Structure Plans), draft National Park Plans, any other relevant regional transport plans such as Core Path Plans and Sustainable Tourism Plans (see Section 3.3).

The completed worksheet for the cumulative assessment of interventions and measures within the RTS (for the Preferred Strategy as a whole) is presented in Appendix J.

2.6.3 Appropriate Assessment

All plans and projects need to be screened in relation to their potential effects on designated sites of European nature conservation importance, in accordance with The Conservation (Natural Habitats, & c.) Regulations 1994 (the Habitats Regulations). Where there is potential for plans to have significant effects on Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) then Appropriate Assessment by the competent authority is required.

The potential for significant effects of the draft RTS on European sites has been considered, based on the physical interventions presented in the strategy. The assessment of the interventions presented in the RTS indicates that very few measures would have physical environmental effects on designated areas (or indeed on non-designated resources).

At this stage, an initial sift of the potential measures and initiatives which *may* have an impact on Natura 2000 sites has been undertaken. The measures which have been identified to have the potential to significantly affect relevant sites (SPAs and SACs) are shown in Table 2.5.

Table 2.5 RTS Interventions Potentially Requiring Appropriate Assessment

Group of Measures	Intervention	Potentially Affected Site
I Road-based Measures	Intervention: IV_I2 – New crossing of the Tay linking the A9 to the A94 north of Scone, including a package of associated bus priority, cycle and pedestrian measures locking in the benefits to Perth city centre	River Tay SAC
	Intervention: IV_I3 – Provision of new link road between A84 Kildean and A9 University completing Stirling’s Outer Ring road, including package of measures of associated bus priority, cycle and pedestrian measures, locking in the benefits to Stirling city centre	River Forth SPA and River Teith SAC
J Freight-specific	Intervention: IV_J2 – Improved road	Montrose Basin SPA, SAC

measures	links to the Ports of Montrose and Dundee and Perth Harbour	(and RAMSAR)
----------	---	--------------

The likelihood of significant effects on the qualifying interests of the relevant site will depend to a great degree on the nature and exact location of the proposed transport measures. These aspects, and other details, are not available at present and it is therefore proposed that as part of the mitigation for this SEA, all interventions with the potential to affect SPAs and SACs will be reviewed in more detail and the potential requirement for Appropriate Assessment will be considered further in consultation with Scottish Natural Heritage (SNH) at the appropriate time.

2.6.4 European Protected Species⁵

The potential for the strategy to affect European Protected Species such as otter, bats, great crested newts, cetaceans etc has been similarly taken into account when undertaking the appraisals of road based measures. Mitigation defines the requirement for surveys to identify appropriate protection measures once projects are defined.

2.6.5 Health Effects

It is generally recognised by SEA practitioners that how health effects are appraised as part of the SEA process is a developing skill⁶. For this appraisal the focus has been on environmental health effects including the benefits or disbenefits the RTS provides in terms of promoting a healthy lifestyle through encouraging sustainable modes of transport such as cycling and walking and discouraging dependency on the car; reducing the adverse effects of noise and poor air quality and promoting beneficial effects from improving opportunities for access to the countryside or important cultural sites. Detailed health effects have not been investigated such as specific effects on asthma or lung disease.

2.7 ALTERNATIVES CONSIDERED

2.7.1 Approach to Alternatives

Alternatives have been considered as an implicit part of the development of the RTS. This section summarises the principal options which have been assessed at each key stage of the RTS and the extent to which environmental issues and analysis were a part of the process of option selection.

Specifically, options have been considered in relation to:

- RTS Objectives;
- RTS Interventions and Measures;
- RTS Preferred Strategy ; and
- RTS Alternative Strategies

These are discussed in the following subsections.

⁵ Those protected under the Habitats Regulations and for which special licence procedures are required if any project has potential to kill or disturb such species

⁶ This comment was echoed at the recent Scottish Executive conference at the launch of the SEA Toolkit (September, 2006)

2.7.2 Objectives

The objectives of the RTS are an important part of the document because they set the context and aspirations against which the measures and themes in the Strategy are intended to deliver. In a similar way to that used for the development of objectives for the SEA (which is described in Section 2.4 of this report), objectives for the RTS were developed in an iterative manner including reviews of relevant strategy and policy and in consultation with member authorities of TACTRAN and a wider group of stakeholders.

Objectives were drafted under the six main categories of:

- Economy
- Accessibility, Equity and Social Inclusion
- Environment
- Health and Well-Being
- Safety and Security
- Integration

In common with the process adopted for SEA objectives, initial long lists of objectives in each category were refined through discussion and consultation to reflect the key priorities for the TACTRAN region. The RTS objectives under the Environment theme were developed in conjunction with the SEA team to ensure that they were consistent with those being proposed for the environmental assessment process.

2.7.3 Measures and Interventions

Early work on the RTS involved the generation of a 'long list' of transport options which was collated from a review of measures in existing transport plans and programmes, measures suggested by the study team and those put forward by member local authorities and stakeholders during consultation (see Section 6 of the draft RTS, and the Issues and Objectives Report⁷). This long list was then categorised into manageable and similar groups of measures and interventions.

A process of option sifting was then undertaken which involved qualitative appraisal of each option using a spreadsheet tool to assess the potential of each measure in relation to each of the RTS objectives. This appraisal included analysis of the environmental implications of each measure which was fed back into the overall scoring process. From this ranking, a number of measures were sifted out from further consideration, and the remaining list of measures was taken forward to provide inputs to the Preferred Strategy section of the RTS (see Section 2.7.4).

2.7.4 Preferred Strategy

The RTS has been developed in a progressive manner which has considered and refined options for objectives and measures as described above. This process has allowed for consideration and appraisal of a broad range of alternatives of all scales (from small interventions to major mode share targets) from the start of the

⁷ MVA Consultancy (August 2006) TACTRAN Regional Transport Strategy: Issues and Objectives.

RTS development, with an ongoing process of refinement following appraisal against the environmental (and other) RTS and SEA objectives. The RTS Objectives together with the three key strategic themes of:

- Delivering economic prosperity
- Connecting communities and being socially inclusive
- Environmental sustainability and promoting health and well-being

(all described in more detail in Section 3.2) effectively set the boundaries for the preferred transport strategy. There were then alternatives to be considered in relation to which interventions should be included in each of the 11 groups that make up the Preferred Strategy, drawing in part on the long lists of measures previously assessed.

The 'preferred draft strategy' which resulted from this process therefore reflects the balance, priorities, consultation and issues which have been assessed and agreed as the RTS has progressed.

2.7.5 Alternative Strategies

The draft RTS also presents three alternative strategies at a high level. These are based on the three strategic themes set out above under the Preferred Strategy. The RTS seeks to demonstrate that by giving additional weight to certain interventions already within the Preferred Strategy and by adding some additional interventions it is possible to define three alternative scenarios where the thrust is more towards either:

1. Economic Prosperity
2. Connecting Communities and Social Inclusion
3. Environmental Sustainability and Health and Well-being

The Preferred Strategy is considered to represent a balanced approach tailored towards meeting the objectives and needs of the TACTRAN area. Views are sought, however, as to whether this is the case or whether additional weight and action should be given to any one of the key strategic themes.

2.8 CONSULTATION AND RESPONSE TO STATUTORY CONSULTATION

2.8.1 Consultation

Stakeholder consultation has been undertaken for the RTS and the SEA by various means including:

- Letters to statutory bodies inviting input on sources of information and key issues;
- Feedback from the RTS consultations relevant to the SEA. This has included a series of interviews either face to face or by telephone with regional consultees where environmental issues have been fed back to the SEA team;
- An SEA workshop was held on 03 August 2006 as part of a larger RTS stakeholder workshop. A range of statutory and non-statutory consultees

attended this workshop at which key environmental issues and draft environmental objectives for the RTS were developed and discussed.

In addition to this some 200 telephone based questionnaires seeking views of the public and businesses on travel and transport issues in Tayside and Central Scotland have been conducted. This included a prioritisation exercise of the approved RTS objectives (which included specific environmental objectives).

Information about the SEA workshop is included in Annex A including the list of attendees, the format of the workshop and a short report of the key outputs obtained from the event.

2.8.2 Response to Statutory Consultation

2.8.2.1 Introduction

The full responses of the three statutory consultees (the Consultation Authorities) – Historic Scotland, the Scottish Environment Protection Agency and Scottish Natural Heritage to the consultation process on the scoping report are provided in Annex B and the table indicates how these comments have been dealt with in the Environmental Report. Where comments have not been taken on board this is explained, or where information will be used at an appropriate stage in the delivery of the RTS this is noted. The responses are summarised below.

2.8.2.2 Historic Scotland

Some comments were provided with regard to the context of the historic environment together with recommendations for the inclusion of one or two more relevant plans and policies for review. These have now been included.

There were also comments with regard to:

- the scope of “population” and “material assets”;
- the consideration of transport infrastructure which may include listed structures or scheduled ancient monuments, for example piers and bridges;
- likely future requests from Historic Scotland that historic landscapes are taken into consideration.

These points have been noted and taken into account in the SEA appraisal as well as other points including:

- consideration of direct and indirect effects on the historic environment;
- how the historic environment might be affected by:
 - construction of new infrastructure;
 - maintenance and management;
- the consideration of accessibility improvement measures.

A note was made of the need to assess alternative options where this is appropriate and document this in the ER.

General satisfaction was expressed in the proposed assessment method with some useful comments on the SEA objectives and questions including references to gardens and designed landscapes and locally important sites.

These points have been taken up and reflected in the ER.

2.8.2.3 Scottish Environment Protection Agency (SEPA)

Comments with regard to the relationship with other plans, programmes and strategies. There was broad agreement with the environmental baseline and the level of detail to be included. There was also satisfaction with the approach to the environmental assessment, including the matrix approach.

2.8.2.4 Scottish Natural Heritage (SNH)

Some suggestions for additional plans and programmes that should be considered including the Biofuels Directive, Disability Discrimination Acts and the draft National Park Plans were made. These have now been included. Some corrections to baseline information with regard to the Rivers Teith and Forth were provided plus a request for information and discussion on access to recreation opportunities, greenspace and lengths of promoted paths and the links to human health and well-being.

A number of points were raised with regard to landscape and biodiversity:

- the need to say more about the sensitivity of landscape to transport developments;
- the need to refer to the level of protection of European sites;
- issues relating to mitigation and possible compensation for losses.

These points have been picked up and addressed in the Environmental Report where appropriate.

The possibility of effects on Natura 2000 sites and the need for appropriate assessment was also raised and these points have been addressed in the Environmental Report.

3 PLAN CONTEXT

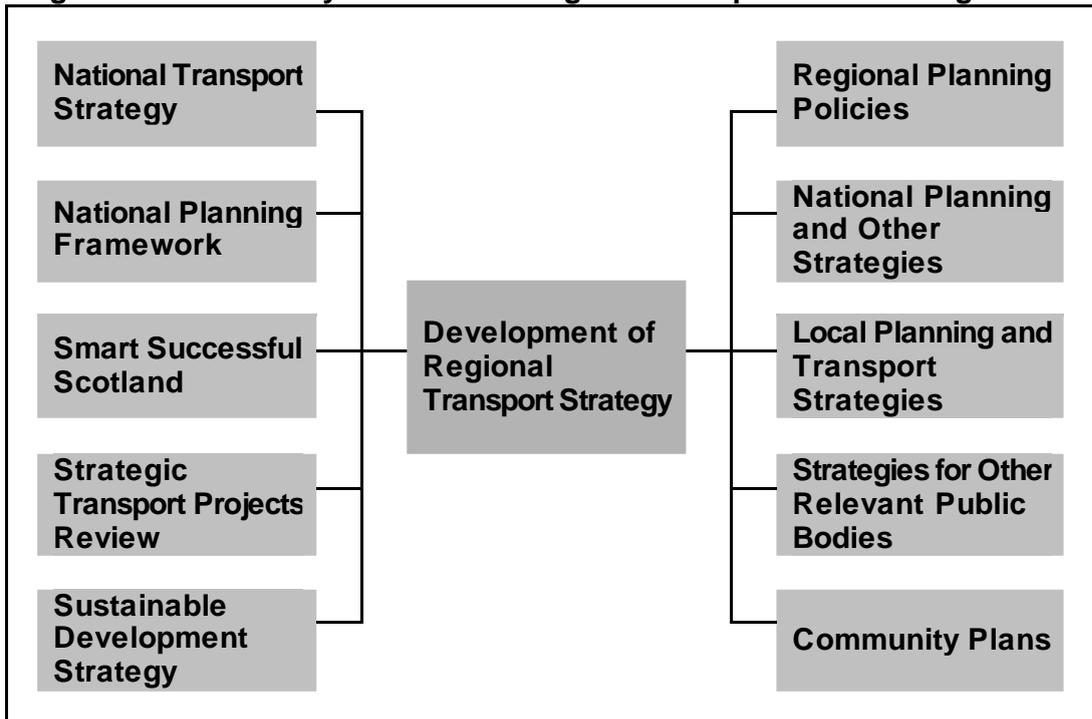
3.1 INTRODUCTION

This section provides the context for the SEA of the RTS. It introduces the statutory background for the RTS (Section 3.2), and presents an outline of the content of the draft RTS (Section 3.3). The context for the SEA has been identified through a review of relevant strategies, plans and programmes to identify relevant issues, baseline information and objectives which in some way are linked with the RTS and/or with the environmental appraisal of the RTS. The findings of this review are presented and discussed in Section 3.4.

3.2 STATUTORY CONTEXT FOR THE RTS

The RTS provides a key input to regional planning policy, local transport strategies and planning, and will also impact on other public bodies such as Health Boards. Feeding into the RTS is the national policy context covering in particular the areas of transport, planning, and economic development. Figure 3.1 illustrates the relationship between core national and regional transport and planning strategy and the RTS.

Figure 3.1 Statutory National and Regional Transport and Planning Context



At the national level the RTS also links closely with planning, regeneration and economic development strategy. For example, the Scottish Executive’s *Regeneration Policy Statement* and *Closing the Opportunity Gap* documents emphasise the role of transport in regenerating programmes.

The RTS for Tayside and Central Scotland, along with those being produced by the other six Regional Transport Partnerships forms a key part of the transport strategy and planning process in Scotland and critically, are intended to support the aims and objectives of the National Transport Strategy (NTS). The vision and

objectives of the RTS in particular have been developed to be compatible with those of the NTS to ensure that consistency of strategy is tiered down from the national to regional level.

The RTS will also integrate closely with strategies and plans dealing with land use, particularly given the messages in the RTS regarding the importance of the relationship between transport and land use planning. The degree to which implementation of the strategy will be successful in tackling problems of accessibility and reducing car based trips (particularly for commuting) depends upon complementary activity in land use planning. The linkages between the RTS and Structure and Local Plans is clear and has influenced the objectives and policies of the RTS and the SEA.

A range of authorities and stakeholders will be involved in the delivery of the objectives which are set out in the RTS, once it is finalised. Although the RTS presents a series of possible transport initiatives and measures, the delivery of transport proposals and projects will be partly taken forward by the constituent local authorities in TACTRAN in partnership with public transport operators. In this respect the RTS links closely with, and provides a steer for, the Local Transport Strategies (LTSs) which are developed by each local authority. Other projects, which require involvement and/or financing at the national level, will be delivered in partnership with the Scottish Executive and Transport Scotland following an appraisal of all national projects via the Strategic Transport Projects Review (STPR). The degree to which TACTRAN, as the Regional Transport Partnership, will become directly involved in implementation of projects and proposals in the RTS will depend upon its future statutory status (and the partnership 'model' it wishes to adopt) and the level of funding available for the Strategy, which is discussed in Section 7.5 of the draft RTS.

The SEA which is reported in this Environmental Report has also drawn closely from, and links with, a wide range of relevant national and regional strategy and policy. As part of the process of establishing the context for the SEA, relevant transport, planning and environmental plans and programmes have been reviewed and relevant objectives and other information incorporated into the SEA (see Section 3.4).

3.3 TACTRAN RTS - OUTLINE AND OBJECTIVES

3.3.1 Outline

The draft RTS has been developed through a process of consultation, stakeholder workshops, transport and environmental analysis and strategy drafting through the second half of 2006. The draft RTS document sets out the context for the Tayside and Central Scotland region, describing the important transport and accessibility trends and issues across all modes of travel, which draws on the extensive public and stakeholder consultation undertaken during the Strategy development process. The document then sets out, in a series of chapters, the core components of the RTS which can briefly be described as:

- RTS Vision and Objectives
- RTS Preferred Strategy and Alternatives Considered
- RTS Interventions packaged into 11 groups to deliver three key strategic aims:

- Delivering economic prosperity
- Connecting communities and being socially inclusive
- Delivering environmental sustainability and health and well-being

The latter sections of the document address delivery, funding and monitoring. The core elements of the Strategy, which are of most relevance to the environmental assessment of the RTS, are described in more detail in the remainder of this section. The full draft RTS can be accessed and downloaded from the TACTRAN website at the following address:

- www.tactran.gov.uk

3.3.2 RTS Objectives

The RTS has six high level objectives each supported by sub-objectives, giving altogether a package of 18 objectives. These are:

Objective 1 – Economy: To ensure transport helps to deliver regional prosperity.

Related sub-objectives:

1. To ensure that transport infrastructure and services in the region help deliver economic growth, particularly in key business and employment sectors;
2. To improve the efficiency, reliability and integration of the movement of goods and people; and
3. To address issues of peripherality associated with the TACTRAN area.

Objective 2 – Accessibility, Equity and Social Inclusion: To improve accessibility for all, particularly for those suffering from social exclusion.

Related sub-objectives:

4. To improve access to employment;
5. To improve access to public services, including health and education;
6. To improve access to retail, recreation and leisure facilities;
7. To reduce severance and social and economic isolation caused by transport, or by a lack of it; and
8. To improve the accessibility and inclusivity of the transport system.

Objective 3 – The Environment: To ensure that the transport system contributes to safeguarding the environment and promotes opportunities for improvement.

Related sub-objectives:

9. To contribute to the achievement of the Scottish national targets and obligations on greenhouse gas emissions;
10. To promote a transport system that respects both the natural and the built environment; and
11. To promote a shift towards more sustainable modes.

Objective 4 – Health and Well-Being: To promote the health and well-being of communities.

Related sub-objectives:

12. To help meet or better all statutory air quality requirements in the TACTRAN area; and
13. To promote a culture of active and healthy travel.

Objective 5 – Safety & Security: To improve the real and perceived safety and security of the transport network.

Related sub-objectives:

14. To improve transport-related safety; and
15. To improve real or perceived levels of personal security on the transport network.

Objective 6 – Integration: To improve integration, both within transport and between transport and other policy areas.

Related sub-objectives:

16. To improve integration of the transport modes;
17. To ensure integration with land-use planning; and
18. To ensure a fit with other relevant national, regional and local strategies and policies.

These objectives have been used to guide the identification of options and packages of measures which have been considered and assessed in the development of the Preferred Strategy and also possible Alternative Strategy Scenarios.

3.3.3 Preferred Strategy Interventions

The package of interventions (described in Chapter 6 of the Draft RTS) is the core part of the RTS and has been set out in the suite of 11 categories or groups of measures described in section 2 as follows:

- A: Land use and planning-related measures (including parking strategy);
- B: Information-based measures;
- C: Measures designed to change attitudes and behaviour, including demand management;
- D: Walking and cycling measures;
- E: Bus-based measures;
- F: Rail-based measures;
- G: Measure associated with improving multi-modal interchange;
- H: Community and Demand Responsive Transport;
- I: Road-based measures;
- J: Freight-specific measures; and
- K: Air transport measures.

The proposed interventions arranged under these headings with associated proposed actions are summarised in Table 3.1.

Table 3.1 Themed Groups of Interventions or Measures within the Preferred Strategy

Group	Interventions and Actions
<p>A: Land use and planning-related measures (including parking strategy)</p>	<p>IV_A1 – Land-use planning policy and controls to help reduce the need to travel, particularly by private car Action A1.1: Engage with Planning Authorities in the TACTRAN area and relevant City Regions to ensure TACTRAN's RTS is fully integrated within appropriate planning documents at the early development stage of these documents. Action A1.2: Consider establishing regional best practice on the transportation aspects of development control. Action A1.3: Ensure that TACTRAN is engaged in consideration of strategic land-use planning across the region at an early stage. Action A1.4: Encourage the provision of appropriate services within the community in support of the development of sustainable communities and reducing the need to travel. Action A1.5: Liaise with Transport Scotland and the potential providers of relevant transport and accessibility-planning models to ensure that suitably-robust models are available for any forthcoming scheme design and appraisal work.</p> <p>IV_A2 - Travel Plan Guidance and Support to Large Employers Action A2.1: Engage with relevant organisations to encourage them to design and adopt effective Travel Plans, focussing initially on Councils, Health Boards and other major employers, particularly those with the most acute transport/ parking problems.</p> <p>IV_A3 – A consistent framework for parking standards at new developments Action A3.1: TACTRAN will work with its constituent Local Authorities to develop a consistent framework of parking standards for new developments.</p> <p>IV_A4 – Improved access to Health Care Action A4.1: TACTRAN will liaise closely with Health Boards in any review of their care and transport-related services and ensure that TACTRAN are consulted on any future changes to health care provision which have transport implications.</p>
<p>B: Information-based measures</p>	<p>IV_B1 – Develop, maintain and deliver a Regional Travel Information Strategy Action B1.1: Develop a regional Travel Information Strategy, building on the existing initiatives. Action B1.2: Develop, promote and maintain a comprehensive Travel Information System, covering all modes and users and make this information available in hard-copy and on-line formats. Action B1.3: Ensure that the specific needs of disabled and other disadvantaged groups are addressed in the proposed Travel Information Strategy. Action B1.4: Seek to extend Real Time Information systems already covering parts of the region to other key areas/corridors/routes, ensuring common regional and cross-regional approaches where possible. Action B1.5: Work closely with Councils, Visit Scotland, and the two National Park Authorities to help visitors access tourist attractions by the most-appropriate and most sustainable mode</p>
<p>C: Measures designed to change attitudes and behaviour, including demand management</p>	<p>IV_C1 – Use of awareness campaigns to increase the use of sustainable transport modes and/or reduce overall travel Action C1.1: TACTRAN will collate and tailor Best Practice in the delivery of 'Hearts and Minds' campaigns for changing traveller attitudes and behaviour. Action C1.2: TACTRAN will invest in advertising and Hearts and Minds campaigns which have been shown to be effective in delivering 'Smarter Choices' cost-effectively. Action C1.3: TACTRAN will work with Councils, Community Planning Partnerships and major employers to seek to promote flexible working and school hours to reduce peak demands on the transport system.</p> <p>IV_C2 – Promote Regional Car-sharing Schemes Action C2.1: TACTRAN will seek to develop <i>dundeeliftshare.com</i> into a region-wide car-share scheme.</p> <p>IV_C3 – Establish Strategic Parking Policy Framework Action C3.1: TACTRAN will consider the need for a strategic parking policy, particularly for areas where parking demand is exceeding, or will shortly exceed supply and/or where congestion and air quality issues warrant</p>

Group	Interventions and Actions
	<p>additional car traffic demand management measures.</p> <p>IV_C4 – Develop measures to help encourage sustainable tourism Action C4.1: TACTRAN will work closely with Visit Scotland and others to identify and help deliver a range of measures targeted specifically at encouraging tourists to make full use of the more-sustainable transport modes.</p>
<p>D: Walking and cycling measures</p>	<p>IV_D1 - Develop, deliver and monitor a Walking and Cycling Strategy for the Region Action D1.1: TACTRAN will work closely with relevant stakeholders to develop a Walking and Cycling Strategy for the region. Action D1.2: TACTRAN will collate good practice on cycling infrastructure, as a resource available to local authorities, public transport providers, developers and other key stakeholders. Action D1.3: TACTRAN will identify and promote walking and cycling improvements to the major nodes on the transport network, starting with the public transport stops/interchanges which are most heavily used and to which access is currently poorest. Action D1.4: TACTRAN will investigate the development of urban walking and cycle networks, as identified by Action D1.1 and incorporating Good Practice identified by Action D1.2 Action D1.5: TACTRAN will investigate the development of on and off-road walking and cycle networks connecting rural localities to key destinations, including hospitals, colleges, employment areas and towns.</p> <p>IV_D2 – Safer Routes to School Action D2.1: TACTRAN will establish and maintain an inventory of current practice regarding the provision of ‘Safer Routes to School’ which encourages healthy travel habits, amongst its four constituent Authorities and help identify any significant gaps in this provision.</p>
<p>E: Bus-based measures</p>	<p>IV_E1 – Quality Bus Partnerships Action E1.1: TACTRAN will work in close partnership with Councils, bus operators and other relevant stakeholders to identify and deliver improvements to the quality of vehicles, services and facilities across the Region, particularly maximizing funding and grant opportunities in support of these measures. Action E1.2: TACTRAN will seek to achieve minimum standards of public transport infrastructure and service frequencies across the area, through partnership with operators. Action E1.3: TACTRAN will work closely with bus operators and Councils to tackle the main sources of delays to buses and improve bus journey times on the strategic network.</p> <p>IV_E2 – Review Bus Frequency on Key Commuter Corridors Action E2.1: TACTRAN will examine the need for additional peak-hour bus services on key commuter corridors, particularly those which have been shown to have higher levels of car usage than other, similar corridors, including a complementary package of associated bus priority, cycle lanes and facilities and pedestrian access measures.</p> <p>IV_E3 – Redevelop or replace Arbroath bus station Action E3.1: TACTRAN will endeavour to procure funding to help deliver significant improvements to Arbroath bus station.</p>
<p>F: Rail-based measures</p>	<p>IV_F1 – Fast hourly rail service between Aberdeen and Edinburgh supported by semi-fast rail service from Dundee to Edinburgh Action F1.1: TACTRAN will continue to support and promote proposals for additional rail services between Dundee and Edinburgh.</p> <p>IV_F2 – Improved rail services between Perth and Edinburgh Action F2.1: TACTRAN will continue to support and promote proposals for line-speed enhancements between Perth and Ladybank. Action F2.2: TACTRAN will support and promote proposals for an hourly rail service between Edinburgh and Perth.</p> <p>IV_F3 – Additional hourly rail service between Arbroath and Perth as recommended by the Tay Estuary Rail Study (TERS)) and possible extensions of this service to Stirling or Glasgow Action F3.1: TACTRAN will work with Transport Scotland, First ScotRail and Network Rail to update the business case for the proposed TERS Rail Service, and possible extensions, and ensure that these services are fully assessed as part of the Strategic Transport Projects Review. Action F3.2: TACTRAN will support and promote rail infrastructure</p>

Group	Interventions and Actions
	<p>enhancements proposed under TERS, including a new Dundee West Station and station enhancements at Montrose, Arbroath, Carnoustie, Broughty Ferry, Dundee and Perth, and possible new stations at locations such as Blackford and Greenloaning.</p>
<p>G: Measures associated with improving Multi-Modal Interchange</p>	<p>IV_G1 – Bus-based Park and Ride/Park and Choose network in Dundee, Perth and Stirling Action G1.1: TACTRAN will assess the potential for enhanced Park and Ride /Park and Choose networks in the Perth, Stirling and Dundee areas, including “Inter-Urban” Park and Ride allowing for longer distance travel on bus.</p> <p>IV_G2 – Additional improvements to Dundee rail station, including improved multi-modal interchange, as part of the major development of the Dundee Waterfront Action G2.1: TACTRAN will endeavour to procure any additional funding needed to help deliver significant improvements to Dundee railway station.</p> <p>IV_G3 – Upgrading of the rail and bus stations in Perth, to provide a high quality integrated multi-modal interchange facility, along with improved links to the main town centre. Action G3.1: TACTRAN will endeavour to procure funding to help deliver significant improvements to Perth’s main rail and bus stations and associated links to the city centre.</p> <p>IV_G4- Upgrading of Stirling bus station to provide full integration with the railway station. Action G4.1: TACTRAN will endeavour to procure funding to help deliver significant integration improvements at Stirling’s bus and rail station.</p> <p>IV_G5- Rail Based Park and Ride Enhanced Car Parking and passenger facilities at Key Rail Stations Action G5.1: TACTRAN will liaise with Transport Scotland and Network Rail and support a review of station car parking provision aimed at encouraging modal shift in favour of rail. Action G5.2: TACTRAN will support the development of a new Park and Ride station at Bannockburn. Action G5.3: Ensure that the specific needs of disabled and other disadvantaged groups in accessing and using rail station are addressed.</p> <p>IV_G6 - Integrated Ticketing Schemes Action G6.1: TACTRAN will work with Transport Scotland, main public transport providers, and neighbouring Regional Transport Partnerships to develop integrated ticketing schemes, building on recently-introduced Smartcard technology introduced under National Concessionary Travel schemes.</p>
<p>H: Community and Demand Responsive Transport</p>	<p>IV_H1 – Region-wide co-ordination of Community Transport Action H1.1: TACTRAN will investigate the benefits of establishing a forum for the regional co-ordination of Community Transport provision and development, in consultation with Community Transport providers, Health Boards and other stakeholders.</p> <p>IV_H2 – Expansion of Demand Responsive Transport services Action H2.1: TACTRAN will investigate the potential for expansion of Demand Responsive Transport provision across the area and the development of a regional framework of DRT service provision.</p> <p>IV_H3 – Consideration of a TACTRAN-wide Taxi-Card scheme Action H3.1: TACTRAN will consider the need for establishing a Region-wide Taxi-Card scheme for the benefit of those who are unable to use conventional bus services.</p>
<p>I: Road-based measures</p>	<p>IV_I1 – A90 Outer Bypass of Dundee including investigation of all options for A90 corridor through Dundee, including a package of associated bus priority, cycle lanes and pedestrian measures on or across the Kingsway, locking in the benefits to Dundee City. Action I1.1: TACTRAN will seek to ensure that the A90 Outer Bypass of Dundee and other options for improving the A90 through Dundee are included in the Strategic Transport Projects Review. Action I1.2: TACTRAN will promote an associated package of measures of bus priority, cycle lanes and pedestrian facilities designed to lock in the benefits of Action I1.1 above.</p> <p>IV_I2 – New crossing of the Tay linking the A9 to the A94 north of Scone,</p>

Group	Interventions and Actions
	<p>including a package of associated bus priority, cycle and pedestrian measures locking in the benefits to Perth city centre. Action I2.1: TACTRAN will continue to fund development work on a new A9/A94 link-road and associated package of pedestrian, cycling and bus priority measures in Perth. Action I2.2: TACTRAN will seek to ensure that this project is included in the Strategic Transport Projects Review.</p> <p>IV_I3 - Provision of new link road between A84 Kildean and A9 University, and a new M9/A811 interchange, completing Stirling’s Outer Ring road, including package of associated bus priority, cycle and pedestrian measures, locking in the benefits to Stirling City centre. Action I3.1: TACTRAN will promote development work on the A84/A9 link-road to the west of Stirling and associated package of pedestrian, cycling and bus priority measures in Stirling City center and seek to ensure that this project is included in the Strategic Transport Projects Review. Action I3.2: TACTRAN will seek to ensure that the M9/A811 interchange is included in the Strategic Transport Projects Review. Action I3.3: TACTRAN will promote an associated package of measures of bus priority, cycle and pedestrian facilities designed to lock in the benefits of the M9/A811 interchange.</p> <p>IV_I4 - Road safety improvements on A92 north of Arbroath Action I4.1: TACTRAN will continue to work closely with Angus Council to deliver a programme of road safety measures for the A92 north of Arbroath.</p> <p>IV_I5 – Regional Road Safety Plan Action I5.1: TACTRAN will investigate the potential for adopting a Regional approach to road casualty reduction and associated road safety education campaigns.</p> <p>IV_I6 – Assist Local Authorities in securing additional resources to tackle the maintenance backlog on roads, bridges and street lighting Action I6.1: TACTRAN will support Councils in securing additional Grant Aided Expenditure funding for transport-related maintenance across the region.</p> <p>IV_I7 – Meeting the needs of car and coach-based tourists Action I7.1: TACTRAN will work closely with VisitScotland and the Scottish Executive/Transport Scotland to help deliver measures designed to improve the safety and quality of experience of car and coach visitors to the region.</p>
<p>J: Freight-specific measures</p>	<p>IV_J1 – A Regional Freight Quality Partnership Action J1.1: TACTRAN will seek to establish a TACTRAN-wide Freight Quality Partnership, in liaison with freight interests and Councils - drawing upon established guidance, to help deliver cost-effective packages of freight-related interventions across the region.</p> <p>IV_J2 - Improved road links to the Ports of Montrose and Dundee and Perth Harbour Action J2.1: TACTRAN will investigate improved road links to Montrose and Dundee ports and Perth harbour.</p> <p>IV_J3 – Regional Rail Freight Facilities Action J3.1: TACTRAN will liaise with relevant stakeholders to investigate the potential for regional rail freight facilities, including the possibility of inter-modal transfer between road, rail and sea-borne freight at one or more of the three main ports.</p>
<p>K: Air transport measures</p>	<p>IV_K1 – Additional air services from Dundee Airport Action K1.1: TACTRAN will work with relevant airport authorities to promote flights from Dundee to new UK and European destinations.</p> <p>IV_K2 – Improved terminal and other facilities at Dundee airport Action K2.1: TACTRAN will support the development of enhanced facilities at Dundee airport to cater for passenger growth, as identified in Scotland’s National Transport Strategy.</p>

3.3.4 Summary

The preceding sections and tables have presented a summary of the content, structure and measures within the draft RTS. This is important for the SEA since the approach which has been adopted to the environmental appraisal (see Chapter 2 of this report) and the reporting of the findings of the assessment (see

Chapter 5) have followed the grouping of themed interventions set out in the draft strategy.

3.4 LINKS TO OTHER RELEVANT POLICIES, PLANS AND PROGRAMMES

An understanding of the relevance of other legislation, policy and plans to the RTS is an essential step in understanding the context for the RTS, the relationship with other strategies and in deriving the necessary environmental baseline for the assessment.

Over one hundred of other plans, programmes and environmental strategies/objectives have been reviewed during the scoping stage of the SEA. In order to ensure a consistent and rigorous approach to the review process, a proforma table was developed so that the necessary environmental information, objectives and issues could be identified from each strategy and plan reviewed by the SEA team. This table was derived from various sources of current SEA guidance (including tables presented in the pilot SEA templates) in order to make it relevant to the SEA of the draft RTS.

Completed proformas for each strategy and plan reviewed are included in Annex C. A summary of the key information identified from this process, including the relationship between the RTS and the most relevant plans that have been reviewed is presented in Table 3.2. This table includes regional and the key local level plans and programmes only since it has been assumed that relevant international and national legislation and policy have been incorporated at the regional and local level. National level plans have been included in the review presented in Annex C.

In Table 3.2 a column is included which indicates how the relevant plans and programmes have influenced the development of the SEA objectives. The draft SEA objectives are presented in Section 2.4.

Table 3.2 Relationships with other Plans, Programmes and Environmental Objectives

Name of Plan	Main Requirements of Plan	How it affects or is affected by RTS	Implications for the SEA	Relevant SEA Objective
NHS Tayside Health Plan 2005	Sets out aims, objectives, targets and vision for improving health in the Tayside region	Human Health: link between road traffic & human respiratory health Population: transport has a role to play in accessibility of health services particularly by public transport & non motorised modes	<ul style="list-style-type: none"> Will expect RTS to promote schemes that minimise congestion and create corresponding benefits for local air quality and human health Will expect RTS to facilitate access to essential health services via public transport minimising reliance on car 	<ul style="list-style-type: none"> Community well being
Tayside Waste Area, Draft Area Waste Plan, 2002	Sets out a framework within which the Tayside area can reduce waste production and increase sustainable waste management	Air Quality: aiming to reduce the environmental impact of waste infrastructure Population: providing accessible recycling points	<ul style="list-style-type: none"> Will expect RTS to promote schemes that will facilitate waste transport within the area Accessibility to waste recovery and recycling centres will need to be addressed and schemes promoting better links encouraged 	<ul style="list-style-type: none"> Climate change Material assets and resources Community well being
Tay – Estuary Rail Study 2003	Document presenting the findings from a study in order to improve the local relevance of rail services in the Tay Estuary area	Population: improving transport links and accessibility for the areas population	<ul style="list-style-type: none"> Will expect RTS to promote the use of public transport, specifically rail links, through park and ride schemes etc Will expect RTS to provide accessibility to services. 	<ul style="list-style-type: none"> Material assets and resources Community well being
Surrounding Scottish Local Authority Structure Plans (Summary)	Set out a vision for the future sustainable development of the Local Authority areas	Population: improving transport links & therefore accessibility & the promotion of economic growth creating employment opportunities Human Health & Safety: promotion of sustainable and healthy modes of transport Air Quality, Climate Change: aims to encourage more sustainable pattern of development Cultural Heritage, Landscape and Townscape: aims to promote the	<ul style="list-style-type: none"> Will expect RTS to promote schemes that improve access to employment, essential services and community facilities Will expect a focus on schemes encouraging a modal shift away from the car and on to public transport, cycling and walking to help improve road safety and promoting healthier lifestyles Will expect RTS to promote schemes that encourage modal shift to cycles and walking and other more sustainable forms of transport reducing reliance on the car and helping to cut CO2 emissions 	<ul style="list-style-type: none"> Community well being Climate change

Name of Plan	Main Requirements of Plan	How it affects or is affected by RTS	Implications for the SEA	Relevant SEA Objective
		maintenance and enhancement of the cultural heritage, including landscape and Gaelic language		
Surrounding Scottish Local Authority Local Plans (Summary)	Set out the local development planning framework for various local authority areas	<p>Climate Change, Human Health, Air Quality: a move towards all development as sustainable in turn having a positive impact on the above areas</p> <p>Human Health & Population: encouraging sustainable modes of transport and increased public transport leading to accessibility and healthier lifestyles</p> <p>Landscape & Townscape & Cultural Heritage: aims to preserve these and ensure that transport networks promote & enhance rather than hinder these</p>	<ul style="list-style-type: none"> • Will expect a focus on schemes encouraging a modal shift away from the car and on to public transport, cycling and walking to help improve road safety, cut emissions and improve air quality and promote healthier lifestyles • Will expect RTS to promote schemes that encourage modal shift to cycles and walking and other more sustainable forms of transport reducing reliance on the car and helping to cut CO2 emissions • Will expect RTS to address minimising transport effects on landscape, townscape and cultural heritage 	<ul style="list-style-type: none"> • Community well being • Climate change • Natural heritage • Cultural heritage
TACTRAN area Local Authority Structure Plans (Summary)	Strategic land use planning framework with direct reference to the Town and Country Planning (Scotland) Act 1997 and Town and Country Planning (Structure and Local Plans) (Scotland) Regulations 1983	<p>Material Assets: identifies requirements for new transport infrastructure as part of overall land use planning</p> <p>Population: improving transport links & therefore accessibility</p> <p>Human Health & Safety: encouragement of sustainable modes of travel (cycling, walking) and reduced numbers of private vehicles on road leading to improved health and safety</p> <p>Climate Change: encouragement of sustainable modes of travel, increased accessibility & improved transport networks lead to less private car use, congestion & therefore impacts less on climate change</p>	<ul style="list-style-type: none"> • Will expect RTS to promote schemes that make use of more sustainable design and construction methods in the development of road infrastructure • Will expect RTS to promote schemes that improve access to employment, essential services and community facilities • Will expect RTS to promote schemes that encourage modal shift to cycles and walking and other more sustainable forms of transport reducing reliance on the car, helping to cut CO2 emissions, improving air quality and promoting healthier lifestyles 	<ul style="list-style-type: none"> • Material assets and resources • Community well being • Climate change

Name of Plan	Main Requirements of Plan	How it affects or is affected by RTS	Implications for the SEA	Relevant SEA Objective
		<p>Cultural Heritage, Landscape and Townscape: aims to promote the maintenance and enhancement of the cultural heritage, including landscape and Gaelic language</p>		
<p>TACTRAN area Local Authority Local Plans (Summary)</p>	<p>Sets out each Local Authority's local planning framework</p>	<p>Climate Change, Human Health, Air Quality: a move towards all development as sustainable in turn having a positive impact on the above areas</p> <p>Human Health & Population: encouraging sustainable modes of transport and increased public transport leading to accessibility and healthier lifestyles</p> <p>Landscape & Townscape & Cultural Heritage: aims to preserve these and ensure that transport networks promote & enhance rather than hinder these</p>	<ul style="list-style-type: none"> • Will expect a focus on schemes encouraging a modal shift away from the car and on to public transport, cycling and walking to help improve road safety, cut emissions and improve air quality and promote healthier lifestyles • Will expect RTS to promote schemes that encourage modal shift to cycles and walking and other more sustainable forms of transport reducing reliance on the car and helping to cut CO2 emissions • Will expect RTS to address minimising transport effects on landscape, townscape and cultural heritage 	<ul style="list-style-type: none"> • Community well being • Climate change • Natural heritage • Cultural heritage
<p>TACTRAN area Local Transport Strategies (Summary)</p>	<p>Sets out each Local Authority's plans, policies, projects and vision for transport</p>	<p>Human Health & Safety: encouragement of sustainable modes of travel (cycling, walking) and reduced numbers of private vehicles on road leading to improved health and safety</p> <p>Air Quality & noise: aim to reduce congestion, noise & increase public and sustainable transport use which improves air quality</p> <p>Population: improving access to amenities & employment</p> <p>Climate Change: aim to reduce negative impact of transportation & transport</p>	<ul style="list-style-type: none"> • Will expect RTS to promote schemes that encourage modal shift to cycles and walking and other more sustainable forms of transport reducing reliance on the car, helping to cut CO2 emissions, improving air quality and promoting healthier lifestyles • Will expect RTS to promote schemes that minimise congestion and create corresponding benefits for local air quality and human health • Will expect RTS to promote schemes that improve access to employment, essential services and community facilities 	<ul style="list-style-type: none"> • Material assets and resources • Natural heritage • Community well-being

Name of Plan	Main Requirements of Plan	How it affects or is affected by RTS	Implications for the SEA	Relevant SEA Objective
		infrastructure on the environment & therefore climate change		
TACTRAN area Local Authority Local Biodiversity Action Plans (Summary)	Local Biodiversity Action Plan	Biodiversity: sets out objectives for habitat conservation which need to be taken into consideration in the RTS development	<ul style="list-style-type: none"> Will expect RTS to promote schemes that help to conserve and enhance biodiversity Where possible the RTS should encourage schemes that do not impact negatively on priority habitats and species (at UK, Scottish and local levels) and where possible help to conserve and enhance such habitats and species 	<ul style="list-style-type: none"> Natural heritage
TACTRAN area Local Authority Outdoor Access Strategies (Summary)	Outdoor Access Strategy with reference to the Land Reform (Scotland) Act 2003	<p>Air Quality, Climate Change & Human Health: seeks to reduce vehicle use by providing a healthy, green sustainable route & mode</p> <p>Population: creating more access & greater quality of life</p>	<ul style="list-style-type: none"> Will expect RTS to promote schemes that will reduce the need to travel by car and which support increased use of cycles and walking The RTS should also be compatible with supporting access links between green spaces and the wider countryside and facilitating the use of such links by local communities 	<ul style="list-style-type: none"> Community well being Natural heritage
TACTRAN area Local Authority Community Plans (Summary)	Sets out priorities for each Local Authority which have been agreed by both communities and agencies	<p>Human Health & Safety: to promote health through development of paths & alternative routes & modes of transport & improvement of transport infrastructure</p> <p>Population: improved quality of life & greater access through extension of alternative routes, improvement of transport infrastructure & move towards greener, safer communities</p>	<ul style="list-style-type: none"> Will expect RTS to promote schemes that encourage modal shift to cycles and walking and other more sustainable forms of transport reducing reliance on the car, helping to cut CO2 emissions, improving air quality and promoting healthier lifestyles The RTS should also be compatible with supporting access links between green spaces and the wider countryside and facilitating the use of such links by local communities 	<ul style="list-style-type: none"> Community well being
Local Authority Sustainable Development Strategies (Local Agenda 21) (Summary)	To develop a vision for a more environmentally sustainable Local Authority Area	<p>Human Health & Safety: aim to promote sustainable methods of transport & less private vehicle usage</p> <p>Population: sustainable development for future generations</p> <p>Climate Change: a move towards all development as sustainable, contributes to</p>	<ul style="list-style-type: none"> Will expect RTS to promote schemes that encourage modal shift to cycles and walking and other more sustainable forms of transport reducing reliance on the car, helping to cut CO2 emissions, improving air quality and promoting healthier lifestyles The RTS should also be compatible with supporting access links between green spaces and the wider countryside and facilitating the use of such links by local communities 	<ul style="list-style-type: none"> Climate change Community well being Natural heritage

Name of Plan	Main Requirements of Plan	How it affects or is affected by RTS	Implications for the SEA	Relevant SEA Objective
		reducing climate change Aquatic Environment: sustainable management of water & water conservation	<ul style="list-style-type: none"> RTS expected to support schemes that help to minimise environmental impacts on surface and ground waters. Road infrastructure expected to tie in with sustainable urban drainage schemes (SUDS) 	

The review of plans and programmes (together with the review of issues and baseline information in the TACTRAN area, see Chapter 4) helped to inform the identification of draft SEA objectives which were further developed at the SEA workshop (see Section 1.5). The draft objectives were grouped under the environmental topics which have to be considered under the SEA legislation (see Section 4.2 for SEA topics and Section 2.4 for development of objectives).

Table 3.2 summarises the key plans and programmes relevant to the RTS and how their content has been linked into the SEA objectives. The objectives, further refined and developed, have been used to underpin the appraisal of the SEA (see Chapter 5).

The summary in Table 3.2 indicates that other plans and programmes give a clear steer towards the need for the RTS to encourage sustainable modes of transport and contribute to promoting healthier lifestyles and to ensure that new transport measures are designed to reduce their impact on the natural and cultural heritage.

4 ENVIRONMENTAL BASELINE

4.1 INTRODUCTION

This chapter describes the approach to collating the environmental baseline for the TACTRAN area and provides a summary of the key information which was collated to inform the SEA process. An understanding of the baseline was first needed to inform the review of environmental issues in the area and this also fed into the development of SEA objectives (and RTS environmental objectives). The collated information was then used in the appraisal of all parts of the Strategy (see Chapter 5). The level of information which has been collated is necessarily quite strategic and much is qualitative. The RTS itself is strategic and some of the proposed interventions are not yet fully defined. The environmental baseline information which has been collated is considered sufficient for the appraisal of the draft RTS. Information sources have been mapped wherever possible using GIS (see Appendix D).

Section 4.2 introduces the environmental topics required to be considered by SEA legislation. Section 4.3 summarises the baseline of the area; Section 4.5 lists environmental issues and problems and describes implications and opportunities for the SEA and RTS, and Section 4.6 describes the likely future evolution of the environmental baseline without the plan.

4.2 SEA TOPICS

The first step in developing the baseline for the SEA was the identification of environmental topics which would provide a structure for the baseline and which would provide an overall structure for the appraisal framework which is discussed further in Section 2.6 and Table 2.3.

The scope and content of this report has been guided by the relevant criteria for Environmental Reports set out in Schedule 3 of the SEA Act. This report has been structured with ten environmental topics so that the key information relating to elements of the TACTRAN area environment is grouped into clear headings.

The following environmental 'topics' were identified through an internal SEA team workshop process. The topics were selected to provide a sufficiently wide scope for the SEA (and thus the necessary environmental baseline information to be collected) and to reflect the nature, scope and potential effects of the RTS.

The following environmental topics have been defined for the SEA:

- Air Quality and Noise
- Soils and Geology
- Aquatic Environment
- Climate Change
- Landscape and Townscape
- Biodiversity
- Cultural Heritage
- Human Health and Safety
- Population
- Material Assets

For the latter two categories of population and material assets, the SEA team also defined the scope of these topics in relation to the SEA of the RTS since these topics are potentially very wide ranging, and it was considered necessary to limit the range of environmental data which needs to be collated for these topics in particular. The scope of these topics was therefore determined with reference to the potential implications of the RTS for various environmental and social assets within each topic, as follows:

- Population: scope to include demographic factors and accessibility;
- Material assets: scope to include aggregates, fuels, transport infrastructure and construction waste.

The relationship between the environmental topics and the criteria required by the SEA Act is shown in Table 4.1, together with an indication of the key environmental features identified for each topic.

Table 4.1 Relationship between Proposed SEA Topics and Schedule 3 Criteria

Environmental Topics	SEA Act Criteria	Key Environmental Issues
Air Quality and Noise	Air, Climatic Factors, Human Health	Air quality (concentrations of nitrogen dioxide (NO ₂) and particulate matter (PM ₁₀)) Noise climate
Soils and Geology	Soil, Material Assets	Designated sites Soil resources
Aquatic Environment	Water, Climatic Factors	Freshwater and coastal/estuarine quality Hydrological regime / channel characteristics Flooding and flood risk
Climate Change	Climatic Factors	Carbon dioxide (CO ₂) emissions Flooding Increased land slips
Landscape and Townscape	Landscape	Designated landscape areas Landscape character
Biodiversity	Biodiversity, fauna and flora	Ecological designations Priority habitats and species Habitat action plans
Cultural Heritage	Cultural Heritage	Designated sites and buildings / structures
Human Health and Safety	Human Health	Key health indicators Transport safety
Population	Population	Demographics Accessibility
Material Assets	Material Assets	Construction aggregates and waste Fuel and energy consumption and efficiency Transport infrastructure

4.3 BASELINE DATA GATHERING AND ANALYSIS

This section provides a summary of the environmental baseline within the TACTRAN area. Full details of the environmental baseline are presented within Annex D.

The collation and analysis of the environmental baseline has been undertaken to a level of detail appropriate to the SEA of the TACTRAN RTS. Whilst a broad cross section of environmental baseline issues have been considered (as set out in Table 4.1), information has been collated to broadly match the level of detail of measures and schemes anticipated in the draft RTS (see Section 3.3) and has been focused on aspects of the environment on which transport policies and measures are likely to have significant effects.

A summary of the key issues and status of the environmental baseline is presented in Table 4.2. Further analysis of environmental problems in the area of the RTS is presented in Section 4.5 of this report.

Table 4.2 Summary of Environmental Baseline

Environmental Topics	Key Indicators/Issues	Baseline Status	Trends	Summary Appraisal Methodology ⁸
Air Quality and Noise	Concentrations of NO ₂ and PM ₁₀ - Designated Air Quality Management Areas (AQMAs) Noise levels	Some monitored exceedences of the national air quality objectives (Dundee City and Perth City area) Two Air Quality Management Areas – Dundee City and Perth City area Road vehicle emissions key source of NO ₂ and PM ₁₀ Other sources present across TACTRAN area	No monitored noise trends Air quality data are variable in parameters and periods monitored which makes it difficult to draw conclusive region wide trends Predicted background air quality improvements Increasing traffic flows on key roads across area, especially commuter routes	Influence of proposed measure on emissions considered Particular consideration of potential to improve or worsen areas of poor air quality has been given
Soils and Geology	Designated sites Agricultural land quality	18 Geological SSSIs and 11 mixed SSSIs 71 Geological Conservation Review (GCR) sites Prime agricultural land in Angus and poorer quality soils in the Grampians No statutory designations of contaminated land under Part 11A of the Environmental protection Act 1990 present in the TACTRAN area	No trend data	Potential for measure to affect designated areas directly and indirectly by comparing likely impact of measure with baseline information Appraisal of potential for measure to affect areas of peat by comparing likely impact of measure with baseline information Appraisal of potential for measure to affect areas of prime agricultural land by comparing likely impact of measure with baseline information
Aquatic Environment	Quality of waterbodies (surface and groundwater) Flooding	Large network of running and standing water. Numerous waterbodies designated as Special Protection Areas and RAMSAR sites,	Nationally water quality within Scotland is reported to be improving	Qualitative appraisal of potential for measure to affect water quality based on experience, potential for mitigation, best practice guidance etc Appraisal of any positive effects from

⁸ In addition questions set out in Table 2.3 SEA Appraisal Framework were used

Environmental Topics	Key Indicators/Issues	Baseline Status	Trends	Summary Appraisal Methodology ⁸
		including River Tay and Montrose Basin Water quality varies widely but generally fair to good with better quality generally associated with upland, remoter locations and poorer quality in urban areas. Some areas at risk from flooding		flooding as part of natural hydrological/ecological cycle
Climate Change	Emissions of greenhouse gases Climate data	Existing climate is generally in line with Scotland as a whole though experiences lower than average rainfall.	Climate change predictions suggest potential increases in annual temperature and seasonal precipitation changes	Qualitative appraisal on likely effects of measure on traffic flows
Landscape and Townscape	Designated areas Landscape character Green belt, corridors	Wide variety of landscapes Range of landscape designations (including 5 National Scenic Areas and 57 Historic Gardens and Designed Landscapes)	Pressure on landscape from development	Appraisal of potential impacts of measure on landscape of TACTRAN area and consideration of potential for mitigation
Biodiversity	Designated sites BAP and LBAP priority habitats and species	<ul style="list-style-type: none"> • 29 SACs, 9 SPAs and 7 RAMSAR sites • 218 SSSIs (biological and mixed) • 7 NNR, 5 LNR and 6 Country Parks • 6 key LBAP priority habitat types and various priority species 	Habitat loss and loss of biodiversity through development such as urbanisation and changes in land management practices Increasing degradation of biodiversity associated with direct and indirect effects from development such as pollution.	Review of potential for measure to affect designated areas directly and indirectly by comparing likely impact of measure with baseline information Appraisal of potential impacts of measure on biodiversity of TACTRAN area and consideration of potential for mitigation
Cultural Heritage	Designated sites	<ul style="list-style-type: none"> • 7,644 Listed Buildings Category A to C(s), many of which have local importance • 1,351 Scheduled Ancient Monuments (SAMs) 	No trend data Increasing development may identify previously unknown archaeology resulting in increased known resources	Review of potential for measure to affect designated resources directly and indirectly by comparing likely impact of measure with baseline information Qualitative consideration of potential of

Environmental Topics	Key Indicators/Issues	Baseline Status	Trends	Summary Appraisal Methodology ⁸
		<ul style="list-style-type: none"> • Approximately 100 Conservation Areas • Potential for undiscovered archaeology 		measure to affect unknown remains
Human Health and Safety	Census Health Indicators Flooding	Better health than Scottish average (based on specific indicators) and higher life expectancy for men and women Reduction in road casualty rates and trends from 1994-98 average to 2001-05 average Some areas at risk from flooding Opportunities for health and well being including Long Distance Routes	None identified	Consideration of potential for measure to affect health Consideration of potential for measure to cause or exacerbate flooding, drawing on available information including the draft RTS, experience etc
Population	Demographic profile Accessibility indicators Tourism Indicators	TACTRAN area accounts for 9.4% of the Scottish population Population distribution within a few key large conurbations, within smaller towns and villages and throughout rural areas. Lower accessibility to private vehicles than Scottish average 2001 to 2005 saw a 50% increase in international visitors to Scotland and an 11% increase in visitor attraction numbers (of which there are many in the TACTRAN area)	Predicted increases in population lower than Scottish average	Consideration of potential for measure to impact on accessibility drawing on available information including the draft RTS, experience, best practice etc

Environmental Topics	Key Indicators/Issues	Baseline Status	Trends	Summary Appraisal Methodology ⁸
Material Assets	Aggregates and waste Transport infrastructure	Network of local and national roads, railways and aquatic infrastructure A82 and A9 are major North to South routes through Scotland	None identified	Review of potential for measure to affect infrastructure resources directly and indirectly by comparing likely impact of measure with baseline information Review of potential for measure to affect aggregate resources directly and indirectly by comparing likely impact of measure with baseline information

4.4 AREAS LIKELY TO BE AFFECTED BY THE RTS

Given the nature of the RTS, the areas that are most likely to be affected are those on or in close proximity to the transport network. The geographical extent of such effects is likely to be dependent upon the proposed interventions within the RTS and is likely to be localised to the specific interventions.

The level of environmental appraisal for the SEA has been necessarily strategic due to the limited detail available in the RTS for the interventions proposed either in terms of their form or (in some cases) their geographical location. This has made it difficult to be specific about the exact nature of predicted environmental effects and the specific geographical areas which may be affected. Where there is potential for location specific environmental effects (for example some of the road-based interventions involving infrastructure, see Annex H or in relation to sites of European nature conservation importance – see Section 2.6.3) then this has been recorded in the appraisal process. The overall findings of the SEA are presented in Chapter 5 of this report.

4.5 ENVIRONMENTAL ISSUES AND PROBLEMS

An initial review of environmental problems, issues and opportunities in the TACTRAN area has been undertaken by the environmental assessment team. This review has included:

- reviews of issues from relevant strategies, plans and programmes;
- review of baseline environmental data;
- team knowledge of environmental conditions in the Strategy area;
- team knowledge of contemporary national (and regional) environmental issues relevant to transport; and
- the SEA workshop (see Annex A); and
- comments received from the Consultation Authorities at the scoping stage (see Annex B).

A summary of the key findings of the review is presented below. Where appropriate, opportunities for the environment in relation to the RTS are included.

Air Quality and Noise

Issues and Problems

- Levels of NO₂ and PM₁₀ (particularly in urban areas associated with traffic flows and/or congestion)
- Noise (traffic associated)
- Increasing traffic flows (including new sources such as residential developments)
- Dust from construction activities (at a localised level)
- Current and future congestion levels on Kingsway-poor air quality may trigger Air Quality Management Area (AQMA) designation
- Journey times crossing Dundee
- Management of tourist traffic summer congestion, over-taking and parking on rural roads
- Logging and mineral extraction traffic on rural roads

- Number of cars commuting into Dundee is high, although car ownership is low. Dundee university students have high car ownership
- Perth city and surrounding area is an AQMA. Pollution is caused by congestion, air quality hot spots in Perth City Centre and also Crieff High Street
- Growing congestion at the double roundabout at Forfar
- Congestion spots in Stirling may trigger AQMA
- Cumulative impacts from traffic from various developments

Opportunities

- Background levels of NO₂ and PM₁₀ are predicted to decrease in non urban areas (2001 – 2010)
- Promotion of sustainable transport (including walking and cycling) and reduction of private journeys by car
- Provision or enhancement of sustainable transport infrastructure
- Raising awareness of best site management practices in contracts
- Promote access to developments on most suitable roads
- Checking new infrastructure does not give rise to greater emissions
- Provision of suitable infrastructure in tourism hotspots (lay bys overtaking sections etc)
- Improvement to transport infrastructure and vehicles (e.g. 'quiet' road surfaces and cleaner fuels and vehicles)

Soils and Geology

Issues and Problems

- Direct and indirect impact on statutory and non-statutory designated sites (these include geological Sites of Special Scientific Interest (SSSI), Geological Conservation Review (GCR) Sites and Regionally Important Geological Sites (RIGS))
- Potential impact on important peat resources
- Pressure on soil resources, particularly those supporting prime agricultural land
- Areas of potentially contaminated soils and mineral instability (e.g. in former mining areas)
- Potential for contamination from transport (e.g. fuel spillages during construction)
- Erosion from run-off and peat stability/slippage

Opportunities

- Creation of new geological sites through development (e.g. road cuttings etc) providing educational opportunities
- Good construction design and practice offers the opportunity to minimise impact on soils and geology
- Changing agricultural policies (e.g. reduced perception of the importance of prime agricultural land)
- Following advice on avoidance of soil and peat instability

Aquatic Environment

Issues and Problems (Freshwater Environment)

- Direct and indirect impact on surface and groundwaters (through water quality, flow and affecting physical form)
- Flooding including fluvial and urban (associated with insufficient drainage/culvert maintenance and capacity)
- New development in flood plains is a key pressure on the hydrological regime and contributory factor to flooding in some locations and careful planning required to avoid impacts
- Pressure on private abstractions
- Water abstraction can affect important habitats

Issues and Problems (Marine Environment)

- Direct and indirect impacts on coastal waters and estuaries
- Flooding and sea level rise
- Pollution from construction related activities or from spills once operational

Opportunities

- SEPA reports water quality across Scotland as a whole is improving. The implementation of the RTS has the opportunity to contribute to the improvement of water quality and physical form (as well as the habitat aspect discussed in Biodiversity) through good construction design and practices
- Potential to develop watercourses as a resource for better health and economic development

Climate Change

Issues and Problems

- Emissions of greenhouse gases from traffic and transport
- Emissions from transport play an important role in greenhouse gas emissions and as identified in the Air Quality and Noise section road traffic levels are increasing on some routes
- Predicted increases in storm event frequency and severity from climate change in future
- Rising sea levels
- Dependency on oil and air travel

Opportunities

- Opportunities to reduce private vehicle journeys and promote use of sustainable modes of transport
- Education about sustainable transport and promotion of the benefits to the environment and health
- Checking new proposals do not give rise to significant new emissions
- Opportunities to exploit the potential for biofuels, solar and renewables

Landscape and Townscape

Issues and Problems

- Direct and indirect impact on designated sites (such as National Scenic Areas (NSAs), National Parks, Areas of Great Landscape Value (AGLVs), Conservation Areas and Historic Gardens and Designed Landscapes)
- Inappropriate or insensitive development, and capacity of the landscape to absorb new infrastructure
- Gradual erosion of landscape character (cumulative development effects)
- Construction of new infrastructure may affect the wider landscape setting of particular sites or sensitive historic landscapes
- Possible severance of historic environment features
- Townscapes affected by traffic calming measures
- Maintenance of existing infrastructure affecting the historic environment features (e.g. historic bridges)

Opportunities

- Opportunity for landscape/townscape/seascape enhancements with new and revised infrastructure, this is particularly in areas of lower current landscape and townscape value
- The potential to improve the accessibility of historic features such as townscapes

Biodiversity

Issues and Problems

- Direct and indirect impact on designated sites (European, national and local), European Protected Species and nationally important species
- Loss of habitat and species (particularly those identified within the Local Biodiversity Action Plans (LBAPs), associated in part with urbanisation and development within the countryside (projected increases in residential developments and associated infrastructure will continue to increase this pressure)
- Sustainable use of biodiversity, ecosystem level diversity, networks and wildlife corridors
- Changes in land use (such as afforestation) resulting in changes to habitat composition (as well as landscape change)
- Habitat fragmentation and severance associated with new developments
- Disturbance of species from construction works and traffic
- Species loss and road kill
- Presence of National Parks within region, Stirling and Perth
- Risk of introduction of alien species

Opportunities

- With transport there is the potential to promote and create wildlife habitats
- Ensure new development does not affect designated sites or important species
- Reducing vehicle traffic may help reduce road kills

- Planning development to avoid severance and fragmentation
- New planting associated with transport developments can add to local biodiversity
- There is an opportunity to provide more interpretation facilities
- To raise awareness of biodiversity and sites such as Flanders Moss, Ben Lui, Ben Lawers, Vane Farm, forestry sites etc

Cultural Heritage

Issues and Problems

- Direct and indirect impacts on statutory and non-statutory designated sites and the impact on their settings (Scheduled Ancient Monuments (SAMs), Listed Buildings (LBs), Designed Landscapes and Conservation Areas), and locally designated sites
- Need to take account of and conserve important historical landscapes
- Promotion of Dundee and Angus as tourist destinations, desire to move from day destinations to longer stay
- In Perth Tourism is a major sector
- Risks of impact to unknown and as yet undiscovered resources
- Variety of locally important sites which should be safeguarded including battlefields

Opportunities

- There is an opportunity to enhance the setting and potentially the physical form of cultural heritage sites where this is appropriate (and in discussion with Historic Scotland for features of national importance)
- There is an opportunity to improve accessibility to the cultural heritage resource
- Potential to enhance interpretation of the cultural resource

Human Health and Safety

Issues and Problems

- Inadequate and insufficient infrastructure for sustainable, healthy transport (e.g. walking routes and cycling commuting routes)
- Air pollution is a problem with regard to health, particularly in urban locations and close to major transport corridors. Air pollution is also a factor in the promotion of sustainable, healthy transport (e.g. walking and cycling)
- Community severance effects e.g. intimidation and safety of road crossings
- Personal safety on the transport network can be a factor in the use of sustainable methods of transport such as road safety for bicycles and personal safety for bus networks, particularly at night and in remoter locations
- Road traffic casualties
- Changes to provision of health care – centralisation/relocation of clinical specialities at specific hospitals (PRI/Ninewells/Stracathro; Stirling Royal Infirmary/Larbert)
- Access from rural areas
- Ambulance service review (where will future provision for non-emergency transport come from)

- Parking levels at hospitals
- In Dundee, Kingsway is a strategic and local problem – severs city, especially for cycles/pedestrians
- Perth has an issue of a split site hospital; health service is funding transport (bus) between two hospitals
- Access in Angus to healthcare is problematic

Opportunities

- There are opportunities for promoting sustainable methods of transport (e.g. walking and cycling) which can play an important role in improving health
- Opportunities to promote green space and their opportunities for recreation and human well being
- There are opportunities within the transport network and infrastructure to address these problems through design, maintenance and raising awareness. Opportunities may include improved lighting around bus stops, creation of on and off-line cycle lanes and traffic calming measures
- Careful planning in RTS to address access issues
- Promotion of safety measures in RTS

Population

Issues and Problems

- Lack of access within/from towns and villages and to the local countryside
- Issues of requirement for better accessibility to public transport facilities and services (adequate pedestrian routes to services of reasonable distance etc)
- Lifestyle trends and family choices affecting location decisions for housing/work/education which are contributing in many cases to longer commuting distances by car
- Lack of attractive long distance safe commuter cycle routes
- Bridge tolls (Tay and Forth road bridges). Perth has attempted to use Park and Ride schemes to limit bridge traffic
- The Perth megabus interchange provides problems
- Level of rail services to/from Perth
- Development of station at Blackford
- Train capacity to Edinburgh/Glasgow (Dundee services often over-crowded)
- Disparity of rail fares across region
- New Arbroath to Perth rail service
- Perception of poor interchange between Dundee bus and rail stations
- Lack of integrated ticketing
- Large high school catchment areas within rural areas
- Access to colleges and universities within the region
- Dundee's population rising very slowly
- Journey planner – postcode travel information due to become personalised – multi modal, web based tool
- Dundee Western gateway – major growth area in housing in south
- Need to travel is high in Angus as population is spread out in seven small centres
- Severance of communities leading to perceived and/or real peripherality issues

- Coordinated travel information for tourists
- Ability to sustain bus provision to dispersed locations
- Declining Post Bus services
- Potential for Demand Responsive Transport
- Need to retain services (retail/GPs/post offices/banks) within rural and market town locations (reducing need for travel)
- Promotion of ports within region and competition between ports
- Lack of rail freight facilities
- Forth Road Bridge acts as a barrier to access to Dundee and Dundee Station is not a good gateway, there is also a need for more trains with greater passenger capacity for Dundee to Edinburgh journeys
- Air access – issue for Scotland’s economy as a whole

Opportunities

- Design of new developments and their infrastructure associated with the projected increases in dwellings has the opportunity to promote accessibility to sustainable transport
- The RTS has the opportunity to support, promote and facilitate the sustainable access to strategic development areas
- Ensuring RTS promotes accessibility

Material Assets

Issues and Problems

- Transport infrastructure (access to, quality, frequency, maintenance etc)
- Transport related fuel and energy use
- Reducing number of ‘quiet’ roads leading to less walking and cycling
- Pressure for aggregates and associated effects of, for example, visual intrusion from quarries and borrow pits
- Inadequate landfill space to accept spoil from infrastructure construction projects

Opportunities

- RTS can promote wise use of existing road and other transport infrastructure
- Promote reduction of non-renewable resources
- Promote re-use of aggregates and other road materials
- Reduce construction of new infrastructure for transport unless essential
- Re-use of materials on site
- Recycling of construction and demolition wastes
- Opportunities to exploit the potential for biofuels

4.6 LIKELY FUTURE EVOLUTION OF THE ENVIRONMENTAL BASELINE WITHOUT THE PLAN

4.6.1 Introduction

Forecasting the evolution of the environment in the absence of the RTS helps to understand how this strategy would contribute to changes in the environment in the future. This section therefore evaluates the likely changes to the environment

in the TACTRAN area assuming no RTS is implemented. The assumption is not, however, that previously adopted, draft and future relevant plans and programmes will not continue to be implemented. The SEA therefore, assumes that other adopted plans, programmes and policies will be delivered as planned. The assessment is summarised in Table 4.3 below.

The draft RTS does not contain a large number of physical transport infrastructure proposals. It is therefore not predicted that the future environmental baseline with the strategy would be significantly different compared to the 'without-strategy' scenario, at least in broad physical environmental terms. There are three interventions that could involve substantial road infrastructure (outer bypass of Dundee, new Tay crossing at Perth and new link road near Stirling) and the RTS is also likely to be supportive of the provision of a replacement Forth crossing, all of which could lead to a number of significant environmental effects from new infrastructure which would not otherwise have occurred without the influence of the RTS.

4.6.2 Air Quality and Climatic Factors

It is in relation to the predicted effects of the strategy on traffic growth and hence on emissions of carbon dioxide and local air pollutants where it is likely that the baseline environment in Tayside and Central Scotland would differ significantly in the absence of the RTS. Information obtained during the preparation of the draft RTS suggests that car ownership is likely to increase with growing congestion particularly in the hot spot areas of Dundee, Perth and Stirling. With or without the RTS it is predicted that air pollutant (NO_x and particulates) and CO_2 emissions are likely to increase, although implementation of the RTS should slow down this increase, thus without the RTS the effect is considered to be more adverse.

4.6.3 Landscape and Biodiversity

Over the years the increased pressure from transport, road construction and associated infrastructure has resulted in a loss of landscape quality and biodiversity. Physical transport infrastructure projects (e.g. new roads, rail lines etc) have often led to a loss and fragmentation of habitats although mitigation planting has, in at least some instances enhanced local biodiversity. The draft RTS has positive measures to encourage the take up of public transport and a shift from heavy reliance on the car which should help to reduce the risk of potential effects that new road build, if permitted, would bring. As mentioned above, there are possible infrastructure schemes that may go ahead within the RTS so these could bring with them negative effects on landscape and biodiversity which the RTS would in effect be responsible for introducing. Detailed options studies and environmental impact assessment (EIA) would, however, allow mitigation to be identified to reduce the negative impacts of these schemes (which do also have potential to reduce congestion with subsequent environmental benefits).

Since the RTS has a balance of measures that could impact both positively and negatively on landscape and biodiversity with a greater number of positive measures, it is unlikely that the evolution of the baseline with or without the RTS will differ significantly and so on balance the effect is considered to be indiscernible or neutral.

4.6.4 Soil, Land and Water

The balance of RTS measures was not assessed as having significant impacts on either soil or water. Legislation at the European level (such as the Water Framework Directive) and associated UK legislation aims to deliver long-term protection of the water environment and thus any negative impacts must be identified and a programme of improvement measures introduced. This should prevent any further decline of water quality in the absence of the RTS, so the effect is considered to be slightly beneficial.

4.6.5 Population

One of the main thrusts of the draft RTS is to provide a framework for accessibility improvements. A key goal will be to deliver some level of modal shift away from the car towards more efficient public transport, cycling and walking and to provide enhanced accessibility. If measures are not introduced that also help to tackle noise increases from traffic growth and congestion then negative effects will be inevitable. Overall, therefore, the local population would most likely be affected negatively without the RTS to combat and mitigate some of these potential effects.

4.6.6 Human Health and Safety

In terms of human health, issues such as obesity and heart disease are on the rise and may be further exacerbated by increases in sedentary modes of transport. Traffic growth and in particular congestion from the number of cars on the road, would be likely to increase air pollutants that affect health and could also have the ancillary effect of increasing the number of road traffic accidents. The draft RTS has goals aimed at slowing down car traffic growth, encouraging a greater use of public transport and also more sustainable modes such as cycling and walking. It is likely however that health will continue to decline even in the absence of the RTS since it is related to many more complex issues associated with lifestyles and diet.

4.6.7 Cultural Heritage

Although through the activities of agencies such as Historic Scotland the cultural heritage will continue to be conserved and where appropriate enhanced, traffic growth and congestion, particularly in the historic towns and cities could cause harm to historic buildings and archaeological sites through emissions, noise and vibration. This could also impact negatively on townscapes and settings. The RTS includes objectives that aim to reduce or remove such effects and seek ways to help protect the historic environment. In the absence of the RTS there could be a slightly adverse effect on cultural heritage in some locations.

4.6.8 Material Assets

The draft RTS includes measures that would help to maintain the quality of transport infrastructure and also introduce measures to encourage more sustainable design and construction techniques and use of recycled materials. Without the RTS therefore, the material assets considered in the SEA could degrade significantly leading to a significantly adverse effect.

Table 4.3 Summary of the evolution of the environment without the implementation of the RTS

SEA Topic	Environmental Issue for the RTS	Evolution without RTS
Air quality, climatic factors	Climate Change, Levels of NO ₂ and PM ₁₀	Adverse
Landscape, biodiversity,	Landscape and biodiversity, designated sites	Neutral
Soil, land, water,	Soil resources, peat, contamination, flooding	Slight beneficial
Population,	Accessibility, demographics, lifestyles	Adverse
Human health and safety	Obesity, air quality, nuisance, safety	Adverse
Cultural heritage	Historic environment, monuments, settings	Slight adverse
Material assets	Infrastructure, materials, recycling	Major adverse

* categories can be – major adverse, adverse, slight adverse, slight beneficial, beneficial, major beneficial

5 ASSESSMENT OF THE ENVIRONMENTAL EFFECTS AND PROPOSED MITIGATION

5.1 INTRODUCTION

This chapter presents the findings of the environmental assessment of the RTS. Sections 5.2 to 5.4 set out the findings of the environmental assessment of the core components of the RTS. These are:

- Section 5.2 the RTS objectives;
- Section 5.3 the RTS groups of interventions; and
- Section 5.4 the combination of measures within the 11 groups which collectively make up the Preferred Strategy within the draft RTS.

The environmental assessments have included an analysis of the potentially significant environmental impacts and the proposed measures to mitigate these, thus reporting residual effects. The assessment has been undertaken using the SEA objectives and framework developed during the scoping stage and refined following receipt of feedback from the Consultation Authorities (see Chapter 2). The tables in Sections 5.2 to 5.4 summarise the predicted residual effects of the interventions with comments on their significance. An assessment of the cumulative effects of interventions within the RTS and of possible interactions with other plans or programmes is summarised in Section 5.4.2.

An overview of the alternatives for the RTS is set out in Section 5.5.

Section 5.6 summarises the proposed mitigation and Section 5.7 provides the proposals for monitoring.

5.2 ASSESSMENT OF OBJECTIVES

At an early stage in the development of the RTS a series of objectives were developed through consultation and drawing on relevant other regional strategies and plans and the previous experience of the team. The objectives of the RTS are similar in intention to those in the SEA, that is they set the overall framework for the remainder of the strategy. Environmental objectives are included in the RTS objective list and it was important to ensure that these were complementary with the much longer set of SEA environmental objectives.

The appraisal indicates that, as would be expected, there is generally clear compatibility between the three RTS 'environmental' objectives and many of the SEA objectives. There is also good synergy between a number of the RTS accessibility and safety objectives with the environmental objectives. With a number of the economic and accessibility objectives there is uncertainty with regard to the compatibility with the SEA objectives indicating either a potentially negative or positive effect dependant on the precise nature of the interventions used to deliver the objective. These were found to be useful in flagging up potential areas of concern and also potential opportunities and helped to inform the development of subsequent interventions within the Preferred Strategy.

5.3 ASSESSMENT OF INTERVENTIONS

The appraisal of the environmental effects of the detailed part of the RTS concentrated on the 11 groups of measures (see Sections 3.3.3) which comprise the Preferred Strategy.

The methodology for appraising these themed groups of interventions has been described in Chapter 2. The full appraisal tables are presented in Annexes F and G.

The worksheets in Annex G were designed to provide consideration of the mitigation which has been assumed in the assessments, and for the evaluation of the significance of the themed groups before and following mitigation. The findings and the key predicted effects, are briefly summarised in the following sub-sections.

Land Use and Planning-related Measures

The key findings of the assessment of the environmental effects of this themed group are presented in Table 5.1. The assessment results have been summarised into the five key headline groups of environmental objectives and are presented as residual effects (i.e. following mitigation).

Table 5.1 Predicted Effects of the Land Use and Planning-related Measures

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being	Broadly supportive (✓) Neutral in relation to flood risks and visual intrusion effects	Significant change of traditional attitudes required to achieve significant health and safety benefits
Natural Heritage	Neutral (0)	Measures not predicted to significantly affect the natural environment
Cultural Heritage	Neutral (0)	Appraisal assumes that no measures would significantly affect archaeology or cultural heritage, but could have potential to reduce negative effects of transport on townscapes but not considered to be significant
Material Assets and Resources	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources TACTRAN should promote information to ensure take-up of more sustainable modes of transport
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the land use and planning-related measures theme are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. This finding depends upon effective (and full) implementation of the measures in the RTS. With regard to the natural and cultural heritage the measures are neutral with no discernible effect. Whilst these measures would potentially assist in supporting these objectives, they can only do so in the context of the whole RTS, and the predicted effects of these combined themes are considered later in this chapter.

Information-based Measures

As for the above measures the key findings of the assessment of the environmental effects of this themed group are presented in Table 5.2. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.2 Predicted Effects of the Information-based Measures

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly supportive (✓) Effect will be greater over time as more actions in the RTS are implemented.	Information Strategy has potential to encourage modal shift but unlikely to be significant on its own
Community Well-being	Broadly supportive (✓) Neutral in relation to flood risks and visual intrusion effects	Significant change of traditional attitudes required to achieve significant health and safety benefits TACTRAN should promote information to ensure take-up of more sustainable modes
Natural Heritage	Neutral (0) No significant effects are predicted	
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources TACTRAN should promote information to ensure take-up of more sustainable modes of transport
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the information-based measures themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. This finding depends upon effective (and full) implementation of the measures in the RTS. The interventions proposed in this theme are broadly neutral in their environmental effect on natural and cultural heritage. Whilst these

measures would potentially assist in supporting these objectives, they can only do so in the context of the whole RTS, and the predicted effects of these combined themes are considered later in this chapter.

Measures designed to change Attitudes and Behaviour

The key findings of the assessment of the environmental effects of this themed group are presented in Table 5.3. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.3 Predicted Effects of the Measures Designed to Change Attitudes and Behaviour

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly supportive (✓) Effect will be greater over time as more actions in the RTS are implemented.	Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being	Broadly supportive (✓) Neutral in relation to flood risks and visual intrusion effects	Significant change of traditional attitudes required to achieve significant health and safety benefits TACTRAN should promote information to ensure take-up of more sustainable modes
Natural Heritage	Neutral (0) No significant effects are predicted	
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources TACTRAN should prepare high profile awareness campaigns and promote information to ensure take-up of more sustainable modes and in association with Visit Scotland promote the sustainable tourism theme
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the measures designed to change attitudes and behaviour themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. This finding depends upon effective (and full) implementation of the measures in the RTS. The interventions proposed in this theme are broadly neutral in their environmental effect on natural and cultural heritage. Whilst these measures would potentially assist in supporting these

objectives, they can only do so in the context of the whole RTS, and the predicted effects of these combined themes are considered later in this chapter.

Walking and Cycling Measures

The key findings of the assessment of the environmental effects of this themed group are presented in Table 5.4. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.4 Predicted Effects of the Walking and Cycling Measures

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly supportive (✓) Effect will be greater over time as more actions in the RTS are implemented.	Intervention supports modal shift but considered unlikely to have a significant effect on carbon emissions
Community Well-being	Broadly supportive (✓) Neutral in relation to flood risks and visual intrusion effects	TACTRAN should promote information to ensure take-up of more sustainable modes. A switch to increased walking and cycling will require intensive awareness raising campaigns and dissemination of information on infrastructure and availability of urban walking and cycle networks
Natural Heritage	Neutral (0) No significant effects are predicted	Measures are not predicted to result in significant modal shift to directly benefit the National Parks and result in significant positive effects on integrity. Promotion of the Walking and Cycling Strategy should be broadly supportive of sustainable tourism which in turn will be of benefit to the National Parks
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Broadly supportive (✓) Effects will be greater over time as the Walking and Cycling Strategy is implemented	Measures not predicted to significantly affect material assets and resources TACTRAN should lead an awareness campaign and continually promote the Strategy and associated information (on for example "Safer Routes to School") to ensure take-up of more sustainable modes such as the walking and cycling
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the walking and cycling measures themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and

resources. This finding depends upon effective (and full) implementation of the measures in the RTS. The interventions proposed in this themed group are broadly neutral in their environmental effect on natural and cultural heritage. Measures are not predicted to result in significant modal shift to directly benefit the National Parks. Whilst these measures would potentially assist in supporting these objectives, they can only do so in the context of the whole RTS, and the predicted effects of these combined themes are considered later in this chapter.

Bus-based Measures

The key findings of the assessment of the environmental effects of this themed group are presented in Table 5.5. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.5 Predicted Effects of the Bus-based Measures

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly supportive (✓) Effect will be greater over time as more actions in the RTS are implemented.	Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being	Broadly supportive (✓) Neutral in relation to flood risks and visual intrusion effects	Significant change of traditional attitudes towards PT required to achieve discernible health and safety benefits TACTRAN should promote information to ensure more take-up of buses. Improvements in bus services, frequency and quality should encourage switch to buses
Natural Heritage	Neutral (0) No significant effects are predicted	
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the bus-based measures themed group are, overall, broadly supportive of the environmental objectives in the SEA for climate change, quality of life and material assets and resources. This finding depends upon effective (and full) implementation of the measures in the RTS. The interventions proposed in this theme are broadly neutral in their environmental effect on natural and cultural heritage. Whilst these measures would potentially assist in supporting these objectives, they can only do so in the

context of the whole RTS, and the predicted effects of these combined themes are considered later in this chapter.

Rail-based Measures

The key findings of the assessment of the environmental effects of this themed group are presented in Table 5.6 Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.6 Predicted Effects of the Rail-based Measures

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly supportive (✓) Effect will be greater over time as more actions in the RTS are implemented.	Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being	Broadly supportive (✓) Neutral in relation to flood risks and visual intrusion effects and uncertain with regard to noise and vibration effects	Simultaneous improvement in rail services together with significant change of traditional attitudes (where there is often a preference for cars) required to achieve switch to trains which in turn would bring health and safety benefits (through a reduction in car/commuter traffic volume) Interventions could promote modal shift with reductions in noise from traffic in some locations however some noise and vibration impacts from increased rail services are possible at properties close to the line
Natural Heritage	Neutral (0) No significant effects are predicted	
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources TACTRAN should follow through on its actions to support rail service improvement and increased frequency, raise awareness and promote information to ensure maximum take-up of available train services
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the rail-based measures themed group are, overall, broadly supportive of the environmental objectives in

the SEA for climate change, quality of life and material assets and resources. This finding depends upon effective (and full) implementation of the measures in the RTS. The interventions proposed in this theme are broadly neutral in their environmental effect on natural and cultural heritage. Whilst these measures would potentially assist in supporting these objectives, they can only do so in the context of the whole RTS, and the predicted effects of these combined themes are considered later in this chapter.

Measures associated with improving Interchange

The key findings of the assessment of the environmental effects of this themed group are presented in Table 5.7. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.7 Predicted Effects of the Measures Associated with Improving Interchange

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly neutral (0) Effects will be greater over time as more actions in the RTS are implemented.	Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being	Broadly supportive (✓) Neutral in relation to flood risks and improving health and an uncertain but possibly negative effect with regard to visual intrusion	Simultaneous improvement with interchanges together with significant change of traditional attitudes (where there is often a preference for cars) required to achieve switch to trains and buses which in turn would bring health and safety benefits (through a reduction in car/commuter traffic volume) New infrastructure associated with Park and Rides has potential for visual impact – significance of effects can be reduced by choosing appropriate sites and implementing high quality designs
Natural Heritage	Potential for negative or positive effects at first but with mitigation possibly neutral (0)	New infrastructure has potential for biodiversity and landscape impacts – significance of effects can be reduced by choosing appropriate sites and implementing high quality landscape designs taking opportunities to enhance local biodiversity wherever possible
Cultural Heritage	Neutral (0) Potential for negative but with mitigation neutral	Appraisal assumes that with implementation, measures are unlikely to significantly affect archaeology or cultural heritage but actual impacts cannot be

SEA Objectives	Predicted Residual Effects	Key Comments
		assessed. There may be some benefits to the setting of some resources through the reduction of traffic flows in their proximity
Material Assets and Resources	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources TACTRAN should follow through on its actions to support improvements with inter – modal changes (e.g. integrated ticketing), raise awareness and promote information to ensure maximum take-up of available bus and train services
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the measures associated with the improving interchange themed group are, overall, broadly supportive of the environmental objectives in the SEA for community well-being and material assets and resources. This finding depends upon effective (and full) implementation of the measures in the RTS. The interventions proposed in this themed group are broadly neutral in their environmental effect on climate change, natural and cultural heritage. Although in the case of the latter two the initial effect was considered uncertain possibly negative but with mitigation this was likely to be neutral. Whilst these measures would potentially assist in supporting these objectives, they can only do so in the context of the whole RTS, and the predicted effects of these combined themes are considered later in this chapter.

Community and Demand Responsive Transport

As for the above measures the key findings of the assessment of the environmental effects of this themed group are presented in Table 5.8. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.8 Predicted Effects of Community and Demand Responsive Transport

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly Neutral (0) Effect will be greater over time as more actions in the RTS are implemented.	Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being	Broadly Neutral (0) Broadly positive with regard to health and safety and sustainable access to employment and essential services	Significant change of traditional attitudes required to achieve significant health and safety benefits TACTRAN should promote information to ensure take-up of

SEA Objectives	Predicted Residual Effects	Key Comments
		more sustainable modes
Natural Heritage	Neutral (0) No significant effects are predicted	
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Neutral (0) Positive towards promoting sustainable travel. Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources TACTRAN should promote information to ensure take-up of more sustainable modes of transport
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the Community and Demand Responsive Transport themed group have, overall, a neutral effect on the environmental objectives in the SEA for all of the SEA objectives. This finding depends upon effective (and full) implementation of the measures in the RTS.

Road-based Measures (Infrastructure-based)

The key findings of the assessment of the environmental effects of this themed group are presented in Table 5.9. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.9 Predicted Effects of the Road-based Measures (Infrastructure)

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Uncertain (?)	Further appraisal of interventions required to determine effects on carbon emissions – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift
Community Well-being	Uncertain for many (?) with some negative (visual intrusion) and possible positive effects (community severance)	Further appraisal of interventions required to determine effects on health and safety – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift Potential for reduction in traffic flows in cities could benefit local air quality but new roads have the potential to increase traffic with negative resultant effects on local air quality. EIA would be required for all new major roads to

SEA Objectives	Predicted Residual Effects	Key Comments
		determine specific effects and inform the decision making process EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process
Natural Heritage	Uncertain negative/neutral (?x/0)	All routes are located in sensitive locations and adequate survey and appraisal would be required to inform the EIAs and appropriate assessments where European sites could be affected
Cultural Heritage	Uncertain negative (?x) for historic and archaeological resources and their settings but uncertain positive(?✓) for maintaining townscapes and their settings	EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Planting proposals should be sited to ensure no direct effects on archaeological remains
Material Assets and Resources	Uncertain positive (?✓) or neutral (0) Effect will be greater over time as more measures in the RTS are implemented.	All new major infrastructure to be designed in accordance with best practice and TACTRAN to promote sustainable planning, design and construction methods TACTRAN should promote information to ensure take-up of more sustainable modes to compensate for potential increases in motorised traffic using new road infrastructure
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the road-based infrastructure measures themed group are, overall, uncertain and possibly negative towards most of the SEA environmental objectives. It is assumed that surveys would be undertaken to inform route choice and identify required mitigation.

Road-based measures (Safety and Maintenance-based)

As for the above measures the key findings of the assessment of the environmental effects of this themed group are presented in Table 5.10. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.10 Predicted Effects of the Road-based Measures (Safety and Maintenance-based)

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Neutral (0) No significant effects are predicted	Measures not predicted to significantly affect carbon emissions
Community Well-being	Broadly Neutral (0) Supportive (✓) to improving general health in the region and strong contribution and compatibility with improving health and safety	Development of a regional road safety plan with associated education campaigns likely to contribute significantly to the delivery of improved health and safety
Natural Heritage	Neutral (0) No significant effects are predicted	
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Neutral (0) No significant effects are predicted	
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the road-based health and safety measures themed group are, overall, broadly neutral towards the environmental objectives in the SEA. This finding depends upon effective (and full) implementation of the measures in the RTS.

Freight-specific Measures

The key findings of the assessment of the environmental effects of this themed group are presented in Table 5.11. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.11 Predicted Effects of the Freight-specific Measures

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Uncertain but likely to be broadly supportive (?✓) Effect will be greater over time as more actions in the RTS are implemented.	No significant effect on global carbon emissions predicted. Improved road links to ports have potential to increase traffic and therefore emissions which could counterbalance any emissions reduction from inter-modal transfer of freight
Community Well-being	Mainly neutral (0) In some cases (improved air quality and reduction in noise)	Potential for impacts (negative/positive) on local communities from changes in HGV movements associated with

SEA Objectives	Predicted Residual Effects	Key Comments
	<p>uncertain and possibly supportive (?✓)</p> <p>Uncertain possible negative effect (?x) for community severance</p>	<p>improved road links to ports. Careful design and planning of improvements could avoid some impacts</p> <p>Effect dependant on level of modal shift for freight (i.e. road to rail or sea). Measures have potential to help reduce HGV traffic growth but unlikely to be significant. Improved road links to ports have potential to increase traffic and therefore emissions which could counterbalance any emissions reduction from inter-modal transfer of freight. Changes in HGV patterns as a result of bridge etc improvements to port link roads could increase community severance in some settlements</p>
Natural Heritage	<p>Neutral (0)</p> <p>No significant residual effects are predicted with mitigation</p>	<p>There may be some significant effects at some locations if new road infrastructure needed for improving links to ports. These would require definition as part of the appraisal for those projects. Careful design and planning of improvements could avoid some impacts</p> <p>Mitigation measures have the potential to enhance local biodiversity in the longer term with good management</p>
Cultural Heritage	<p>Neutral (0)</p> <p>No significant residual effects are predicted with mitigation</p>	<p>Careful design and planning of improvements could avoid some impacts</p>
Material Assets and Resources	<p>Broadly neutral (0)</p>	<p>Effects will depend on potential for measure to improve more sustainable use of harbours for water transport or freight instead of road/rail freight</p>
<p>Note: Assumed mitigation is presented in Section 5.6.</p>		

The assessment indicates that the interventions in the freight-specific measures themed group have, overall, a broadly neutral residual effect on the SEA objectives. In some cases the initial assessment indicated an uncertain and possible negative effect (e.g. several of the natural and cultural heritage objectives) but with mitigation this was changed to a mainly neutral effect. These findings depend upon effective (and full) implementation of the measures in the RTS and the anticipated mitigation where it is needed.

Air Transport Measures

As for the above measures the key findings of the assessment of the environmental effects of this themed group are presented in Table 5.12. Assessment against each individual SEA objective is presented in the more detailed appraisal tables in Appendix G.

Table 5.12 Predicted Effects of the Air Transport Measures

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Negative potential effects but with mitigation could become neutral. Effect will be dependant on offset measures and if these include planting this would take time to create an effective carbon sink	Effect would only be neutral if carbon offset scheme successfully implemented
Community Well-being	Neutral in relation to certain objectives (flood risk, severance etc) Negative effects for air quality and noise	It is assumed that the level of increase in flights is relatively small and that no new major infrastructure is required Effects on local air quality from increased number of flights and traffic accessing the airport could have negative effects on health from emissions. Significance cannot be quantified as would depend on level of increases
Natural Heritage	Neutral (0) No significant effects are predicted	
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Broadly neutral (0)	Carbon offset measures and promotion of sustainable access (via PT) may reduce negative effect of promoting air travel
Note: Assumed mitigation is presented in Section 5.6.		

The assessment indicates that the interventions in the air transport measures themed group have, overall, a broadly neutral residual effect on the natural and cultural heritage SEA objectives (on the assumption that the level of increase in flight numbers would not be sufficient to cause significant additional disturbance to the Tay SPA and Ramsar site) but are likely to have a negative impact on local air quality and noise. The significance of this cannot be quantified since it would depend on the level of proposed flight increases. Increases in the number of flights would be likely to increase carbon emissions and the effect could only be brought down to a neutral one if a carbon offset scheme was successfully implemented.

5.4 ASSESSMENT OF THE DRAFT RTS

5.4.1 Assessment of the Combined RTS Interventions and Actions

Following completion of the assessments for each of the 11 themed groups of interventions within the Preferred Strategy an appraisal was undertaken of the 'combined' elements of the Strategy, that is the combination of all of the groups of measures (A to J). This appraisal was undertaken using the same type of appraisal matrix as that used for each individual themed group and the completed matrix is presented in Annex I.

The key findings of the assessment of the environmental effects of the whole of the Preferred Strategy are presented in Table 5.13.

Table 5.13 Predicted Effects of the Complete Preferred Strategy

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Effect dependant on level of modal shift. Many interventions in the RTS have the potential to reduce traffic growth (although unlikely to reverse it). Further appraisal of interventions required to determine effects on carbon emissions – some negative effects could result if new road infrastructure leads to traffic growth but some benefits could result from modal shift
Community Well-being	Broadly supportive (✓) Some question marks with regard to air quality, noise and severance effects. Neutral in relation to flood risks and visual intrusion effects (although negative for the latter with infrastructure projects)	Promotion of good health is dependant on reducing car dependency and its emissions and promoting more sustainable modes (e.g. cycling and walking). Further appraisal of interventions required to determine effects on health and safety – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift Positive effects dependant on level of modal shift. Many measures in the RTS have potential to reduce local traffic flows and congestion but these benefits will need to be “locked in”. Potential for reduction in traffic flows in cities could benefit local air quality but new roads have the potential to increase traffic with negative resultant effects on local air quality. EIA would be required for all new major roads to determine specific effects and inform the decision making process. Implementation of local interventions could help to address specific local air quality hot spots in the region. Local Transport Strategies (LTSs) could provide the mechanism to deliver further benefits. Many interventions in the RTS have little potential for significant visual intrusion
Natural Heritage	Broadly neutral (0) with uncertain but likely to be negative effects for new infrastructure projects	There may be some significant effects from new infrastructure projects at some locations. EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Appropriate assessment would be required of all schemes with potential to affect European sites. Implementation of best construction practices would reduce the risk of significant effects
Cultural Heritage	Broadly neutral (0) but possible negative effects on archaeological and historic resources with infrastructure projects	EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Planting proposals should be sited to ensure no direct effects on archaeological remains. Modal shift would have potential to enhance the setting of historic townscapes and features through reductions in traffic flows and congestion etc
Material Assets and Resources	Broadly neutral (0)	Compliance with End of Life Vehicles Directive should promote uptake and markets for vehicle recycling. Primary focus of RTS on modal shift measures reduces inefficient use of resources. Interventions would not significantly affect resources TACTRAN should promote information to ensure take-up of more sustainable modes to compensate for potential increases in motorised traffic using new road infrastructure. The majority of the RTS seeks to promote more sustainable transport and achieve modal shift. Success will depend on general raising of awareness on sustainable modes of transport within the region and delivery of committed actions
Note: Assumed mitigation is presented in Section 5.6.		

5.4.2 Cumulative Effects of the RTS and other Plans and Strategies

The cumulative effects of the draft RTS, beyond those which accrue as a result of the combination of policies and interventions across the 11 themed groups of interventions within the Preferred Strategy, have been assessed at a high level with respect to other regional plans and strategies which could have synergistic or additive effects to the RTS. Since the measures presented within the RTS are generally of an indicative and often non-location specific nature, the appraisal has been based on a broad consideration of how regional land use development and transportation plans may interact with the RTS during its proposed 15 year implementation life. The cumulative effects which have been predicted are summarised in Table 5.14.

The appraisal has highlighted that there is a clear need for joint and co-operative working by the agencies involved in regional planning, development and transport if the potential transport, accessibility and environmental benefits of the RTS are to be realised. The TACTRAN region is predicted to have continued population growth, strong economic development (and associated prosperity) and continued pressure on land, natural and environmental resources. Sustainable allocation of land for development, which is served by accessible and efficient public transport services will be imperative if environmental degradation is to be avoided and the potentially negative effects of increased commuter (and other private) traffic are to be mitigated.

There is a strong potential therefore for the positive environmental effects predicted for the RTS (albeit modest) to be substantially eroded by development resulting from the realisation of other plans and strategies, in particular from structure and local plans. The degree to which this dilution of effect will occur is not possible to accurately predict (hence the high degree of uncertainty reported in the table below) but it is suggested that the relevant regional (and national) agencies involved will need to maintain and develop their plans and strategies in a manner which reflects the priorities placed by the RTS on sustainable forms of transport and reduced traffic-related emissions if the region, and Scotland as a whole, is to achieve internationally and nationally binding commitments on issues such as climate change.

Table 5.14 Predicted Cumulative Effects

SEA Topic (see Table 4.1)	SEA Objective (see Table 2.2)	Cumulative Effect of the RTS	Cumulative Effects with Other PPS
Air quality and noise	To improve air quality in the region and contribute to meeting national air quality and health objectives	Uncertain but likely positive effect Dependent on level of modal shift. RTS has potential to reduce traffic flows (and thus air pollutants) but not to reverse them. Effect will be greater over time as more interventions and actions within the RTS are implemented.	Uncertain effects (negative/positive) New development, particularly housing in areas may increase traffic and erode potential air quality benefits of RTS and LTSs. Rigorous delivery of LTSs with RTS allied to sustainable land use allocations may offer air quality benefits
	To reduce transport related noise and vibration pollution	Uncertain but likely positive effect Measures which have potential to deliver modal shift are not predicted to significantly affect noise and vibration although local benefits could result from specific interventions.	Uncertain/slight positive Local Transport Strategies (LTSs) could provide the mechanism to deliver benefits in tandem with the RTS
Soils and Geology	To protect the region's geomorphology, geology, soils, mineral and peat resources	Uncertain neutral with no anticipated significant effects	EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Many interventions in the RTS have no potential to affect geomorphology, geology, minerals, soils and peat resources
Aquatic Environment	To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	No significant effects RTS contains few interventions which could cumulatively affect catchments or water resources. Implementation of best construction practices would reduce the risk of significant effects. Routine monitoring of watercourses (where it is undertaken) affected by new infrastructure would indicate the adequacy of implemented mitigation measures	Uncertain Improved transport provision may stimulate new development
	To reduce flood risks from transport	No significant effects RTS contains few interventions which could cumulatively affect flooding or flood risk	Uncertain Improved transport provision may stimulate new development
Climate change	To contribute to meeting the Scottish share in the reduction of carbon emissions	Positive effect Effect dependant on level of modal shift. Many interventions in the RTS have the potential to reduce traffic growth (although unlikely to reverse it). Further appraisal of interventions required to determine effects on carbon emissions – some negative	Uncertain effects (negative/positive) New development may increase traffic and erode potential carbon reduction benefits of RTS. Rigorous delivery of LTSs with RTS allied to sustainable land use planning may offer carbon reduction opportunities

SEA Topic (see Table 4.1)	SEA Objective (see Table 2.2)	Cumulative Effect of the RTS	Cumulative Effects with Other PPS
		<p>effects could result if new road infrastructure leads to traffic growth but some benefits could result from modal shift</p> <p>Effect will be greater over time as more measures in the RTS are implemented</p>	
Landscape and Townscape	To avoid negative impacts from visual intrusion from transport infrastructure	<p>No significant effects</p> <p>The RTS contains few interventions with potential for significant visual intrusion</p>	Uncertain but significant effects considered unlikely
	To protect and enhance the landscape of the region	<p>Neutral overall, but negative effects from infrastructure projects</p> <p>EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Many interventions in the RTS have little potential for significant visual intrusion</p>	Potential for significant negative effects from combinations of RTS and any future national transport projects
	To maintain and enhance townscapes and their settings	<p>Uncertain but likely positive effect</p> <p>Measures have potential to reduce negative effects of transport on townscapes but unlikely to be significant. Traffic reduction measures offer enhancement of townscapes through de-cluttering of streets etc. The majority of interventions in the RTS would not significantly affect townscapes.</p>	Uncertain (positive or negative) depending on quality of developments stimulated by enhanced transport links and accessibility
Biodiversity	To protect and enhance biodiversity	There may be some significant effects from new infrastructure projects at some locations which require extensive habitat loss. These would require definition of specific mitigation as part of the EIA for those projects	Potential for significant effects to habitats and protected species from combination of transport and land use development proposals
	To minimise the effects of transport on designated areas and protected species	All proposed new routes in road-based infrastructure projects are located in sensitive locations and adequate survey and appraisal would be required to inform the EIAs and appropriate assessments where European sites could be affected	Potential for significant effects to habitats, protected species and designated areas from combination of transport and land use development proposals
Cultural Heritage	To protect all (known and unknown) archaeological and historic resources of the region and their settings	Uncertain but potential for significant effects on archaeology and settings. EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Planting proposals should be sited to ensure no direct effects on archaeological remains. Modal shift would have potential to enhance the setting of historic townscapes and features through reductions in traffic flows and congestion etc	Uncertain but potential for significant effects to archaeology from combination of transport and land use development proposals

SEA Topic (see Table 4.1)	SEA Objective (see Table 2.2)	Cumulative Effect of the RTS	Cumulative Effects with Other PPS
Human Health and Safety	To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	Positive effect. Promotion of good health is dependant on reducing car dependency and its emissions and promoting more sustainable modes (e.g. cycling and walking). Further appraisal of interventions required to determine effects on health and safety – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift	Potential for beneficial effects provided housing and employment areas developed with accessible public transport, and access for walking and cycling
	To reduce the severance effects of traffic and infrastructure on communities	Uncertain but possibly neutral. Traffic reductions as a result of by-passes would reduce community severance. New infrastructure would need to be designed to take account of the potential to increase community severance and for appropriate mitigation measures to be implemented. Changes to infrastructure which could increase HGV movements through settlements not currently affected may result in increased community severance which may require mitigation (there could also be decreases in HGV movements in other areas)	No significant effects provided new schemes fully mitigated
Population	To provide sustainable access to employment and essential services	Positive effect from better public transport and promotion of sustainable modes	No significant effects
Material Assets and Resources	To minimise waste and recover and recycle resources efficiently	No significant effects	No significant effects
	To adopt sustainable planning, design and construction methods	Positive effect. Design of interventions should incorporate sustainable planning principles. Attention to detail in use and sourcing of materials. TACTRAN to promote and ensure RTS interventions delivered	Improved public transport could assist in facilitating more sustainable developments
	To promote sustainable travel	Positive effect. TACTRAN should promote information to ensure take-up of more sustainable modes to compensate for potential increases in motorised traffic using new road infrastructure. The majority of the RTS seeks to promote more sustainable transport and achieve modal shift. Success will depend on general raising of awareness on sustainable modes of transport within the region and delivery of committed actions	Improved public transport and the adoption of other more sustainable modes of transport in other regions could assist in facilitating progress in the TACTRAN region

5.5 ASSESSMENT OF ALTERNATIVES

Section 2.7 sets out the approach which has been adopted in this SEA towards the assessment of alternatives. The approach has involved the consideration of options throughout the iterative stages of strategy development (for the strategic themes, objectives, and grouped packages of interventions) as an integrated part of the process (see Section 5.2).

Nevertheless the RTS also presents three alternative strategies. These demonstrate that if certain packages of measures within the Preferred Strategy are given more weight and if some additional interventions are also added then the alternatives that could be considered would be:

- Alternative Strategy 1: Delivering Economic Prosperity
- Alternative Strategy 2: Connecting Communities and Social Inclusion
- Alternative Strategy 3: Environmental Sustainability and Health and Well-being

The results of the appraisal of these options is presented in Annex J and are summarised in the following sections.

5.5.1 Delivering Economic Prosperity

This alternative is described in the draft RTS as being the driver behind:

- measures designed to tackle peripherality;
- measures providing improvements in the key commuter corridors;
- most of the rail-based measures;
- all freight and air transport related interventions.

If these measures are given extra weight then the interventions that would have a higher priority would be those that involve the most infrastructure development, including:

- the three main road-based infrastructure interventions;
- the rail freight and port improvements;
- the airport terminal and facilities improvements.

The additional measures would be likely to involve congestion and accident hotspot improvements (including possible road dualling and infrastructure improvements). The summary of the predicted effects of this alternative is presented in Table 5.15.

Table 5.15 Predicted Effects of the “Delivering Economic Prosperity” Alternative

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Negative potential effects (x) but with mitigation could become neutral. Effect will be dependant on offset measures for air transport interventions	Effect would only be neutral if carbon offset scheme successfully implemented
Community Well-being	Neutral in relation to certain objectives (flood risk, severance etc) Negative effects (x) for air quality and noise	Effects on local air quality from increased number of flights and traffic accessing the airport could have negative effects on health from emissions. Significance cannot be quantified as would depend on level of increases Further appraisal of interventions required to determine effects on health and safety – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift Potential for reduction in traffic flows in cities could benefit local air quality but new roads have the potential to increase traffic with negative resultant effects on local air quality. EIA would be required for all new major roads to determine specific effects and inform the decision making process
Natural Heritage	Uncertain, but likely to be negative effects (x) for new infrastructure projects	There may be some significant effects from new infrastructure projects at some locations. EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Appropriate assessment would be required of all schemes with potential to affect European sites. Implementation of best construction practices would reduce the risk of significant effects.
Cultural Heritage	Possible negative effects (x) on archaeological and historic resources with infrastructure projects	EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Planting proposals should be sited to ensure no direct effects on archaeological remains. Modal shift would have potential to enhance the setting of historic townscapes and features through reductions in traffic flows and congestion etc
Material Assets and Resources	Uncertain possibly neutral (0)	Carbon offset measures and promotion of sustainable access (via PT) may reduce negative effect of promoting air travel

5.5.2 Connecting Communities and Social Inclusion

This alternative is described in the draft RTS as being the driver behind:

- measures in the land-use and planning group;
- the community and demand responsive transport measures;
- measures to remove barriers for disabled travellers.

If these measures are given extra weight then the interventions that would have a higher priority would be those that involve:

- travel plan guidance for large employers;
- improved access to healthcare;
- region-wide coordination of community transport;
- expansion of demand responsive transport services.

The additional measures would be likely to involve additional bus services, concessionary schemes and expanding community and demand responsive transport across the region. The summary of the predicted effects of this alternative is presented in Table 5.16.

Table 5.16 Predicted Effects of the “Connecting Communities and Social Inclusion” Alternative

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly Neutral (0) Effect will be greater over time as more actions in the RTS are implemented.	Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being	Broadly Neutral (0) Broadly positive with regard to health and safety and sustainable access to employment and essential services	Significant change of traditional attitudes required to achieve significant health and safety benefits
Natural Heritage	Neutral (0) No significant effects are predicted	
Cultural Heritage	Neutral (0) No significant effects are predicted	
Material Assets and Resources	Neutral (0) Positive towards promoting sustainable travel. Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources There will be a need to promote information to ensure take-up of more sustainable modes of transport

5.5.3 Environmental Sustainability and Health and Well-being

This alternative is described in the draft RTS as being the driver behind:

- measures in the “reducing the need to travel” group;
- travel plan related measures;
- measures in the “changing attitudes and behaviour” group;
- all of the walking and cycling measures.

If these measures are given extra weight then the interventions that would have a higher priority would be those that involve:

- travel plan guidance for large employers;
- improved access to healthcare;
- promoting regional car sharing schemes;
- measures to encourage sustainable tourism;
- the walking and cycling strategy;
- safer routes to school.

The additional measures would be likely to involve support for a national policy on carbon trading, opportunities for short sea shipping, low emission zones in city centres, bio-fuel promotion and car clubs.

The summary of the predicted effects of this alternative is presented in Table 5.17.

Table 5.17 Predicted Effects of the “Environmental Sustainability and Health and Well-being” Alternative

SEA Objectives	Predicted Residual Effects	Key Comments
Climate Change	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects. Carbon trading would contribute to offsetting carbon emissions
Community Well-being	Broadly supportive (✓) Neutral in relation to flood risks and visual intrusion effects	Significant change of traditional attitudes required to achieve significant health and safety benefits. Low emission city centre zones plus promotion of bio-fuels would help improve air quality and increase health benefits
Natural Heritage	Neutral (0)	Measures not predicted to significantly affect the natural environment
Cultural Heritage	Neutral (0)	Appraisal assumes that no measures would significantly affect archaeology or cultural heritage, but could have potential to reduce negative effects of transport on townscapes but not considered to be significant

SEA Objectives	Predicted Residual Effects	Key Comments
Material Assets and Resources	Broadly supportive (✓) Effect will be greater over time as more measures in the RTS are implemented.	Measures not predicted to significantly affect material assets and resources There will be a need to promote information to ensure take-up of more sustainable modes of transport Use of bio-fuels is likely to be a more sustainable option than fossil fuels but would need further investigation

5.6 ENVIRONMENTAL PERFORMANCE OF THE PREFERRED STRATEGY

Sections 5.4 and 5.5 have assessed the environmental effects of the Preferred Strategy (including potential cumulative effects) and the effects of possible alternative scenarios where added weight could be given to economic, social or environmental themes. If reference is made back to the Environmental Objectives within the draft RTS in Section 3.2 it is possible to draw some conclusions as to how effective the Preferred Strategy would be in terms of their delivery and how this compares with the alternative scenarios.

The overall objective within the RTS on environment is:

“To ensure that the transport system contributes to safeguarding the environment and promotes opportunities for improvement”

Beneath this are three sub-objectives:

- 9. To contribute to the achievement of the Scottish national targets and obligations on greenhouse gas emissions
- 10. To promote a transport system that respects both the natural and the built environment
- 11. To promote a shift towards more sustainable modes

A number of conclusions can be drawn:

- Whilst many of the interventions in the Preferred Strategy go some way towards reducing greenhouse gas emissions and generally protecting the environment, the major new infrastructure projects and the proposal to enhance air services at Dundee may be contrary to these objectives.
- New road infrastructure can clearly bring some benefits if it truly decreases congestion (such as improvements to AQMAs) but TACTRAN will need to encourage delivery of all the RTS measures and interventions and ensure actions implemented, to gain the full benefit. This will also involve promoting interventions to discourage private car use and encourage public transport and leading awareness campaigns to promote more sustainable options. New roads could however increase car-based traffic so interventions facilitating a move to PT and non-motorised transport would need to be implemented and promoted.

- The alternative scenario promoting economic prosperity has a mixed performance with regard to environmental effects. Interventions that promote more air travel and run the risk of increasing road traffic could clearly create problems in delivering Environmental Objective 9. Major new road infrastructure, particularly where it potentially threatens sensitive habitats would also create problems in delivering Environmental Objective 10. There would also be difficulties with the delivery of Objective 11 as well. These potentially negative effects could be offset by appropriate mitigation (as described in Section 5.7 and the tables in Annex G) and where measures in this package achieve modal shift this could help to improve local air quality. The issue with this alternative is associated with the “speed” of delivery, since the measures that are given the added weight here are the ones that are most likely to have direct impacts on the environment and would require careful design to mitigate adverse impacts including option studies etc.
- The alternative scenario promoting the connection of communities and social inclusion does not create any further issues with regard to the environment and is therefore broadly neutral in terms of the delivery of the RTS Environmental Objectives.
- As would be expected the scenario promoting environmental sustainability, health and well-being does contribute more strongly towards the delivery of the RTS Environmental Objectives in particular the contribution towards reducing greenhouse gas emissions and promoting more sustainable modes of travel.
- The Preferred Strategy appears to provide a good balance of measures and interventions that broadly support the RTS Environmental Objectives, and where there are potential conflicts identified the recommended mitigation (see Section 5.7) should produce the desired effect. Its success is reliant on the presumption that all measures in the Strategy could be implemented. Some measures in the alternative strategies could be added to the Preferred Strategy with additional benefits to the environment.

5.7 PROPOSED MITIGATION

Mitigation measures have been developed throughout the environmental appraisal process. The approach to mitigation has been to consider measures to avoid, reduce, remedy or compensate for negative and enhancement where possible for positive effects. These measures are presented within each of the appraisal matrices used to assess the environmental effects of the themed groups of interventions that make up the Preferred Strategy for the RTS. Table 5.18 presents a summary of all the assumed measures from the SEA process and comments on their use and effectiveness.

The mitigation measures listed are necessarily at a strategic level. This reflects the nature of the interventions in the draft RTS on which the SEA has been undertaken. It will be very important, in the implementation of the RTS, that measures and initiatives which have the potential for significant environmental effects are screened for EIA and that Environmental Statements are subsequently produced with robust mitigation measures aimed at avoiding,

reducing and where appropriate offsetting significant environmental effects from individual schemes.

In addition, all interventions with the potential to affect designated sites of European nature conservation importance (SPAs and SACs) will be reviewed in more detail and the potential requirement for appropriate assessment will be considered by TACTRAN in consultation with Scottish Natural Heritage (SNH).

The responsibility of delivering mitigation will depend on the agreed strategy for responsibility in delivering the measure in the RTS. TACTRAN will, however, take responsibility for ensuring that mitigation is considered as an essential element of any delivery strategy.

Table 5.18 Summary of Mitigation Measures

SEA Topic (see Table 4.1)	SEA Objective (see Table 2.2)	Mitigation Measure	Comment
Air quality and noise	To improve air quality in the region and contribute to meeting national air quality and health objectives	TACTRAN to ensure delivery of interventions within RTS. Implement actions to discourage use of car and encourage use of PT and non-motorised transport TACTRAN should promote information to ensure take-up of more sustainable modes and make sure Walking and Cycling Strategy is delivered	These measures should help to improve local air quality and, in part, address specific air quality problems from congestion in urban areas
	To reduce transport related noise and vibration pollution	TACTRAN to encourage delivery of measures which support modal shift from car to PT. Promote measures to "lock-in" benefits of traffic reduction Adequate noise reduction measures to address potential impacts from new infrastructure proposals	Modal shift should help to address traffic noise problems in roadside locations Secondary effects of measures such as noise barriers (e.g. visual) need to be considered in environmental impact assessments
Soils and Geology	To protect the region's geomorphology, geology, soils, mineral and peat resources	All projects to be designed to avoid significant effects on designated areas and will need to manage and protect soils and drift deposits during construction and to prevent erosion and contamination of soils during operation. Avoid sterilisation of mineral resources Any new earthworks should be designed to ensure slope stability of the transport infrastructure over their design lives	It has been assumed that designated areas will be avoided and that best practice construction procedures will be adopted to minimise negative effects on geology, minerals and soils e.g. from compaction and erosion Soil is a non-renewable resource, and areas of peat and prime quality agricultural land in particular should be avoided in planning of new infrastructure
Aquatic Environment	To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	Implementation of best practice measures including SUDS and compliance with Controlled Activities Regulations (CARs) for new projects	Design of SUDS measures is a standard requirement in all new developments. Implementation of Water Framework Directive is driving new legislation and pollution control procedures such as CARs
	To reduce flood risks from transport	Implementation of SUDS and other flood attenuation measures as part of new infrastructure projects would help to mitigate flood risk resulting from new infrastructure projects Any new infrastructure will need to be designed and constructed to withstand sea level rise and the effects of climate change through increased fluvial flood risk	New developments will be required to be flood neutral and will need to be constructed outwith flood risk areas (or further compensation measures provided) Drainage impact assessments may be required to demonstrate that new areas of hardstanding (e.g. road and car park surfaces) do not increase overall catchment flooding or exceed drainage capacities
Climate Change	To contribute to meeting the Scottish share in the reduction of carbon	TACTRAN to encourage delivery of interventions within RTS. Promote measures to discourage private road transport and encourage public transport	Co-ordination with national agencies and the National Transport Strategy will be important in realising traffic and carbon dioxide reductions

SEA Topic (see Table 4.1)	SEA Objective (see Table 2.2)	Mitigation Measure	Comment
	emissions		
Landscape and Townscape	To avoid negative impacts from visual intrusion from transport infrastructure	Measures defined in the relevant Environmental Statements will need to be implemented to ensure that visual impacts are not significant. High quality design will be needed for all new infrastructure All new Park and Ride sites and new or improved infrastructure to be designed to a high standard taking account of potential visual impact. Site options appraisal should be undertaken to ensure least intrusive sites chosen taking account of other environmental impacts	Integration of design mitigation measures to reduce visual effects is an essential element of the EIA process
	To protect and enhance the landscape of the region	Adequate landscape mitigation and design measures in infrastructure plans and projects including sensitive landforming and planting schemes	New proposals need to respect local landscape character and quality. Potential to link with habitat enhancement through scheme mitigation
	To maintain and enhance townscapes and their settings	Any new infrastructure in towns would require to be designed to integrate with local townscapes Relies on delivery of regional measures in RTS and local measures in LTSs to reduce traffic in towns	Commitment to high quality design essential in achieving adequate mitigation
Biodiversity	To protect and enhance biodiversity	Adequate biodiversity mitigation measures in infrastructure plans and projects including planting proposals to enhance local biodiversity	Opportunities should be taken to link with priorities in Local Biodiversity Action Plans for habitats and species
	To minimise the effects of transport on designated areas and protected species	Surveys to be undertaken to inform route choice and identify required mitigation	All routes are located in sensitive locations and adequate survey and appraisal would be required to inform the EIAs and appropriate assessments where European sites could be affected
Cultural Heritage	To protect all (known and unknown) archaeological and historic resources of the region and their settings	Adequate mitigation to protect the cultural heritage from new infrastructure plans and projects including archaeological survey and appraisals of the effects of intervention on settings New planting proposals to be designed taking account of any potential risk to any unidentified archaeological remains, the setting of cultural heritage sites and historic landscapes	Proposals need to respect the potential for as yet unknown archaeological resources. Indirect effects of new projects on the settings of features such as listed buildings, designed and historic landscapes should also be fully considered in project planning and appraisal processes

SEA Topic (see Table 4.1)	SEA Objective (see Table 2.2)	Mitigation Measure	Comment
Human Health and Safety	To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport. TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region which should further promote measures to discourage use of car and encourage walking and cycling. Support and promote "Safer Routes to School". Promote better access to healthcare facilities	Health can be influenced directly through improving access to healthcare facilities. Indirect benefits are recognised through improvements in air quality and the potential to encourage greater use of sustainable modes (walking and cycling) through the measures in the RTS (and in LTSs). Health benefits are also linked with improved access to greenspaces and the wider countryside
	To reduce the severance effects of traffic and infrastructure on communities	TACTRAN should ensure that all opportunities to reduce community severance are taken when designing and delivering interventions. TACTRAN to ensure benefits from traffic flow reductions "locked in" by appropriate measures	Transport measures should also be designed to improve safety for users e.g. cyclists, and to reduce the intimidation effects of traffic on pedestrians and communities
Population	To provide sustainable access to employment and essential services	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport. Ensure that when all relevant measures of the RTS are implemented that opportunities for public access are maximised especially by cycling and walking	Key linkages with health and education benefits from enhanced accessibility by walking and cycling for commuting to work and providing access to countryside around towns, greenspaces, parks, cycle routes etc. Synergy with Core Path Plans and LTSs at the local authority level
Material assets	To minimise waste and recover and recycle resources efficiently	Encourage re-use of materials in construction schemes and seek to balance earthworks for new infrastructure projects	Co-ordination with Area Waste Plans and promotion of greater use of contractual requirements to reduce, re-use and recycle construction waste from projects
	To adopt sustainable planning, design and construction methods	Design of measures should incorporate sustainable planning principles in other policies and plans Attention to detail in use and sourcing of materials and in design of shared spaces and public realm	Awareness of urban design strategies and local plans. Various techniques available (e.g. BREEAM, CIRIA guidance) to reduce the environmental impact of materials use and specification in physical projects
	To promote sustainable travel	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport. TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region. Support and promote "Safer Routes to School"	Awareness and behavioural change will be key ingredients to the success of achieving this SEA objective. TACTRAN should act as a focus for publicity and information dissemination through its various "sub-strategies" e.g. the Walking and Cycling Strategy and the Information strategy. Working with partners on for example Core Path Planning will make a contribution

5.8 MONITORING

This section briefly sets out the proposed approach to monitoring of the environmental effects of implementation of the RTS. A series of monitoring indicators have been proposed against which the predicted significant or uncertain environmental effects of the Strategy could be monitored.

The monitoring indicators and responsibilities will be subject to consultation and any significant changes in the RTS following consultation will need to be reflected in the monitoring arrangements, which may include those proposed for monitoring environmental effects.

5.8.1 Monitoring Indicators

Monitoring indicators have been identified for all of the SEA topics (and relevant SEA objectives) where the assessment of environmental effects (reported in this Chapter) has identified that there may be significant, potentially significant or uncertain effects from implementation of the RTS.

The proposed monitoring indicators are presented in Table 5.19 and potential sources of information to support measurement of the indicator and/or suggested organisational responsibility for monitoring are identified in the final column.

Table 5.19 Monitoring Environmental Effects of the RTS

SEA Topic	SEA Objective	Indicator	Source/Responsibility
Air quality and noise	To improve air quality in the region and contribute to meeting national air quality and health objectives	Number of AQMAs Trends in monitored roadside NO2 and PM10 by LA area	Local authority routine air quality monitoring
	To reduce transport related noise and vibration pollution	Key sources (contours) of transport noise	Local authority environmental noise mapping (under Environmental Noise Directive implementation)
Climate Change	To contribute to meeting the Scottish share in the reduction of carbon emissions	National CO2 emissions from transport sector	Scottish Executive statistics
		Traffic counters on key road links	Local authority and Transport Scotland traffic count survey data
Landscape and Townscape	To avoid negative impacts from visual intrusion from transport infrastructure	Number of significant visual effects predicted in ESs for new interventions	TACTRAN
	To protect and enhance the landscape of the region	Number of significant landscape effects predicted in ESs for new interventions	TACTRAN
	To maintain and enhance townscapes and their settings	Number of objections to interventions from Historic Scotland	Historic Scotland/LA planning registers
Biodiversity	To protect and enhance biodiversity	Number of significant ecological effects predicted in ESs for new interventions	TACTRAN
		Number of schemes with positive species and habitat enhancement measures	

SEA Topic	SEA Objective	Indicator	Source/Responsibility
	To minimise the effects of transport on designated areas and protected species	Number of significant ecological effects on protected species and designated sites predicted in ESs for new interventions	TACTRAN
Cultural Heritage	To protect all (known and unknown) archaeological and historic resources of the region and their settings	Number of significant effects predicted on archaeological remains and historic resources in ESs for new interventions	TACTRAN
Human Health and Safety	To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	Kms of new cycleway Number of safe routes to school projects Change in number of car trips <1km	Local authorities/TACTRAN Transport Scotland?

The purpose of monitoring the implementation of the RTS is to ensure the following:

- that the RTS is contributing to the achievement of the SEA objectives;
- that mitigation measures are performing as well as can be expected or require modifying;
- whether any further remedial measures are necessary during the lifetime of the Strategy to mitigate any adverse significant effects which had not been identified previously, or to respond to changes to the RTS in the light of periodic reviews and updates during its lifetime.

It is proposed that the effectiveness and sensitivity of the monitoring indicators is reviewed periodically during the RTS implementation to ensure that the effects and benefits of the Strategy are being appropriately monitored and that monitoring information is proving useful to TACTRAN in its role as the responsible authority for the Strategy.

5.8.2 Timescales for Implementation

The RTS is intended to be implemented gradually over the next 15 years. It is therefore a long term strategy and the proposals for monitoring will need to reflect the staged process of implementation, and the availability of information to support the indicators.

The detailed proposals for monitoring and the timescales for implementation will be set out in a RTS Delivery Plan which will be published by TACTRAN following formal approval and adoption of the Strategy. This plan will set timescales and milestones for delivery of the interventions, and delivery will be monitored against these using agreed monitoring indicators in the RTS and in the final SEA Statement.

6 NEXT STEPS

6.1 PROPOSED STAGES

The following stages in the development of the RTS and its environmental assessment are envisaged:

- The Environmental Report, which reports the findings of the SEA of the RTS will be published for consultation around the same time as the draft RTS. This is programmed for late January 2007, and the public consultation period is scheduled to last for some eight weeks.
- Following consultation on the draft RTS and the Environmental Report, the RTS will be revised and updated taking account of stakeholder and public comments. If it is necessary, further environmental assessment will be undertaken on revised components of the RTS and the Environmental Report would be amended accordingly.
- Following revision of the RTS, an SEA Statement will be prepared and made available to the Consultation Authorities (and made public) setting out how the findings of public and stakeholder consultation exercise and the environmental assessment have been incorporated into the development of the Regional Transport Strategy.
- It is intended to submit the final RTS and associated documents to the Scottish Ministers by 31st March 2007 for approval and adoption.

6.2 ANTICIPATED MILESTONES

The key milestones in the development of the RTS and the SEA are as follows:

- Submission of the Environmental Report to the Consultation Authorities and made available for public consultation with the draft RTS, late January 2007;
- Consultation on the draft RTS and Environmental Report from January 22 to March 16;
- Finalisation of the RTS in March 2007.
- Adoption of the RTS by 31 March 2007.

ANNEX A
WORKSHOP SUMMARY

Annex A - Workshop Summary

Strategic Environmental Assessment (SEA) of TACTRAN Regional Transport Strategy (RTS): Initial SEA Workshop Report

A1. Introduction

A1.1 Introduction

Under the provisions of the Environmental Assessment (Scotland) Act strategic environmental assessment (SEA) is required of all major transport plans including a Regional Transport Strategy (RTS). In addition environmental appraisal is required as part of the STAG appraisal of the RTS. The key purpose is to ensure that sustainable principles underpin transport plans right from the start rather than considering environmental effects much further down the line as part of, for example, environmental impact assessment (EIA) of specific proposals.

Information for the SEA and STAG appraisal has been gathered from baseline sources and also from consultations with a wide range of stakeholders. To better understand key issues and help draft objectives for the SEA a workshop was held on 03.08.06 in Dundee Discovery Centre, Dundee City. The workshop ran in parallel with the wider RTS workshop which explored issues and objectives and the way forward for the RTS.

MVA/Natural Capital sent out invitations to some 44 stakeholders inviting them to participate at the workshop. Only six participants attended. The response was disappointing but those who attended were very active in their participation and much useful information was obtained.

This report describes the workshop and provides a summary of the discussions and outcomes from it.

The focus of the workshop was on:

- exploring environmental issues in the TACTRAN area;
- what the objectives for the SEA should be; and
- what criteria can be used to check whether RTS proposals meet these objectives.

All discussions were underpinned by reference to the topic areas required by the Act and the SEA Directive:

- air quality and noise;
- soils and geology;
- aquatic environment (freshwater and marine);
- climate change;
- landscape and townscape;
- biodiversity;
- cultural heritage;
- human health and safety;
- population; and
- material assets.

A1.2 Layout of the Annex

The remainder of the annex is structured as follows:

- Chapter 2 provides an introduction to the workshop and the agenda which was followed;
- Chapter 3 sets out the outputs from the workshop exercises.

The annex is supported by the following appendices:

- List of attendees;
- Sample feedback form.

A2. Workshops

A2.1 Workshop Format

The workshop agenda was designed for some 20-30 participants, with the workshop lasting approximately five hours with a break for lunch. Six participants attended. A list of attendees is provided in Appendix 1.

The format for the workshop was as follows:

RTS Workshop:

- Introduction to the TACTRAN RTS and overview of workshop – as part of full workshop (*30 minutes*)

SEA Workshop:

- Introduction and Background (*5 minutes*)
- Baseline Mapping and Data Gaps (*5-7 minutes*)
- Exercise 1 – Key Environmental Issues (*60 minutes*)
 - Summary of findings of Exercise 1
 - What are the key issues in the TACTRAN area – prioritisation exercise & feedback
- Introduction – why objectives (*5 minutes*)
- Exercise 2 – Environmental Objectives (*55 minutes*)
 - What should the environmental objectives be? Brainstorm what is important and from which draft objectives can be evolved
 - Feedback in plenary
 - Comparison with team draft objective
 - Summary of findings of Exercise 2
- Brainstorm session on appraisal criteria for each draft objective (*25 minutes*)
- Q & A, Concluding remarks and Close (*2 minutes*)

A2.2 Workshop Exercises

Participants first joined the main RTS workshop when presentations on key trends and emerging issues were given. The SEA workshop then began with an explanation of how SEA and environmental components of STAG were being tackled.

A description of the approach to collating baseline information for the TACTRAN area was given and it was explained how this information was being used as one source in the identification of issues. Further information about some environmental issues had also been received from consultees.

The first exercise was designed to further explore baseline environmental issues (that is those known at present and those of the future baseline). Participants were asked to use their knowledge of the area and their experiences from other projects to identify environmental issues and problems in the TACTRAN area and where possible participants were asked to identify specific examples of issues. The exercise was undertaken in groups recording the discussions on flipchart. Handouts of the SEA topics were provided to stimulate wide ranging coverage of environmental issues. Feedback of key issues was then undertaken in a plenary session.

At the end of the feedback session participants were asked to use 5 dots and place these next to issues which they considered to be most important in the TACTRAN area. The findings of all parts of Exercise 1 are presented in Section 3.2.

In the second exercise participants explored potential environmental objectives for the SEA taking account of the issues raised in Exercise 1. Each group fed back in plenary.

The findings of the workshop will be used to feed into the RTS Issues Paper and also to refine the developing SEA objectives.

Participants were asked to feel welcome to further contribute to the SEA and also the workshop using a feedback form which was distributed (Appendix 2).

A3. Outputs from Workshop

A3.1 Introduction

In this chapter the outputs from the two exercises are listed as recorded on flipcharts during the workshop (participants' contributions and those collated in plenary sessions).

A3.2 Exercise 1: Key Environmental Issues

A3.2.1 Group 1

1. Poor air quality in urban area. Airborne pollutants increased noise levels on major routes
2. Impact of new infrastructure and upgrading existing routes (good or bad)
3. Impact intertidal areas. Potential flood impact. Potential for new bridges. Run off into aquatic environment
4. Increased emission. Long-term response to climate change. Which form of transport? Flood prevention schemes
5. Consequences of air borne pollution on physical structure. Loss of historic environment to new infrastructure. Built to service new routes
6. Need to conform to Nature Conservation (Scotland) act 2004. Potential to impact on protected species and habitats. Cumulative impact. Green corridors
7. Potential on scheduled and unscheduled archaeology. Effect on rural communities and culture. Cultural important heritage to local communities
8. Improve opportunity to travel by healthier means (cycle/walking). Green space and good access. Public transport

9. Stagnant population. Ageing population. Accessibility to services. Rural population lack of access
10. Efficient use of material, recycling, maintenance

A3.2.2 Group 2

1. Issue in urban areas
2. N/A: Local not strategic
3. Issue for development, traffic growth, etc
4. Major issue carbon emissions, effect on sea levels, dependency on oil, air travel, modal shift, target transport generators
5. Protecting landscape: Moratorium on road building. Improving streetscape: Reducing speed limits, change focus away from car
6. Limit effect of transport on bio-diversity preserve and increase natural world
7. Improve public health through active travel
8. Accessibility, roads bisecting communities, poverty deprivation
9. Construction affecting natural assets

A3.2.3 Summary in Plenary

1. *Climate Change*
 - greenhouse gas emissions
 - long – term response
 - forms of transport
 - flood prevention
 - dependency on oil
 - modal shift
2. *Health and safety*
 - improving health
 - encouraging healthier transport
 - accessibility e.g. Greenspace
3. *Conserving and enhancing Biodiversity*
 - protected species
 - habitats
 - cumulative effects
 - green corridor
4. *Landscape/Townscape*
 - protecting Landscape
 - improving/protecting Townscape
 - public realm/spaces
 - airborne pollution
5. *Population*
 - accessibility
 - rural populations – bisecting, alternatives
 - essential services
6. *Impact on historic settings/cultural identity*
 - archaeological sites

A3.2.4 Prioritised Issues

Participants placed dots against any issues listed above.

Number of Priority Dots	Issue
● ● ● ● ● ● ● ● ● ● ● ●	Climate Change (emphasis on dependency on oil)
● ● ● ● ● ●	Health and Safety (emphasis on improving health and accessibility)
● ● ● ● ● ●	Conserving and enhancing biodiversity (emphasis on cumulative effects)
● ●	Landscape/Townscape (emphasis on protection)
● ●	Population (emphasis on rural populations)
● ●	Impact on historic settings/cultural identity

A3.3 Exercise 2: Environmental Objectives

A3.3.1 Group 1

1. *Climate Change*
 - reduce emissions from transport over the TACTRAN area. Climate change adaptation strategy
2. *Health and Safety*
 - to improve health and safety by providing appropriate means and modes of which contribute to a healthier, safer lifestyle
3. *Biodiversity*
 - conserve and enhance biodiversity
4. *Landscape/Townscape*
 - improve and enhance the environmental characteristics of landscapes and townscapes of regional importance
5. *Population*
 - support and respond to the needs of a demographically changing population

6. *To protect and enhance the cultural heritage and identity in the TACTRAN and adjoining areas*
7. *Cumulative Impact*
 - take account of the cumulative effects of strategic actions within and on the TACTRAN area

A3.2.2 Group 2

1. *Climate Change*
 - Reduce CO₂ emissions through reduction in road traffic by:
 - Increase in: walking and cycling, more trips by public transport, switch to more efficient vehicles
 - Decrease: Private car journeys, oil dependency
 - Decrease air travel in RTP area
 - Decrease construction of transport infrastructure e.g. road building
 - Moratorium on road building
 - Freight: promote rail over road, reduce freight movement
2. *Health*
 - Increase in trips by foot and bike
 - Improving accessibility of health facilities
 - Reducing speed limits, zoning e.g. around schools, homes
 - Making recreation more accessible
3. *Biodiversity*
 - Assess cumulative impacts of transport
 - Protecting environments (designated), increasing and enhancing
 - Increase green corridors
 - Brownfield sites
4. *Landscape/Townscape*
 - Protecting designated sites
 - Preserve existing landscape
 - Amelioration of transport impacts
 - Traffic calming, de-auration of road space, reduction in speed, paths, preservation of core path networks, public realm
5. *Population*
 - Accessibility to socially excluded groups
 - Rural communities bisected by busy roads: paths, minor road traffic calming
6. *Culture*
 - Minimise development on sensitive sites and landscapes
 - Opening access to culture
7. *Air Quality and Noise*
 - Air travel
 - Lower speed levels
 - Cut congestion
 - Plant trees

8. *Soils and Geology*
 - Avoid geological sites
 - Reduce run-off
 - Increase use of brownfield
 - Decrease emissions
9. *Aquatic Environment*
 - Reduce pollution
 - Drainage
 - Protect all watercourses
10. *Material Assets*
 - Recycling building materials
 - Sustainable use of natural resources

A3.3.3 Summary in Plenary

1. To reduce CO₂ emissions through transport measures. To develop a climate change adaptation strategy
2. To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier safer lifestyle
3. To protect and enhance the biodiversity of the region and beyond
4. To maintain or enhance the environmental characteristics of Landscape and Townscape
5. To improve accessibility to essential services for socially excluded groups. To support and respond to the needs of a demographically changing population
6. To protect and enhance the cultural heritage and identity in the TACTRAN and adjoining areas
7. To improve air quality and reduce transport related noise pollution
8. To take account of cumulative effects of strategic actions within and on the TACTRAN area
9. To protect the quality of water courses in the TACTRAN area from the impacts of the transport and maintain the quality
10. To promote the sustainable use of resources

List of Attendees

Name	Organisation	Organisation Address	Email
Peter Romilly	University of Abertay	Dundee Business School, Bell Street, Dundee, DD1 1HG	p.romilly@tay.ac.uk
Paul Gallagher	Scottish Wildlife Trust	Cramond Kirk, Cramond, Edinburgh	pfgallagher@swt.org.uk
Ian Hutchison	Scottish Badgers	13 Eddie Avenue, Brechin, DD9 6YD	ian@scottishbadgers.org.uk
Graham Esson	Perth and Kinross Council	Pullar House, 35 Kinnoul Street, Perth, PH1 5GD	gcesson@pkc.gov.uk
Jared Wilson	RSPB	1 Atholl Place, Perth	Jared.Wilson@rspb.org.uk
John Lauder	SUSTRANS	16A Randolph Crescent, EH3 7TT	John.lauder@sustrans.org.uk

Sample Feedback Form

SEA of TACTRAN RTS

Workshop Feedback Form

Thank you for attending the workshop on environmental issues and objectives for the Strategic Environmental Assessment (SEA) of the Tayside and Central Scotland Regional Transport Strategy (RTS).

The purpose of this form is to provide you with an opportunity to feed back comments on issues relating to the environment in Tayside and Central Scotland, and/or to comment on potential objectives for the SEA.

Feel free to respond to the questions below as you consider appropriate to supplement points you have made during the workshop. Please can you pass your completed form to one of the representatives from Natural Capital before leaving at the end of the workshop. Thank you.

1. Environmental Baseline Issues and Problems

Please list any issues you consider to be of particular importance to the key environmental issues presented.

2. Environmental Objectives

If you have further comments or suggested environmental objectives (or appraisal criteria), please note them down here.

3. Other Comments

Have we missed anything? Please add any further comments/issues on any aspect of the environmental baseline in Tayside and Central Scotland or on the SEA process for the RTS.

Thank you

This form can also be returned to Phil Say (Natural Capital Ltd) by:

- **Fax: 0131 220 6131 or**
- **Post: 13 Coates Crescent, Edinburgh, EH7 3AF**

ANNEX B

SUMMARY OF CONSULTATION RESPONSES

Organisation	Date	Name	Information/Comments	Comment
Historic Scotland (HS)	08.11.06	Amanda Chisholm	<p>Scope of assessment and level of detail</p> <ul style="list-style-type: none"> • HS is content with the scope and level of detail proposed for the environmental assessment • HS understand that the environmental assessment will include assessment of the strategy's: objectives; policies; proposals and measures (including regulatory measures, physical measures, soft measures and demonstrative measures such as best practice); and alternatives • HS expects the environmental assessment to take cognisance of the full meaning/features of 'historic environment', in the collection of baseline data and in considering the likely impact of the plan on the historic environment • A balanced approach is needed. <p>Consultation period for the Environmental Report (ER)</p> <ul style="list-style-type: none"> • HS would prefer to receive paper copies of the ER and draft RTS, sent via the Scottish Executive Gateway <p>Detailed comments on the Scoping Report</p> <p>Plan Context</p> <p><i>Relationship with other plans and programmes</i></p> <ul style="list-style-type: none"> • Annex A and Table 3.1: the review is thorough, may also wish to review SHEP 2: Scheduling: protecting Scotland's nationally important monuments <p><i>Environmental Baseline</i></p> <ul style="list-style-type: none"> • Section 3.3 explains that the scope of the 'population' and 'material assets' has been defined for the SEA as they are potentially wide ranging topics, HS notes that the scope has been determined with reference to the implications for environmental and social issues. In undertaking a Sustainability Appraisal of the RTS, you should ensure that the environmental results are reported clearly, HS prefers this to be reported separately from the ER. • Table 3.3 and Annex B: <ul style="list-style-type: none"> • Baseline information has been collated to match the level of detail of the measures and interventions in the RTS. Information on locally important archaeological sites may be helpful when considering impacts of measures with more detailed locational information. Obtain this from the Sites and Monuments Record (SMR) held by each local authority • Transport infrastructure itself may be of historic interest (e.g. piers, harbours) • For information: HS is in process of undertaking an audit of the historic environment in Scotland. Also, in the future, HS likely to request that historic landscapes are taken into consideration. Historic land-use assessment (HLA) is a GIS based analysis of past and present land-use, available on RCAHMS website www.rchams.gov.uk– does not yet have Scottish coverage. 	<p>Points noted and no action required</p> <p>Noted</p> <p>Added to Annex C</p> <p>Point Noted</p> <p>Included in summary in D8.2</p> <p>See D8.2</p> <p>Noted for future use</p>

Organisation	Date	Name	Information/Comments	Comment
			<ul style="list-style-type: none"> • B8.3: noted that some impacts on the historic environment may be uncertain at the strategic level and where this is the case the ER will identify such issues and describe how they will be taken into account and implemented at lower levels of planning – this approach is welcomed by HS • Table 3.3: includes an overview of the proposed appraisal methodology for each environmental topic. HS notes that impacts on the historic environment should be considered in terms of the following: <ul style="list-style-type: none"> ○ Direct (i.e. loss and/or damage to a feature of the historic environment) ○ Indirect (i.e. effects on setting, or effects from changes to surface drainage patterns or local air quality) • HS notes that when undertaking the assessment it might be useful to map the baseline data alongside the elements of the strategy that have spatial information (e.g. transport schemes). This may help to identify any environmental constraints and to consider alternative options. It would also assist in undertaking the review of the ER <p><i>Environmental Issues and Problems</i></p> <ul style="list-style-type: none"> • HS is content with section 3.4 <p>Environmental Assessment</p> <p><i>Plan Alternatives</i></p> <ul style="list-style-type: none"> • Will alternatives to the RTS be considered during the development of the strategy and will STAG approach be used to appraise packages of interventions in the ER. HS note that where a preferred option for a project or measure is identified in the RTS, a discussion of the project's alternative would need to be included in the ER to demonstrate that the environmental implications of the various options have been taken into account in the final decision that is being taken forward in the RTS <p><i>Scoping of significant environmental effects</i></p> <ul style="list-style-type: none"> • HS content that the historic environment has been scoped into the assessment <p><i>Environmental Appraisal</i></p> <ul style="list-style-type: none"> • HS suggests that can group policies which are unlikely to exert environmental effects • Table 4.2 and 4.5: HS content • HS requires clarification in the ER as to whether potential impacts on gardens and designed landscapes be considered using the SEA objective for the historic environment or for landscape? • May wish to consider impacts of transport measures and proposals on sites that are of local or regional importance • HS suggests adding SEA Objective: 'to promote the understanding and enjoyment of the historic environment' 	<p>This discussed in Appraisal Tables in Annex G</p> <p>These points built into the appraisal framework in Table 2.3</p> <p>Available data were used and the maps compared in the appraisal. Maps presented in the ER are too small for easy comparison and have not been overlaid No action required</p> <p>Alternatives included in ER</p> <p>No action required</p> <p>Noted</p> <p>This included in Natural Heritage in landscape</p> <p>Noted – would be taken into account at EIA stage Considered but decided that accessibility in widest sense</p>

Organisation	Date	Name	Information/Comments	Comment
			<ul style="list-style-type: none"> Noted that the environmental assessment will include consideration of cumulative effects <p>Next Steps <i>Proposed structure of the ER</i></p> <ul style="list-style-type: none"> Identification of who will be responsible for ensuring that the mitigation measures are taken forward into lower levels of transport planning Mitigation measures should be considered using the mitigation hierarchy, i.e. avoid, reduce, remedy or compensate (for negative effects) and enhancement where appropriate (for positive effects) Any enhancement of the historic environment should only be undertaken where appropriate and should be discussed with HS when features of national interest are being considered. 	<p>taken into account in draft RTS and that focus of strategy was not access to natural and cultural heritage sites Addressed in Section 5.7</p> <p>Noted in Section 5.7</p> <p>Noted</p>
Loch Lomond and Trossachs Park Authority	06.11.06	Nigel Brooks Transport Initiatives Coordinator	<ul style="list-style-type: none"> B6.2.2, National Parks are not owned by the government and the definition used is not appropriate for the Scottish context. Include 4 aims of National Park Quote the draft national park plan in Annex A 	Added to D6.2.2 & Annex C
SEPA (South East)	07.11.06	Sofia Billet Senior Planning Officer (SEA)	<p>General Comments</p> <ul style="list-style-type: none"> SEPA is broadly content with the scope and level of detail proposed for the SEA SEPA is satisfied with the 6 week proposed consultation period <p>Detailed Comments</p> <ul style="list-style-type: none"> SEPA considers that all relevant background information is presented SEPA notes that the objectives of the Water Framework Directive (WFD) is also the mitigation of floods and droughts and that the policy on the culverting of watercourses is in process of being reviewed Table 3.3: Baseline: the potential presence of land contamination in areas of previous industrial uses should be included in issues relating to soils. No statutory designations of contaminated land under Part 11A of the Environmental Protection Act 1990 in TACTRAN area. SEPA notes that Appendix B provides a comprehensive assessment of the current state of the environment etc SEPA notes that further information on climate trends for Scotland can be found in the SNIFFER report – A Handbook of climate trends across Scotland (May 2006) SEPA WFD requires the production of River Basin Management Plans (RBMP) by December 2009 for each river basin district identified – TACTRAN will be part of the Scotland River Basin District (SRBD) and within both the Forth and the Tay Area Advisory Group Indicative River and Coastal Flood Map (Scotland) can be found on 	<p>Noted</p> <p>Noted Added to Annex C</p> <p>Added in D3.3</p> <p>Noted</p> <p>Noted</p> <p>Added to D4.2.4</p> <p>Noted</p>

Organisation	Date	Name	Information/Comments	Comment
			<p>www.sepa.org.uk/flooding/mapping/</p> <ul style="list-style-type: none"> • 'The IRCF Map (Scotland) is designed to be used as a national and strategic assessment of flood risk to support planning policy in Scotland.' • SEPA supports proposal to 'scope in' all the environmental issues outlined in Schedule 3 of the Act • SEPA supports the appraisal framework for testing the RTS objectives, policies etc and the inclusion of detailed comments, the assessment of potential for cumulative effects to arise from the RTS and the link to mitigation options • Box 4.1 and Table 4.2 – SEPA notes that the objectives relating to water and soil are under Natural Heritage as being misleading. Air is found under Human Health which does not take account of air quality affecting other aspects of the environment. SEPA would prefer to see objectives in relation to water, flooding, soil and air under different headings. Another objective that could be considered under 'material assets' is the avoidance of sterilisation of mineral resources • SEPA notes that in relation to the SEA questions, under the Water Framework Directive's objectives, there is a requirement to not only prevent deterioration and enhance the quality, hydrological and morphological aspects of the water environment but also the ecological status of the aquatic environment 	<p>Noted</p> <p>Noted</p> <p>Points noted</p> <p>Natural Heritage is a term used frequently in EIA to cover all these objectives and the appraisals clearly cover the topics (see Table 2.3). Air quality is covered as part of several topics (again see Table 2.3). Minerals have been added to the geology and soils objective</p> <p>Noted and addressed in Table 2.3</p>
Scottish Natural Heritage (SNH)	07.11.06	Philip Gaskell, Area Manager	<p>General Comments</p> <ul style="list-style-type: none"> • SNH is content with the scope and level of detail proposed for the ER • SNH asks for 8 weeks consultation period for ER <p>Detailed Comments</p> <p><i>Table 3.1:</i> SNH recommends inclusion of</p> <ul style="list-style-type: none"> • International: Directive 2003/30/EC 'Biofuels Directive' – this has a target for biofuels to form at least 5% of transport fuels by 2010 • National: Disability Discrimination Acts 1995 and 2005 should be included • Regional: Loch Lomond and Trossachs National Park (LLTNP) draft park plan; Cairngorms Draft Local Plan; The NPs are the local Planning and Access authorities; The ER could usefully make reference to the NP aims set out in The National Parks (Scotland) Act 2000 • Reference is made to the Clackmannanshire Structure Plan (pg A35) – although SNH is not 	<p>Noted</p> <p>Consultation period changed to 8 weeks</p> <p>Checked and reviewed all plans/programmes recommended by SNH and added/removed to/from Annex C</p>

Organisation	Date	Name	Information/Comments	Comment
			<p>aware of this document – the Stirling and Clackmannanshire SP is appropriately included</p> <ul style="list-style-type: none"> • SNH points out for completeness that the Argyll and Bute Local Plan 2005 does not cover that part of Argyll and Bute within National Park, pending production of its own local plan, the Cowal Plan 1993 is still relevant. Similarly the draft West Dunbarton plan does not cover the part of the West Dunbartonshire council within the National Park <p><i>SNH Policy Documents: The following may be relevant:</i></p> <ul style="list-style-type: none"> • Environmental Justice: www.snh.org.uk/pdfs/polsum/enjh.pdf • National Scenic Areas: www.snh.org.uk/pdfs/polsum/NSA.pdf • Sustainable Development: www.snh.org.uk/pdfs/polstat/susdev_NH.pdf • The Natural Heritage Futures programme sets out SNH's vision for Scotland's natural heritage and promotes integrated management: www.snh.org.uk/future/Data/index.htm • Table 3.2: SNH recommends that it could in climate change a reference to flooding and the increased risk of land slips following storms, which can disrupt transport routes <p><i>Baseline Information</i></p> <ul style="list-style-type: none"> • Data could refer to the Loch Lomond and the Trossachs National park data – <i>An Evaluation of the Special Qualities of Loch Lomond and The Trossachs National Park 2006</i> and <i>The State of the Park Report 2005</i> • Reference could also be made to the Cairngorms National Park <i>State of the Park Report</i> • The NPs are referred to in the Landscape section though both the natural heritage interests and the statutory aims of the NPs raise their importance and sensitivity in other aspects • Climate Change: opportunities could also include solar and renewable electric power • Aquatic Environments: B4.1 – information in table is inaccurate. <ul style="list-style-type: none"> ○ The River Teith and River Forth merge to west of Stirling and take the name of the River Forth. Highest tidal effect on the River Forth is at Stirling Bridge in Stirling and the River forth continues through the estuary to meet the Firth of Forth at the Forth bridges ○ The River Teith, Endrick Water (Stirlingshire), River Tay and South Esk (Angus) all qualify as SACs – useful if this section identified their qualifying interests and conservation objectives – can be obtained from SNH website ○ Loch Katrine and Loch Lomond are both water catchment supplies for Glasgow • Landscape: greater assessment could be made of the sensitivity of landscape to transport infrastructure. Annex B.6 is a summary of landscape across the whole area – SNH notes that this seems overly simplistic in its approach • B.6.2.2: SNH notes inaccuracy of this section – see response letter for more info. • SNH notes that it would be helpful if the ER acknowledged that the TACTRAN area hosts 	<p>Noted</p> <p>Added to Annex B Added to Annex B Added to Annex B Noted</p> <p>Addressed in Table 4.1</p> <p>Added to Annex C & D6.2.2</p> <p>As above As above</p> <p>Added to D5.3</p> <p>Added to TableD4.1</p> <p>Expanded in tables in Annex G</p> <p>Noted & added to D6.2.2 Added to D11.2.2</p>

Organisation	Date	Name	Information/Comments	Comment
			<p>sections of 2 main North-South routes in Scotland – A82 and A9 – both routes subject to high levels of car traffic and road freight and currently undergoing minor upgrades and significant upgrade option studies</p> <ul style="list-style-type: none"> • Section 3.3 (pg 25) and Table 3.3 (pg 30) do not address visual impacts and there is no consideration of the importance of cumulative impacts • Insensitive historical road developments have resulted in roads detracting from landscape and visual amenity – the RTS offers opportunity to identify these impacts and seek to address them – opportunities also exist to improve access to landscape and its interpretation • Biodiversity: reference made to long distance footpaths and the NSA (map) – SNH notes that these would be more accurately referred to in Health and Safety and Landscape sections • B7.2.2 – note that species listed on Annex 4 of the Habitats Directive and all birds are given some level of protection – confirmed through NPPG14. Habitats listed on Annex 1 of the Habitats Directive should also be protected in the wider countryside, complementary to the Natura 2000 network • SNH note that it would be helpful if the ER briefly summarised the level of protection given to European sites and the tests applied to them and to European Protected Species • SNH add that opportunities also exist to raise awareness of biodiversity and many organisations already promote biodiversity at their sites, these include National Nature Reserves (NNRs) such as Flanders Moss, Ben Lui, Ben Lawers and Loch Leven and the RSPB reserve at Vane Farm • Cultural Heritage: Why have Dundee and Angus been specifically identified as tourist destinations. SNH notes that the area contains a range of significant cultural designations including 2 national parks, historic towns and villages such as Stirling, Perth, Dunkeld and Comrie, a large number of historic buildings, homes, museums and formal gardens • Human Health and Safety: SNH suggest that a discussion of the baseline of available access and recreation opportunities, length of promoted paths, length of cycle routes accessible for all, and access to greenspace and open space within the TACTRAN area would be useful – information should be available through various access and greenspace strategies. SNH further notes that Paths to Health demonstrates the value of informal outdoor recreation to human health <p><i>Significant Issues</i></p> <ul style="list-style-type: none"> • SNH notes that the issues of sustainable use of biodiversity, ecosystem level diversity, networks and wildlife corridors, threats of alien species and the importance of non protected biodiversity should be given consideration • Any effects on Natura Sites/Species: European guidance available: www.europa.eu.int/comm/environmental/eia/030923_sea_guidance.pdf notes that effects on protected sites/species should be part of ER guidance assessment that effects on the 	<p>See Tables in Annex G & Section 5.4.2 Added to D7.3</p> <p>Moved to D9</p> <p>Point noted</p> <p>See Section 2.6.3</p> <p>Added to Section 4.5 and D7.3</p> <p>Added to D8.2</p> <p>Principles added to relevant sections of report</p> <p>Added to Section 4.5 and D7.3</p> <p>See Section 2.6.3 and Table 2.5</p>

Organisation	Date	Name	Information/Comments	Comment
			<p>protected sites/species should be part of ER, guidance recommends that effects might be described in separate chapter as the findings on such effects are binding for the decision of the competent authorities on the plan or programme</p> <ul style="list-style-type: none"> Further advice on integrating SEA and appropriate assessment available www.englishnature.org.uk/pubs/publication/PDF/SEAbiodiversityGguide.pdf Where there are any potential significant effects on Natura sites, it should be noted that these require to be subject for an Appropriate Assessment <p><i>SEA Objectives</i></p> <ul style="list-style-type: none"> SNH consider SEA objectives to be a well balanced list, but offer the following comments: <i>Climate Change</i>: this objective could also make reference to the more ambitious UK target of 60% reductions. The sub objective could also refer to dealing with the effects as well as tackling the causes of climate change such as increased flooding <i>Community Well-being</i>: could include objective to provide access to open space, greenspace and recreation opportunities <i>Natural Heritage</i>: (a) habitats and species protected under the Birds and Habitats Directives should be addressed through a specific sub-objective such as 'to avoid adverse effects on the integrity of Natura sites'. This would need to be addressed initially through a criterion along the lines of 'is this plan likely to have significant effects on the qualifying features of SAC/SPA? An affirmative answer would require Appropriate assessment, (b) last objective is strangely worded and should included words 'protect against' or 'mitigate'. In addition the National Parks are included under the Natural heritage objective, although their remit is much wider <p><i>Report Structure</i></p> <ul style="list-style-type: none"> SNH supports the proposals for the report structure and accepts the need for further development of the RTS objectives before these can be included in the assessment 	<p>Noted</p> <p>Noted</p> <p>Points noted Scottish Target considered appropriate to RTS</p> <p>Point noted but felt to be covered by first two sub-objectives</p> <p>Picked up in SEA objective in protecting designated sites and in relevant appraisal tables</p> <p>No action required</p>

ANNEX C

ANALYSIS OF OTHER STRATEGIES, PLANS AND PROGRAMMES

Annex C: Analysis of Other Strategies, Plans and Programmes

International and European

Name and Date of Plan: <i>United Nations Framework Convention on Climate Change (Kyoto Protocol, 1992)</i>	
Content: Kyoto Protocol: International treaty on climate change, an agreement made under the United Nations Framework Convention on Climate Change	
Relevance to RTS: Reduction in emissions of carbon dioxide and greenhouse gases, leading to a positive impact on the environment, biodiversity and human health	
Relevant Objectives: <ul style="list-style-type: none"> • The stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system • Countries that ratify this protocol commit to reduce their emissions of carbon dioxide and five other greenhouse gases, or engage in emissions trading if they maintain or increase emissions of these gases 	
Opportunities/synergies: Reducing pollutants by increasing use of public and sustainable transport, recycling initiatives, waste awareness education etc Reduction in CO2 emissions leads to healthier population and environment	Constraints/challenges: Changing public attitudes

Name and Date of Plan: <i>Promotion of the use of biofuels or other renewable fuels for transport directive (Directive 2003/30/EC)</i>	
Content: The Directive aims at promoting the use of biofuels or other renewable fuels to replace diesel or petrol for transport purposes with a view to contributing to objectives such as meeting climate change commitments, environmentally friendly security of supply and promoting renewable energy sources	
Relevance to RTS: Looks at ensuring that transport and transportation is more environmentally sustainable	
Relevant Objectives: <ul style="list-style-type: none"> • Various 'objectives' all looking to promote the use of biofuels in both public 'fleet' and private transport and including a target for biofuels to form at least 5% of transport fuels by 2010 	
Opportunities/synergies: Environmental sustainability Promotion of health and well being	Constraints/challenges: Cost Availability of fuel

Name and Date of Plan: Assessment and Management of Environmental Noise Directive (Directive 2002/49/EC)	
Content: The Directive provides a basis for developing and completing the existing set of Community measures concerning noise emitted by the major sources, in particular road and rail vehicles and infrastructure and for developing additional measures in the short, medium and long term	
Relevance to RTS: To protect against noise from <i>inter alia</i> traffic and transport infrastructure	
Relevant Objectives: <ul style="list-style-type: none"> To define a common approach to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise To provide a basis for developing Community measures to reduce noise emitted by major sources, in particular road and rail vehicles and infrastructure 	
Opportunities/synergies: To promote awareness of the levels of noise caused by major roads or other traffic routes (flight paths etc) and ensure that these levels are managed in a sustainable manner	Constraints/challenges: The Directive only applies to certain areas and does not apply to noise pollution inside transport.

Name and Date of Plan: The Water Framework Directive (Directive 2000/60/EC)	
Content: The Directive requires EU Member States to put in place systems for managing their water environments, based on natural river basin districts and underpinned by extensive environmental monitoring and scientific investigation ("river basin management"). The Water Environment and Water Services (Scotland) Act 2003	
Relevance to RTS: The Directive requires that the physical and polluting impacts of land based activities (which would include transportation infrastructure) are controlled, with the aim of achieving "good" ecological status for most rivers etc by specified deadlines – 2015 in most cases	
Relevant Objectives: The basic objectives are summarised below: <ul style="list-style-type: none"> Prevent deterioration in the status of surface water bodies Protect, enhance and restore all bodies of surface water with the aim of achieving good surface water status by 2015 Prevent deterioration of the status of groundwater bodies Protect, enhance and restore all bodies of groundwater with the aim of achieving good groundwater status by 2015 Prevent or limit the input of pollutants to groundwater and reverse any significant and sustained upward trend in the concentration of pollutants in groundwater Comply with European wide measures against priority and hazardous substances Achieve compliance with any relevant standards and objectives for protected areas Mitigation of floods and droughts 	
Opportunities/synergies: <i>Scope is not restricted to what happens on or in water</i> Land use and activities are central to achieving the objectives of the Directive Requires consideration of any human intervention that could effect water quality, wherever the intervention takes place	Constraints/challenges: <i>Challenge of achieving, monitoring and sustaining good ecological status</i> Adopting a holistic approach to water management based on river basin management planning

Name and Date of Plan: <i>Air Quality Framework Directive (Directive 96/62/EC) (1996)</i>	
Content: Part of a series of directives introduced to control levels of certain pollutants and to monitor their management	
Relevance to RTS: Transport and related transport infrastructure contribute to ambient air quality	
Relevant Objectives: The general aim of this directive is to define the basic principles of a common strategy to: <ul style="list-style-type: none"> • Define and establish objectives for ambient air quality in the community designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole • Obtain adequate information on ambient air quality and ensure that it is made available to the public, inter alia by means of alert thresholds • Maintain ambient air quality where it is good and improve it in other cases 	
Opportunities/synergies: Improved health Benefits to the environment	Constraints/challenges: May hinder economic/industrial development

Name and Date of Plan: <i>The Habitats Directive (Directive 92/43/EEC)</i>	
Content: Gives statutory protection to natural habitats and other species of wild plants and animals	
Relevance to RTS: The Habitats Directive underpins a European network of protected areas known as Natura 2000. The construction, use, management and development of transport infrastructure should have due regard to the provisions of the Habitats Directive, Natura 2000 sites (including SPAs and SACs) and other protected areas and species	
Relevant Objectives: <ul style="list-style-type: none"> • To primary objective of the Habitats Directive is to protect natural habitats and other species of wild plants and animals • To establish Natura 2000 sites (protected areas including SACs and SPAs) and protect European protected species 	
Opportunities/synergies: To protect, enhance and sustain natural habitats and other species To integrate ecological considerations into the development process, including traffic and transport infrastructure	Constraints/challenges: To integrate ecological and conservation considerations into the traffic infrastructure design process

Name and Date of Plan: <i>The Birds Directive (Directive 79/409/EEC)</i>	
Content: Protects all wild birds, nests, eggs and habitats within the EC	
Relevance to RTS: The planning, design, use and maintenance of the transport infrastructure needs to have regard to the statutory requirements of the Birds Directive and its enacting legislation	
Relevant Objectives: <ul style="list-style-type: none"> • To protect all wild birds, nests, eggs and habitats within the EC • To ensure that ecological considerations are built into development proposals. • To enable member states to classify SPAs to protect birds which are rare/vulnerable in Europe, including all migratory birds 	
Opportunities/synergies: The Birds Directive makes certain provisions for the protection of wild birds in the wider countryside out with protected areas	Constraints/challenges: To integrate ecological and conservation considerations into the traffic infrastructure design process

National

Name and Date of Plan: <i>Climate Change The UK Programme 2006</i>	
Content: Document concerned with climate change in the Uk.	
Relevance to RTS: Transport and its infrastructure contribute to climate change in the uK	
Relevant Objectives: The Uk Government will: <ul style="list-style-type: none"> • Build on the progress made at the G8 Summit in Gleneagles and the Montreal Climate Change Conference to strengthen the international regime to tackle climate change; • In partnership with the EU enhance our efforts to help India, China and other developing countries evolve as low carbon economies; • Work to build international consensus on the scale of global action needed to stabilise the climate and avoid dangerous climate change; • Work with EU partners to secure agreement to further action in the EU, in particular strengthening the Emissions Trading Scheme beyond 2012 and making it the heart of a global carbon market; and • Support international collaboration and coordination to ensure the successful expansion of new technologies, through action in key areas such as product standards and research development 	
Opportunities/synergies: Promotion of sustainable travel, transport and transport infrastructure	Constraints/challenges: Change in public attitudes

Name and Date of Plan: <i>National Air Quality Strategy, DEFRA, January 2000</i>	
Content: Sets out the air quality strategy for the UK with objectives and targets, refers to Environment Act 1995 legislation	
Relevance to RTS: Traffic and transport emissions are major air pollutants	
Relevant Objectives: The reduction in the levels of 8 harmful pollutants present in the air, which in turn promote; <ul style="list-style-type: none"> • The protection of human health • The protection of vegetation and ecosystems 	
Opportunities/synergies: To look towards reducing pollution caused by transport and therefore protecting the health of people and the environment	Constraints/challenges: Reducing congestion and pollution caused by traffic, transport infrastructure

Name and Date of Plan: <i>The Future of Transport White Paper 2004</i>	
Content: Document aiming to ensure that the UK can benefit from mobility and access while minimising the impact on other people and the environment, now and in the future	
Relevance to RTS: Plan extends to Scotland in so much that it covers UK policy responsibilities for some aspects of road traffic regulation	
Relevant Objectives: <ul style="list-style-type: none"> • We continue to improve safety • We identify, fund, and deliver promptly additional road capacity where this is justified - balancing the needs of motorists and other road users with wider concerns about the impact on the environment, including the landscape • We get ever greater performance out of the road network through improved management • We facilitate smarter individual choices about the trips we need to make, giving people alternatives to using their car, particularly for short journeys; and • And promote these choices by ensuring that new ways of paying for road use are developed so they become practical options 	
Opportunities/synergies: Deliver sustainable transport plans in Scotland which meet the growing demand	Constraints/challenges: Balancing demand for transport with environmental impact

Name and Date of Plan: <i>National Cycling Strategy, Department for Transport, October 2004</i>	
Content: Sets out the cycling strategy for the UK with objectives and targets	
Relevance to RTS: Cycling as a sustainable form of transport	
Relevant Objectives: <ul style="list-style-type: none"> • To increase cycle use • To achieve convenient cycle access to key destinations • Improve cycle safety • Provide for increased cycle use within all local highways and traffic management schemes • Cycle parking facilities to be available at all major destinations, including town centres, shopping developments, educational establishments, hospitals and leisure facilities • Raise awareness and expertise amongst transport providers, service providers and employers unlock financial resources to meet the Strategy objectives • Progress the National Cycling Strategy 	
Opportunities/synergies: To increase and integrate cycle use within the transport system which will in turn improve health and contribute to a healthier environment	Constraints/challenges: Changing attitudes

Name and Date of Plan: <i>One Future – Different Paths. The UK's Shared Framework for Sustainable Development, Sustainable Development Commission, July 2005</i>	
Content: Document focuses on the issue of Sustainable development	
Relevance to RTS: Sustainable development strategy at the national level	
Relevant Objectives: <ul style="list-style-type: none"> • To achieve sustainable consumption and production – achieving more for less • Climate change and energy – to change the way we generate and use energy and to set a good example in this • To achieve natural resource protection and environmental enhancement – protecting the environmental resources on which we depend • Building sustainable communities at the local and global levels • Changing behaviour to achieve sustainable development 	
Opportunities/synergies: Ensuring sustainable development is at the heart of government policy	Constraints/challenges: Fully incorporating sustainable development into the RTS

Name and Date of Plan: <i>Securing the Future – UK Government Sustainable Development Strategy, March 2005</i>	
Content: Sustainable development	
Relevance to RTS: Sustainability strategy	
Relevant Objectives: <ul style="list-style-type: none"> • Sustainable consumption and production • Climate change and energy • Natural resource protection and environmental enhancement • Sustainable communities 	
Opportunities/synergies: Ensuring sustainability is central to government policy	Constraints/challenges: Fully incorporating sustainable development into the RTS

Name and Date of Plan: <i>British Waterways – Our Plan for the Future, 2005 – 2009</i>	
Content: To blend best commercial practice with public sector values to earn and increase the income available to conserve and enhance the waterways for the benefit of the public/users	
Relevance to RTS: British waterways form an integral part of the transport system and infrastructure	
Relevant Objectives: <ul style="list-style-type: none"> • To increase leisure traffic for recreation • To increase freight traffic for the transportation of goods • To double freight carriage by 2010 (compared to 2000), concentrating on four main markets: minerals, waste, construction and demolition materials and containers 	
Opportunities/synergies: To ensure that waterways are an integral part of any planned development and transport infrastructure Use of waterways as method of freight transportation and conservation of the waterways lead to cleaner environment and better health	Constraints/challenges: Freight as the main waterway purpose Safety issues

Name and Date of Plan: <i>Disability discrimination Act 2005</i>	
Content: Act detailing legislation requirements in relation to discrimination against disabilities, updating the 1995 Act	
Relevance to RTS: RTS should take disability measures into account in relation to transport provision and access in the TACTRAN area	
Relevant Objectives: <ul style="list-style-type: none">• None stated as such but section detailing legislation relating specifically to transport such as rail, display and use of disabled users badges etc	
Opportunities/synergies: Creating better access for all	Constraints/challenges: Ensuring that adequate transport and access is provided for all users

National (Scotland)

Name and Date of Plan: <i>Changing Our Ways: Scotland's Climate Change Programme (2006)</i>	
Content: Programme setting out the steps being taken by Scotland now and in the near future of actions to tackle climate change	
Relevance to RTS: RTS will set out ways of reducing transport contributions to climate change	
Relevant Objectives:	
<ul style="list-style-type: none"> • Developing a transparent approach and an open and inclusive process; • Integrating climate change routinely into policy development across all sectors and at all levels; • Achieving Scotland's contribution in the most sustainable way - considering the wider environmental, social and economic implications of different courses of action; • Influencing and contributing to UK, European and global efforts to respond and adapt to climate change where Scotland's participation can add most to the process; • Combining both demand management (reduced energy consumption and increased efficiency of use) and supply side measures (low carbon options including fuel mix and renewables); • Maximising opportunities for both mitigation and adaptation (e.g. green jobs, technology development, renewables, biomass, sustainable flood management) - and making the most of Scotland's strengths; • Leading the public sector, visibly and by example - doing and communicating best practice to others; • Overcoming the inertia - everyone making the connection between daily life choices and climate change, and having options to act accordingly; and • Increasing the momentum - capacity building, monitoring, reporting, feedback 	
Opportunities/synergies:	Constraints/challenges:
Reduce transport based contributions to climate change	Changing public practices Balancing priorities

Name and Date of Plan: <i>Scotland's National Transport Strategy, Scottish Executive, December 2006</i>	
Content: This strategy sets out the long term future for transport in Scotland	
Relevance to RTS: National Transport Strategy (NTS) for Scotland which aims to promote economic growth, social inclusion, health and protection of our environment through a safe, integrated, effective and efficient transport system	
Relevant Objectives:	
<p>The vision, as set out in Scotland's Transport Future (2004), is of "an accessible Scotland with safe, integrated and reliable transport that supports economic growth, provides opportunities for all and is easy to use; a transport system that meets everyone's needs, respects our environment and contributes to health; services recognised internationally for quality, technology and innovation, and for effective and well-maintained networks; a culture where fewer short journeys are made by car, where we favour public transport, walking and cycling because they are safe and sustainable, where transport providers and planners respond to the changing needs of businesses, communities and users, and where one ticket will get you anywhere"</p> <p>The high level objectives for transport, as set out in Scotland's Transport Future (2004), are to:</p> <ul style="list-style-type: none"> • Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency • Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network • Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy • Improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, cyclists, drivers, passengers and staff • Improve integration by making journey planning and ticketing easier and working to ensure smooth 	

connection between different forms of transport	
<p>This NTS outlines 3 key strategic outcome that Scotland must focus on to achieve its vision:</p> <ul style="list-style-type: none"> • Improve journey times and connections, to tackle congestion and the lack of integration and connections in transport which impact on our high level objectives for economic growth, social inclusion, integration and safety; • Reduce emissions, to tackle the issues of climate change, air quality and health improvement which impact on our high level objective for protecting the environment and improving health; and • Improve quality, accessibility and affordability, to give people a choice of public transport, where availability means better quality transport services and value for money or an alternative to the car 	
<p>Opportunities/synergies:</p> <p>Ensure that the RTS covers all aspects of and works in conjunction with the objectives set out in the NTS</p>	<p>Constraints/challenges:</p> <p>Ensuring the RTS has strong and effective links and relationships with its adjoining RTS areas and that they connect rather than conflict</p>

<p>Name and Date of Plan: <i>Scotland's Biodiversity: It's in your hands, Scottish Executive, 2004</i></p>	
<p>Content: A strategy for the conservation and enhancement of biodiversity in Scotland – various biodiversity and environmental regulations</p>	
<p>Relevance to RTS: Transport impacts on biodiversity</p>	
<p>Relevant Objectives:</p> <ul style="list-style-type: none"> • To halt the loss of biodiversity and continue to reverse previous losses through targeted action for species and habitats • To restore and enhance biodiversity in all our urban, rural and marine environments through better planning, design and practice • To develop an effective management framework that ensures biodiversity is taken into account in all decision making 	
<p>Opportunities/synergies:</p> <p>Ensuring that traffic and transport infrastructure recognises and adheres by the biodiversity aims and objectives</p>	<p>Constraints/challenges:</p> <p>Development of transport infrastructure and network may be hindered by strict biodiversity regulations</p>

Name and Date of Plan: <i>Choosing Our Future: Scotland's Sustainable Development Strategy, Scottish Executive, 2005</i>	
Content: Underpinned by the philosophy of the UK shared framework for sustainable development, <i>One Future – different paths</i> . This strategy sets out the measures that we will take in Scotland to turn this framework into action.	
Relevance to RTS: Considers and highlights the importance of sustainable development	
Relevant Objectives: These priorities for Scotland and across the UK are our response to these challenges: <ul style="list-style-type: none"> • Sustainable consumption and production: achieving more with less. This includes reducing the inefficient use of resources, looking at the impact of products and materials across their whole lifecycle and encouraging people to think about social and environmental consequences of their purchasing choices. • Climate change and energy: securing a profound change in the way we generate and use energy, and reducing greenhouse gas emissions • Natural resource protection and environmental enhancement: protecting our natural resources, building a better understanding of environmental limits, and improving the quality of the environment • Sustainable communities: creating communities that embody the principles of sustainable development locally 	
Opportunities/synergies: Encouragement of sustainable forms of living such as sustainable modes of transport Improved quality of life linked to sustainable travel and transport	Constraints/challenges: May hinder the economy Changing public perceptions and attitudes

Name and Date of Plan: <i>Women and Transport: Moving Forward, Scottish Executive, 2000</i>	
Content: N/A	
Relevance to RTS: Transport issues relating specifically to women	
Relevant Objectives: Principle aim was to produce a set of guidelines for central and local government transport policy makers to assist them in taking account of the needs of women in the development of transport policy	
Opportunities/synergies: Women were identified to travel by foot and public transport more than men	Constraints/challenges: Lack of safety on public transport Physical access to transport (especially for disabled and women with children) Timing and routes, especially early morning provision Clarity and accessibility of transport information Lack of consultation with women affecting the development of relevant policy

Name and Date of Plan: <i>Creating Our Future... Minding Our Past. Scotland's National Cultural Strategy, Scottish Executive, 1999</i>	
Content: Promoting creativity, the arts, and other cultural activities	
Relevance to RTS: Transports relationship to and role in promoting Scotland's cultural activity	
Relevant Objectives: <ul style="list-style-type: none"> Promoting creativity, the arts, and other cultural activity Realising culture's potential contribution to education, promoting inclusion and enhancing people's quality of life 	
Opportunities/synergies: Promoting social inclusion through provision of transport infrastructure related to the enhancement of Scotland's culture	Constraints/challenges: N/A

Name and Date of Plan: <i>National Waste Plan, Waste Action Scotland, 2003</i>	
Content: Framework Directive on Waste (75/442/EEC) (as amended), The Environment Act 1995	
Relevance to RTS: Waste management and resource efficiency in Scotland	
Relevant Objectives: <ul style="list-style-type: none"> The aims of the Plan are to minimise the impact of waste on the environment, both locally and globally, to improve resource use efficiency in Scotland, and to remedy the environmental injustices suffered by those who have to live with the consequences of a wasteful society 	
Opportunities/synergies: Reduction in waste created by transport	Constraints/challenges:

Name and Date of Plan: <i>Trunk Road Biodiversity Action Plan: Review for Discussion, Scottish Executive, 2000</i>	
Content: To assist in the delivery of biodiversity targets and objectives as set down in the Scottish Local Biodiversity Action Plans	
Relevance to RTS: Biodiversity alongside trunk roads	
Relevant Objectives: <ul style="list-style-type: none"> Adopt practices which help to maintain and enhance the biological resource Identify all designated sites (SSSI) adjacent to trunk roads, and ensure that the operation and maintenance of the road does not adversely affect them Reduce reliance on fertilisers and herbicides 	
Opportunities/synergies: Design and positive management can help maintain and enhance the biodiversity of trunk roads	Constraints/challenges: Ensuring that biodiversity of trunk roads is included in all trunk road planning and management

Name and Date of Plan: <i>Scotland's Transport Future – The Transport White Paper, June 2004</i>	
Content: Scottish Executive White Paper	
Relevance to RTS: Sets out the Scottish Executive's aims and objectives for transport in Scotland	
Relevant Objectives: <ul style="list-style-type: none"> • To promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency; • To promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network; • To protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy; • To improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, drivers, passengers and staff; 	
Opportunities/synergies: <p>Transport connections create opportunities in trade, employment, education, shopping, health and leisure</p> <p>There are opportunities to create new transport infrastructure</p> <p>There are opportunities for stabilising traffic growth There are opportunities for technical change Opportunities to develop the cycle and footpath network</p>	Constraints/challenges: <p>Changing public attitudes</p> <p>Stabilising road traffic volumes – by breaking the link between economic growth and increased volume of traffic</p> <p>Make the most of existing transport links and facilitate the development of new links that allow us to play a full part in the global economy and the international community.</p> <p>History of neglect in public transport and lack of investment in road maintenance</p> <p>Traffic growth has major economic, environmental and social costs</p> <p>Improving road safety</p>

Name and Date of Plan: <i>Scottish Transport Appraisal Guidance (STAG) 2000</i>	
Content: It is a requirement that all transport projects for which Scottish Executive support of approval is required shall be appraised in accordance with STAG	
Relevance to RTS: STAG is a document to aid transport planners and decision makers in the development of transport policies, plans, programmes and projects.	
Relevant Objectives: <ul style="list-style-type: none"> • Environment • Safety • Economy • Integration • Accessibility and social inclusion 	
Opportunities/synergies: <p>Opportunities to integrate objectives into the optioneering, planning and design of transport/infrastructure proposal</p>	Constraints/challenges: <p>N/A as STAG aimed at assisting RTS</p>

Name and Date of Plan: <i>SPP1 The Planning System, Scottish Executive, November 2002</i>	
Content: Various planning regulations, including Town and Country Planning (Scotland) Act 1997	
Relevance to RTS: SPP1 identifies the key priorities for the planning system, this has an implication for transport	
Relevant Objectives: To encourage integrated transport and more sustainable travel patterns	
Opportunities/synergies: The planning system can encourage more sustainable travel patterns by: Allocating land for development and selecting priority areas for regeneration to maximise the scope for access by foot, cycle and public transport Promoting an efficient transport network for the movement of freight and goods distribution, including where possible use of rail and water Providing direct and safe access to local facilities by a choice of transport modes Supporting mixed use, increased tenure choice and local service provision	Constraints/challenges: Changing public attitudes Planning as a constraint to expansion of transport infrastructure

Name and Date of Plan: <i>SPP2: Economic Development, Scottish Executive, November 2002</i>	
Content: Various planning regulations, including Town and Country Planning (Scotland) Act 1997	
Relevance to RTS: Discusses how transport plays a role in economic development	
Relevant Objectives: <ul style="list-style-type: none"> To secure and support the delivery of sites for economic development in sustainable locations by identifying key locations that are highly accessible by public transport Safeguard and enhance the environment, by requiring that new development is of a high design quality and protecting the natural and built heritage 	
Opportunities/synergies: Continued reinvigoration of the transport system to meet Scotland's economic and social needs without threatening the health of the environment Good, affordable and reliable public transport links Growth and expansion of airports and ports supports the economy	Constraints/challenges: Ensuring that environmental sustainability is taken account of

Name and Date of Plan: <i>SPP3: Planning and Housing, Scottish Executive, February 2003</i>	
Content: Housing (Scotland) Act 2001. Various planning regulations, including Town and Country Planning (Scotland) Act 1997	
Relevance to RTS: Refers to location of new housing in relation to integration with transport	
Relevant Objectives: <ul style="list-style-type: none"> To create quality residential environments - New housing should make a positive contribution to the built and rural environment, and should be designed and laid out to provide lasting benefits To guide new housing developments to the right places - New housing areas should be easily accessible by public transport and well integrated into walking and cycling networks 	
Opportunities/synergies: Promoting sustainable methods of transport such as walking, cycling and public transport Opportunity to reduce travel demand with location and layout of new housing	Constraints/challenges: Changing public attitudes

Name and Date of Plan: <i>SPP7 – Planning and Flooding, The Scottish Executive</i>	
Content: Sustainable Flood Management supported by The Water Environment and Water Services (Scotland) Act 2003 (“The WEWS Act”)	
Relevance to RTS: Gives guidance to ensure that development proposals, including transport infrastructure, have due regard to flood risk and sustainable flood management	
Relevant Objectives: <ul style="list-style-type: none"> To prevent further development which would have a significant probability of being affected by flooding or which would increase the probability of flooding elsewhere 	
Opportunities/synergies: To integrate sustainable flood management into transport infrastructure proposals Requirements of the Water Framework Directive	Constraints/challenges: Functional flood plain restrictions culverting

Name and Date of Plan: <i>SPP15: Planning for Rural Development, Scottish Executive, February 2005</i>	
Content: Planning to be sensitive to demand for new types of development in rural areas. Various planning regulations including Town and Country Planning (Scotland) Act 1997	
Relevance to RTS: Rural development and transport	
Relevant Objectives: <ul style="list-style-type: none"> The overarching aim is to have a prosperous rural economy, with a stable or increasing population that is more balanced in terms of age structure and where rural communities have reasonable access to good quality services 	
Opportunities/synergies: Rural accessibility – ensuring those living in rural areas have sufficient and sustainable transport links To integrate transport issues into rural land use planning	Constraints/challenges: Accessibility, costs, frequency and reliability of rural (public) transport Reliance on private cars

Name and Date of Plan: SSP17: Planning for Transport, Scottish Executive, August 2005	
Content: SPP1: The Planning System and various planning regulations, including Town and Country Planning (Scotland) Act 1997	
Relevance to RTS: Integrates transport and planning	
Relevant Objectives: <ul style="list-style-type: none"> • To meet European and UK commitments and targets on greenhouse gases and local air quality; • To maintain and enhance the natural and built environment, through avoiding or mitigating adverse environmental impacts, minimising environmental intrusion and retaining, improving and enhancing areas for biodiversity; • To maintain and enhance the quality of urban life, particularly the vitality and viability of urban centres; • To reinforce the rural economy and way of life; and • To ensure that the impact of development proposals on transport networks does not compromise their safety or efficiency. 	
Opportunities/synergies: Promote healthier lifestyles through transport use Economic development Integration	Constraints/challenges: For the transport network to most effectively support the economy, land use planning should assist in reducing the need to travel; in creating the right conditions for greater use of sustainable transport modes; and in avoiding or mitigating adverse environmental impacts.

Name and Date of Plan: NPPG5 Archaeology and Planning, October 1998	
Content: Associated with Planning Advice Note Archaeology - <i>the Planning Process and Scheduled Monument Procedures</i>	
Relevance to RTS: Traffic and transportation infrastructure's effect on archaeological sites	
Relevant Objectives: <ul style="list-style-type: none"> • To preserve and enhance archaeological heritage 	
Opportunities/synergies: Transport policies and plans are in line with the protection of archaeological features	Constraints/challenges: Strict planning regulations in specific areas may hinder growth of transport links

Name and Date of Plan: NPPG6 Renewable Energy Developments, November 2000	
Content: To support an increase in renewable energy development in Scotland	
Relevance to RTS: Relationship between transport and renewable energy developments	
Relevant Objectives: <ul style="list-style-type: none"> • To encourage more electricity generation from renewable sources • To recognise the planning system's important role in providing a framework for promoting renewable energy development 	
Opportunities/synergies: Encouragement of renewable and sustainable transport, such as hydrogen fuel cell cars and bicycles	Constraints/challenges: Changing public attitudes

Name and Date of Plan: <i>NPPG8 Town Centres and Retailing, January 2003</i>	
Content: Planning guidance in relation to town centres and retailing	
Relevance to RTS: Access to town centres and retail developments	
Relevant Objectives: <ul style="list-style-type: none"> To sustain and enhance the vitality, viability and design quality of town centres, as the most appropriate location for retailing and other related activities To ensure that new developments are located where there are good public transport services, and better access for those walking and cycling, leading to less dependence on access by car. 	
Opportunities/synergies: That town centre and retailing plans are compatible with sustainable development This includes new developments being located by public transport links and better access for walkers and cyclist.	Constraints/challenges: To change public's behaviour and reduce reliance on private transport use in town centres and retail areas

Name and Date of Plan: <i>NPPG11 Sport, Physical Recreation and Open Space, June 1996</i>	
Content: Considers the land use implications of sport and physical recreation and aspects of informal physical recreation that take place in urban open spaces and the countryside, associated with the House of Commons Environment Committee's Report The Environmental Impact of Leisure Activities, 1995	
Relevance to RTS: Access to sport and the implications on land use as a result of this access	
Relevant Objectives: <ul style="list-style-type: none"> To pay special regard to those who find it difficult to gain access to sport; To ensure that new sports facilities are readily accessible by public transport, cycling and on foot; To improve the health of the population through sport and recreational activities 	
Opportunities/synergies: Ensuring that leisure activities are a means of creating awareness of, and appreciation for, the environment Maintaining transport links that provide access for all people to various sport/leisure/recreational facilities To improve health of the population – may promote forms of sustainable transport such as cycling and walking	Constraints/challenges: Environmental impacts caused by sport/physical recreation/leisure activities including; overcrowding, traffic congestion, wear and tear of local environment, disturbance and noise impacting on countryside, inappropriate development

Name and Date of Plan: <i>NPPG13 Coastal Planning, August 1997</i>	
Content: Takes account of recent and likely development pressures on the coast, new nature conservation designations, and the Government's commitment to sustainable development and other relevant Government policies	
Relevance to RTS: Traffic and transportation infrastructure's effect on coastal areas	
Relevant Objectives: <ul style="list-style-type: none"> • To contribute to achieving sustainable development and also maintaining and enhancing biodiversity on the coast • To promote sensitive development, including reuse of existing buildings, for the promotion of tourism in coastal areas 	
Opportunities/synergies: Commitment to sustainable development Providing suitable non intrusive access to coastal areas, to enable recreation and tourist access to coastal areas	Constraints/challenges: Strict planning regulations in coastal areas

Name and Date of Plan: <i>NPPG14 Natural Heritage, January 1999</i>	
Content: Gives guidance on how the Government's policies for the conservation and enhancement of Scotland's natural heritage should be reflected in land use planning, associated with the UK BAP	
Relevance to RTS: Transport and associated infrastructure impacts on the natural heritage of Scotland	
Relevant Objectives: <ul style="list-style-type: none"> • To ensure that society's land requirements in terms of housing, economic activity, transport infrastructure and recreation are met in ways which do not erode environmental capital • To conserve and enhance Scotland's natural heritage 	
Opportunities/synergies: To create transportation infrastructure that does not destroy the natural heritage	Constraints/challenges: Strict planning regulations in specific areas

Name and Date of Plan: <i>NPPG18 Planning and the Historic Environment, April 1999</i>	
Content: National planning guidance for planning and the historic environment, deals primarily with listed buildings, conservation areas, world heritage sites, historic gardens, designed landscapes and their settings	
Relevance to RTS: Traffic and transportation infrastructure impact on the historic environment	
Relevant Objectives: <ul style="list-style-type: none"> • To protect, conserve and enhance the historic environment 	
Opportunities/synergies: <i>To maintain and enhance Scotland's historic environment – economical, social and cultural value</i> To contribute to sustainable development	Constraints/challenges: Strict planning regulations could place regulations on the growth of transport network and infrastructure

Name and Date of Plan: PAN 56: Planning and Noise, April 1999	
Content: Integrating noise issues into planning considerations	
Relevance to RTS: Noise created from traffic and transport infrastructure (construction and operation)	
Relevant Objectives: <ul style="list-style-type: none"> To set out a range of noise issues that planning authorities need to be aware of in formulating development plans and making decisions on planning applications To demonstrate the role of the planning system in preventing and limiting the adverse effects of noise without prejudicing investment in enterprise, development and transport 	
Opportunities/synergies: Reducing noise pollution	Constraints/challenges: Integrating noise planning into future transportation planning and developments to ensure that the levels of noise created/produced by traffic and transport infrastructure is kept to a minimum

Name and Date of Plan: Pan 59: Improving Town Centres, October 1999	
Content: Accompanies NPPG8: Town Centres and Retailing	
Relevance to RTS: Accessibility to town centres	
Relevant Objectives: <ul style="list-style-type: none"> For town centres to be accessible by a variety of efficient and effective modes of transport, have an amenity which is attractive, clean and safe, and are planned, managed and promoted in a positive way 	
Opportunities/synergies: Opportunities to make town centres more accessible through the provision of effective and reliable transport links – this can include the promotion of public transport use leading to a reduction in the use of private transport	Constraints/challenges: Reducing the ever increasing dependency on private cars within city centres and the associated problems with this (congestion etc) Changing public attitudes to lead to increased use of public transport

Name and Date of Plan: PAN 60: Planning for Natural Heritage, August 2000	
Content: The role of planning in protecting, managing and enhancing natural heritage (complements the NPPG14: Natural Heritage)	
Relevance to RTS: Inter-relationship between natural heritage and development is crucial to land-use planning, including transport and transport infrastructure developments	
Relevant Objectives: <ul style="list-style-type: none"> To provide advice on how development and the planning system can contribute to the conservation, enhancement, enjoyment and understanding of Scotland's natural environment To encourage developers and planning authorities to be positive and creative in addressing natural heritage issues 	
Opportunities/synergies: Prevention of the loss of biodiversity A sustainable approach to the conservation of the natural heritage Providing access through transportation links	Constraints/challenges: Strict planning and guidelines for specific areas of natural heritage

Name and Date of Plan: <i>PAN 61: Planning and Sustainable Urban Drainage Systems, July 2001</i>	
Content: Provides advice on good practice and other relevant information on SUDS	
Relevance to RTS: SUDS are often a key requirement of transport infrastructure development	
Relevant Objectives:	
<ul style="list-style-type: none"> To provide good practice on the use of SUDS in new developments To demonstrate the role of the planning system in getting SUDS accepted as a normal part of the development process, including transport related developments 	
Opportunities/synergies:	Constraints/challenges:
Integrate SUDS into all new developments associated with transport	Ensuring SUDS are incorporated into all new developments associated with transport

Name and Date of Plan: <i>PAN 65: Planning and Open Space, January 2003</i>	
Content: Advice on the role of the planning system in protecting and enhancing existing open spaces and providing high quality new spaces	
Relevance to RTS: Transport and transportation infrastructure impacts directly and indirectly on open space.	
Relevant Objectives:	
The planning system performs two key functions in relation to open space:	
<ul style="list-style-type: none"> Protecting areas that are valuable and valued; and Ensuring provision of appropriate quality in, or within easy reach of, new development. 	
Opportunities/synergies:	Constraints/challenges:
Managing and maintaining the quality and accessibility of open spaces	Increasing congestion from transport and associated infrastructure
Maintaining key open spaces and recreation ground for the health and well being of the population	Increasing encroachment of transport and associated infrastructure onto open spaces

Name and Date of Plan: <i>PAN 71: Conservation Area Management, August 2004</i>	
Content: Complements existing national policy (NPPG18 Planning and the Historic Environment) and provides further advice on the management of conservation areas	
Relevance to RTS: Relationship between transport and the environment / conservation areas	
Relevant Objectives:	
<ul style="list-style-type: none"> To identify good practice for managing change, sets out a checklist for appraising conservation areas and provides advice on funding and implementation 	
Opportunities/synergies:	Constraints/challenges:
Working with conservation policy to enhance existing conservation areas (promote pedestrian access, cycling etc) and their associated access and transportation links	Strict policy may hinder development of transportation links required to promote economic development

Name and Date of Plan: <i>PAN 72: Housing in the Countryside, February 2005</i>	
Content: To create more widespread good quality rural housing which respects the Scottish landscape and building traditions	
Relevance to RTS: Transportation links and access to the increasing number of people dwelling in the countryside	
Relevant Objectives: <ul style="list-style-type: none">Sets out key design principles which need to be taken into account by applicants when planning a new development and by planning authorities, when preparing development plans and supporting guidance, and determining applications.	
Opportunities/synergies: Increased transport links to rural areas Chance to improve and update public transport links and decrease reliance on private car dependency	Constraints/challenges: Providing adequate, efficient and inexpensive public transport links and changing public attitudes Ever increasing congestion in the countryside and increase traffic on the road Road safety
Name and Date of Plan: <i>PAN 75: Planning for Transport, August 2005</i>	
Content: Accompanies SPP17: Planning for Transport	
Relevance to RTS: Provides good practice guidance which planning authorities should carry out in their transport policy development, proposal assessment and delivery. PAN 75 aims to create greater awareness of how linkages between planning and transport can be managed	
Relevant Objectives: <ul style="list-style-type: none">To help achieve better and earlier integration between land use planning at national, regional and local levels	
Opportunities/synergies: The integration of land use and transport planning is a key element of sustainable development PAN75 reinforces the principles and policy set out in SPP17	Constraints/challenges: Modal shift

Name and Date of Plan: <i>The Scottish Executive's Community Regeneration Statement Better Communities in Scotland– Closing the Gap, June 2002</i>	
Content: Sets out how the Scottish Executive and partners intend to turn around disadvantaged communities to improve quality of life and social justice	
Relevance to RTS: Access to public transport is important to community regeneration	
Relevant Objectives: <ul style="list-style-type: none"> • To make core public services as effective as possible in deprived areas • To ensure individuals and communities have the social capital, including resources, to take advantage of and increase the opportunities available to them • Community regeneration has 5 priority areas – health, education, transport, crime and employment 	
Opportunities/synergies: Transport is central to delivering sustainable communities, particularly in providing access to opportunities and employment Providing access through public transport links	Constraints/challenges: Poor quality, inaccessible, unreliable and infrequent public transport is a barrier to regenerating communities and sustainability

Name and Date of Plan: <i>A Partnership for a Better Scotland: Partnership Agreement, Scottish Executive, 2003</i>	
Content: Partnership working	
Relevance to RTS: Scottish Executive (high level) approach and commitment to transport	
Relevant Objectives: <ul style="list-style-type: none"> • The aim is for an accessible Scotland, with a modern, safe, efficient and sustainable transport system 	
Opportunities/synergies: The transport system will: Meet the needs of business, transport users and the environment Improve access for rural communities Protect the environment and improve safety Ensure that our future transport system is well planned and delivered	Constraints/challenges: The Scottish people and economy needs reliable, efficient transport. An effective transport system is central to a thriving economy and strong communities

Name and Date of Plan: <i>Scotland's Transport, Delivering Improvements, Scottish Executive, March 2002</i>	
Content: Transport Policy	
Relevance to RTS: Presents the Scottish executive's vision for transport and transport improvements	
Relevant Objectives:	
<ul style="list-style-type: none"> To deliver transport improvements consistent with that vision (to work together to build a sustainable, effective and integrated transport system) and appropriate to the different needs in different parts of Scotland, and delivering a transport system for Scotland fit for the 21st century 	
Opportunities/synergies:	Constraints/challenges:
The integration of land use and transport planning is a key element of sustainable development	Time versus increased congestion and pollution caused by transport
	Modal shift

Name and Date of Plan: <i>Communities Scotland Corporate Plan, 2003 – 2006</i>	
Content: Community regeneration	
Relevance to RTS: Part of the aims of Communities Scotland involve transport aspects of the community	
Relevant Objectives:	
<ul style="list-style-type: none"> To regenerate our communities. In part this will be through Communities Scotland demonstrating that they are closing the opportunity gap for disadvantaged communities in respect of key outcomes for education, health, justice, transport, housing and employment 	
Opportunities/synergies:	Constraints/challenges:
Aiding the regeneration of disadvantaged communities by providing access	Provision of sustainable, affordable, efficient and user friendly public transport for those disadvantaged communities

Name and Date of Plan: <i>Cycling Scotland – Assessment of Local Authorities: Performance on Cycling, April 2005</i>	
Content: The study focuses on Local Authority plans and policies relating to cycling and to the engagement of stakeholders	
Relevance to RTS: Provision, promotion and use of cycling facilities is central to sustainable transport	
Relevant Objectives:	
<ul style="list-style-type: none"> To support the development of cycling in Scotland To compare Local Authority performance in promoting cycling as a sustainable form of transport To establish a baseline on cycling in Scotland for policy and planning purposes To provide observations and comment on good practice and general recommendations for improving cycling strategies, stakeholder engagement, infrastructure and promotion of cycling 	
Opportunities/synergies:	Constraints/challenges:
To provide synergy between and comparison of Local Authority performance throughout the UK	Differences in need between urban and rural areas
Promotion of cycling – health, sustainability	Difference in approach, resources and funding between Local Authorities

Name and Date of Plan: SEPA Policy 26 – Policy on the Culverting of Watercourses (1998)	
Note: Currently being reviewed	
Content: The Town and Country Planning Act (1997), The Environment Act (1995), The Water Framework Directive	
Relevance to RTS: Culverting is often required as a result of transport infrastructure.	
Relevant Objectives:	
<ul style="list-style-type: none"> • To outline SEPA policy on the culverting of watercourses • To outline SEPA and developers' responsibilities in terms of culverting watercourses, including in relation to transport infrastructure. • To improve the quality of the water environment by promoting alternatives to culverting and the benefits of de-culverting. 	
Opportunities/synergies:	Constraints/challenges:
To improve quality of the water environment	Culverting is often the only solution where transport infrastructure crosses watercourses
To develop and promote alternatives to culverting	

Name and Date of Plan: SEPA Policy 19 – Groundwater Protection Policy for Scotland	
Content: Water Framework Directive (2000/60/EC) and Groundwater Directive (80/68/EEC)	
Relevance to RTS: Traffic and transport infrastructure implications for the protection of groundwater	
Relevant Objectives:	
<p>The policy aims to provide a sustainable future for Scotland's groundwater resources by protecting legitimate uses of groundwater and providing a common SEPA framework to:</p> <ul style="list-style-type: none"> • Protect groundwater quality by minimising the risks posed by point and diffuse sources of pollution maintain the groundwater resource by influencing the design of abstractions and developments which could affect groundwater quantity 	
Opportunities/synergies:	Constraints/challenges:
The policy recognises that soil is an important factor in groundwater protection	Threats to groundwater from human activities Risk of over-abstraction

Name and Date of Plan: <i>Passed to the Future: Sustainability Policy, Historic Scotland, 2002</i>	
Content: Historic Scotland's policy for the sustainable management of the historic environment	
Relevance to RTS: Protection and sustainable management of the historic environment from the potential negative impacts of transport and related infrastructure	
Relevant Objectives: Historic Scotland considers the following broad principles as fundamental: <ul style="list-style-type: none"> • Recognising value • Good stewardship • Assessing impact • Working together 	
Opportunities/synergies: Preserving the historic environment Promoting sustainable practices	Constraints/challenges: Transport and related infrastructure may impact negatively on the historic environment.

Name and Date of Plan: <i>Scotland's Historic Environment Policy (SHEP 1): Scotland's Historic Environment, March 2006</i>	
Content: SHEP 1 is the overarching policy statement for the historic environment providing a framework for more detailed strategic policies and operational policies to inform the day-to-day work of a range of organisations.	
Relevance to RTS: Protection and sustainable management of the historic environment from the potential negative impacts of transport and related infrastructure	
Relevant Objectives: <ul style="list-style-type: none"> • The historic environment is cared for, protected and enhanced for the benefit of our own and future generations • There is increased public appreciation and enjoyment of the historic environment amongst all people of Scotland and visitors to the country, and • The historic environment's importance as a key asset in Scotland's economic, social and cultural success is recognised and skilfully enhanced. 	
Opportunities/synergies: Policy set in place to protect the historic environment	Constraints/challenges: Transport and related infrastructure may impact negatively on the historic environment.
Opportunities/synergies: Policy set in place to protect nationally important monuments	Constraints/challenges: Transport and related infrastructure may impact negatively on the historic environment

Name and Date of Plan: <i>Scotland's Historic Environment Policy (SHEP 2): Scheduling: protecting Scotland's nationally important monuments, 2006</i>	
Content: SHEP 2 sets out Scottish Ministers' policy for the identification and designation of nationally important ancient monuments, a process which plays an important part in the conservation of evidence for Scotland's past.	
Relevance to RTS: Protection and sustainable management of Scotland's nationally important monuments from the potential negative impacts of transport and related infrastructure	
Relevant Objectives: The following principles will underpin the scheduling process (only relevant principles noted): <ul style="list-style-type: none"> • the past of all parts of Scotland is worthy of study and should be considered for conservation; • no part of Scotland's past and no part of its land is inherently more or less likely to produce monuments of national importance than another; • monuments that do not meet the criteria for national importance will be removed from the Schedule; and • scheduling is applied to secure the legal protection of monuments in the national interest. It is the intrinsic value of the monument to the nation's heritage that is the primary consideration in deciding whether or not a site shall be scheduled and in determining applications for scheduled monument consent. 	
Opportunities/synergies: Policy set in place to protect nationally important monuments	Constraints/challenges: Transport and related infrastructure may impact negatively on the historic environment

Name and Date of Plan: <i>Scottish Natural Heritage Policy Summary: Environmental Justice and the Natural Heritage, August 2004</i>	
Content: Policy summary providing background to the policy and outlining Scottish Natural Heritage's commitment to environmental justice and the natural heritage.	
Relevance to RTS: RTS may affect/impact environmental justice issues and the natural heritage	
Relevant Objectives: SNH will contribute to the government's environmental justice objectives by developing understanding of the relations between environmental and social justice by: <ul style="list-style-type: none"> • improving poor quality landscapes and environments close to where people live; • involving people in decisions concerning local environments; and • improving access to environmental information 	
Opportunities/synergies: Improved access	Constraints/challenges: Transport and related infrastructure may impact negatively on the natural environment

Name and Date of Plan: <i>Scottish Natural Heritage Policy Summary: National Scenic Areas, June 2000</i>	
Content: Policy summary providing background to the policy and outlining Scottish Natural Heritage's commitment to National Scenic Areas (NSAs)	
Relevance to RTS: RTS may affect/impact National Scenic Areas	
Relevant Objectives: <ul style="list-style-type: none"> • SNH aims to protect areas and sites of special natural heritage value and to secure their appropriate management 	
Opportunities/synergies: Avoidance of NSAs to reduce impact of RTS on NSAs	Constraints/challenges: Transport and related infrastructure may impact negatively on the natural environment

Name and Date of Plan: <i>Scottish Natural Heritage Policy Statement (No 01/02): Sustainable Development</i>	
Content: The Natural Heritage Futures initiative promotes integrated management of natural heritage	
Relevance to RTS: The natural heritage requires consideration in the RTS	
Relevant Objectives: SNH has established 5 broad guidelines for sustainability and the natural heritage as a basis for their own actions and advice to others: <ul style="list-style-type: none"> • Sustainable Use • Carrying capacity • Environmental Quality • The Precautionary principle • Shared benefits 	
Opportunities/synergies: Contributing towards sustainable development	Constraints/challenges: Transport and related infrastructure may impact negatively on the natural environment and therefore not promote sustainable development

Regional

Name and Date of Plan: <i>NHS Tayside Health Plan 2005</i>	
Content: The Tayside Health Plan 2005 contains proposals to improve the health of the people of Tayside and modernise the care that they receive. It covers a period of 5 years, that is from April 2005 to March 2010. It is largely a strategic document that paints “the big picture”, and it therefore concentrates upon major changes that are planned. The Tayside Health Plan 2005 builds upon the Health Plans produced in 2003 and 2004	
Relevance to RTS: Links between transport usage and public health	
Relevant Objectives:	
<ul style="list-style-type: none"> • Workforce Sustainability • Improved patient access to specialist services • Improved access to service for patients across Scotland. • Improved patient journey and reduction in unnecessary treatments • Sustainable service for Scotland with appropriate cross cover arrangements 	
Opportunities/synergies: Provide health benefits through encouraging sustainable transport Improved environment from sustainable transport provides health benefits for the community	Constraints/challenges: Changing public perceptions and practices

Name and Date of Plan: <i>Tayside Waste Area, Draft Area Waste Plan, 2002</i>	
Content: In order to tackle waste issues, the National Waste Strategy: Scotland described a process of area waste planning and the formation of Waste Strategy Area Groups (WSAG). The strategy has been adopted by the Scottish Executive as the principal mechanism to develop sustainable waste management across Scotland. The Tayside WSAG was formed in April 2000 and is a partnership of the following organisations:	
<ul style="list-style-type: none"> • Angus Council • Dundee City Council • Perth and Kinross Council • Scottish Environment Protection Agency • Scottish Waste Awareness Group. 	
Relevance to RTS: Waste strategy for the Tayside region	
Relevant Objectives:	
<ul style="list-style-type: none"> • Contribute to the sustainable development of the Tayside area by developing waste management systems that will control waste generation, reduce the environmental impacts of waste production, improve resource efficiency, stimulate investment and maximise the economic opportunities arising from waste 	
Opportunities/synergies: Reduction in waste created by transport	Constraints/challenges: Balancing priorities

Name and Date of Plan: <i>Tay – Estuary Rail Study 2003</i>	
Content: Document presenting the findings from a study in order to improve the local relevance of rail services in the Tay Estuary area	
Relevance to RTS: Important to the rail aspects of the RTS	
Relevant Objectives: <ul style="list-style-type: none"> • Accessibility (PO1): to assess the change in the numbers of people living within a “representative journey” of selected key destinations; • Efficiency and Effectiveness of Rail Operations (PO2): to increase the maximum number of “station-visits” feasible on the section of the network under consideration in the study; • Quality (PO3): to deliver significant improvements in passenger satisfaction with the quality of provision • Integration (PO4): creating the sense that individual public transport services are part of a unified whole 	
Opportunities/synergies: Environmental improvements from promotion of rail travel Links with other public transport	Constraints/challenges: Decreasing car dependency

Surrounding Structure Plans

Name and Date of Plan: <i>Aberdeen and Aberdeenshire Structure Plan 2001</i>	
Content: The purpose of this document is to set out a shared strategic statement about the future use of land in the North East. In particular, it to provide a long-term vision which takes into account the different functions of, and relationship between, settlements in the area	
Relevance to RTS: Travel and transport plans in Aberdeen and Aberdeenshire will impact on the Structure Plan	
Relevant Objectives: <ul style="list-style-type: none"> • Minimise the use of non-renewable resources and use renewable resources within their carrying capacity, minimising waste. • Work with nature, encouraging diversity and minimising harmful environmental impact. • Foster quality and the unique cultural identity of the North East. • Optimise the diversity of opportunity for and fair access to health, security and prosperity. • Recognise the interdependence of communities, each at its own scale, and the part each has to play. • Satisfy the needs of a competitive economy and viable community before individual wants. • Give long-term and global cumulative effects greater weighting than purely short-term and local effects. • Apply the precautionary principle. • Deal with all of the above together as a whole on behalf of everyone. 	
Opportunities/synergies: Sustainable travel links throughout Scotland Economic growth	Constraints/challenges: Cost and compatibility / continuity of travel and transport infrastructure across local authority boundaries

Name and Date of Plan: <i>Highland Structure Plan 2001</i>	
Content: The Highland Structure Plan aims to create a shared vision of how people in the Highlands can work together to develop a prosperous future, strong communities and a healthy environment. In short, it sets out a path towards sustainable development over the next twenty years and aims to promote and enhance the social, economic and environmental wellbeing of the people of Highland	
Relevance to RTS: Travel and transport plans in Highland impact on the RTS	
Relevant Objectives: Fifteen sustainable objectives have been identified. These are to maximise: <ul style="list-style-type: none"> • Community empowerment and decision-making; • The diversification of the regional and local economies; • The quality and number of employment opportunities; • Accessibility to and quality of housing; • The safety, enjoyment and diversity of towns and villages; • Standards of health for all; • The effectiveness and efficiency of infrastructure provision; • Accessibility to community facilities and services; • Accessibility to education and training; • The maintenance and enhancement of the cultural heritage, including landscape and Gaelic language; • The quality of the built environment; • Biodiversity • The optimal use of renewable and non-renewable resources • The efficiency of energy use • The quality of air, water and land. 	
Opportunities/synergies: Sustainable travel links throughout Scotland Aid in economic growth	Constraints/challenges: Cost and compatibility / continuity of travel and transport infrastructure across local authority boundaries

Name and Date of Plan: <i>Argyll and Bute Structure Plan 2002</i>	
Content: The Structure Plan helps to shape the vision for Argyll and Bute and for its distinctive areas. It also sets the scene for the more detailed Argyll and Bute Local Plan and the Argyll and Bute sector of a future loch Lomond and The Trossachs National Park Plan	
Relevance to RTS: Travel and transport plans in Argyll and Bute affect RTS	
Relevant Objectives: <ul style="list-style-type: none"> • Provide a strategic land use plan for the 10 year Plan period up to 2010 • Promote appropriate responses to the strategic, economic, environmental and land use issues facing the distinctive island, peninsular, mainland and conurbation areas of Argyll and Bute • Promote 'sustainable development' within short- and long-term economic, social and environmental perspectives • Promote the safeguarding and the enhancement of the natural and historic environment and the maintenance of biodiversity within Argyll and Bute • Guide the preparation of the detailed Argyll and Bute Local Plan and a future Loch Lomond and Trossachs National Park Local Plan 	
Opportunities/synergies: Sustainable travel links throughout Scotland Aid in economic growth	Constraints/challenges: Cost and compatibility / continuity of travel and transport infrastructure across local authority boundaries

Name and Date of Plan: <i>Glasgow and Clyde Valley Structure Plan 2000 (2006 alteration)</i>	
Content: Document sets out the long term development strategy for Glasgow and Clyde Valley, the 2006 alteration sets out reasoned justification for alterations that are required to update the development proposals in the 2000 plan based on significant economic growth in Glasgow and the Clyde Valley, which is referred to as the Agenda for Sustained Growth	
Relevance to RTS: Travel and transport plans in Glasgow and Clyde Valley affect the RTS	
Relevant Objectives: <ul style="list-style-type: none"> • Strengthening Communities in the area by meeting their diverse social needs and improving health • A Corridor of Growth through the heart of the area stimulating economic growth with a strong and vibrant City Centre as the heart of the metropolitan conurbation • A Green Network creating a quality environment 	
Opportunities/synergies: Sustainable travel links throughout Scotland Aid in economic growth	Constraints/challenges: Cost and compatibility / continuity of travel and transport infrastructure across local authority boundaries

Name and Date of Plan: <i>Fife Structure Plan 2006 - 2026</i>	
Content: The Fife Structure Plan sets out the strategic land use policies and proposals guiding the future development of Fife and identifies the general scale and location of such development. The Structure Plan sets the context for Local Plans which translate the strategic guidance into site-specific detail. Together the Structure Plan and the Local Plans form the Fife Development Plan	
Relevance to RTS: Outlines transportation strategy within a development planning context	
Relevant Objectives: <p>The strategy to improve accessibility to, from and within Fife is:</p> <ul style="list-style-type: none"> • To maximise the efficient use of existing Forth and Tay crossings through supporting increased modal shift to public transport and car share • To support growth in both the national and metropolitan Edinburgh economies through the development of a new multi-modal Forth crossing at Queensferry • To promote mixed use developments to achieve improved accessibility • To support the provision of a cross-Forth ferry service and associated infrastructure • To promote routes for public transport rapid transit corridors and interchange with other networks • To support the provision of strategic transport improvements outwith Fife which support and improve Fife's economy and accessibility, including the proposed Edinburgh Airport Link • To support the provision of strategic transport improvements within Fife including Cupar relief road, St Andrews link road, upgrading of the A92 and the Rosyth bypass 	
Opportunities/synergies: <p>Improved transport links are critical to east central Scotland's economy and must be strengthened to meet the challenges of the 21st century</p> <p>Rosyth is a European hub with the opportunity and potential to develop further as a national transport hub</p> <p>Need to better link regeneration areas with employment hubs</p> <p>Proposal for a passenger ferry between Fife and Edinburgh will assist in regenerating Mid Fife</p> <p>The proposal to re-open the Levenmouth rail line will assist social inclusion</p> <p>Increasing modal shift to public transport and increasing the occupancy of vehicles</p>	Constraints/challenges: <p>Downward population and economic activity trends in Central Fife</p> <p>Increased congestion and major public transport infrastructure challenges require investment to improve sustainable travel choices</p> <p>Large scale investment in new infrastructure</p>

Surrounding Local Plans

Name and Date of Plan: <i>Aberdeenshire Council Local Plan 2006</i>	
Content: The Aberdeenshire Local Plan (ALP) is the document that sets out the detailed guidance for new development in Aberdeenshire up to the end of 2015. ALP has been produced to conform with North East Scotland together (NEST), the Aberdeen City and Aberdeenshire Structure Plan, which determines the broader guidance for new development in these areas up to December 2015. Together, the Local Plan and the Structure Plan make up the Development Plan.	
Relevance to RTS: Outlines transportation strategy within a development planning context	
Relevant Objectives: <ul style="list-style-type: none"> • To integrate land use and transportation and ensure that development is well related to public transport, especially on the main communication corridors • To create a long-term framework for the communications network, giving preference to public and freight transport, cycling, walking and telecommunications 	
Opportunities/synergies: To be aware of surrounding local authorities local plans and ensure compatibility	Constraints/challenges: Planning constraints set by surrounding local plans

Name and Date of Plan: <i>West Dunbartonshire Local Plan, Consultative Draft, December 2005</i>	
Content: Local Plans require to be prepared by the Council in order to identify opportunities for development and to maintain and enhance the quality of the environment.	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the local plan	
Relevant Objectives: The Key Policies include; <ul style="list-style-type: none"> • Urban Renewal • Regeneration Priorities • Residential Development • Green Network • Green Belt • Wider countryside • Regional Scenic Area • Sustainable Development 	
Opportunities/synergies: To be aware of surrounding local authorities local plans and ensure compatibility	Constraints/challenges: Planning constraints set by surrounding local plans

Name and Date of Plan: <i>Argyll and Bute Local Plan 2005</i>	
Content: The Local Plan comprises a Written Statement and 4 proposal map folders arranged as follows: <ul style="list-style-type: none"> • Written Statement (this document): the Written Statement comprises: an introduction, the main business of the plan including the settlement strategy, development land supply proposals; actions to support the plan; the development control policies, plan indicators and appendixes together with a glossary of terms used in the plan. • Proposal Maps A: These show the development control zones along with countryside based information, policy constraints, proposals and policies. • Proposal Maps B: These show the proposed settlement boundaries, allocations, potential development areas, areas for action, policy constraints, development road action and traffic management action as applicable for each settlement. • Rural Constraints Proposals Maps: These show various environmental constraints. 	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the local plan	
Relevant Objectives: <ul style="list-style-type: none"> • To improve economic competitiveness and the relatively poor economic performance of Argyll and Bute as a whole • To enhance the economic and social prospects of the geographically diverse local communities in Argyll and Bute • To promote appropriate responses to the variety of challenging economic, transport-related and planning circumstances facing these local communities • Safeguard the diverse and high quality natural and built heritage resources, including the abundant landward and maritime biodiversity of Argyll and Bute 	
Opportunities/synergies: To be aware of surrounding local authorities local plans and ensure compatibility	Constraints/challenges: Planning constraints set by surrounding local plans

Name and Date of Plan: <i>North Lanarkshire Local Plan</i>	
Content: Unavailable at time of review, pending completion.	
Relevance to RTS:	
Relevant Objectives:	
Opportunities/synergies:	Constraints/challenges:

Name and Date of Plan: <i>East Dunbartonshire Local Plan 2005</i>	
Content: The Local plan is designed to:- <ul style="list-style-type: none"> • set out detailed policies and specific proposals for the development and use of land in order to guide decisions on planning applications and investment • highlight development opportunities and promote economic development • maintain and enhance the quality of the historic and natural environment 	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the local plan	
Relevant Objectives: <ul style="list-style-type: none"> • Enhancing the quality of life and protecting the local environment. • Building strong communities and promoting social inclusion. • Protecting and strengthening the identity of East Dunbartonshire. Delivering quality services through Best Value. • Extending local democracy. 	
Opportunities/synergies: To be aware of surrounding local authorities local plans and ensure compatibility	Constraints/challenges: Planning constraints set by surrounding local plans

Name and Date of Plan: <i>Falkirk Local Plan 2005</i>	
Content: The Local Plan aims to; <ul style="list-style-type: none"> • Provide a detailed framework for day to day planning decisions; • Translate the broad policies and proposals of the Falkirk Council Structure Plan, and relevant national planning guidance, to the local level; and • Highlight and promote opportunities for beneficial development 	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the local plan	
Relevant Objectives: The four themes of the plan are: <ul style="list-style-type: none"> • Innovation Falkirk – developing 21st century technologies • Successful Falkirk – creating capacity for business growth • Experience Falkirk – living, working and visiting Falkirk • Networked Falkirk – exploiting physical and digital connections to the world 	
Opportunities/synergies: To be aware of surrounding local authorities local plans and ensure compatibility	Constraints/challenges: Planning constraints set by surrounding local plans

Name and Date of Plan: <i>Clackmannanshire Local Plan</i>	
Content: Following SPP1 Planning System guidelines to; <ul style="list-style-type: none"> • Set the land use framework for promoting economic development • Encourage economic, social and environmental regeneration • Maintain and enhance the quality of the natural heritage and built environment 	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the local plan	
Relevant Objectives: The Local Plan aims to: <ul style="list-style-type: none"> • Care for the environment • Create and sustain jobs • Locate new homes and promote high quality standards • Improve community infrastructure 	
Opportunities/synergies: To be aware of surrounding local authorities local plans and ensure compatibility	Constraints/challenges: Planning constraints set by surrounding local plans

Name and Date of Plan: <i>St Andrews and East Fife Local Plan, March 2005</i>	
Content: The Local Plan comprises: <ul style="list-style-type: none"> • The Plan Statement which describes the strategy and provides a summary of the planning issues, policies and proposals affecting individual towns and villages in new Towns and Village plans • A Proposals Map identifying the areas where policies apply and identifying the location of development proposals • Fife local plan core policies which apply across Fife and are used in decisions to manage and promote development 	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the local plan	
Relevant Objectives: The Local Plan Strategy is to: <ul style="list-style-type: none"> • Focus medium scale development in 6 areas • Grow the economy • Meet housing needs • Care for the environment • Provide for community needs • Develop the transport network 	
Opportunities/synergies: To be aware of surrounding local authorities local plans and ensure compatibility	Constraints/challenges: Planning constraints set by surrounding local plans

Local (to TACTRAN area)

Structure Plans

Name and Date of Plan: <i>Dundee and Angus Structure Plan 2001 - 2016</i>	
Content: The plan sets out the strategic land use planning framework for Dundee and Angus over the period 2001-2016	
Relevance to RTS: Policies in the Structure Plan will directly link into the RTS	
Relevant Objectives:	
<ul style="list-style-type: none"> • Create the conditions for a vibrant and diverse economy providing increased and varied job opportunities. • Integrate land use and transport to improve accessibility for everyone between home, work, leisure and services with a view to maintaining air quality, reducing pollution and unnecessary travel. • Promote urban renewal and community regeneration and address rural and urban disadvantage to assist reduction of poverty and inequality. • Provide for local housing need and ensure access to affordable housing. • Give priority to the reuse of previously developed sites where appropriate. • Encourage the continued development and maintenance of viable and vital communities which support an appropriate range of facilities. • Promote environmentally sustainable use of existing and planned infrastructure and service capacity to support and facilitate development. • Promote the use of renewable energy and resources, the efficient use of energy and the reuse, recovery and recycling of waste. • Protect and enhance the quality and diversity of the natural, built and historic environment including the heritage, biodiversity and landscape of Dundee and Angus. • Maintain existing undeveloped coasts and locate new development away from areas at risk from flooding. 	
Opportunities/synergies:	Constraints/challenges:
Regional cohesion	Balancing priorities
Promotion of sustainable travel modes	Changing public attitudes

Name and Date of Plan: <i>Perth and Kinross Structure Plan, Towards a Sustainable Future, 2003 - 2020</i>	
Content: Key strategic land-use planning document providing the long term land use planning vision for development and the environment in Perth & Kinross to the year 2020	
Relevance to RTS: Travel and transport plans in Perth and Kinross impact on RTS	
Relevant Objectives: <ul style="list-style-type: none"> • To reduce the need to travel by focusing development on major settlements, locating developments in relation to each other and to the transport network • To improve Perth and Kinross's links to and from other centres to encourage economic growth 	
Opportunities/synergies: Sustainable travel links throughout Scotland Economic growth	Constraints/challenges: Cost and compatibility / continuity of travel and transport infrastructure across local authority boundaries

Name and Date of Plan: <i>Clackmannanshire and Stirling Structure Plan 2002</i>	
Content: Long term vision for the sustainable development of the Clackmannanshire and Stirling area.	
Relevance to RTS: Policies in the Structure Plan will directly link into the RTS	
Relevant Objectives: The Vision: <ul style="list-style-type: none"> • Caring for the environment; • Promoting appropriate development; • Improving the quality of life; and • Promoting access to opportunity 	
Opportunities/synergies: Regional cohesion Promotion of sustainable travel modes	Constraints/challenges: Balancing priorities Changing public attitudes

Local Plans

Name and Date of Plan: <i>Angus Council Local Plan Review 2006</i>	
Content: The Angus Local Plan Review will provide the detailed policy framework to guide future development, and use and investment in Angus for the period to 2011	
Relevance to RTS: The Local Plan has also had regard to other statutory and non-statutory policy statements including Angus Community Plan, Local Agenda 21 Strategy for Angus and Angus Local Transport Strategy	
Relevant Objectives:	
<ul style="list-style-type: none"> • Integrate land use and transport to improve accessibility for everyone between home, work, leisure and services with a view to reducing unnecessary travel • Promote community safety and reduce community severance caused by road traffic • Promote access to the countryside for residents and visitors • Reduce pollution from developments and traffic 	
Opportunities/synergies:	Constraints/challenges:
Improve accessibility for all	Balancing resources
Reduce pollution and improve environmental conditions including dangers of road traffic	Changing long time perceptions

Name and Date of Plan: <i>City of Dundee Local Plan 2005</i>	
Content: The finalised plan sets out detailed policies and proposals for land use and development in the city for the period to 2011	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the plan	
Relevant Objectives:	
In association with the Structure Plan and the Local Transport Strategy, it is the strategy of the Local Plan to:	
<ul style="list-style-type: none"> • Encourage development in the right location so to reduce the need for travel • Address accessibility issues by promoting alternative choice in the range of transport modes available for any particular journey • Control car use in a manner that is balanced with other modes • Encourage an improvement in air quality through the promotion of appropriate transport choice and promotion of sustainable transport modes. Consider Air Quality impacts when undertaking construction or management of the transport network 	
Opportunities/synergies:	Constraints/challenges:
Links with environmental policies	Investment
Increase equality in accessibility	Changing and supporting public views

Name and Date of Plan: <i>Perth and Kinross Draft Local Plan, 2004 (previously Perth Local Plan and Perth Central Local Plan)</i>	
Content: Within Perth and Kinross there are at present 6 adopted Local Plans. This Local Plan replaces the Perth Local Plan and Perth Central Local Plan and thus focuses on these areas, namely Perth City Centre.	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the plan	
Relevant Objectives: The thrust of the Plan for the central area is to build upon past successes and to consolidate the role of Perth City Centre as the heart of the Council area and a wider hinterland. The Plan aims to implement a range of projects and initiatives to establish Perth as one of Europe's beautiful, vibrant and successful smaller cities. In particular this means;	
<ul style="list-style-type: none"> • Protecting and developing the retail core as a compact, accessible, safe, high quality pedestrian friendly area • Encouraging new retailing opportunities which will enable Perth to remain competitive with neighbouring retail centres • Providing adequate car parking for shoppers and visitors in appropriate locations adjacent to the retail core and providing opportunities for commuters to travel to work by bus, cycle and on foot 	
Opportunities/synergies: Promotion of sustainable forms of travel Promotion of health and safety Increased accessibility to localised services and amenities	Constraints/challenges: Overprovision of conveniences for private car use discourages sustainable forms of travel Changing people's attitudes

Name and Date of Plan: <i>Perth and Kinross Local Plan – Strathearn 1998</i>	
Content: This Local Plan replaces the existing Strathearn Local Plan. The Local Plan area contains the upland area around Ben Chonzie to the North with the Earn Valley and the Ochill hills to the South.	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the plan	
Relevant Objectives: <ul style="list-style-type: none"> • To realise significant opportunities for development within settlements along the A9 • To provide a range of development opportunities along the A85 related to the scale and function of existing settlements • To protect the valuable landscape resources and the natural and built heritage within Strathearn 	
Opportunities/synergies: Links with environmental policies Increase equality in accessibility	Constraints/challenges: Investment Changing and supporting public views

Name and Date of Plan: <i>Perth and Kinross Local Plan – Highland 2000</i>	
Content: The Highland area Local Plan is a review and amalgamation of the Rannoch area, Pitlochry area and Aberfeldy area local plans in order to reduce the number of local plans to 6	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the plan	
Relevant Objectives:	
<ul style="list-style-type: none"> • To direct most development to appropriate locations within or adjacent to the existing settlements in the Plan area where there are good transport links • To protect and enhance the landscape and natural and built heritage of the area • To protect the existing shopping and commercial functions of towns and also rural shops • To protect the best quality agricultural land in the Plan area • To ensure that development does not take place on areas exposed to frequent or extensive flooding 	
Opportunities/synergies:	Constraints/challenges:
Links with environmental policies	Investment
Increase equality in accessibility	Changing and supporting public views

Name and Date of Plan: <i>Perth and Kinross Local Plan – Eastern Draft Plan 1998</i>	
Content: A review of the Eastern Area Local Plan adopted by Perth and Kinross District Council 24 August 1983 (and altered in March 1987). The plan area covers approximately 73,000 hectares of the Eastern section of the Council's area, extending from Coupar Angus to Strathadle and Glenshee.	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the plan	
Relevant Objectives:	
<ul style="list-style-type: none"> • To seek to ensure, where possible, that Development within the Plan area is carried out in a sustainable manner • To provide a framework which encourages sustainable tourism • To allocate housing and other land uses in a way which seeks to minimise transport cost • To seek to ensure the environmental assets of an area are maintained and enhanced • To maintain and enhance the high quality of living and working environment identified by the Glasgow Universities "Quality of Life Study" of 1990 • To provide for the responsible use of land with due regard for the need to retain and enhance the natural heritage and bio diversity resources of the area 	
Opportunities/synergies:	Constraints/challenges:
Links with environmental policies	Changing and supporting public views
Increase equality in accessibility	Balancing allocation of resources

Name and Date of Plan: <i>Perth and Kinross Local Plan – Kinross 2004</i>	
Content: Covers an area including the main settlements of Kinross and Milnathort, the area also covers a number of other villages and small settlements including the stretch from Drunzie in the north to Keltybridge in the south and from well in the east to Blairingone in the west	
Relevance to RTS: Issues relating to travel and transport infrastructure may be contained within the plan	
Relevant Objectives: <ul style="list-style-type: none"> • Environmental protection centres on Loch Leven and the need to ensure that the qualities which give it its status as a Special Protection Area are not damaged in any way • Identification of a variety of industrial/business opportunities in both Kinross and Milnathort. The area between Bridgend and the Safeway Supermarket represents the prime option for employment generating developments within the Kinross area and has been identified for mixed use development incorporating housing, business and an element of retail • Policies supporting rural diversification 	
Opportunities/synergies: Links with environmental policies Increase equality in accessibility	Constraints/challenges: Changing and supporting public views Balancing allocation of resources

Name and Date of Plan: <i>Stirling Council Local Plan 1999</i>	
Content: The Stirling Council Local Plan is the Council's policy statement on all matters related to development. It outlines the Council's views on how the area should best be developed for the benefit of local people, businesses and visitors	
Relevance to RTS: Whilst the Local Plan is mainly concerned with land use issues, such as the identification of potential development sites, it also covers other community, economic development and environmental matters which will include transport issues	
Relevant Objectives: <ul style="list-style-type: none"> • To retain and improve nature conservation interest, natural heritage and landscape quality • To secure an appropriate balance between the use and conservation of resources • To safeguard the rural environment through the protection of the landscape and landscape setting of the area's towns and villages • To require that the existing environment is not compromised by new development, but improved, through insistence upon high design standards, the reduction of energy consumption and control of all types of development • To pursue the improvement of existing housing and the development of new housing to meet the needs of local residents and increase in households in the district • To protect existing wealth creating activities and enable their expansion, through the promotion of economic development in a planned manner which respects the quality, potential and strengths of the area 	
Opportunities/synergies: Aid in the delivery of environmental objectives To promote development	Constraints/challenges: Engaging and altering public views Balancing resources

Name and Date of Plan: <i>Loch Lomond and Trossachs National Park (LLTNP) draft park plan, 2006</i>	
Content: The first National Park Plan for Scotland's first National Park, which sets out policies and initiatives that seek to secure positive change over the next 5 years while working towards a longer-term vision for this special part of Scotland.	
Relevance to RTS: The Loch Lomond and Trossachs National Park may be impacted/impact upon transport and its infrastructure in the TACTRAN area	
Relevant Objectives: Loch Lomond and Trossachs National Park follows the National Parks (Scotland) Act 2000 National Park Aims <ul style="list-style-type: none"> • To conserve and enhance the natural and cultural heritage of the area; • To promote sustainable use of the natural resources of the area; • To promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public • To promote sustainable economic and social development of the area's communities. • 	
Opportunities/synergies: Promotion of human health Environmental protection Community and stakeholder engagement	Constraints/challenges: Land use conflict

Name and Date of Plan: <i>Cairngorms Draft National Park Local Plan, October 2005</i>	
Content: A plan to guide and control development and use of land in the Cairngorms national Park at a detailed level and contribute to meeting the needs and aspirations of the communities within it as well as helping to care for the qualities that make the Cairngorms special for both residents and visitors	
Relevance to RTS: The Cairngorms National Park may be impacted/impact upon transport and its infrastructure in the TACTRAN area	
Relevant Objectives: Cairngorms National Park follows the National Parks (Scotland) Act 2000 National Park Aims <ul style="list-style-type: none"> • To conserve and enhance the natural and cultural heritage of the area; • To promote sustainable use of the natural resources of the area; • To promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public • To promote sustainable economic and social development of the area's communities. 	
Opportunities/synergies: Promotion of human health Environmental protection Community and stakeholder engagement	Constraints/challenges: Land use conflict

Transport Strategies

Name and Date of Plan: <i>Angus Council Local Transport Strategy 2000</i>	
Content: Considers transport infrastructure, transport and travel in the Angus council area	
Relevance to RTS: Local area transport strategy which is important in informing the regional transport strategy	
Relevant Objectives: The five key objectives are: <ul style="list-style-type: none"> • To maintain and improve accessibility to job, services and facilities for all members of the Angus Community in the most sustainable way • To promote greater integration within and between transport modes across transport, land use, social, economic and environmental policies aimed at reducing the need for travel • To widen travel choices and improve the convenience and efficiency of transport services for the benefit of Angus residents, visitors and businesses • To take full account of the effect of transport movements on the environment and to reduce adverse environmental impacts • To reduce accident casualties associated with the transport network, improve road safety and assist safe travel throughout Angus 	
Opportunities/synergies: Improved accessibility Improved transport integration Promotion of safeguarding the environment Human health and safety	Constraints/challenges: To ensure the strategic level Regional Transport Strategy is informed by the Angus Local Transport Strategy

Name and Date of Plan: <i>Angus Road Safety Action Plan, 2005</i>	
Content: Action Plan aimed at improving road safety in Angus, supporting the document 'Tomorrow's roads - safer for everyone' national road safety strategy, March 2000	
Relevance to RTS: Looks at reducing accidents on the road and improving road safety.	
Relevant Objectives: An overall drive to achieve the 2010 casualty reduction rates as defined by the national road safety strategy.	
Opportunities/synergies: Human health and safety Improved transport infrastructure	Constraints/challenges: Ensuring that all transport infrastructure is safe

Name and Date of Plan: <i>Stirling Local Transport Strategy, 2006</i>	
Content: Considers transport infrastructure, transport and travel in the Stirling council area	
Relevance to RTS: Local area transport strategy which is important in informing the regional transport strategy	
Relevant Objectives: Stirling Local Transport Strategy Principle Objectives include;	
<ul style="list-style-type: none"> • Promote safer travel for all • Maintain and manage the existing transport network effectively • Increase transport accessibility for people with restricted options • Increase travel choices and enhance linkages between different means of travel to reduce the need for car use • Support and enable future development through sustainable transport 	
Opportunities/synergies: Health and safety Increased accessibility Promotion of sustainable transport	Constraints/challenges: Change in public attitudes

Name and Date of Plan: <i>Road Safety Plan for Stirling Council Area 2004 - 07</i>	
Content: Action Plan aimed at improving road safety in Stirling, supporting the document 'Tomorrow's roads - safer for everyone' national road safety strategy, March 2000	
Relevance to RTS: Looks at reducing accidents on the road and improving road safety	
Relevant Objectives: The aims of the Council's road Safety Plan are:	
<ul style="list-style-type: none"> • To detail progress to date towards achieving the government's road safety target • To present a framework of strategies, policies and plans to further improve road safety over the next six years 	
Opportunities/synergies: Human health and safety Improved transport infrastructure	Constraints/challenges: Ensuring that all transport infrastructure is safe

Name and Date of Plan: <i>Dundee Local Transport Strategy</i>	
Content: Unavailable at time of review	
Relevance to RTS:	
Relevant Objectives:	
Opportunities/synergies:	Constraints/challenges:

Name and Date of Plan: <i>Perth and Kinross Local Transport Strategy</i>	
Content: Local Transport Strategy pending.	
Relevance to RTS:	
Relevant Objectives:	
Opportunities/synergies:	Constraints/challenges:

Biodiversity Action Plans or Similar

Name and Date of Plan: <i>Stirling Council Biodiversity Action Plan 2001</i>	
Content: Series of action plans consisting of actions that will address the factors affecting the rare and threatened species and habitats found in the Stirling Council area	
Relevance to RTS: Identification of biodiversity resources and priorities and development of habitat and species action plans for biodiversity conservation, including targets	
Relevant Objectives: Specific objectives set for selected species and habitats	
Opportunities/synergies: Partnership working Environmental protection Community and stakeholder engagement To focus resources that partner organisations can offer	Constraints/challenges: Allocation of resources Pressure from newly proposed developments Minimising environmental impacts

Name and Date of Plan: <i>Tayside Biodiversity Action Plan 2002</i>	
Content: Series of action plans for various habitats in the Tayside area with actions to protect and enhance species and habitats in the region. Set within local, national and international context	
Relevance to RTS: Identification of biodiversity resources and priorities and development of habitat and species action plans for biodiversity conservation, including targets	
Relevant Objectives: Includes species and habitat specific objectives	
Opportunities/synergies: Partnership working Environmental protection Community and stakeholder engagement To focus resources that partner organisations can offer	Constraints/challenges: Allocation of resources Pressure from newly proposed developments Minimising environmental impacts

Name and Date of Plan: <i>Cairngorms Biodiversity Action Plan 2002</i>	
Content: The Cairngorms has an important and unique biodiversity resource in a local, national and international context and deserves special attention. Although it is difficult to compare and contrast different areas, the Cairngorms are widely accepted as one of the most outstanding parts of Scotland and the world. The Biodiversity Action Plan is set up to protect the important habitats and species of this area	
Relevance to RTS: Identification of biodiversity resources and priorities and development of habitat and species action plans for biodiversity conservation, including targets	
Relevant Objectives: <ul style="list-style-type: none"> • To take forward national biodiversity priorities (UK Habitat and Species Action Plans) by helping to deliver them at a local level • To conserve locally important species and habitats • Engage local people and visitors in the management of biodiversity and ensure that they benefit from biodiversity • To bring together in partnership those working in the Cairngorms to better achieve biodiversity conservation 	
Opportunities/synergies: Partnership working Environmental protection Community and stakeholder engagement To focus resources that partner organisations can offer	Constraints/challenges: Allocation of resources Pressure from newly proposed developments Minimising environmental impacts

Outdoor Access Strategy / Countryside Access Strategy or Similar

Name and Date of Plan: <i>Angus Countryside Access Strategy 2004</i>	
Content: This strategy sets out the Council's priorities for the provision and development of access to the countryside in Angus	
Relevance to RTS: The Strategy focuses on non-motorised access to the countryside and aims to address the needs and aspirations of people of all ages and abilities, and reflects the increasing priority of access issues with the enactment of the Land Reform Act	
Relevant Objectives: <ul style="list-style-type: none"> • To carry out a review of existing ByLaws and Management Rules relating to Council owned land with a view to permitted bicycles and horses where appropriate • Angus Council will develop policies and procedures to uphold access rights under the Land Reform (Scotland) Act 2003 • Angus Council will develop policies and procedures to process applications to exempt land for the general right of access • Angus Council will prepare a Core Path Plan in consultation with landowners and local communities • Angus Council will work with landowner and local communities to develop path networks around each of the seven Angus burghs 	
Opportunities/synergies: Partnership working Stakeholder engagement	Constraints/challenges: Land use conflict Access issues – right to roam

Name and Date of Plan: <i>Dundee Outdoor Access Strategy 2005</i>	
Content: This Strategy forms a framework for the future planning, development and management of access within Dundee	
Relevance to RTS: Aims to address access issues within Dundee, issues which relate and interact with transport issues	
Relevant Objectives: <ul style="list-style-type: none"> • To develop access as a sustainable and equitable transport mode by ensuring that local services are linked to people 's homes • To work with employers and education providers to develop access links to the workplace and learning opportunities • To focus on access opportunities from and within the Community Regeneration Areas of the city as a means of ensuring that the development of the network does not reinforce patterns of exclusion 	
Opportunities/synergies: Network links Partnership working Stakeholder engagement	Constraints/challenges: Land use conflict Access issues – right to roam

Name and Date of Plan: <i>Stirling Countryside Access and Recreation Strategy 1999</i>	
Content: Strategy setting out vision to improve access and recreation opportunities for all to the countryside of Stirling district, whilst promoting responsible use, supporting rural economies and respecting current land management	
Relevance to RTS: Aims to address access issues within Stirling, issues which relate and interact with transport issues	
Relevant Objectives:	
<ul style="list-style-type: none"> To ensure there are adequate links between existing facilities, including path networks, car parks and country parks, to create added value and increase opportunity All proposals for new car parks and lay-bys should be evaluated against the need for car parking at that location, links to existing or proposed access facilities and the capacity of the area in terms of the number of people who can be accommodated without damaging the environment 	
Opportunities/synergies:	Constraints/challenges:
Network links	Land use conflict
Partnership working	Access issues – right to roam
Stakeholder engagement	

Name and Date of Plan: <i>Active Stirling, 2005</i>	
Content: Document considers how to encourage a more active Stirling where people participate in sport and activities. Follows the principles of 'Sport 21 – Shaping Scotland's Future (2003 – 2007)'. Relevance to RTS: Aims to address the health and activity of those living in Stirling which may link in to sustainable forms of transport	
Relevant Objectives:	
Four key goals;	
<ul style="list-style-type: none"> Ensure the opportunities to participate exist – fun, safe, quality opportunities that are relevant to local needs Put in place the programme and facilities necessary to bring about these opportunities Maximise the number of people participating locally and the frequency with which they participate Develop productive partnerships between relevant agencies 	
Opportunities/synergies:	Constraints/challenges:
Promotion of human health	Changing public attitudes
Sustainable methods of travel	

Name and Date of Plan: <i>Core Paths Plan (All SESTRAN Area Local Authorities), Current</i>	
Content: Under the Land Reform (Scotland) Act 2003, each local authority is required to draw up a 'Core Paths Plan', which will designate a system of paths sufficient for giving the public reasonable access throughout the area.	
Relevance to RTS: Core Paths are afforded protection and access along these routes must be maintained	
Relevant Objectives:	
<ul style="list-style-type: none"> Not all of the 7 local authority areas have confirmed objectives and those that have are not available at present. 	
Opportunities/synergies:	
Improved health and well being	Safety on paths close to key transport routes
Promotion of sustainable modes of travel	

Community Plans

Name and Date of Plan: <i>Angus Community Plan 2000</i>	
Content: The Angus Community Plan sets a long-term direction for 10 years, with an annual review and opportunities to respond to progress and changed circumstances. It is hoped that communities will take the opportunity to continue to respond to the community plan through various existing and new consultative arrangements	
Relevance to RTS: Includes policies and vision for sustainable transport and infrastructure	
Relevant Objectives:	
<ul style="list-style-type: none"> • Promote the principles of sustainable development • Promote protection of biodiversity by production and implementation of a Biodiversity Action Plan for Tayside • Develop a Local Agenda 21 strategy by the end of 2000 • Encourage businesses to assess the environmental impact of their activities and introduce mitigation measures • Build sustainable communities • Promote sustainable use of resources including increasing recycling and minimizing waste • Dispose of waste in the most environmentally acceptable manner • Provide opportunities to reduce the need for car travel • Maintain and where possible enhance the opportunities to use public transport • Protect the environment and promote sustainability through the Angus Local Plan and through development control • Reduce home energy use by promoting warm energy efficient houses 	
Opportunities/synergies:	Constraints/challenges:
Promoting physical activity	Pockets of persistent deprivation
Reducing road accidents and improving road safety	Rapid suburban growth
Promoting the potential for transport to become more environmentally friendly through new technology	Pressures on local authority and environmental organisation funding

Name and Date of Plan: <i>Angus Community Safety Strategy 2000/2001</i>	
Content: Document containing the individual action plans agreed by all members of the Angus Community Safety Partnership for the year 2002-2003. Included in each plan is a current position statement and a reference to the relevant strategic drivers	
Relevance to RTS: Contains objectives for road safety	
Relevant Objectives:	
<ul style="list-style-type: none"> • Reduce the risk of road accidents, casualties and casualty severity, particularly in residential areas and at schools 	
Opportunities/synergies:	Constraints/challenges:
Help to improve safety	Balancing priorities
Partnership working	

Name and Date of Plan: <i>Dundee Community Plan 2005</i>	
Content: Document describing how Dundee City Council, Scottish Enterprise Tayside, NHS Tayside, Tayside Police and Communities Scotland have formed a partnership in order to make Dundee a more attractive place to live	
Relevance to RTS: Includes plans to improve the regions transport, sustainable transport and infrastructure	
Relevant Objectives: <ul style="list-style-type: none"> • Improve transportation linkages and the quality of public transport provision • Ensure that the Local Transport Strategy addresses the needs of children and families suffering from poverty and social exclusion • Ensure that Transportation is planned in a co-ordinated, sustainable manner, involving users and recognising their needs Ensure that public transport is, safe, affordable, accessible and integrated 	
Opportunities/synergies: Partnership working Stakeholder and community engagement Cross-cutting with other plans and policies	Constraints/challenges: Partnership working Community engagement Monitoring progress

Name and Date of Plan: <i>Perth and Kinross Community Plan 2004</i>	
Content: Strategy aiming to achieve a vibrant, successful, safe, healthy and sustainable environment where learning and enterprise are nurtured and supported	
Relevance to RTS: Includes plans to improve the regions transport, sustainable transport and infrastructure	
Relevant Objectives: The community plan is structured under five key planning themes: <ul style="list-style-type: none"> • Business and Jobs • Community Safety • Environment • Health and Wellbeing • Lifelong Learning 	
Opportunities/synergies: Partnership working Stakeholder and community engagement Cross-cutting with other plans and policies	Constraints/challenges: Partnership working Community engagement Monitoring progress

Name and Date of Plan: <i>Stirling Draft Community Plan 2005 – 2020</i>	
Content: Plan setting out how Stirling Council will work as one for a 21 st Century Stirling	
Relevance to RTS: Includes policies and vision for sustainable transport and infrastructure	
Relevant Objectives: The vision and outcomes of this Plan are focused on added value, or collaborative gain. They group under four main determinants of success;	
<ul style="list-style-type: none"> • A growing population and economy • High quality infrastructure • Joined up services and • Citizen focused services 	
Opportunities/synergies: Partnership working Stakeholder and community engagement Cross-cutting with other plans and policies	Constraints/challenges: Partnership working Community engagement Monitoring progress

Local Agenda 21 and Environmental

Name and Date of Plan: <i>Angus Draft Local Agenda 21, 2000</i>	
Content: This document sets out the first Local Agenda 21 Strategy for Angus.	
Relevance to RTS: Considers the environment and sustainability of the Angus area	
Relevant Objectives: Its main aim is to promote sustainable development as a means of improving the quality of life locally, while at the same time making a contribution to tackling global problems, and ensuring that the quality of life of future generations is also safeguarded	
Opportunities/synergies: Promotion and encouragement of sustainable transport use Promotion of health and well being Accessibility Community empowerment	Constraints/challenges: May not tie in with economic development

Name and Date of Plan: <i>Angus Environmental Strategy Action Plan</i>	
Content: Based on the themes and objectives adopted in the Environment Strategy which are aimed at integrating economic, social and environmental issues.	
Relevance to RTS: Considers the balance of economic, social and environmental issues (sustainability) affecting Angus.	
Relevant Objectives: The Environmental Strategy has six principal aims in working towards sustainability: <ul style="list-style-type: none"> • To integrate environmental and sustainability considerations into Council strategy, policy and programme formulation; • To work in partnership with other agencies, businesses, community groups and individuals; • To consult and involve people more fully where decisions affect our environment; • To work towards sustainability by balancing economic, social and environmental considerations for both present and future generations; • To recognise that working towards sustainability will be a continuing process requiring flexibility and adaptability; • To monitor and report on progress towards sustainability 	
Opportunities/synergies: Promotion of sustainability and sustainable transport Partnership working	Constraints/challenges: Achieving environmental sustainability

Name and Date of Plan: <i>Dundee (Consultative Draft) Environmental Strategy, May 2006</i>	
Content: This document has been developed in a response to the launch of the Dundee Partnership's Community Plan and sets out a long term vision for the main environmental issues facing Dundee	
Relevance to RTS: Considers the balance of economic, social and environmental issues (sustainability) affecting Dundee.	
Relevant Objectives: The Dundee Environmental Strategy aims to: <ul style="list-style-type: none"> • Establishing the State of Dundee's Environment • Identifying Opportunities for Action • Leading by Example • Community Action and Participation • Strategy Evaluation 	
Opportunities/synergies: Community engagement and partnership working	Constraints/challenges: Achieving environmental sustainability Protection of the natural environment and biodiversity

Name and Date of Plan: <i>Towards a Sustainable Stirling – The Local Agenda 21 for Stirling, 2000</i>	
Content: A strategy which outlines what measures Stirling are taking to promote sustainable development.	
Relevance to RTS: Considers the environment and sustainability of the Stirling area.	
Relevant Objectives: The council's four strategic aims; <ul style="list-style-type: none"> • promote local democracy and provide community leadership • promote sustainable development • promote social inclusion • provide best value 	
Opportunities/synergies: Promote social inclusion Accessibility Partnership making	Constraints/challenges: Meeting sustainable development requirements Preserving biodiversity

Name and Date of Plan: <i>Perth and Kinross Joint Environmental Strategy and Action Plan, 2004 - 08</i>	
Content: This document sets out an interim vision and strategic framework for the environment of Perth and Kinross.	
Relevance to RTS: Considers the balance of economic, social and environmental issues (sustainability) affecting Perth and Kinross.	
Relevant Objectives: The Environment Partnership will work towards achieving its vision of: <ul style="list-style-type: none"> • A Perth and Kinross where action is taken to protect and enhance our habitats and species; where waste is not only minimised but also utilised as a valuable resource; where overall energy consumption and carbon dioxide emissions are reduced, and where all new buildings follow sustainable construction principles. 	
Opportunities/synergies: Sustainable forms of transport Partnership working Sustainable design	Constraints/challenges: Achieving environmental sustainability Protection of the natural environment and biodiversity

ANNEX D
ENVIRONMENTAL BASELINE

Annex D: Environmental Baseline

D1 INTRODUCTION

This annex contains environmental baseline information to meet the detailed requirements of the SEA of the TACTRAN RTS. The data has been collated to an appropriate level for a regional strategy. Therefore the baseline discusses the elements of the environment which are most relevant and likely to be affected by the RTS.

Information for each topic area has been collated using:

- data from relevant website sources;
- information from consultees;
- feedback from the SEA workshop (3 August 2006); and
- review of relevant documents and plans.

D2 AIR QUALITY AND NOISE

D2.1 INTRODUCTION

There are many sources of air pollutants within the TACTRAN area of which road traffic emissions are a key source¹. The two main air pollutants associated with road traffic emissions in the TACTRAN area are:

- Nitrogen Dioxide (NO₂); and
- Particulate Matter (PM₁₀).

Noise pollution can be defined as unwanted sound. Road traffic and other forms of transportation are key sources of noise within the urban and the rural environments of the TACTRAN area.

D2.2 CURRENT BASELINE

D2.2.1 Air

Each Local Authority has confirmed that there are current air quality monitoring stations in the TACTRAN area and these are listed in Table D2.1 below.

Table D2.1 Air Quality Monitoring Stations

Local Authority	Nitrogen Dioxide	PM ₁₀	Other Monitoring
Dundee City	3 roadside (real time) 95 Passive Diffusion Tubes (PDT)	2 Roadside	Carbon Monoxide, Sulphur Dioxide, Benzene
Perth Kinross	1 automatic monitoring station 58 PDT	1 automatic monitoring station	-
Stirling	22 PDT	1 TEOM Analyser and 1 Osiris Monitor	-

¹ Variety of sources consulted for air quality information including:

- Angus Council (2006). Angus State of the Environment Report. Available: www.angus.gov.uk. Accessed August 2006.
- Dundee City Council (2003). Local Authority Air Quality Updating and Screening Assessment. Available: www.dundee.city.gov.uk. Accessed: August 2006.
- Perth and Kinross Council (2006). Air Quality Report. Available: www.perthshire.gov.uk. Accessed August 2006.
- BMT Cordah Limited (2006). Stirling Council LAQM Updating and Screening Assessment 2006. A Report for Stirling Council. Available: www.stirling.gov.uk. Accessed August 2006.

Local Authority	Nitrogen Dioxide	PM ₁₀	Other Monitoring
Angus	7 PDT 1 Ambient Air Quality Monitoring (Leased for Dundee City)	1PDT 2 Gravitec Monitor	Sulphur Dioxide, Carbon Dioxide

There are two designated Air Quality Management Areas (AQMA)² within the TACTRAN area. One encompasses the city of Dundee, the other is centred within the city of Perth (see Figure D1: Air Quality Management Areas).

The Air Quality Report for Perth and Kinross (2005) concluded that it was likely that the NO₂ objective for 2005 and the PM₁₀ objective for 2010 would be exceeded in areas where personal exposure occurs. Consequently, Perth & Kinross Council were required to declare an AQMA to cover the area of exceedence in the Atholl Street/Barrack Street Junction and other areas of Perth City. Following declaration further assessment was required, and is currently being progressed. This was to support an Action Plan prepared by the Council.

The AQMA for Dundee was designated in relation to breaches and likely breaches of the Nitrogen Dioxide annual mean air quality objective (as specified in the Air Quality (Scotland) Regulations 2000 as amended by the Air Quality (Scotland) Amendment Regulations 2002) at various junctions within Dundee City. It came into effect on the 3rd July 2006, and will remain in force until it is varied or revoked by a subsequent order.

The two other council areas made the following comments on AQMAs:

- Information gathered so far for Angus Council indicate that no specific air quality management measures would need to be introduced. The Council is ever mindful however, of the need to reduce the impact of transport on the environment and in an attempt to reduce emissions from vehicles, low sulphur diesel (GreenEnergy CityDiesel) has been used in the Council fleet for some time.
- Stirling Council currently has no designated AQMAs, although extensive surveying is being done at one site (Craigs Roundabout) and this site will be reconsidered following a year of monitoring.

Other significant pollutant sources, in addition to traffic, present in the TACTRAN area which may contribute to local and regional air quality include;

- Aircraft flying to and from airports at Dundee and Perth;
- Shipping and related industry using ports at Perth, Broughty Ferry, Arbroath and Montrose;
- Heavy industry in and around Dundee city, Stirling and Perth city;
- Railway trains in all TACTRAN area local authorities;
- Construction works in all TACTRAN area local authorities;

² Air Quality Management Area (AQMA). Following a Local Authority's review and assessment of air quality in their area in accordance with national air quality objectives, if it finds an any place where these objectives are not likely to be achieved it must declare an AQMA. A plan will then be put together to improve the air quality of that place.



Figure D1: Air Quality Management Areas in the TACTRAN Area

© Crown Copyright and /or Database Right. All rights reserved. Licence Number 10013712



DATE:	Sept 06	DWG SIZE:	A4
DRAWN:	AD	APPROVED:	AS

D2.2.2 Noise

No widespread monitoring of noise is undertaken within the TACTRAN area. Noise monitoring is generally undertaken as a result of assessment for specific sites or projects. No meaningful data relevant to the RTS is available for the TACTRAN area.

D2.3 PROBLEMS AND OPPORTUNITIES

Trends in traffic volume have an influence on the levels of associated air pollutants throughout the TACTRAN area. In the absence of area wide trend data on air quality, trends in traffic data may be used as a proxy given road traffic's role as a primary source of local air pollution. Data on traffic volumes on local roads within the TACTRAN area were obtained from a Scottish Executive commissioned report and have been summarised in Table D2.2 below.

Table D2.2 Traffic Growth on Local Road Network by Local Authority Area, 1993 to 2002

Local Authority Area	Traffic Volume (million vehicle kilometres)		
	1993	2002	% Change
Angus	565	671	18.1
Dundee City	591	656	11.0
Perth and Kinross	785	887	13.0
Stirling	590	672	13.9

Source: FaberMaunsell (2006) Research Study: Local Authority Road Traffic Reduction Targets, Commissioned by Scottish Executive

The data within Table D2.2 demonstrate an increase in traffic volumes over the monitoring period in all TACTRAN local authority areas with an especially high percentage change in traffic volume in Angus. Increased traffic volumes generally mean increased pollution although future technologies such as electric cars and biofuels may reverse this trend.

Poor air quality and elevated noise levels have implications on the health of the population as well as the built and natural environment. Poor air quality may also be a factor in the perception of an area, particularly in areas with visible industrial activity.

Opportunities exist to reduce air pollution and noise levels associated with transport, notably road traffic, through a variety of measures including:

- reduction in private vehicle journeys (promoting walking, cycling, use of public transport);
- encouraging transfer of freight by train, sea etc;
- improvement in vehicle design (such as pollution reduction technology);
- transport infrastructure design, such as 'quiet' road surfaces and screening; and
- improved road network and traffic management (resulting in the avoidance of queues or 'bottlenecks' in town centres).

D2.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

Whilst there is no area wide data available on long-term trends in air quality and noise levels the air quality and noise environment is affected by a range of factors, a key one of which is road traffic. Road traffic levels on key roads throughout the area have been increasing over recent years although the use of traffic volumes as a proxy do not take

account of other measures such as vehicle design and 'quiet' road surfaces which may act to reduce the per vehicle air quality and/or noise emissions. Communities situated within 300m of either side of motorways, trunk roads and more heavily trafficked roads may be subject to elevated noise levels and local air pollutant concentrations (although specific effects will be dependent on local conditions such as topography, screening etc).

The RTS has the opportunity to influence the air quality and noise baseline of the area through its influence on transport. Where the RTS can reduce traffic flows and promote sustainable transport and modal shift for example, it has the potential to reduce air pollution and improve the noise environment in comparison to the evolution without the strategy.

D3 SOIL AND GEOLOGY

D3.1 INTRODUCTION

The geology and soils of the TACTRAN area play an important role in shaping the landscape and supporting different types of agriculture and have played an influential role in the industrial evolution and settlement pattern of the area. The quality of the soils across the TACTRAN area vary widely from the prime high quality agricultural land in Angus to the poorer quality uplands soils of the Trossachs and Grampians.

D3.2 CURRENT BASELINE

The baseline can be considered in terms of the physical geology of the area, the nature and quality of the soil and the presence of geological designations.

D3.2.1 Geology

Cutting through the TACTRAN area is the prominent Highland Boundary Fault Line (The Highland Line), which runs from Stonehaven in the northeast to the inner Firth of Clyde to the southwest. The Grampian Mountains run on the northern edge of this ancient fault line separating the volcanic and mountainous northwest from the relatively subdued sedimentary topography of the Midland Valley to the southeast. Erosion has emphasised the more resistant nature of the mainly metamorphic rocks of the Highlands in contrast to the generally softer sedimentary rocks of the Midland Valley.

The modern landscape of the TACTRAN area has been very much shaped by the Ice Ages of the past 2 million years. Ice originating from the highlands radiated outwards flowing southwards and eastwards through the major highland glens of Tayside and scouring out valleys such as Glen Lyon and Glen Clova. Water features such as rivers, streams, lochs and burns have formed over time as glacial ice melted, sea levels rose and erosion took place. Loch Tay and Loch Earn owe their origins and depth to the erosional power of ice sheets. In coastal areas such as Montrose and in the Tay and Earn Valleys, local sea level was particularly high as the main ice cleared from the firth and estuary. Consequently there are raised beaches and estuarine deposits well inland of the present coastline, some of which, such as 'raised clays', have been exploited as in Dundee, for brick and tile manufacture. Deposits of alluvial gravel, sand, silt and clay left by modern flood plains exist in the TACTRAN area, as do raised bogs and mosses, for example Methven Moss in Perth and Kinross.

There is marked human impact on the topography of the TACTRAN area in various ways from urbanisation and transport infrastructure in general to the installation of flood embankments on the Firth of Tay reducing its course from a braided to a meandering river.

The geological heritage of the area has contributed towards the variety and abundance of flora and fauna. To the west are Rannoch Moor and the ancient pines of the Black Wood. In the east mineral-rich rocks and soils have created the rare alpine habitats on Caenlochan. On the coast there are the most extensive reedbeds anywhere in Europe and at Barry Buddon one of the largest sand dune complexes in the UK.

Table D3.1 Bedrock Geology Summary

Key Geology Type	TACTRAN Area Coverage
Precambrian Metamorphic Rocks	Found in the northern reaches of the TACTRAN area in the Grampian Mountains
Dalradian Metamorphic Rocks	Found in a band running across Scotland from southwest to northeast on the northern edge of the Highland Fault Line
Devonian Sedimentary Rocks	Found in a band running across Scotland from southwest to northeast on the southern edge of the Highland Fault Line and accounts for eastern coastal areas such as Montrose and Arbroath and inland areas
Devonian Igneous Rocks and Carboniferous Igneous Rocks	Found in Dundee, Perth city and surrounding the Firth of Tay, these rock types are found mixed together.
Carboniferous Sedimentary Rocks	Found in the southernmost reaches of the TACTRAN area to the south of the Firth of Tay and Perth city

Source: www.scottishgeology.com (accessed August 2006)

D3.2.2 Soils

The nature and quality of soil in the TACTRAN area is governed to a degree by the nature of the bedrock and drift deposits, by historical and current vegetation cover, by existing land use and by factors such as industrial activity and physical influence from engineering and development. No statutory designations of contaminated land under Part 11A of the Environmental protection Act 1990 present in the TACTRAN area.

The soils of the TACTRAN area have a varied quality with regard to agricultural capability with better soils in Angus and poorer quality soils of the uplands such as the Grampian Mountains.

D3.2.3 Designated Geological Sites

There are 71 Geological Conservation Review sites (GCRs)³ within the TACTRAN area, 18 Sites of Special Scientific Interest (SSSIs)⁴ identified for geological importance and 11 SSSI's identified for mixed geological and biological reasons.

Table D3.2 Designated Geological Sites

Site Type	Number	Total Area (hectares)
Geological Sites of Scientific Interest (SSSIs)	18	747.60
Mixed SSSIs (biological and geological)	11	11521.35
Geological Conservation Review Sites (GCR)	71	unavailable on web link at time

Sources: SSSI information SNH data 2003/2004, GCR sites JNCC website (accessed July/August 2006)

³ Geological Conservation Review Sites (GCR). The GCR is designed to identify those sites of national and international importance needed to show all the key scientific elements of the Earth heritage of Britain, such as sediments, rocks, fossils and encompassing the range of geological and geomorphological features of Britain.

⁴ Site of Special Scientific Interest (SSSI). A conservation designation denoting a protected area in the United Kingdom. SSSIs are the basic 'building block' of nature conservation legislation and most other nature/geological conservation designations are based upon them.

D3.3 PROBLEMS AND OPPORTUNITIES

The various TACTRAN Local Biodiversity Action Plans (LBAPs)⁵ (see section D7) indicate that the conservation of soils is important, as is the conservation of plants, animals and habitats that soils support. As urbanisation increases, more attention is needed to sustain and conserve soils, particularly in areas experiencing development pressures, particularly around existing settlements.

There are a number of pressures and threats to the integrity, extent and quality of soils throughout the TACTRAN area, including:

- climate change and increased rainfall;
- potential presence of land contamination in areas of previous industrial uses
- intensive cultivation and loss of organic matter;
- urbanisation;
- poor soil handling and management; and
- poor restoration techniques.

New developments and infrastructure may impact on soil through direct loss or impacts such as compaction and erosion. Construction best practice and the design process provide opportunities to protect the high quality soil resource (including prime agricultural land) and poorer quality soils which are important in their own way for habitat and nature conservation. Across the TACTRAN area there are pressures on land for housing and industry which makes it necessary to consider the conservation, sustainable management and after use of soils.

Opportunities exist through construction practice and design to minimise the impact on soil resources such as extraction and removal and through compaction and contamination.

D3.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

There is unlikely to be any significant evolution of the soil and geological environment notwithstanding long term geological evolution processes. However, the resource may be locally impacted primarily as a result of new developments which may include schemes within the RTS. Strategic and project level mitigation would minimise the impact of the implementation of the RTS and its schemes on the geological and soil resource.

D4 AQUATIC ENVIRONMENT

D4.1 INTRODUCTION

The aquatic environment of the TACTRAN area consists of the coastal area of The Firth of Tay, a network of running waters (rivers, burns) and standing waters (ponds, reservoirs, canals and bogs/marshes). The aquatic environment plays an important role both in its own right and through its contribution to biodiversity, landscape, cultural heritage and the community as well as providing transport infrastructure.

⁵ Local Biodiversity Action Plans (LBAPs). Act as a way of stimulating effective local action for national priorities identified in the UK Biodiversity Action Plan, as well as for species which and habitats which are particularly cherished or valued in local areas.

D4.2 CURRENT BASELINE

Table D4.1 Major Rivers

River Name	Broad Catchment Area	Location of River Mouth
River Tay/Tay Estuary	Runs along southern boundary of Perth and Kinross draining areas of Fife (south of TACTRAN area) and Perth and Kinross.	Dundee/Tayport
River Forth	River Teith and River Tay merge to the west of Stirling and take the name of the River Forth. The highest tidal effect on the River Forth is at Stirling Bridge in Stirling and the River Forth continues through the estuary to meet the Firth of Forth at the Forth bridges.	East Fife/East Lothian (outwith TACTRAN area)

The River Tay, River Teith, Endrick Water, South Esk and Firth of Forth are all Special Areas of Conservation.

There are a number of lochs and reservoirs within the TACTRAN area, predominately located in rural and upland areas. These include larger commercial reservoirs such as Loch Lednock and Loch Turret, natural lochs such as Loch Tay and local standing water features. Key lochs and reservoirs include:

- Lochs in the Sidlaw Hills
- Loch Muick, Loch Lee and Backwater Reservoir in Angus
- Ciatto Country Park Reservoir near Dundee City
- Loch Leven near Kinross
- Loch Rannock and Loch Tummel near Pitlochry
- Loch Tay and the lochs in the Grampian Mountains
- Loch Lomond and the Lochs in the Trossachs
- North Third Reservoir near Stirling
- Loch Venachar and Loch Earn in the Loch Lomond and Trossachs National Park
- Loch Katrine and Loch Lomond which are both water catchment supplies for Glasgow

D4.2.1 Ground Water

Groundwater is an important resource throughout the TACTRAN area both in terms of the hydrological cycle and as a source of raw water for public supply.

The Scottish Environment Protection Agency (SEPA) has produced a series of aquifer and vulnerability classifications for Water Framework Directive characterisation⁶. These maps (derived by the British Geological Society in consultation with SEPA) have been produced for both the superficial and bedrock deposits. The Superficial Aquifer Map⁷ indicates that superficial aquifers exhibiting intergranular flow and high productivity are found predominately in the east of the TACTRAN area. Aquifers of low productivity are found throughout the TACTRAN area particularly in Perth and Kinross. There are few areas of medium productivity aquifers other than a small area on the Angus coast and another in close proximity to Perth.

⁶ Scottish Environment Protection Agency (SEPA) website. Accessed: August 2006

⁷ Scottish Environment Protection Agency (SEPA) (2004) River Quality Classification map. Available: www.sepa.org.uk. Accessed August 2006

The Bedrock Aquifer Map⁸ shows that intergranular fracture flow with moderate productivity is present in central part of the TACTRAN area. In the north of Perth and Kinross it is dominated by fracture flow with low productivity. Where as in the south of Perth and Kinross, running into Stirling, there is a band of fracture/intergranular flow of high productivity.

D4.2.2 Water Quality

Water quality is monitored by SEPA and the latest (2004) water quality data is displayed on their map. This identifies a range of water quality classifications within the TACTRAN area (See Figure D2: Aquatic Environments). Table D4.2 below presents a summary of the monitored water quality within the TACTRAN area.

Table D4.2 Water Quality in the TACTRAN Area

Council	Water Quality Within the Council Area
Dundee City	The majority of the rivers are classified as B with some Class A2 and Class C's
Stirling	Is dominated by Class A2 with a range from Class A1 to Class B
Perth and Kinross	The rivers range from Class A1 to Class A2 with predominately Class A1 and only a few Class B
Angus	In the northern parts the rivers are predominately Class A1 and in the south near settlements they are predominately Class B

Sources: Scottish Environmental Protection Agency's (SEPA) interactive water quality map, 2004 data (data obtained April 2006)

Note: The classification used within this table is that used by SEPA, this being Class A1 (excellent), Class A2 (Good), Class B (Fair), Class C (Poor) and Class D (Seriously Polluted)

⁸ Scottish Environment Protection Agency (SEPA) Interactive Water Framework Directive Map (2004). Available: www.sepa.org.uk. Accessed August 2006



Figure D2: Aquatic Environments in the TACTRAN Area

© Crown Copyright and /or Database Right. All rights reserved. Licence Number 10013712

natural CAPITAL

mvaconsultancy

DATE:	Sept 06	DWG SIZE:	A4
DRAWN:	AD	APPROVED:	AS

D4.2.3 Coastal Water Quality

The coastline of Angus is predominately marked as being Class A, excellent⁹. There are a couple of small sections at the settlements of Carnoustie, Arbroath and Montrose which are marked as Class B, good.

Angus has a Shoreline Management Plan (2001), which aims to provide a positive basis for sustainable shoreline management policies over the next 50 years and set a framework for the future management of the Angus coastline. The plan outlines the risks, to people and the environment, from coastal erosion and flooding; identifies preferred policies to manage these risks and sets out monitoring procedures for these policies to ensure that future land use and development of the shoreline take account of these factors.

D4.2.4 Water Framework Directive

The Water Framework Directive (WFD) is European Legislation which became law in Scotland in 2003 through the Water Environment and Water Services (Scotland) Act 2003. The Directive established a legal framework for the protection, improvement and sustainable use of surface waters, transitional waters, coastal waters and groundwater.

SEPA maintains an independent classification of watercourses and waterbodies based on their target ecological status. Watercourses within the TACTRAN area are classified according to risk, as below:

- Class 1a: At Risk
- Class 1b: At Risk (Probably)
- Class 2a: not at Risk (Probably)
- Class 2b: Not at Risk

Final assessment in relation to SEPA's 2006 water quality targets will be made in early 2007. From 2007 onwards entirely new WFD quality classification schemes will be applied to all waters. No TACTRAN specific data on water quality is available however the following was noted in SEPA's National Water Quality Classification Report 2004;

- A 2.5 kilometre (km) stretch of the Brothock Water in Arbroath improved from class C to B following the completion of dredging work as part of a flood prevention scheme.
- In the River Tay catchment near Perth, two stretches improved from class C to class B due to reductions in toxic ammonia concentrations in two effluents. Additional reed bed treatment of the effluent from Methven Waste Water Treatment Works (WWTW) resulted in the improvement of a 1.8 km stretch of the East Pow at Moss-side.
- The Frenich Burn in Perthshire continues to suffer from heavy metal discharges from Foss Barytes mine. In 2004, all of the zinc results for the year were greater than the Environmental Quality Standard, resulting in a 4.9 km downgrade to class C.
- In the Esk estuary (which includes Montrose Basin) 0.9 km² has been upgraded from good to excellent. The new secondary treatment plant at Montrose is now operational and previous discharges of unscreened sewage have ceased to the South Esk estuary resulting in the narrow neck (1 km²) of the South Esk being upgraded to class A in 2002.

⁹ Scottish Environment Protection Agency (SEPA) (2004). Interactive Water Quality Map. Available: www.sepa.org.uk. Accessed: April 2006)

- In the Tay estuary, 15.2 km² has been upgraded from class B to class A between Dundee and Newport-on-Tay. This reflects ongoing improvements in water quality following the commissioning of the Tay Wastewater Scheme. There is a possibility that the remaining area of class B on the south shore could be upgraded to class A.

SEPA WFD requires the production of River Basin Management Plans by December 2009 for each river basin, TACTRAN will be part of the Scotland River Basin District and within both the Forth and Tay Area Advisory Group.

D4.2.5 Flooding

Coastal and urban flooding could affect some areas in the TACTRAN area. SEPA is in the process of finalising its plans of areas potentially at risk of flooding and it is likely that these will be publicly available in Autumn 2006. The information within these plans will be used, if available, during the environmental assessment of the RTS.

Locations which are likely to be prone to flooding in the TACTRAN area include:

- **Flood plains.** These are natural fluvial flood inundation areas for rivers and burns. Flooding can occur when development encroaches on these flood plains with the direct impact of flooding on the development and the indirect effects of the development up and downstream.
- **Urban areas.** Poorly maintained urban drainage (such as culverts and drains) and insufficient drainage capacity has the potential to result in flooding. This can be caused both by a reduction in capacity from blockage, increased loading from new development on the drainage system as well as natural changes in rainfall pattern resulting in more heavy rainfall periods.

D4.3 PROBLEMS AND OPPORTUNITIES

There are a series of potential issues affecting the aquatic environment, including:

- **Pollution/Run -off.** Diffuse and point sources of pollution are an important issue with regard to water quality. Sources include agricultural land uses as well as point sources such as urban drainage, industry and road drainage.
- **Physical Form.** There are problems associated with the physical form of watercourses including impacts such as culverting and hard engineered channels. These have an impact on the hydrological regime as well as the physical and biological properties of the watercourses. Such impacts on the hydrological regime can lead to changes in the flood capability of watercourses and therefore affect the flood risk along the watercourse.

SEPA's Water Quality Classification Report for 2004 identifies that, across Scotland as a whole, the results demonstrate continuing substantial quality improvements in rivers and coastal waters. It also notes some expected short-term downgrading of local coastal waters due to particular weather conditions, including prolonged rainfall.

Associated with all new developments, including transport infrastructure, there is an opportunity for the design and construction/maintenance of such projects to enhance the aquatic environment. Measures such as sustainable urban drainage systems (SUDS) and bridging as opposed to culverting may improve the aquatic environment.

D4.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

The trend identified by SEPA can be expected to continue with potential localised impacts on water quality and hydrological flows associated with new developments and industrial activity. Measures being promoted through legislation and best practice, such as the Controlled Activity Regulations (CAR) and SUDS, are likely to contribute to improving water quality and flows throughout the area.

The RTS is only likely to have impacts on the local hydrological environment along with any associated impacts either up or downstream of the schemes. The RTS therefore has the potential to affect the evolution of the hydrological baseline through direct and indirect local effects.

D5 CLIMATE CHANGE

D5.1 INTRODUCTION

Climate change is now becoming widely recognised as the most serious environmental threat facing the planet. Emissions of greenhouse gases (GHGs), from the burning of fossil fuels (e.g. oil, coal, gas), are already making an impact on the world's climate. The TACTRAN area, like all other areas, contributes to emissions of GHGs.

D5.2 CURRENT BASELINE

The TACTRAN area encompasses the Tayside and Central Scotland regions. The current climate of Tayside and Central Scotland regions is noted within average annual climate maps produced by the Meteorological Office to have the following characteristics:

Rainfall: TACTRAN area lies predominantly within an area of lower to average rainfall compared to the Scottish average.

Temperature: Average annual temperature within the TACTRAN area varies with warmer temperatures experienced in the lowland areas such as around the settlements of Dundee and Stirling and cooler temperatures associated with inland upland areas such as those in Angus and Perth and Kinross.

The UK Climate Impact Programme¹⁰ produce climate change predictions for different parameters under various emissions scenarios. Table D5.1 below is based on the climate change prediction maps produced by UKCIP for temperature, precipitation and wind speed parameters.

Table D5.1 Climate Change Predictions

Variable	Forecast Period	Low Emissions Scenario	Medium Emissions Scenario	Low Emissions Scenario	High Emissions Scenario
Annual Mean Temp Change (Increase)	2020s	0.5 to 1.0°C	0.5 to 1.0°C		0.5 to 1.0°C
	2050s	1.0 to 1.5°C	1.0 to 1.5°C		1.5 to 2.0°C
	2080s	1.5 to 2.0°C	1.5 to 2.5°C		3.0 to 3.5°C
Percentage change in winter precipitation (increase)	2020s	Change within natural variability with 0 to 10% increase in places	Change within natural variability with 0 to 10% increase in places		Change within natural variability with 0 to 10% increase in places
	2050s	0 to 15%	0 to 15%		0 to 25%
	2080s	10 to 20 %	10 to 25%		20 to 30%
Percentage change in summer precipitation (decrease)	2020s	0 to 10	0 to 20		10 to 20
	2050s	10 to 20	10 to 30		20 to 30
	2080s	20 to 30	20 to 30		40 to 50

¹⁰ United Kingdom Climate Impacts Programme (UKCIP). Available: <http://www.ukcip.org.uk>. (Accessed: August 2006)

Variable	Forecast Period	Low Emissions Scenario	Medium Emissions Scenario	Low Emissions Scenario	High Emissions Scenario
Changes in wind speeds	2020s	Change within natural variability	Change generally within natural variability with slight decrease of 0 to 3% in the summer		
	2050s	Change generally within natural variability with slight decrease of 0 to 3% in the summer and autumn			
	2080s	Change generally within natural variability 0 to 3% decrease in the summer and autumn	Change generally within natural variability with slight decrease of 0 to 3% in the autumn	Change within natural variability with a 3 to 6% increase in winter and spring	

Source: UKCIP. All data are subject to confidence levels used by UKCIP in the forecasting process

The changes predicted for wind speed and temperature in the eastern part of central Scotland are generally similar to those predicted across Scotland. The east central Scotland area is however predicted to experience a higher variation in precipitation in future years than Scotland as a whole.

Scotland's new Sustainable Development Strategy ("*Choosing our Future – Scotland's Sustainable Development Strategy*") sets a key goal of reducing Scotland's own greenhouse gas emissions within the UK and Kyoto frameworks. It emphasises the fact that the bulk of the emissions come from the use of fossil fuels (coal, gas and oil) to heat homes, fuel for transport and electricity generation. It therefore highlights the need to use energy and fuel much more efficiently.

Figures highlighted in the strategy indicate that transport makes a significant contribution to Scotland's global environmental impact, accounting for 28% of Scotland's energy use and 27% of Scotland's greenhouse gas emissions¹¹. The strategy also indicates that the amount that people travel in Scotland per year is increasing and that the figures for average miles travelled in 2002/03 are 43% higher than for 1985/86. The car is sited as the dominant mode of travel with its use having grown by 19% over the last 10 years.

D5.3 PROBLEMS AND OPPORTUNITIES

The effects of climate change, like the causes, are not fully understood. However, the latest projections¹² for Scotland suggest that by the end of this century it will have warmer, wetter winters, less snowfall and an increased risk of flooding. There is also the possibility of sea level rise which may affect the TACTRAN area's coastline and low-lying inland areas (see section D4.2.5 Flooding). Whilst the causes of climate change, and the relative contributions to it from areas like the TACTRAN area vary enormously, the effects of changing weather patterns are a global phenomenon which do not recognise regional or administrative boundaries.

Emissions from transport play an important role in greenhouse gas emissions and, as identified in section D4.2.5 Flooding, road traffic levels on key routes are generally increasing in the TACTRAN area. Other factors may however act to mitigate increases in transport usage such as cleaner combustion technologies, alternative fuels and solar and renewable electric power.

Table D5.2 Climate Change Synergy by SEA Topic

Topic	Climate Change Synergy
Land Use	<ul style="list-style-type: none"> Changes in land management and agricultural practices can give rise to release of stored carbon in soils and vegetation. This may be an issue with

¹¹ *Choosing Our Future – Scotland's Sustainable Development Strategy* (2005)

¹² UK Climate Change Programme (2006)

Topic	Climate Change Synergy
	<p>new developments and associated transport infrastructure.</p> <ul style="list-style-type: none"> The potential for increased flooding from changes in precipitation may be exacerbated by new developments which incorporate areas of impermeable hardstanding (eg car parks, roads, roofs). Other material assets such as electricity supply infrastructure may require strengthening against increased severity of storms.
Ecology	<ul style="list-style-type: none"> Key semi-natural and natural habitats such as peat bogs, heaths and woodlands perform an important carbon sink role and these habitats are well represented in the TACTRAN area. Any development and related transport infrastructure has the potential to impact on the integrity and ecosystems of these habitats. Important habitats and species may be affected by changing climatic conditions, for example changes in the condition and extent of upland habitats such as heaths and heather moorland.
Aquatic Environment	<ul style="list-style-type: none"> Rainfall supply may be affected by changes in meteorological patterns with wetter winters and drier summers. Flooding frequency is likely to increase with rainfall and protection of natural floodplains being important factors, together with maintenance of urban drainage systems. Transport infrastructure can impact on the hydrological cycle. Increased rainfall may promote greater erosion, scour, and turbulence in watercourses with attendant effects on water quality and fisheries.
Geology and soils	<ul style="list-style-type: none"> Peat resources, particularly bogs, form important carbon storage reserves. Soils in Scotland are carbon rich and changes in forestry and agricultural practices can lead to increased emissions of carbon. Increased rainfall may exacerbate soil erosion, waterlogging of soil, and possible loss of agricultural productivity.
Waste	<ul style="list-style-type: none"> Methane emissions from existing and closed landfills have significant global warming potential and require management (29% of methane emissions in Scotland are from waste facilities).
Energy	<ul style="list-style-type: none"> Renewable energy sources offer an opportunity to replace fossil fuel based power supplies with low carbon technologies.
Air Quality	<ul style="list-style-type: none"> Carbon dioxide (CO₂) is emitted from existing sources such as road transport and energy use.
Communities	<ul style="list-style-type: none"> Increased maintenance burden for recreational and community facilities due to damage caused by increased flooding and increased storm severity.

D5.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

Climate change is likely to evolve in a similar manner without the RTS implementation. There is the potential for regional influences on climate change to be supported and influenced by the RTS implementation through, for example, the promotion of sustainable transport, reductions in private car use and related emissions generation.

Whilst recognising regional contributions and impacts, climate change is being addressed at a national and global level. The introduction of measures to reduce greenhouse gas emissions and therefore address global climate change may reduce the rate and level of climate change.

D6 LANDSCAPE AND TOWNSCAPE

D6.1 INTRODUCTION

The TACTRAN area has a broad and mixed landscape ranging from upland areas such as the northern areas of Perth and Kinross and Angus to the major settlements of Dundee and Stirling, to the coastal region of Angus. A number of areas within the TACTRAN area have been identified as having a national and local landscape value with a range of designations, including 5 National Scenic Areas (see Section D7.2.1 and Table D7.1). Many of the urban centres of the TACTRAN area have important townscape and historical value (including 57 Historic Gardens and Designed Landscapes – see Table D8.1) with a number of these protected within conservation areas (see Table D8.2 Conservation Areas).

D6.2 CURRENT BASELINE

The landscape of the TACTRAN area has been shaped both by geological and industrial activity. The landscape is influenced by its coastal and estuarine location along the North Sea coast, including the Firth of Tay. The topography of the region is varied with mountain ranges such as the Grampian Mountains and the Trossachs to the hill ranges of the Ochil Hills near Perth and the Sidlaw Hills near Dundee.

D6.2.1 Landscape Character

Within the TACTRAN area SNH has prepared a number of Landscape Character Assessments¹³. These are as follows:

1. In open undeveloped areas the landscape is classified as:

- Open Upland Hills;
- Open Upland Glens;
- Open Glen Sides;
- Open Parallel Ridges; and
- Open Moorland Hill.

The wild, undeveloped character of the landscapes is important, and priority should be given to discouraging inappropriate development. These areas should be managed to promote their existing landscape and ecological value, promoting good practice in muirburn, deer and sheep management, bracken control, erosion control and encouraging the regeneration of semi-natural woodland up to the natural tree line.

2. In areas dominated by commercial forests the landscape is classified as:

- Forested Upland Hills;
- Forested Upland Glens;
- Forested Parallel Ridges; and
- Forested Moorland Hills and Pastures.

Attention should be paid to restructuring of the forests so that they integrate more naturally into adjoining landscapes. A percentage of native and deciduous species appropriate to the sensitivities of a locally and potential development should be included amongst commercial species.

¹³ Landscape Character Assessment. Addresses both the characterisation process, involving identifying, mapping, classifying and describing landscape character, and the process of making judgements based on landscape character to inform a range of different decisions. www.snh.org.uk

3. In semi-natural wooded areas the landscape is classified as:

- Wooded Upland Hills;
- Wooded Upland Glens; and
- Highland and Lowland Wooded Loch Islands.

There should be emphasis placed on conversation, management and extension of these woodlands.

4. In farmed areas the landscape is classified as:

- Farmed Upland Glens;
- Farmed Strath Floors;
- Farmed Moorland Hills;
- Rolling Farmland with Estates;
- River Valley Farmland with Estates; and
- Moss Farmland with Estates.

The traditional features of the farmed landscape, many of which are falling into disrepair, should be managed.

5. In settled areas the landscape is classified as:

- Settled Strath Floors;
- Settled Loch Shores; and
- Urban Areas.

The priorities for action lie in the successful incorporation of new development and redevelopment in these areas.

6. Loch and loch-side Landscape Character Areas are subject to pressures from tourism and infrastructure. They include:

- Open Loch and Shore;
- Enclosed Loch and Shore; and
- Lowland Loch and Shore.

The challenge in these areas is to manage the complex demands of different people and developers, to avoid conflicts with different users, to ensure that the semi-natural interface of lochs with woodlands and wetlands are not affected, and that historic patterns, including designed landscapes, features such as crannogs etc are retained within their landscape settings.¹⁴

D6.2.2 National Parks ¹⁵

Dominating the natural landscape of the TACTRAN area are two National Parks, Loch Lomond and The Trossachs (opened 2002) and Cairngorms (opened 2003), accounting for 154, 420 hectares (15.5% of the TACTRAN area)¹⁶. These were designated as

¹⁴ TACTRAN area is made up of parts of SNH character assessment areas and so it is not possible to provide quantitative data.

¹⁵ National Park. A reserve/ area of land protected from most human development and pollution. The main role of the National Park Authority is to provide direction, give leadership and engender common purpose across all activities to achieve this.

¹⁶ Scottish Natural Heritage (2005) Facts and Figures 2004/2005. Available: www.snh.org.uk

National Parks under the National Parks (Scotland) Act 2000. These National Parks are afforded a level of protection from most human development and pollution and have extensive planning documents, 'State of the Park Reports', to ensure careful management of the Parks.

D6.3 PROBLEMS AND OPPORTUNITIES

There is the potential for inappropriate or insensitive development to impact on the landscape and townscape, and to result in visual impact on sensitive receptors. New transport infrastructure has the largest potential to impact on the landscape, particularly in areas with a greater sensitivity such as those which have been designated.

The use of the transport network also has the potential to impact on landscape with changes to its usage having a varying impact.

There is the opportunity for enhancements to the landscape associated with new transport infrastructure and changes in the use of existing infrastructure. Opportunities for partnership with other organisations exists to implement landscape enhancement projects along existing and new transport infrastructure.

Sensitive design of new infrastructure may help to reduce any detrimental impacts on the landscape.

D6.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

The evolution of the landscape of the TACTRAN area may be affected by a range of factors however new development, particularly those which are inappropriate or insensitive, are likely to have an impact on landscape and townscape throughout the area. Controls on new development design and landscaping and on landscape enhancement, such as urban renewal, may provide opportunities for improving landscape quality.

D7 BIODIVERSITY

D7.1 INTRODUCTION

The biodiversity of the TACTRAN area is rich, with a number of European, national and locally designated sites and a diverse mix of habitats and species.

D7.2 CURRENT BASELINE

The biodiversity baseline of the TACTRAN area can be considered with regard to two key areas:

- Designated Sites; and
- Local Biodiversity Action Plan (LBAP)¹⁷ Habitats and Species

Designated sites are afforded a level of protection based on the nature of the designation. Habitats and species comprise the biodiversity of the area. Their importance and protection vary, with a number identified as priority habitats and species within the LBAPs. See Figure D3: Biodiversity for a detailed map of current designated sites in the TACTRAN area.

¹⁷ Local Biodiversity Action Plans (LBAPs). Act as a way of stimulating effective local action for national priorities identified in the UK Biodiversity Action Plan, as well as for species which and habitats which are particularly cherished or valued in local areas.

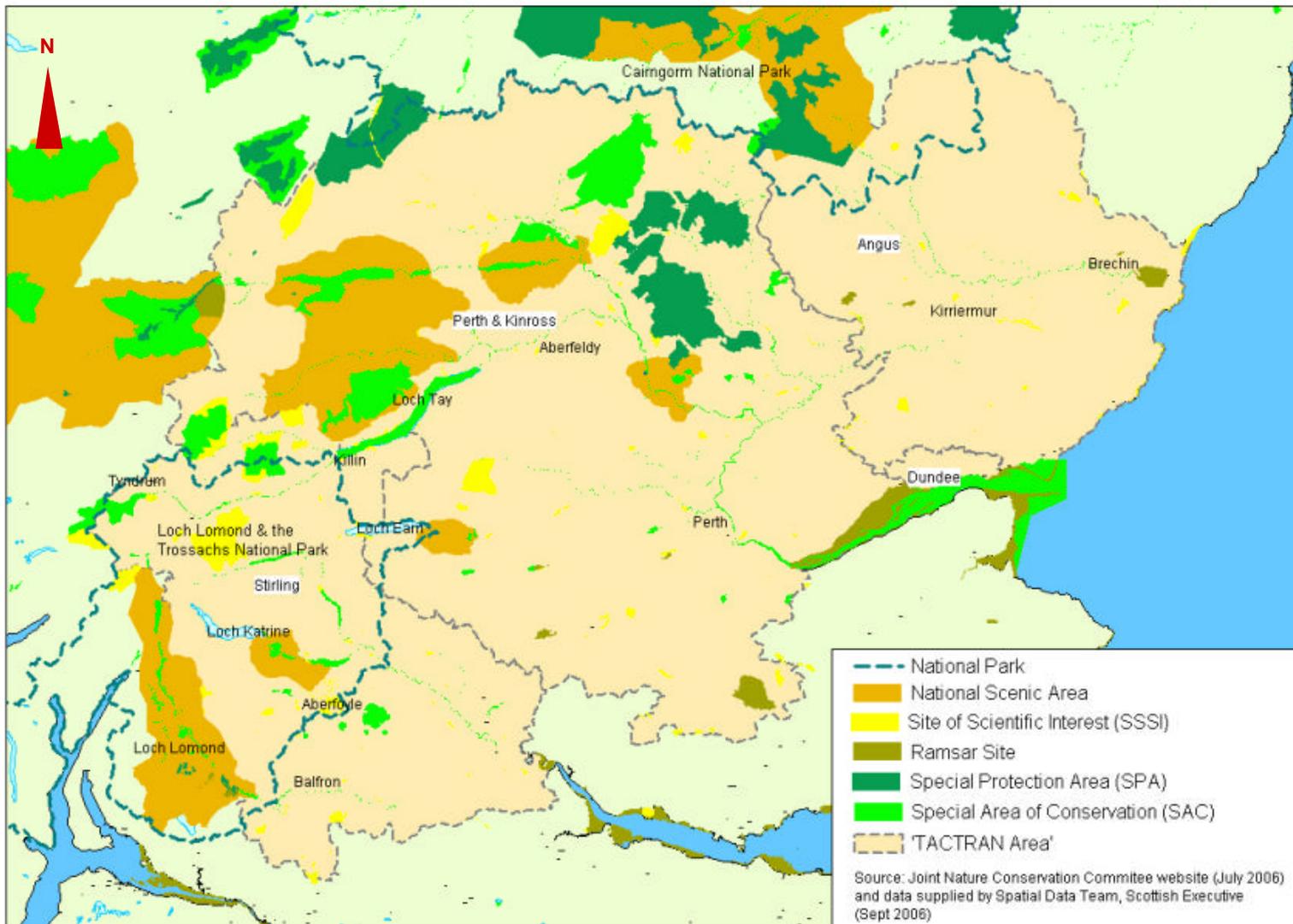


Figure D3: Biodiversity in the TACTRAN Area

© Crown Copyright and /or
 Database Right. All rights
 reserved. Licence Number
 10013712

natural CAPITAL

mvaconsultancy

DATE:	Sept 06	DWG SIZE:	A4
DRAWN:	AD	APPROVED:	AS

D7.2.1 Designated Sites

Table D7.1 Designated Sites in the TACTRAN Area

Designation	Example Sites within TACTRAN area	Number	Area (ha)	% of TACTRAN area
Site of Specific Scientific Interest (SSSI)	Ben Vrackie, Blackwater Marshes, Carrot Hill Meadow, Inchcruin	218	97,035	9.8%
Special Area of Conservation (SAC) ¹⁸	Crieff Woods, Endrick Water	29	53,873	5.4%
Special Protection Area (SPA) ¹⁹	Caenlochan, Forest of Clunie,	9	37,167	3.7%
RAMSAR ²⁰	Loch Leven, Montrose Basin, Rannoch Moor	7	9,162	0.9%
National Scenic Areas (NSA) ²¹	Loch Tummel, The Trossachs	5	94,500	0.1%
National Park	Loch Lomond and The Trossachs, Cairngorms	2	154,420	15.5%
Country Park ²²	Camperdown and Templeton Woods, Forfar Loch	6	681	0.1%
Local Nature Reserve (LNR) ²³	Montrose Basin, Balquhidderock Wood	5	2,213	0.2%
National Nature Reserve (NNR) ²⁴	Flanders Moss and Ben Lawers	7	12,688	1.3%

Source: Scottish Natural Heritage (2005) *Facts and Figures 2004/2005*.

D7.2.2 European and Nationally Protected Species

It will be important to consider the effects of any proposals on European and nationally protected species in the TACTRAN area. European species are given a high level of protection under Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora which is transposed into UK law by The Conservation (Natural Habitats &c) Regulations 1994. These species include otter, wildcat, great crested newt, some cetaceans and all bat species. Disturbance to any of these species requires a licence from the Scottish Executive and demonstration that no reasonable alternative exists and that proposals would not affect the conservation status of the species.

¹⁸ Special Area of Conservation (SAC). These are strictly protected sites designated under the EC Habitats Directive which required the establishment of a European network of important high-quality conservation sites that would make a significant contribution to conserving both habitats and species.

¹⁹ Special Protection Area (SPA). These are strictly protected sites classified for rare and vulnerable birds and for regularly occurring migratory species.

²⁰ Ramsar. These sites are wetlands of international importance designated under the Ramsar Convention since 1976.

²¹ National Scenic Area (NSA). These are areas of land considered of national significance on the basis of their outstanding scenic interest which must be conserved as part of the country's natural heritage.

²² Country Park.

²³ Local Nature Reserve (LNR)

²⁴ National Nature Reserve (NNR)

A number of animal and plant species are protected under the Wildlife and Countryside Act 1981 and the Nature Conservation (Scotland) Act 2004 including golden eagle, osprey, hen harrier, pine marten, red squirrel and water vole. Statutory protection is also given to badger under the Protection of Badgers Act 1992.

Some of these species are also recognised in local biodiversity action plans (see Section D7.2.3).

D7.2.3 Local Biodiversity Action Plan (LBAP) Habitats and Species

A range of habitats are found within the TACTRAN area from coastal habitats to farmland, urban and lowland habitats.

The Local Authority areas of Dundee City, Angus and Perth make up the Tayside LBAP with Stirling Local Authority area having an individual LBAP. Reviews of these two documents has indicated that the following types of habitats have been identified as being important with an Action Plan prepared for each.

- **Coasts and Estuaries:** *Estuaries, Maritime Cliff and Slope, Sand Dunes*
- **Farmland:** *Calcareous and Base-Rich Grassland, Farm Buildings, Hedgerows and Treelines, Stone Dykes, Grassland, Arable*
- **Upland:** *Montane, Upland Heath, Bracken*
- **Urban and Built Environment:** *Built and Developed Environment, Businesses with Land, Golf Courses, Greenspace, Buildings, Gardens, Transport Corridors*
- **Water and Wetlands:** *Mesotrophic Lochs, Rivers and Burns, Standing Open Water, Lowland Raised Bog*
- **Woodland:** *Native Pinewood, Upland Oakwood, Broadleaved Woodland, Conifer Plantation, Parkland*

Species identified within the LBAPs are numerous and range from European level protected species to locally significant species. For example the red kite (*Milvus milvus*) is designated as a UK Biodiversity Priority Species, in Schedule 1 of the Wildlife and Countryside Act 1981 and in Annex 1 of the EU Birds Directive as a species of conservation concern in the European Union. Whereas the pearl bordered fritillary (*Boloria euphrosyne*) is designated as a UK Biodiversity Priority Species with partial protection under Schedule 5 of the Wildlife and Countryside Act 1981. There is a high correlation between the species designated within the Tayside LBAP and the Stirling LBAP.

D7.2.4 Invasive Non -native Species

A number of non-native terrestrial species such as Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Himalayan Balsam (*Impatiens glandulifera*) are spreading along river corridors or invading rough, disturbed ground. Rhododendron (*Rhododendron ponticum*) is invading and spreading through important woodlands. Transport corridors can play a potentially significant role in the spread of such invasive species. The spread of such species is an offence and there are specific controls set out in the Countryside and Wildlife Act 1981 (and relevant amendments) and the Nature Conservation (Scotland) Act 2004.

D7.3 PROBLEMS AND OPPORTUNITIES

There are a wide range of potential issues and threats affecting the biodiversity of the TACTRAN area. These are in general associated with sustainable use of biodiversity, loss of biodiversity, particularly habitat, and are associated with increased development pressures from urbanisation and changing land use practices. Such pressures also affect the quality of the remaining habitats, with degradation of biodiversity both directly and indirectly. There can also be an unintentional spread of non-native invasive species (see Section D7.2.4 above) and threats to wildlife corridors. Awareness of non protected biodiversity also requires consideration.

Urbanisation and development of the countryside has resulted in habitat loss throughout the TACTRAN area. This may continue to increase as development (particularly housing) increases to meet the projected development targets across the area. Key issues and pressures on biodiversity include:

- changes in land use, such as afforestation resulting in changes to the habitat composition;
- direct impact of transport infrastructure on habitat loss;
- habitat fragmentation associated with new developments (such as road) and through changes in land management practices;
- species loss (associated with habitat loss) and road kill (badgers and roe deer identified as problems); and
- degradation of biodiversity associated with direct and indirect effects from development, including pollution, over-use of resources and land use change.

Table D7.2 Specific Threats to Strategic Habitats (as noted in the LBAPs)

Habitat	Potential Issues & Threats	Opportunities
Coasts and Estuaries	Erosion and 'coastal squeeze', grazing can have a marked effect on the structure and composition of saltmarsh vegetation, agricultural improvement, eutrophication and land claim	Various official reports and groups focusing on the potential issues and threats in this habitat, for example the Flood Appraisal Group in Stirling
Farmland	Species associated with arable land have been lost due to agricultural intensification and changes in type of crop grown	Legal penalties associated with misuse/overuse of fertilisers reduces damage Various management opportunities exist under agri-environment schemes
Upland	Damage to fragile vegetation through recreational activities, climate change resulting in loss of species which are unable to re-colonise in the longer term, overgrazing, acidification by pollution, new developments such as windfarms	National designations as protection for these Upland habitats. The Loch Lomond and Trossachs National Park and the Cairngorm National Park will provide opportunities for greater management
Urban and Built Environment	Transport corridors: lack of knowledge of the composition, extent and status of roadside habitats, inadequate maintenance regimes,	The existence of other plans/schemes that may positively influence the quality of these habitats such as the Trunk Road Biodiversity Action Plan and Stirling Council Access Strategy

Habitat	Potential Issues & Threats	Opportunities
	alien/inappropriate planting and the spread of invasive non-native species	
Water and Wetlands	Development on the Forth and implementation of flood prevention schemes, pollution from agriculture, industry and run off, acidification, overuse by tourism, land claim and overgrazing	Habitats improved through National designations and conservation strategies, for example the Water Framework Directive and West of Scotland Water's Integrated Catchment Management Plan for Loch Katrine
Woodland	<p>Pinewoods: poor natural regeneration and reduced diversity due to browsing deer and sheep, limited diversity of structure in many woods and their isolation from other woodlands related to historical exploitation and overgrazing.</p> <p>Upland Oakwood: historical under planting of oakwoods with coniferous species, spread of bracken that can limit regeneration, development pressures, inappropriate management</p>	Follow Government's forestry policy and work done by Local Forestry Framework etc and place woodlands under Woodland Grant Scheme, restoration

Further to the opportunities for biodiversity within each of the above habitats there are a number of more general opportunities for biodiversity, as below:

- New developments, such as new road sections, have the opportunity to provide for enhancement of biodiversity within their design, such as through the creation of new habitat or contribution to wildlife corridors.
- Ongoing maintenance of transport infrastructure has the opportunity to promote and enhance biodiversity such as through the creation of enhanced roadside verges by sensitive mowing practices.
- Appropriate design and construction of transport infrastructure may also reduce the potential for negative impact on biodiversity associated with transport.
- Opportunities to raise awareness of biodiversity, such as Flanders Moss and RSPB reserve at Vane Farm which are actively promoted.

D7.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

No TACTRAN area cumulative data on biodiversity trends are readily available however actions and schemes within the Stirling and Tayside LBAPs and with other organisations include much increased awareness and management of biodiversity as priorities. Development has a potential to detrimentally affect the evolution of the biodiversity baseline through direct and indirect impacts although it can also provide opportunities for enhancement. Impacts on the baseline may be greater in areas with higher development such as around settlements and conurbations and brownfield sites.

D8 CULTURAL HERITAGE

D8.1 INTRODUCTION

The TACTRAN area has a varied cultural heritage resource, from pre-historic remains to twentieth century industrial heritage. Many of these sites are protected by various designations of national and local importance.

D8.2 CURRENT BASELINE

There is a wide range of cultural heritage designated sites within the TACTRAN area, as summarised in Table D8.1 below. Designations range from those of national importance to those with a local value. See also Figure D4: Cultural Heritage for detailed map of current designations.

Table D8.1 Cultural Heritage Designations

Designation	Number				
	Angus	Dundee	Perth	Stirling	Total
Listed Buildings (category A to C(s))	2162	893	3141	1448	7644
Scheduled Ancient Monuments	393	14	751	193	1351
Historic Gardens and Designed Landscapes	11	1	34	11	57

Source: Obtained from Historic Scotland by consultation, July 2006

The TACTRAN area also boasts historic villages and towns such as Perth, Dunkeld and Comrie, a large number of historic homes, museums and formal gardens.

In addition, identified within the Local Plans, there are approximately 90 designated Conservation Areas within the TACTRAN area which are afforded protection by legislation, under the UK Government's 'Listed Buildings and Conservation Areas Act 1990'. Areas of 'Outstanding' conservation are awarded a higher level of protection. A full list of Conservation Areas throughout the TACTRAN area is provided in Table D8.2 below, listed by Local Authority area.



Figure D4: Cultural Heritage in the TACTRAN Area

© Crown Copyright and /or Database Right. All rights reserved. Licence Number 10013712



DATE:	Sept 06	DWG SIZE:	A4
DRAWN:	AD	APPROVED:	AS

Table D8.2 Conservation Areas

Council	Conservation Areas
Angus 19	Arbirlot, Arbroath Abbey to Harbour, Arbroath (Keptie Pond), Arbroath (West Port), Auchmithie, Brechin (Central Areas), Brechin (St Ninian's Square), Dunnichen, Ferryden, Forfar, Fowlis, Glamis, Kirriemuir, Lundie, Montrose, Murroes, Panbride, St Vigean's, Tannadice
Dundee 16 City	Baxter Park, Blackness, Broughty Ferry (1997), Central, Crescents, Forthill, Grove, Law Terraces, Logie, Maryfield, Reres Hill, Trottick, West End Lanes, West End Suburb, West Ferry (1997), University
Perth 35	Outstanding: Comrie, Dunkeld, Dunning, Fortingall, Kenmore, Kinross, Muthill, Perth City Area 1 (Barrossa Place, Rose Terrace, Atholl Street), Perth City Area 2 (George Street), Perth City Area 3 (St John Street), Perth City Area 4 (Tay Street), Perth City Area 5 (Marshall Place, St Leonard's Bank), Spittalfield Conservation Areas: Abernethy, Baledgarno, Birnam, Cleish, Coupar Angus, Errol, Forgandenny, Fowlis Wester, Inchtute, Kinnesswood, Kinrossie, Knapp, Longforan, Meikleour, Moulin, Perth City Area 7 (city Mills), Perth Kinnoull, Pitcairngreen, Rait, Wester Balgeddie
Stirling 31	Ashfield, Balfron, Bannockburn, Blairlogie (outstanding), Bridge of Allan (part outstanding), Buchlyvie, Callander, Cambusbarron, Deanston, Doune, Drymen, Dunblane, Fintry, Gargunnoch, Gartmore, Killearn, Killin, Kippen, Milton (Aberfoyle), Tyndrum, Stirling: Cambuskenneth, Bridgehaugh, Stirling Town (outstanding), Bruce Street, King's Park (outstanding), Park Place/Randolfield, Randolph Road, St Ninians, Torbrex, Drip Bridge

Locally important archaeological sites are also of importance and would be recognised and considered in a development/intervention in which they would be affected. Transport infrastructure itself may also be of historic interest such as local bridges, railway lines/bridges and harbours. These include Montrose Harbour Inner Harbour Light (B listed) and Old Pier (C listed), Dundee Marine Parade, Harbour Workshop and Patent Slips (A listed) and Broughty Ferry Harbour (B listed). Numerous listed local bridges are also evident across the TACTRAN area.

Given the history of the TACTRAN area, there will be other sites and areas of archaeological interest which have not yet been recognised, these would only be identified when disturbed.

D8.3 PROBLEMS AND OPPORTUNITIES

The cultural heritage of the TACTRAN area is faced by a number of potential issues primarily related to development pressure directly on designated sites/areas and on their setting.

Associated with new development and schemes (such as new transport infrastructure) there is maybe an opportunity to enhance the setting and potentially the physical form of designated sites and buildings. Further opportunities exist to improve access to landscape and its interpretation. Some impacts are uncertain at the strategic level. Where this is the case any issues and how they will be taken into account and implemented at the lower level will be identified. Associated with physical enhancement, improved interpretation of such features would provide benefit to the wider community resource.

D8.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

The cultural heritage baseline within the TACTRAN area is likely to continue to change as new developments encounter previously unknown archaeological and cultural heritage remains and these are subsequently preserved and recorded (or lost to development). Depending upon the nature, condition and status of these finds some may be designated at national or local level. As with other components, the impacts associated with development are likely to be greater in areas of high development potential or activity, where there is a greater focus of proposed development.

D9 HUMAN HEALTH AND SAFETY

D9.1 INTRODUCTION

The health and safety of the population of the TACTRAN area is discussed within this section. The health of the population is a complex issue with a range of contributory factors.

D9.2 CURRENT BASELINE

D9.2.1 Human Health

Information on the health of the population has been obtained from the 2001 Census. The Census questioned respondents on their perceived level of health and these responses along with life expectancy at birth data from the General Register Office Scotland 2002 – 04 are presented in Table D9.1 below.

Table D9.1 Human Health in the TACTRAN Area

Council Area	% with Perceived Health: Good	% with Perceived health: Not Good	% with Limiting Long Term Illness	Life Expectancy (at birth 2002 -04)	
				Male (age in years)	Female (age in years)
Angus	70.63	8.15	18.56	75.7	79.4
Dundee City	66.66	11.02	22.31	72.5	78.4
Perth & Kinross	71.86	7.56	17.84	76.3	80.2
Stirling	70.56	8.55	18.50	75.7	79.9
TACTRAN	69.92	8.82	19.30	75.1	79.5
Scotland	67.91	10.15	20.31	73.8	79

Source: 2001 Census and General Register Office Scotland

There are often limitations with health statistics obtained from all sources based on the scope and nature of the surveys. The figures presented above in Table D8.1 suggest that there is a higher percentage of the population with perceived good health in the TACTRAN area than the Scottish average. To further support this, a lower percentage of the population in the TACTRAN area has a limiting long-term illness compared to the Scottish average and the life expectancy of the population in the TACTRAN area for both sexes is higher than the Scottish average. This all tends to suggest that the TACTRAN area is slightly 'healthier' than the Scottish average.

As Health Board areas are not congruous with local authority administrative areas, the collation of meaningful health and safety data specific to the TACTRAN area has not been possible. Angus, Dundee and Perth and Kinross constitute the Tayside Health Board Area and Stirling (and non TACTRAN local authority areas Clackmannanshire and Falkirk) constitute the Forth Valley Health Board Area.

Opportunities for health and well being are available in the TACTRAN area with access to recreation, open space, green space and a network of promoted paths and cycleways. An important Long Distance Route (LDR)²⁵ identified in the TACTRAN area is the West Highland Way which runs 152 kilometres from Milngavie to Fort William crossing through the border of Stirling Local Authority area.

D9.2.2 Safety

Safety of the transport system throughout the TACTRAN area can be considered with regard to two key areas, that of physical safety on the transport network (i.e. road or rail accidents) and that of personal safety whilst using the transport network (i.e. personal attacks and fear of attack).

Road accident statistics are held by the Scottish Executive and are summarised in Table D9.2 below. As demonstrated by the statistics below, it is clear that a general downward trend in accidents of all types is evident in each council area. The TACTRAN area has a slightly higher percentage reduction of 15.1% in 'all severities' from '1994-1998 average' to '2001-2005 average' compared to that of Scotland which has experienced a lower reduction of 14.9%.

Table D9.2 Road Accident Statistics

Council Area	1994-1998 Average			2001 – 2005 Average (provisional)		
	Fatal	Fatal & serious	All Severities	Fatal	Fatal & Serious	All Severities
Angus	8	118	366	9	84	315
Dundee City	5	114	420	4	67	333
Perth & Kinross	19	185	518	18	136	450
Stirling	9	114	320	7	86	280
TACTRAN	41	531	1624	38	373	1378
Scotland	335	4,003	16,508	285	2,790	14,048

Source: Scottish Executive, Statistical Bulletin Transport Series: Trn/2006/4: Key 2005 Road Accident Statistics (June 2006)

D9.3 PROBLEMS AND OPPORTUNITIES

There are several aspects to the health of the TACTRAN area population and transport makes up only one component of this. Opportunities for sustainable methods of transport such as walking and cycling may play an important role in improving health directly in terms of physical health for the individual and indirectly in terms of a reduction

²⁵ Long Distance Routes (LDRs). Designated since 1967 LDRs are routes provide for several days walking on a continuous route through some of Scotland's finest landscape having been created by linking together existing local paths and providing new paths where there were gaps.

in polluting traffic on the roads. However, suitable infrastructure must be in place to achieve this such as cycling lanes and footpaths etc as well as programmes of education to facilitate this. Given the many factors affecting health, it is difficult to ascertain the role of transport in health indicators.

The effects of air pollution (discussed in the Air Quality and Noise section) may have an impact on human health, particularly to those in close proximity to heavily trafficked roads (such as the A90, A91, A92, A9, and the M90; Dundee City in areas close to the Tay Bridge or the Kingsway Roundabout; Stirling city centre or other main roads in urban areas).

Personal safety on the transport network is a factor in the use of sustainable methods of transport such as road safety for bicycles and personal safety on public transport, particularly at night and in remoter locations.

There are opportunities within the transport network and infrastructure to address these problems through design, maintenance and awareness. Opportunities may include improved lighting around bus stops, creation of on and off-line cycle lanes and traffic calming measures.

D9.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

The evolution of the health and safety baseline in the TACTRAN area is likely to be influenced by a number of factors. Safety levels may improve over time through national or local targets on improving road safety and ongoing design of the transport network. Areas to address these will form an important component of the new TACTRAN RTS.

D10 POPULATION

D10.1 INTRODUCTION

At the time of the 2001 Census, the TACTRAN area had a population of approximately 500 thousand (approximately 10% of the Scottish population). This population is focussed on the main urban centres such as Dundee and Perth and other key towns across the area.

D10.2 CURRENT BASELINE

D10.2.1 Population

The 2001 Census identifies the population of the four Councils within the TACTRAN area and these are presented in Table D10.1 below.

Table D10.1 Population of TACTRAN Area

Council	Population	% Scottish Population
Angus	108,400	2.1%
Dundee	145,663	2.9%
Perth & Kinross	134,949	2.7%
Stirling	86,212	1.7%
TACTRAN	475,224	9.4%
Scotland	5,062,011	100%

Source: 2001 Census Data from SCROL Website, July 2006

Within the TACTRAN area the population is distributed between a number of larger towns and cities such as Stirling, Perth, Dundee and Forfar, within smaller towns and villages throughout the area and in rural locations.

The main density of population is focused around Dundee City, which has the smallest area but the highest population of the four local authorities which make up the TACTRAN area. Other densities of population are focused around key transport corridors such as the A90 and A92, in the historical locations of the villages in the Tay Forest Valley, Loch Lomond and the Trossachs, and in coastal locations such as Arbroath and Montrose.

The Scottish Census Results On Line (SCROL) website provides information from the 2001 Census for car/van ownership, this is summarised in Table D10.2 and demonstrates that the TACTRAN area has a lower percentage of the population with no access to a car or van when compared to the Scottish average.

Table D10.2 Total Number of Households with No Car/Van

Council	% with No Car/Van
Angus	26.43%
Dundee	45.52%
Perth and Kinross	23.67%
Stirling	24.39%
TACTRAN	30.00%
Scotland	34.23%

Source: 2001 Census Data from SCROL Website, July 2006

D10.2.1 Tourism ²⁶

Tourism is 'big business' in Scotland accounting for 9% of all employment in 2005 with an annual expenditure of £4.2 billion. In 2005 over 17 million tourists took overnight trips to Scotland and from 2001 to 2005 there was a 50% increase in international visitors to Scotland. This has been matched with an 11% increase in visitor attraction numbers from 2001 to 2005 and a 5% increase in those employed in tourism related jobs in this time period.

Detailed statistics for the four local authority areas that constitute the TACTRAN area are not available. However, the top 3 activities in which visitors to Scotland participate include; visiting castles, monuments and churches; hiking, hill walking, rambling or other walking; and visiting museums, galleries etc.

The following visitor attractions in the TACTRAN area with high visitor numbers in 2004 include:

- Stirling Castle, 420,797 visitors
- Blair Castle, 140,688 visitors
- The Famous Grouse Experience (Crieff), 121,000 visitors
- Glamis Castle, 119,153 visitors
- Crombie Country Park, 104,143 visitors

²⁶ Visit Scotland (2005). Tourism in Scotland .Available: www.scotexchange.net

This indicates that the TACTRAN area is attractive to tourists with many features to visit.

D10.3 PROBLEMS AND OPPORTUNITIES

The General Registrar for Scotland's (GRO) report on projected percentage change in population (2004-2024) identifies that the TACTRAN area contains two council areas (Perth and Kinross and Stirling) with significantly higher than the Scotland wide increase of 0.8%. The council areas of Angus and Dundee City both demonstrate a negative projected percentage showing a decrease in population within these.

Table D10.3 Projected Percentage Change in Population by Council Area (2004 based) 2004 -2024

Council	All Ages	0-15 years	16-59/64 years ²⁷	60/65+ years ²⁸
Angus	-4.1	-22.6	-10.7	29.9
Dundee City	-15	-21.6	-16.3	-5.5
Perth & Kinross	6.0	-9.3	1.5	30.5
Stirling	5.5	-4.5	3.2	22.9
Scotland	0.8	-12.4	0.96	19.3

Source: Population Projections Scotland (2004 based), General Registrar for Scotland (GRO), 2005

The figures identified above indicate that the population of the TACTRAN area is diverse with increasing population predicted for two council areas (Perth and Kinross and Stirling) and declining population predicted for two areas (Angus and Dundee City). The largest projected increase in population being that in the retirement (60/65+ years) category and the lowest projected increase (decrease) in population being that in the 0-15 years category. This trend is reflected in the Scottish average figures which suggest a decreasing birth rate and increase in the number of people within the retirement band.

The projected percentage change in population by council area is reflected in the projected percentage change in total households by Council area 2002 – 2016 as identified by GRO's Statistical Bulletin, Housing Series, April 2004.

The Scottish average stands at a 7% change in total households 2002-2016. Stirling Council area at 17% has the third highest projected percentage change in households in Scotland. Perth and Kinross has a projected percentage change in households of 10%, which like Stirling mirrors the projected percentage change in population. Dundee City Council area experiences the highest decline in Scotland with a projected percentage change in households of -5%. Angus has a low 1% projected percentage change in households. These two figures also mirror the projected percentage change in population for these Council areas.

Design of new developments associated with the predicted increases in population and households has the opportunity to promote accessibility to sustainable development. Whilst the local transport strategies will have an influence in the detailed design and local

²⁷ Includes the change in women's state pension age between 2010 and 2020

²⁸ Includes the change in women's state pension age between 2010 and 2020

level planning, the RTS has the opportunity to support, promote and facilitate the access to strategic development areas/core development areas.

Growing tourism can lead to problems of increased private and public vehicles on the roads along with increased congestion. Other problems associated with tourism include the seasonal congestion in and around Pitlochry and parking in tourist hotspots such as Glen Clova. Opportunities to alleviate the potential increased traffic and congestion includes:

- the promotion of public transport for tourists;
- integrating rail and bus transport; and
- encouraging more cycling and walking.

D10.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

The population baseline is likely to evolve in a similar manner without the RTS implementation. There is the potential however for the evolution to be supported and influenced by the RTS implementation through the choice and location of regional transport schemes.

D11 MATERIAL ASSETS

D11.1 INTRODUCTION

Within this section the range of material assets within the TACTRAN area are discussed with regard to natural and man-made material assets, including:

- *Natural* Material Assets: Aggregates/ Fuel / Energy / Forestry / Agriculture
- *Man-Made* Material Assets: Transport Infrastructure and Aggregates / Construction Waste

D11.2 CURRENT BASELINE

D11.2.1 Natural Material Assets

The increasing traffic flow figures on roads within the TACTRAN area indicate a potential increase in transport related fuel and energy use. There are opportunities within the area for increasing the use of biofuels for the public transport fleet and for the reduction in fuel use (through measures such as modal shift and fuel efficiency).

Transport and transport infrastructure could potentially impact on the forests and woodland of the TACTRAN area, leading to a reduction or loss of forests and woodland for safety and transport reasons.

Demands on aggregates and stone for new and maintenance of existing infrastructure could reduce the aggregate and stone resources of the TACTRAN area.

D11.2.2 Man-Made Material Assets

Two distinct man-made assets have been identified in the TACTRAN area: transport infrastructure and aggregates/construction waste.

Transport Infrastructure

There is a wide range of transport infrastructure within the TACTRAN area. The TACTRAN area hosts sections of the two main North to South routes in Scotland, the A82 and the A9, both of which are subject to high levels of car traffic and road freight. Other key infrastructure includes:

- Dundee Airport with daily flights to London City
- Road Infrastructure, including:
 - M90 Motorway – Linking Edinburgh to Perth
 - M80 Motorway and M9 Motorway North to South through Stirling
 - A9 Primary Route Dual Carriageway – Linking Stirling to Perth
 - A9 Primary Route Single Carriageway – Linking Perth to Pitlochry
 - A90 Primary Route Dual Carriageway – Linking Perth to Dundee to Forfar to Brechin
 - A92 Primary Route Single Carriageway – Linking south to Dundee, Arbroath, Montrose
- Railway Infrastructure, including:
 - Stirling to Perth
 - Perth to Dundee
 - Dundee to East Coast (Arbroath, Montrose and Aberdeen)
- Aquatic Infrastructure, including:
 - North Sea
 - Firth of Tay and Firth of Forth

See also Figure D5: Material Assets for a map detailing the above information.

Aggregates and Construction Waste

The use of aggregates within transport infrastructure places a pressure on the natural resources of the TACTRAN area and further a field. Opportunities exist for the use of recycled aggregates and construction waste in the construction of new and maintenance of existing infrastructure.

D11.3 PROBLEMS AND OPPORTUNITIES

The use of both finite and infinite resources in the construction and operation of transport infrastructure and the operation of vehicles is an important component in assessing the impact of the RTS on both material assets and the raw materials used in their construction and ongoing maintenance. The use of alternatives, such as biofuel to replace unleaded fuels, presents opportunities for incorporating more environmentally acceptable technologies into the transport system.

There are also opportunities to reduce, reuse and recycle resources as part of a sustainable waste management system which could be adopted to contribute towards greening the wider built environment, including transport infrastructure.

D11.4 EVOLUTION OF THE BASELINE WITHOUT RTS IMPLEMENTATION

The man-made and natural resource base is expected to continue to be developed and exploited without the implementation of the RTS. Wider local, regional and national government strategies and targets for waste management and recycling will continue to develop and impact on resource use.

BASELINE INFORMATION SOURCES

Air Quality and Noise

- Angus Council (2006). State of the Environment Report. Available: www.angus.gov.uk. Accessed: August 2006
- BMT Cordah Limited (2006) Stirling Council LAQM Updating and Screening Assessment 2006. A Report for Stirling Council. Available: www.stirling.gov.uk. Accessed: August 2006.
- Dundee City Council (2003). Local Authority Air Quality Updating and Screening Assessment. Available: www.dundee.gov.uk. Accessed: August 2006.
- Perth and Kinross Council (2005). Air Quality Report. Available: www.perthshire.gov.uk. Accessed: August 2006

Soil and Geology

- Tayside Biodiversity Partnership. (2006). Geological Information. Available: www.taysidebiodiversity.co.uk. Accessed: August 2006
- Tayside Biodiversity Partnership. (2006). Geological Maps. Available: www.scottishgeology.com. Accessed: August 2006

Aquatic Environment

- Scottish Environment Protection Agency (SEPA) (2004). Interactive Water Quality Maps. Available: www.sepa.org.uk. Accessed: July 2006.
- Scottish Environment Protection Agency (SEPA) (2004). Interactive Water Framework Directive Maps. Available: www.sepa.org.uk. Accessed: July 2006.

Climate Change

- United Kingdom Climate Change Programme (2006). Available: www.ukcip.org.uk. Accessed: August 2006.
- Scottish Executive (2005). Choosing Our Future – Scotland's Sustainable Development Strategy. Available: www.scotland.gov.uk. Accessed: July 2006

Landscape and Townscape

- Perth Local Plan (all local areas) (various years 1994 – 2005) Available: www.perthshire.gov.uk
- Stirling Council Local Plan (1999). Available: www.stirling.gov.uk
- Angus Council Local Plan Review (2006). Available: www.angus.gov.uk
- City of Dundee Local Plan (2005). Available: www.dundee.gov.uk

- Scottish Natural Heritage (2005). Facts and Figures 2004/2005. Available: www.snh.org.uk. Accessed: July 2006

Biodiversity

- Tayside Biodiversity Partnership (2006). Tayside Local Biodiversity Action Plan. Available: www.taysidebiodiversity.co.uk/. Accessed: July 2006
- Stirling Council (2005). Stirling Local Biodiversity Action Plan. Available: www.stirling.gov.uk. Accessed July 2006.
- Joint Nature Conservation Committee (JNCC). Available: www.jncc.gov.uk/

Cultural Heritage

- Perth Local Plan (all local areas) (various years 1994 – 2005) Available: www.perthshire.gov.uk
- Stirling Council Local Plan (1999). Available: www.stirling.gov.uk
- Angus Council Local Plan Review (2006). Available: www.angus.gov.uk
- City of Dundee Local Plan (2005). Available: www.dundee.gov.uk

Human Health and Safety

- General Registrar Scotland (2001). Census Statistics. Available: www.gro-scotland.gov.uk. Accessed: August 2006.
- Scottish Executive National Statistics (2006). Key 2005 Road Accident Statistics. Available: www.scotland.gov.uk. Accessed: July 2006

Population

- General Registrar Scotland (2001). Census Statistics. Available: www.gro-scotland.gov.uk. Accessed: August 2006.
- Scotland's Census Results Online (2001). Various Census Statistics. Available: www.scrol.gov.uk. Accessed: August 2006
- Visit Scotland (2005). Tourism in Scotland .Available: www.scotexchange.net. Accessed: August 2006.

Material Assets

- Ordnance Survey Map
 - Explorer 366
 - Explorer 369
 - Explorer 380

ANNEX E

MATRIX OF COMPATIBILITY OF SEA AND RTS OBJECTIVES

ANNEX E Matrix of Compatibility of TACTRAN SEA and RTS Objectives

<p>RTS Objectives</p> <p>SEA Objective</p>	<p>Economy – to ensure transport helps to deliver regional prosperity</p>	<p>To ensure that transport infrastructure and services in the region help deliver economic growth, particularly in key business and employment sectors</p>	<p>To improve the efficiency, reliability and integration of the movement of goods and people</p>	<p>To address issues of peripherality associated with the TACTRAN area</p>	<p>Accessibility, Equity and Social Inclusion – to improve accessibility for all, particularly for those suffering from social exclusion</p>	<p>To improve access to employment</p>	<p>To improve access to public services, including health and education</p>	<p>To improve access to retail, recreation and leisure facilities</p>	<p>To reduce severance and social and economic isolation caused by transport, or by a lack of it</p>	<p>To improve the accessibility and inclusivity of the transport system</p>	<p>Environment - to ensure the transport system contributes to safeguarding the environment and promotes opportunities for improvement.</p>	<p>To contribute to the achievement of the Scottish national targets and obligations on greenhouse gas emissions</p>	<p>To promote a transport system that respects both the natural and the built environment</p>	<p>To promote a shift towards more sustainable modes</p>	<p>Health and Well-being – to improve the health and well-being of communities</p>	<p>To help meet or better all statutory air quality requirements in the TACTRAN area</p>	<p>To promote a culture of active and healthy travel</p>	<p>Safety and Security – to improve the real and perceived safety and security of the transport network</p>	<p>To improve transport-related safety</p>	<p>To improve real or perceived levels of personal security on the transport network</p>	<p>Integration – to improve integration, both within transport and between transport and other policy areas</p>	<p>To improve integration of the transport modes</p>	<p>To ensure integration with land-use planning</p>	<p>To ensure a fit with other relevant national, regional and local strategies and policies</p>
<p>Climate Change</p>																								
<p>To contribute to reducing carbon emissions through transport measures</p>	?x/✓	?x/✓	✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	✓	✓	✓	✓	✓	✓	✓	?x/✓	?x/✓	0	✓	✓	0	✓
<p>To contribute to meeting the Scottish share in the reduction of carbon emissions</p>	?x/✓	?x/✓	✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	✓	✓	✓	✓	0	✓	✓	?x/✓	?x/✓	0	✓	✓	0	✓
<p>Community Well-being</p>																								
<p>To protect the well being of communities and improve the regional quality of life</p>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<p>To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle</p>	?x/✓	?x/✓	✓	✓	✓	?x/✓	✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	✓	✓	✓	?x/✓	✓	✓	✓	✓	✓	✓	✓	✓
<p>To provide sustainable access to employment and essential services</p>	?x/✓	?x/✓	✓	✓	✓	✓	✓	✓	✓	✓	?x/✓	?x/✓	0	✓	0	?x/✓	✓	0	0	0	✓	✓	✓	✓
<p>To improve air quality in the region and contribute to meeting national air quality and health objectives</p>	?x/✓	?x/✓	✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	✓	0	✓	✓	✓	✓	✓	0	✓	0	✓	✓	?x/✓	✓
<p>To reduce transport related noise and vibration pollution</p>	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	✓	?x/✓	✓	✓	✓	?x/✓	✓	0	?x/✓	0	✓	✓	✓	✓
<p>To reduce flood risks from transport</p>	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	✓	?x/✓	✓	✓	0	?x/✓	?x/✓	0	?x/✓	0	✓	~	✓	✓
<p>To reduce the severance effects of traffic and infrastructure on communities</p>	?x/✓	?x/✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?x/✓	?x/✓	?x/✓	✓	?x/✓	?x/✓	?x/✓	?x/✓	0	✓	✓	✓	✓
<p>To avoid negative impacts from visual intrusion from transport infrastructure</p>	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	✓	?x/✓	✓	?x/✓	✓	?x/✓	?x/✓	?x/✓	?x/✓	0	✓	0	✓	✓
<p>To contribute to improving health in the region</p>	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	?x/✓	✓	✓	✓	?x/✓	✓	?x/✓	?x/✓	✓	✓	✓	✓	✓	✓	✓	0	0	✓	✓

RTS Objectives SEA Objective	Economy – to ensure transport helps to deliver regional prosperity	To ensure that transport infrastructure and services in the region help deliver economic growth, particularly in key business and employment sectors	To improve the efficiency, reliability and integration of the movement of goods and people	To address issues of peripherality associated with the TACTRAN area	Accessibility, Equity and Social Inclusion – to improve accessibility for all, particularly for those suffering from social exclusion	To improve access to employment	To improve access to public services, including health and education	To improve access to retail, recreation and leisure facilities	To reduce severance and social and economic isolation caused by transport, or by a lack of it	To improve the accessibility and inclusivity of the transport system	Environment - to ensure the transport system contributes to safeguarding the environment and promotes opportunities for improvement.	To contribute to the achievement of the Scottish national targets and obligations on greenhouse gas emissions	To promote a transport system that respects both the natural and the built environment	To promote a shift towards more sustainable modes	Health and Well-being – to improve the health and well-being of communities	To help meet or better all statutory air quality requirements in the TACTRAN area	To promote a culture of active and healthy travel	Safety and Security – to improve the real and perceived safety and security of the transport network	To improve transport-related safety	To improve real or perceived levels of personal security on the transport network	Integration – to improve integration, both within transport and between transport and other policy areas	To improve integration of the transport modes	To ensure integration with land-use planning	To ensure a fit with other relevant national, regional and local strategies and policies
Materials Assets and Resources To promote the sustainable use of the region’s assets and resources	?x/ ✓	✓	✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	✓	✓	✓	✓	✓	0	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	✓	✓	✓	✓
To minimise waste, and recover and recycle, resources efficiently	?x/ ✓	?x/ ✓	✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	✓	✓	✓	✓	✓	0	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	✓	✓	0	✓
To adopt sustainable planning, design and construction methods	?x/ ✓	?x/ ✓	0	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	✓	?x/ ✓	✓	✓	0	✓	?x/ ✓	?x/ ✓	?x/ ✓	?x/ ✓	✓	✓	0	✓

Annex E Matrix Scoring System

Broadly supportive of the SEA objective (positive effect)	✓
Neutral/no effect	0
Negative effect/incompatibility with SEA objective	x
Uncertain effect	?
Possible negative or positive effect depending on measures	?x/✓

ANNEX F

APPRAISAL MATRICIES FOR RTS INTERVENTIONS

Annex F – Environmental Appraisal of Interventions

This annex reports the environmental assessment undertaken on the interventions presented within the themed groups of measures in the Preferred Strategy of the RTS. These themed groups were as follows:

- A: Land use and planning-related measures (including parking strategy);
- B: Information-based measures;
- C: Measures designed to change attitudes and behaviour, including demand management
- D: Walking and cycling measures;
- E: Bus-based measures;
- F: Rail-based measures;
- G: Measure associated with improving multi-modal interchange;
- H: Community and Demand Responsive Transport;
- I: Road-based measures;
- J: Freight-specific measures; and
- K: Air transport measures.

Due to the strategic nature of the initiatives and measures in the RTS, the appraisal has been undertaken at a high level. An appraisal system has been developed and used based on the following scale of effects.

✓✓	Strong compatibility with the objective (or a strong positive effect)
✓	Broadly supportive of the objective (or a compatible/positive effect)
0	Neutral/no effect
X	Negative effect/incompatibility with the objective
XX	Strongly negative effect/incompatibility with the objective
? (✓/X)	Uncertain effect (positive/negative)

The appraisal was undertaken using the framework questions listed in Table 2.3 in Chapter 2 on Methodology.

The appraisal has been reported in a series of tables which list the SEA objectives and present the findings of the assessment in relation to these objectives for each of the interventions presented in Chapter 6 of the draft RTS.

Table F1.1 presents the interventions for groups A – C.

Table F1.2 presents the interventions for groups D – F.

Table F1.3 presents the interventions for groups G – I(2).

Table F1.4 presents the interventions for groups J – K.

Table F1.1 Land Use and Planning (including Parking Strategy), Information Related Measures and Other Measures Designed to Change Attitudes and Behaviours

RTS Initiatives	A - Land use and Planning	IV_A1 – Land-use planning and policy controls to reduce need to travel - car	IV_A2 – Travel Plan Guidance and Support to Large Employers	IV_A3 – Consistent framework for parking standards at new developments	IV_A4 – Improved access to health care	IV_A5 – National Parks access	B - Information related Measures	IV_B1 – Develop, maintain and deliver a Regional Transport Information Strategy	C - Measures designed to change attitudes and behaviour	IV_C1 – use of awareness campaigns to increase use of sustainable transport modes and/or reduce overall travel	IV_C2 – promote regional car-sharing schemes	IV_C3 – Establish a strategic parking policy framework	IV_C4 – Develop measures to help encourage sustainable tourism
SEA Objectives													
Climate Change To contribute to reducing carbon emissions through transport measures	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Community Well-being To protect the well being of communities and improve the regional quality of life	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	✓	✓	✓	✓ ✓	✓		✓	✓	✓	✓	✓	✓

RTS Initiatives	SEA Objectives	A - Land use and Planning	IV_A1 – Land-use planning and policy controls to reduce need to travel - car	IV_A2 – Travel Plan Guidance and Support to Large Employers	IV_A3 – Consistent framework for parking standards at new developments	IV_A4 – Improved access to health care	IV_A5 – National Parks access	B - Information related Measures	IV_B1 – Develop, maintain and deliver a Regional Transport Information Strategy	C - Measures designed to change attitudes and behaviour	IV_C1 – use of awareness campaigns to increase use of sustainable transport modes and/or reduce overall travel	IV_C2 – promote regional car-sharing schemes	IV_C3 – Establish a strategic parking policy framework	IV_C4 – Develop measures to help encourage sustainable tourism
	To provide sustainable access to employment and essential services	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	To reduce transport related noise and vibration pollution	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	To reduce flood risks from transport	0	0	0	0	0	0		0	0	0	0	0	0
	To reduce the severance effects of traffic and infrastructure on communities	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	To avoid negative impacts from visual intrusion from transport infrastructure	0	0	0	0	0	0		0	0	0	0	0	0

RTS Initiatives	SEA Objectives	A - Land use and Planning	IV_A1 – Land-use planning and policy controls to reduce need to travel - car	IV_A2 – Travel Plan Guidance and Support to Large Employers	IV_A3 – Consistent framework for parking standards at new developments	IV_A4 – Improved access to health care	IV_A5 – National Parks access	B - Information related Measures	IV_B1 – Develop, maintain and deliver a Regional Transport Information Strategy	C - Measures designed to change attitudes and behaviour	IV_C1 – use of awareness campaigns to increase use of sustainable transport modes and/or reduce overall travel	IV_C2 – promote regional car-sharing schemes	IV_C3 – Establish a strategic parking policy framework	IV_C4 – Develop measures to help encourage sustainable tourism
	To contribute to improving health in the region	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
	Natural Heritage To protect and enhance the natural heritage of the region and beyond	✓	✓	0	0	✓	✓		✓	✓	✓	✓	✓	✓
	To protect and enhance biodiversity	0	0	0	0	0	0		0	0	0	0	0	0
	To minimise the effects of transport on designated areas and protected species	0	0	0	0	0	0		0	0	0	0	0	0
	To protect and enhance the landscape of the region	0	0	0	0	0	0		0	0	0	0	0	0

RTS Initiatives	SEA Objectives	A - Land use and Planning	IV_A1 – Land-use planning and policy controls to reduce need to travel - car	IV_A2 – Travel Plan Guidance and Support to Large Employers	IV_A3 – Consistent framework for parking standards at new developments	IV_A4 – Improved access to health care	IV_A5 – National Parks access	B - Information related Measures	IV_B1 – Develop, maintain and deliver a Regional Transport Information Strategy	C - Measures designed to change attitudes and behaviour	IV_C1 – use of awareness campaigns to increase use of sustainable transport modes and/or reduce overall travel	IV_C2 – promote regional car-sharing schemes	IV_C3 – Establish a strategic parking policy framework	IV_C4 – Develop measures to help encourage sustainable tourism
	To protect watercourses from the impacts of transport and maintain and enhance their water quality	0	0	0	0	0	0		0	0	0	0	0	0
	To protect the region's geomorphology, mineral, geology, soils and peat resources	0	0	0	0	0	0		0	0	0	0	0	0
	To protect the integrity of the region's National Parks against the effects of transport	0	0	0	0	0	0		0	0	0	0	0	0
	Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas	0	0	0	0	0	0		0	0	0	0	0	0
	To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	0	0	0	0	0		0	0	0	0	0	0

RTS Initiatives	SEA Objectives	A - Land use and Planning	IV_A1 – Land-use planning and policy controls to reduce need to travel - car	IV_A2 – Travel Plan Guidance and Support to Large Employers	IV_A3 – Consistent framework for parking standards at new developments	IV_A4 – Improved access to health care	IV_A5 – National Parks access	B - Information related Measures	IV_B1 – Develop, maintain and deliver a Regional Transport Information Strategy	C - Measures designed to change attitudes and behaviour	IV_C1 – use of awareness campaigns to increase use of sustainable transport modes and/or reduce overall travel	IV_C2 – promote regional car-sharing schemes	IV_C3 – Establish a strategic parking policy framework	IV_C4 – Develop measures to help encourage sustainable tourism
	To maintain and enhance townscapes and their settings	0	0	0	0	0	0		0	0	0	0	0	0
	<u>Materials Assets and Resources</u> To promote the sustainable use of the region’s assets and resources	0	0	0	0	0	0		0	0	0	0	0	0
	To minimise waste, and recover and recycle, resources efficiently	0	0	0	0	0	0		0	0	0	0	0	0
	To adopt sustainable planning, design and construction methods	✓	✓	✓	✓	0	0		✓	✓	✓	0	✓	✓
	To promote sustainable travel	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓		✓✓	✓✓	✓✓	✓✓	✓✓	✓✓

Table F1.2 Walking and Cycling, Bus-based, and Rail-based Measures

RTS Initiatives SEA Objectives	D - Walking and Cycling Measures	IV_D1 – Develop, deliver and monitor a Walking and Cycling Strategy for the region IV_D2 – Safer routes to schools	E - Bus based Measures	IV_E1 – Quality bus partnerships	IV_E2 – Review bus frequency on key commuter corridors	IV_E3 – Redevelop or replace Arbroath bus station	F - Rail Based Measures	IV_F1 – Additional semi-fast rail service from Dundee to Edinburgh	IV_F2 – improved rail services between Perth and Edinburgh	IV_F3 – Additional hourly rail service between Arbroath and Perth (TERS)
Climate Change To contribute to reducing carbon emissions through transport measures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓	✓	✓	✓	✓	0	✓	✓	✓	✓
Community Well-being To protect the well being of communities and improve the regional quality of life	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

RTS Initiatives	D - Walking and Cycling Measures	IV_D1 – Develop, deliver and monitor a Walking and Cycling Strategy for the region	IV_D2 – Safer routes to schools	E - Bus based Measures	IV_E1 – Quality bus partnerships	IV_E2 – Review bus frequency on key commuter corridors	IV_E3 – Redevelop or replace Arbroath bus station	F - Rail Based Measures	IV_F1 – Additional semi-fast rail service from Dundee to Edinburgh	IV_F2 – improved rail services between Perth and Edinburgh	IV_F3 – Additional hourly rail service between Arbroath and Perth (TERS)
SEA Objectives											
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
To provide sustainable access to employment and essential services	✓	✓	✓	✓	✓	✓	0	✓	✓	✓	✓
To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	✓	✓	✓	✓	✓	0	✓	✓	✓	✓
To reduce transport related noise and vibration pollution	✓	✓	✓	✓	✓	✓	0	✓	✓	✓	✓
To reduce flood risks from transport	0	0	0	0	0	0	0	0	0	0	0

RTS Initiatives	D - Walking and Cycling Measures	IV_D1 – Develop, deliver and monitor a Walking and Cycling Strategy for the region	IV_D2 – Safer routes to schools	E - Bus based Measures	IV_E1 – Quality bus partnerships	IV_E2 – Review bus frequency on key commuter corridors	IV_E3 – Redevelop or replace Arbroath bus station	F - Rail Based Measures	IV_F1 – Additional semi-fast rail service from Dundee to Edinburgh	IV_F2 – improved rail services between Perth and Edinburgh	IV_F3 – Additional hourly rail service between Arbroath and Perth (TERS)
SEA Objectives											
To reduce the severance effects of traffic and infrastructure on communities	✓	✓	✓	✓	✓	✓	0	✓	✓	✓	✓
To avoid negative impacts from visual intrusion from transport infrastructure	0	0	0	0	0	0	? ✓	0	0	0	0
To contribute to improving health in the region	✓	✓	✓	✓	✓	✓	0	✓	✓	✓	✓
Natural Heritage To protect and enhance the natural heritage of the region and beyond	✓	✓	✓	✓	✓	✓	0	✓	✓	✓	✓
To protect and enhance biodiversity	0	0	0	0	0	0	0	0	0	0	0

RTS Initiatives	D - Walking and Cycling Measures	IV_D1 – Develop, deliver and monitor a Walking and Cycling Strategy for the region	IV_D2 – Safer routes to schools	E - Bus based Measures	IV_E1 – Quality bus partnerships	IV_E2 – Review bus frequency on key commuter corridors	IV_E3 – Redevelop or replace Arbroath bus station	F - Rail Based Measures	IV_F1 – Additional semi-fast rail service from Dundee to Edinburgh	IV_F2 – improved rail services between Perth and Edinburgh	IV_F3 – Additional hourly rail service between Arbroath and Perth (TERS)
SEA Objectives	0	0	0	0	0	0	0	0	0	0	0
To minimise the effects of transport on designated areas and protected species	0	0	0	0	0	0	0	0	0	0	0
To protect and enhance the landscape of the region	0	0	0	0	0	0	0	0	0	0	0
To protect watercourses from the impacts of transport and maintain and enhance their water quality	0	0	0	0	0	0	0	0	0	0	0
To protect the region's geomorphology, mineral geology, soils and peat resources	0	0	0	0	0	0	0	0	0	0	0
To protect the integrity of the region's National Parks against the effects of transport	0	0	0	0	0	0	0	0	0	0	0

RTS Initiatives SEA Objectives	D - Walking and Cycling Measures	IV_D1 – Develop, deliver and monitor a Walking and Cycling Strategy for the region IV_D2 – Safer routes to schools	E - Bus based Measures	IV_E1 – Quality bus partnerships	IV_E2 – Review bus frequency on key commuter corridors	IV_E3 – Redevelop or replace Arbroath bus station	F - Rail Based Measures	IV_F1 – Additional semi-fast rail service from Dundee to Edinburgh	IV_F2 – improved rail services between Perth and Edinburgh	IV_F3 – Additional hourly rail service between Arbroath and Perth (TERS)
<u>Cultural Heritage</u> To protect and enhance the cultural heritage and identify of the region and adjoining areas	0	0	0	0	0	0	0	0	0	0
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	0	0	0	0	0	0	0	0	0
To maintain and enhance townscapes and their settings	0	0	0	0	0	? ✓	0	0	0	0
<u>Materials Assets and Resources</u> To promote the sustainable use of the region’s assets and resources	0	0	0	0	0	0	0	0	0	0

RTS Initiatives	D - Walking and Cycling Measures	IV_D1 – Develop, deliver and monitor a Walking and Cycling Strategy for the region	IV_D2 – Safer routes to schools	E - Bus based Measures	IV_E1 – Quality bus partnerships	IV_E2 – Review bus frequency on key commuter corridors	IV_E3 – Redevelop or replace Arbroath bus station	F - Rail Based Measures	IV_F1 – Additional semi-fast rail service from Dundee to Edinburgh	IV_F2 – improved rail services between Perth and Edinburgh	IV_F3 – Additional hourly rail service between Arbroath and Perth (TERS)
SEA Objectives	D - Walking and Cycling Measures			E - Bus based Measures				F - Rail Based Measures			
To minimise waste, and recover and recycle, resources efficiently	0	0	0	0	0	0	0	0	0	0	0
To adopt sustainable planning, design and construction methods	✓	✓	✓	0	0	0	✓	0	0	0	0
To promote sustainable travel	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓	✓	✓

Table F1.3 Measures Associated with Improving Multi-Modal Interchange, Community and Demand Responsive Transport, Road-based measures

RTS Initiatives	SEA Objectives																			
	G - Measures Associated with Improving Multi-Modal Interchange	IV_G1 – Bus-based Park and Ride /Park and Choose network in Dundee, Perth and Stirling	IV_G2 – Additional improvements to Dundee rail station	V_G3 – Upgrading of main rail and bus stations in Perth	V_G4 – Upgrading of Stirling bus station to provide full integration with railway station	IV_G5 – Rail-based Park and Ride enhanced car parking at key rail stations	IV_G6 – Integrated Ticketing Schemes	H - Community & Demand Responsive Transport	IV_H1 – Region wide co-ordination of Community Transport	IV_H2 – Expansion of Demand Responsive Transport services	IV_H3 – Consideration of a TACTRAN-wide taxi-card system	I(1) - Road – based Measures Infrastructure based	IV_I1 – A90 Outer Bypass of Dundee, options for A90 corridor through Dundee plus package of measures locking in benefits to Dundee	IV_I2 – new crossing of the Tay with package of bus priority, cycle and pedestrian measures locking in benefits to Perth	IV_I3 – Provision of new link road between A84 Kildean & A9 University, in Stirling's plus measures to lock in benefits	I(2) - Road – Based Measures safety and maintenance	IV_I4 – Road safety improvements on A92 north of Arbroath	IV_I5 – Regional Road Safety Plan	IV_I6 – Assist local authorities in securing additional resources to tackle maintenance backlog on roads, bridges and street lighting	IV_I7 – Meeting the needs of car and coach-based tourists
Climate Change To contribute to reducing carbon emissions through transport measures	✓	✓	✓	✓	✓	✓	✓	0	0	✓	0	? ✓	? ✓	? ✓	? ✓	0	0	0	0	0
To contribute to meeting the Scottish share in the reduction of carbon emissions	0	✓	0	0	0	✓	✓	0	0	✓	0	?0/✓	?0/✓	?0/✓	?0/✓	0	0	0	0	0
Community Well-being To protect the well being of communities and improve the regional quality of life	✓	✓	✓	✓	✓	✓	✓	✓	0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	✓	✓	✓	✓	✓	✓	✓	0	✓	✓	?0/✓	?0/✓	?0/✓	?0/✓	✓✓	✓✓	✓	✓	✓

RTS Initiatives	SEA Objectives																			
	G - Measures Associated with Improving Multi-Modal Interchange	IV_G1 – Bus-based Park and Ride /Park and Choose network in Dundee, Perth and Stirling	IV_G2 – Additional improvements to Dundee rail station	V_G3 – Upgrading of main rail and bus stations in Perth	V_G4 – Upgrading of Stirling bus station to provide full integration with railway station	IV_G5 – Rail-based Park and Ride enhanced car parking at key rail stations	IV_G6 – Integrated Ticketing Schemes	H - Community & Demand Responsive Transport	IV_H1 – Region wide co-ordination of Community Transport	IV_H2 – Expansion of Demand Responsive Transport services	IV_H3 – Consideration of a TACTRAN-wide taxi-card system	I(1) - Road – based Measures Infrastructure based	IV_I1 – A90 Outer Bypass of Dundee, options for A90 corridor through Dundee plus package of measures locking in benefits to Dundee	IV_I2 – new crossing of the Tay with package of bus priority, cycle and pedestrian measures locking in benefits to Perth	IV_I3 – Provision of new link road between A84 Kildean & A9 University, in Stirling's plus measures to lock in benefits	I(2) - Road – Based Measures safety and maintenance	IV_I4 – Road safety improvements on A92 north of Arbroath	IV_I5 – Regional Road Safety Plan	IV_I6 – Assist local authorities in securing additional resources to tackle maintenance backlog on roads, bridges and street lighting	IV_I7 – Meeting the needs of car and coach-based tourists
To provide sustainable access to employment and essential services	0	✓	0	0	0	✓	✓	✓	0	✓	✓	?x/✓	?x/✓	?x/✓	?x/✓	0	0	0	0	0
To improve air quality in the region and contribute to meeting national air quality and health objectives	0	✓	0	0	0	✓	✓	0	0	✓	0	? ✓	? ✓	? ✓	? ✓	0	0	0	0	0
To reduce transport related noise and vibration pollution	0	✓	0	0	0	✓	✓	0	0	✓	0	? ✓	? ✓	? ✓	? ✓	0	0	0	0	0
To reduce flood risks from transport	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
To reduce the severance effects of traffic and infrastructure on communities	0	✓	0	0	0	✓	✓	0	0	✓	0	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	? ✓	0	0

RTS Initiatives	SEA Objectives																			
	G - Measures Associated with Improving Multi-Modal Interchange	IV_G1 – Bus-based Park and Ride /Park and Choose network in Dundee, Perth and Stirling	IV_G2 – Additional improvements to Dundee rail station	V_G3 – Upgrading of main rail and bus stations in Perth	V_G4 – Upgrading of Stirling bus station to provide full integration with railway station	IV_G5 – Rail-based Park and Ride enhanced car parking at key rail stations	IV_G6 – Integrated Ticketing Schemes	H - Community & Demand Responsive Transport	IV_H1 – Region wide co-ordination of Community Transport	IV_H2 – Expansion of Demand Responsive Transport services	IV_H3 – Consideration of a TACTRAN-wide taxi-card system	I(1) - Road – based Measures Infrastructure based	IV_I1 – A90 Outer Bypass of Dundee, options for A90 corridor through Dundee plus package of measures locking in benefits to Dundee	IV_I2 – new crossing of the Tay with package of bus priority, cycle and pedestrian measures locking in benefits to Perth	IV_I3 – Provision of new link road between A84 Kildean & A9 University, in Stirling's plus measures to lock in benefits	I(2) - Road – Based Measures safety and maintenance	IV_I4 – Road safety improvements on A92 north of Arbroath	IV_I5 – Regional Road Safety Plan	IV_I6 – Assist local authorities in securing additional resources to tackle maintenance backlog on roads, bridges and street lighting	IV_I7 – Meeting the needs of car and coach-based tourists
To avoid negative impacts from visual intrusion from transport infrastructure	? ✓	?x	? ✓	? ✓	? ✓	?x	0	0	0	0	0	x	x	x	x	0	0	0	0	0
To contribute to improving health in the region	0	✓	0	0	0	✓	✓	✓	0	✓	✓	?0/✓	?0/✓	?0/✓	?0/✓	✓	✓	✓	0	0
Natural Heritage To protect and enhance the natural heritage of the region and beyond	0	?x	0	0	0	?x	✓	0	0	✓	0	?x	?x	?x	?x	0	0	0	0	?x
To protect and enhance biodiversity	0	?	0	0	0	?	0	0	0	0	0	?x	?x	?x	?x	0	0	0	0	?x
To minimise the effects of transport on designated areas and protected species	0	0	0	0	0	0	0	0	0	0	0	?x	?x	?x	?x	0	0	0	0	?x

RTS Initiatives	SEA Objectives																				
	G - Measures Associated with Improving Multi-Modal Interchange	IV_G1 – Bus-based Park and Ride /Park and Choose network in Dundee, Perth and Stirling	IV_G2 – Additional improvements to Dundee rail station	V_G3 – Upgrading of main rail and bus stations in Perth	V_G4 – Upgrading of Stirling bus station to provide full integration with railway station	IV_G5 – Rail-based Park and Ride enhanced car parking at key rail stations	IV_G6 – Integrated Ticketing Schemes	H - Community & Demand Responsive Transport	IV_H1 – Region wide co-ordination of Community Transport	IV_H2 – Expansion of Demand Responsive Transport services	IV_H3 – Consideration of a TACTRAN-wide taxi-card system	I(1) - Road – based Measures Infrastructure based	IV_I1 – A90 Outer Bypass of Dundee, options for A90 corridor through Dundee plus package of measures locking in benefits to Dundee	IV_I2 – new crossing of the Tay with package of bus priority, cycle and pedestrian measures locking in benefits to Perth	IV_I3 – Provision of new link road between A84 Kildean & A9 University, in Stirling's plus measures to lock in benefits	I(2) - Road – Based Measures safety and maintenance	IV_I4 – Road safety improvements on A92 north of Arbroath	IV_I5 – Regional Road Safety Plan	IV_I6 – Assist local authorities in securing additional resources to tackle maintenance backlog on roads, bridges and street lighting	IV_I7 – Meeting the needs of car and coach-based tourists	
To protect and enhance the landscape of the region	0	?	0	0	0	?	0	0	0	0	0	x	x	x	x	0	0	0	0	0	?x
To protect watercourses from the impacts of transport and maintain and enhance their water quality	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
To protect the region's geomorphology, mineral, geology, soils and peat resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
To protect the integrity of the region's National Parks against the effects of transport	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	✓

RTS Initiatives	SEA Objectives																			
	G - Measures Associated with Improving Multi-Modal Interchange	IV_G1 – Bus-based Park and Ride /Park and Choose network in Dundee, Perth and Stirling	IV_G2 – Additional improvements to Dundee rail station	V_G3 – Upgrading of main rail and bus stations in Perth	V_G4 – Upgrading of Stirling bus station to provide full integration with railway station	IV_G5 – Rail-based Park and Ride enhanced car parking at key rail stations	IV_G6 – Integrated Ticketing Schemes	H - Community & Demand Responsive Transport	IV_H1 – Region wide co-ordination of Community Transport	IV_H2 – Expansion of Demand Responsive Transport services	IV_H3 – Consideration of a TACTRAN-wide taxi-card system	I(1) - Road – based Measures Infrastructure based	IV_I1 – A90 Outer Bypass of Dundee, options for A90 corridor through Dundee plus package of measures locking in benefits to Dundee	IV_I2 – new crossing of the Tay with package of bus priority, cycle and pedestrian measures locking in benefits to Perth	IV_I3 – Provision of new link road between A84 Kildean & A9 University, in Stirling's plus measures to lock in benefits	I(2) - Road – Based Measures safety and maintenance	IV_I4 – Road safety improvements on A92 north of Arbroath	IV_I5 – Regional Road Safety Plan	IV_I6 – Assist local authorities in securing additional resources to tackle maintenance backlog on roads, bridges and street lighting	IV_I7 – Meeting the needs of car and coach-based tourists
Cultural Heritage To protect and enhance the cultural heritage and identify of the region and adjoining areas	0	?	0	0	0	?	0	0	0	0	0	?x	?x	?x	?x	0	0	0	0	?x
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	?	0	0	0	?	0	0	0	0	0	?x	?x	?x	?x	0	0	0	0	?x
To maintain and enhance townscapes and their settings	? ✓	✓	? ✓	? ✓	? ✓	✓	0	0	0	0	0	? ✓	? ✓	? ✓	? ✓	0	0	0	0	✓
Materials Assets and Resources To promote the sustainable use of the region's assets and resources	0	0	0	0	0	0	0	0	0	0	0	?x	?x	?x	?x	0	0	0	0	0

RTS Initiatives	SEA Objectives																				
	G - Measures Associated with Improving Multi-Modal Interchange	IV_G1 – Bus-based Park and Ride /Park and Choose network in Dundee, Perth and Stirling	IV_G2 – Additional improvements to Dundee rail station	V_G3 – Upgrading of main rail and bus stations in Perth	V_G4 – Upgrading of Stirling bus station to provide full integration with railway station	IV_G5 – Rail-based Park and Ride enhanced car parking at key rail stations	IV_G6 – Integrated Ticketing Schemes	H - Community & Demand Responsive Transport	IV_H1 – Region wide co-ordination of Community Transport	IV_H2 – Expansion of Demand Responsive Transport services	IV_H3 – Consideration of a TACTRAN-wide taxi-card system	I(1) - Road – based Measures Infrastructure based	IV_I1 – A90 Outer Bypass of Dundee, options for A90 corridor through Dundee plus package of measures locking in benefits to Dundee	IV_I2 – new crossing of the Tay with package of bus priority, cycle and pedestrian measures locking in benefits to Perth	IV_I3 – Provision of new link road between A84 Kildean & A9 University, in Stirling's plus measures to lock in benefits	I(2) - Road – Based Measures safety and maintenance	IV_I4 – Road safety improvements on A92 north of Arbroath	IV_I5 – Regional Road Safety Plan	IV_I6 – Assist local authorities in securing additional resources to tackle maintenance backlog on roads, bridges and street lighting	IV_I7 – Meeting the needs of car and coach-based tourists	
To minimise waste, and recover and recycle, resources efficiently	0	0	0	0	0	0	0	0	0	0	0	?0	?0	?0	?0	0	0	0	0	0	0
To adopt sustainable planning, design and construction methods	✓	✓	✓	✓	✓	✓	0	0	0	0	✓	? ✓	? ✓	? ✓	? ✓	✓	✓	✓	0	0	✓
To promote sustainable travel	✓	✓✓	✓	✓	✓	✓✓	✓✓	✓	0	✓✓	✓	?0/✓	?0/✓	?0/✓	?0/✓	0	0	0	0	0	0

Table F1.4 Freight Specific Measures and Air Transport Measures

RTS Initiatives SEA Objectives	J - Freight Specific Measures	IV_J1 – Regional freight quality partnership	IV_J2 – Improved road links to ports of Montrose, Dundee and Perth Harbour	Regional Rail Freight Facilities	K - Air Transport Measures	IV_K1 – Additional air services from Dundee Airport	IV_K2 – Improved terminal and other facilities at Dundee Airport
<u>Climate Change</u> To contribute to reducing carbon emissions through transport measures	? ✓	? ✓	? ✓	? ✓	x	x	x
To contribute to meeting the Scottish share in the reduction of carbon emissions	? ✓	? ✓	? ✓	? ✓	x	x	x
<u>Community Well-being</u> To protect the well being of communities and improve the regional quality of life	? ✓	? ✓	? ✓	? ✓	✓	✓	✓
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	0	0	0	0	0	0	0

RTS Initiatives	J - Freight Specific Measures	IV_J1 – Regional freight partnership	IV-J2 – Improved road links to ports of Montrose, Dundee and Perth Harbour	Regional Rail Freight Facilities	K - Air Transport Measures	IV_K1 – Additional air services from Dundee Airport	IV_K2 – Improved terminal and other facilities at Dundee Airport
SEA Objectives	J - Freight Specific Measures	IV_J1 – Regional freight partnership	IV-J2 – Improved road links to ports of Montrose, Dundee and Perth Harbour	Regional Rail Freight Facilities	K - Air Transport Measures	IV_K1 – Additional air services from Dundee Airport	IV_K2 – Improved terminal and other facilities at Dundee Airport
To provide sustainable access to employment and essential services	0	0	0	0	0	0	0
To improve air quality in the region and contribute to meeting national air quality and health objectives	? ✓	? ✓	? ✓	? ✓	?x	?x	?x
To reduce transport related noise and vibration pollution	? ✓	? ✓	? ✓	? ✓	?x	?x	?x
To reduce flood risks from transport	0	0	0	0	0	0	0
To reduce the severance effects of traffic and infrastructure on communities	? ✓	? ✓	? ✓	? ✓	0	0	0
To avoid negative impacts from visual intrusion from transport infrastructure	?x	?x	?x	?x	?x	?x	?x

RTS Initiatives	J - Freight Specific Measures	IV_J1 – Regional freight quality partnership	IV-J2 – Improved road links to ports of Montrose, Dundee and Perth Harbour	Regional Rail Freight Facilities	K - Air Transport Measures	IV_K1 – Additional air services from Dundee Airport	IV_K2 – Improved terminal and other facilities at Dundee Airport
SEA Objectives							
To contribute to improving health in the region	0	0	0	0	0	0	0
Natural Heritage To protect and enhance the natural heritage of the region and beyond	?x	?x	?x	?x	0	0	0
To protect and enhance biodiversity	?x	?x	?x	?x	0	0	0
To minimise the effects of transport on designated areas and protected species	?x	?x	?x	?x	0	0	0
To protect and enhance the landscape of the region	?x	?x	?x	?x	0	0	0
To protect watercourses from the impacts of transport and maintain and enhance their water quality	0	0	0	0	0	0	0

RTS Initiatives	J - Freight Specific Measures	IV_J1 – Regional freight quality partnership	IV_J2 – Improved road links to ports of Montrose, Dundee and Perth Harbour	Regional Rail Freight Facilities	K - Air Transport Measures	IV_K1 – Additional air services from Dundee Airport	IV_K2 – Improved terminal and other facilities at Dundee Airport
SEA Objectives							
To protect the region’s geomorphology, mineral, geology, soils and peat resources	0	0	0	0	0	0	0
To protect the integrity of the region’s National Parks against the effects of transport	0	0	0	0	0	0	0
<u>Cultural Heritage</u> To protect and enhance the cultural heritage and identify of the region and adjoining areas	?x	?x	?x	?x	0	0	0
To protect all (known and unknown) archaeological and historic resources of the region and their settings	?x	?x	?x	?x	0	0	0
To maintain and enhance townscapes and their settings	? ✓	? ✓	? ✓	? ✓	0	0	0

RTS Initiatives	J - Freight Specific Measures	IV_J1 – Regional freight quality partnership	IV-J2 – Improved road links to ports of Montrose, Dundee and Perth Harbour	Regional Rail Freight Facilities	K - Air Transport Measures	IV_K1 – Additional air services from Dundee Airport	IV_K2 – Improved terminal and other facilities at Dundee Airport
SEA Objectives							
Materials Assets and Resources To promote the sustainable use of the region’s assets and resources	?x	?x	?x	?x	0	0	0
To minimise waste, and recover and recycle, resources efficiently	0	0	0	0	0	0	0
To adopt sustainable planning, design and construction methods	✓	✓	✓	✓	?x	?x	?x
To promote sustainable travel	0	0	0	0	x	x	x

ANNEX G

APPRAISAL TABLES FOR RTS THEMED GROUPS OF MEASURES

Group A Land Use and Planning Initiatives

RTS Theme – Land use and Planning Initiatives							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓	TACTRAN to ensure delivery of interventions. Promote measures to discourage private road transport and encourage public transport	✓	Effects will be greater over time as more measures are implemented			Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
To provide sustainable access to employment and essential services	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes
To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Effect dependant on level of modal shift. Measures have potential to help reduce traffic growth but unlikely to be significant
To reduce transport related noise and vibration pollution	✓	TACTRAN to encourage delivery of all measures which support modal shift from car to PT	✓				Measures are broadly supportive of sub-objective but considered unlikely to be significant
To reduce flood risks from transport	0	No specific mitigation	0				Appraisal assumes no measures would significantly effect flooding
To reduce the severance effects of traffic and infrastructure on communities	✓	No specific mitigation	✓				Measures not predicted to significantly affect community severance
To avoid negative impacts from visual intrusion from transport infrastructure	0	No specific mitigation	0				Measures not predicted to significantly affect visual intrusion
To contribute to improving health in the region	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	No specific mitigation	0				Measures not predicted to significantly affect biodiversity
To minimise the effects of transport on designated areas and protected species	0	No specific mitigation	0				Measures not predicted to significantly affect designated areas
To protect and enhance the landscape of the region	0	No specific mitigation	0				Measures not predicted to significantly affect landscape resources
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect geological resources and soils

RTS Theme – Land use and Planning Initiatives							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect the integrity of the region's National Parks against the effects of transport	0	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	0				Measures are not predicted to result in significant modal shift to directly benefit the National Parks and result in significant positive effects
Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Measures have potential to reduce negative effects of transport on townscapes but not considered to be significant
Materials Assets and Resources To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	✓	TACTRAN to promote and ensure measures delivered	✓				Measures are supportive towards sustainable planning
To promote sustainable travel	✓✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓✓	Effects will be greater over time as more measures are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes

Group B Information Related Measures

RTS Theme – Information Related Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change							
To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓	TACTRAN to ensure delivery of actions.	✓	Effects will be greater over time as the actions are implemented			Information Strategy has potential to encourage modal shift but unlikely to be significant on its own
Community Well-being							
To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to ensure delivery of actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more actions are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
To provide sustainable access to employment and essential services	✓	TACTRAN to ensure delivery of actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes
To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	TACTRAN to ensure delivery of actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Effect dependant on level of modal shift. Information Strategy has potential to promote modal shift
To reduce transport related noise and vibration pollution	✓	TACTRAN to encourage delivery of all actions which support modal shift from car to PT	✓				The Information Strategy is broadly supportive of sub-objective but considered unlikely to be significant
To reduce flood risks from transport	0	No specific mitigation	0				Appraisal assumes Information Strategy would not significantly affect flooding
To reduce the severance effects of traffic and infrastructure on communities	✓	TACTRAN to encourage delivery of all actions which support modal shift from car to PT	✓				Implementation of Information Strategy could promote modal shift but not predicted to significantly affect community severance
To avoid negative impacts from visual intrusion from transport infrastructure	0	No specific mitigation	0				Information Strategy not predicted to significantly affect visual intrusion
To contribute to improving health in the region	✓	TACTRAN to ensure delivery of actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as Information Strategy is implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
Natural Heritage							
To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	No specific mitigation	0				Information Strategy not predicted to significantly affect biodiversity
To minimise the effects of transport on designated areas and protected species	0	No specific mitigation	0				Information strategy not predicted to significantly affect designated areas
To protect and enhance the landscape of the region	0	No specific mitigation	0				Information Strategy not predicted to significantly affect landscape resources
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that measure would not significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that measure would not significantly affect geological resources and soils
To protect the integrity of the region's National Parks against the effects of transport	0	TACTRAN to ensure delivery of actions to discourage use of car and encourage use of PT and non-motorised transport	0				Measure is not predicted to result in significant modal shift to directly benefit the National Parks and result in significant positive effects

RTS Theme – Information Related Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that the measure would not significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Implementation of Information Strategy has potential to reduce negative effects of transport on townscapes but not considered to be significant
Materials Assets and Resources To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	No specific mitigation	0				Measure would not significantly affect resources
To adopt sustainable planning, design and construction methods	✓	TACTRAN to promote and ensure Information Strategy is delivered	✓				Measure is supportive towards sustainable planning
To promote sustainable travel	✓✓	TACTRAN to implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓✓	Effects will be greater over time as Information Strategy is implemented			TACTRAN should promote information to ensure take-up of more sustainable modes

Group C Measures Designed to Change Attitudes and Behaviour including Demand Management

RTS Theme – Measures Designed to Change Attitudes and Behaviour, including Demand Management							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓	TACTRAN to ensure delivery of interventions. Promote measures to discourage unnecessary travel and reduce private road transport and encourage public transport	✓	Effects will be greater over time as more measures are implemented			Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
To provide sustainable access to employment and essential services	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes
To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Effect dependant on level of modal shift. Measures have potential to help reduce traffic growth but unlikely to be significant
To reduce transport related noise and vibration pollution	✓	TACTRAN to encourage delivery of all measures which support modal shift from car to PT	✓				Measures are broadly supportive of sub-objective but considered unlikely to be significant
To reduce flood risks from transport	0	No specific mitigation	0				Appraisal assumes no measures would significantly effect flooding
To reduce the severance effects of traffic and infrastructure on communities	✓	No specific mitigation	✓				Measures not predicted to significantly affect community severance
To avoid negative impacts from visual intrusion from transport infrastructure	0	No specific mitigation	0				Measures not predicted to significantly affect visual intrusion
To contribute to improving health in the region	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	No specific mitigation	0				Measures not predicted to significantly affect biodiversity
To minimise the effects of transport on designated areas and protected species	0	No specific mitigation	0				Measures not predicted to significantly affect designated areas
To protect and enhance the landscape of the region	0	No specific mitigation	0				Measures not predicted to significantly affect landscape resources
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect geological resources and soils

RTS Theme – Measures Designed to Change Attitudes and Behaviour, including Demand Management							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect the integrity of the region's National Parks against the effects of transport	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport particularly in the context of encouraging sustainable tourism	✓	Effects will be greater over time as measures to help encourage sustainable tourism start to take effect			Measures are not predicted to result in significant modal shift, particularly in the shorter term to directly benefit the National Parks and result in significant positive effects. In time the effects of measures implemented should be broadly supportive of this objective
Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Measures have potential to reduce negative effects of transport on townscapes but not considered to be significant
Materials Assets and Resources To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	✓	TACTRAN to promote and ensure measures delivered	✓				Measures are supportive towards sustainable planning
To promote sustainable travel	✓✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓✓	Effects will be greater over time as more measures are implemented			TACTRAN should prepare high profile awareness campaigns and promote information to ensure take-up of more sustainable modes and in association with Visit Scotland promote the sustainable tourism theme

Group D Walking and Cycling Measures

RTS Theme – Walking and Cycling Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓	TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region. Promote measures to discourage use of car and encourage walking and cycling	✓	Effects will be greater over time as more measures are implemented			Intervention supports modal shift but considered unlikely to have a significant effect on carbon emissions
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region. Promote measures to discourage use of car and encourage walking and cycling. Support and promote "Safer Routes to School"	✓	Effects will be greater over time as more measures are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
To provide sustainable access to employment and essential services	✓	TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region. Promote measures to discourage use of car and encourage walking and cycling	✓	Effects will be greater over time as more measures are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes. A switch to increased walking and cycling will require intensive awareness raising campaigns and dissemination of information on infrastructure and availability of urban walking and cycle networks
To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region. Promote measures to discourage use of car and encourage walking and cycling	✓	Effects will be greater over time as more measures are implemented			Effect dependant on level of modal shift. Measures have potential to help reduce traffic growth but unlikely to be significant
To reduce transport related noise and vibration pollution	✓	TACTRAN to encourage delivery of all measures which support modal shift from car to walking and cycling	✓				Measures are broadly supportive of sub-objective but considered unlikely to be significant
To reduce flood risks from transport	0	No specific mitigation	0				Appraisal assumes no measures would significantly effect flooding
To reduce the severance effects of traffic and infrastructure on communities	✓	No specific mitigation	✓				Measures not predicted to significantly affect community severance
To avoid negative impacts from visual intrusion from transport infrastructure	0	No specific mitigation	0				Measures not predicted to significantly affect visual intrusion
To contribute to improving health in the region	✓	TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region. Promote measures to discourage use of car and encourage walking and cycling. Support and promote "Safer Routes to School"	✓	Effects will be greater over time as more measures are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	No specific mitigation	0				Measures not predicted to significantly affect biodiversity
To minimise the effects of transport on designated areas and protected species	0	No specific mitigation	0				Measures not predicted to significantly affect designated areas
To protect and enhance the landscape of the region	0	No specific mitigation	0				Measures not predicted to significantly affect landscape resources

RTS Theme – Walking and Cycling Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect geological resources and soils
To protect the integrity of the region's National Parks against the effects of transport	0	TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region. Promote measures to discourage use of car and encourage walking and cycling. Promote walking and cycling in the context of sustainable tourism	0				Measures are not predicted to result in significant modal shift to directly benefit the National Parks and result in significant positive effects on integrity. Promotion of the Walking and Cycling Strategy should be broadly supportive of sustainable tourism which in turn will be of benefit to the National Parks
Cultural Heritage							
To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Measures have potential to reduce negative effects of transport on townscapes but not considered to be significant
Materials Assets and Resources							
To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	✓	TACTRAN to promote and ensure measures delivered	✓				Measures are supportive towards sustainable planning
To promote sustainable travel	✓✓	TACTRAN to ensure the development and delivery of the Walking and Cycling Strategy for the region. Promote measures to discourage use of car and encourage walking and cycling. Support and promote "Safer Routes to School"	✓✓	Effects will be greater over time as the Walking and Cycling Strategy is implemented			TACTRAN should lead an awareness campaign and continually promote the Strategy and associated information (on for example "Safer Routes to School") to ensure take-up of more sustainable modes such as the walking and cycling

Group E Bus-Based Measures

RTS Theme – Bus-Based Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓	TACTRAN to ensure delivery of interventions. Promote and deliver actions to discourage private road transport and encourage the switch to PT and in this case buses	✓	Effects will be greater over time as actions are implemented			Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to ensure delivery of interventions. Promote and deliver actions to discourage private road transport and encourage the switch to PT and in this case buses	✓	Effects will be greater over time as actions are implemented			Significant change of traditional attitudes towards PT and use of buses required to achieve discernible health and safety benefits
To provide sustainable access to employment and essential services	✓	TACTRAN to ensure delivery of interventions. Promote and deliver actions to discourage private road transport and encourage the switch to PT and in this case buses	✓	Effects will be greater over time as actions are implemented			TACTRAN should promote information to ensure more take-up of buses. Improvements in bus services, frequency and quality should encourage switch to buses
To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and in particular in this case buses	✓	Effects will be greater over time as actions are implemented			Effect dependant on level of modal shift. Measures have potential to help reduce traffic growth but unlikely to be significant
To reduce transport related noise and vibration pollution	✓	TACTRAN to encourage delivery of all measures which support modal shift from car to PT	✓				Measures are broadly supportive of sub-objective but considered unlikely to be significant
To reduce flood risks from transport	0	No specific mitigation	0				Appraisal assumes no measures would significantly effect flooding
To reduce the severance effects of traffic and infrastructure on communities	✓	No specific mitigation	✓				Measures not predicted to significantly affect community severance
To avoid negative impacts from visual intrusion from transport infrastructure	0	No specific mitigation	0				Measures not predicted to significantly affect visual intrusion
To contribute to improving health in the region	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and switch to buses	✓	Effects will be greater over time as actions are implemented			Simultaneous improvement in services together with significant change of traditional attitudes required to achieve switch to buses which in turn would bring health and safety benefits (through a reduction in traffic flows and associated environmental disbenefits)
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	No specific mitigation	0				Measures not predicted to significantly affect biodiversity
To minimise the effects of transport on designated areas and protected species	0	No specific mitigation	0				Measures not predicted to significantly affect designated areas
To protect and enhance the landscape of the region	0	No specific mitigation	0				Measures not predicted to significantly affect landscape resources
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect geological resources and soils

RTS Theme – Bus-Based Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect the integrity of the region's National Parks against the effects of transport	0	TACTRAN to ensure delivery of interventions. Promote and deliver actions to discourage private road transport and encourage the switch to PT and in this case buses	0				Measures are not predicted to result in significant modal shift to directly benefit the National Parks and result in significant positive effects
Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Measures have potential to reduce negative effects of transport on townscapes but not considered to be significant
Materials Assets and Resources To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	✓	TACTRAN to promote and ensure measures delivered	✓				Measures are supportive towards sustainable planning
To promote sustainable travel	✓✓	TACTRAN to ensure delivery of interventions. Promote and deliver actions to discourage private road transport and encourage the switch to PT and in this case buses	✓✓	Effects will be greater over time as actions are implemented			TACTRAN should support service improvement, raise awareness and promote information to ensure maximum take-up of available bus services

Group F Rail-Based Measures

RTS Theme – Rail-Based Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓	TACTRAN to ensure delivery of interventions. Promote measures to discourage private road transport and encourage public transport and in this case in particular the use of rail services	✓	Effects will be greater over time as more of the interventions and associated actions are implemented			Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and in particular in this case rail services	✓	Effects will be greater over time as more of the interventions and associated actions are implemented			Substantial change in traditional attitudes required to achieve significant health and safety benefits
To provide sustainable access to employment and essential services	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and in particular in this case rail services	✓	Effects will be greater over time as more of the interventions and associated actions are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes
To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and in particular in this case rail services	✓	Effects will be greater over time as more of the interventions and associated actions are implemented			Effect dependant on level of modal shift. Measures have potential to help reduce traffic growth but unlikely to be significant
To reduce transport related noise and vibration pollution	?	TACTRAN to encourage delivery of all measures which support modal shift from car to PT and in this case rail services	?				Interventions could promote modal shift with reductions in noise from traffic in some locations however some noise and vibration impacts from increased rail services are possible at properties close to the line
To reduce flood risks from transport	0	No specific mitigation	0				Appraisal assumes no measures would significantly effect flooding
To reduce the severance effects of traffic and infrastructure on communities	✓	No specific mitigation	✓				Measures not predicted to significantly affect community severance
To avoid negative impacts from visual intrusion from transport infrastructure	0	No specific mitigation	0				Measures not predicted to significantly affect visual intrusion
To contribute to improving health in the region	✓	TACTRAN to encourage delivery of all measures which support modal shift from car to PT and in this case to trains	✓	Effects will be greater over time as more of the interventions and associated actions are implemented			Simultaneous improvement in rail services together with significant change of traditional attitudes (where there is often a preference for cars) required to achieve switch to trains which in turn would bring health and safety benefits (through a reduction in car/commuter traffic volume)
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	No specific mitigation	0				Measures not predicted to significantly affect biodiversity
To minimise the effects of transport on designated areas and protected species	0	No specific mitigation	0				Measures not predicted to significantly affect designated areas
To protect and enhance the landscape of the region	0	No specific mitigation	0				Measures not predicted to significantly affect landscape resources
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect geological resources and soils

RTS Theme – Rail-Based Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect the integrity of the region's National Parks against the effects of transport	0	TACTRAN to encourage delivery of all measures which support modal shift from car to PT and in this case to trains and links to PT access to the National Parks	0				Measures are not predicted to result in significant modal shift to directly benefit the National Parks and result in significant positive effects
Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Measures have potential to reduce negative effects of transport on townscapes but not considered to be significant
Materials Assets and Resources To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	0	TACTRAN to promote and ensure measures delivered	0				Measures are supportive towards sustainable planning
To promote sustainable travel	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and in particular in this case rail services	✓	Effects will be greater over time as more of the interventions and associated actions are implemented			TACTRAN should follow through on its actions to support rail service improvement and increased frequency, raise awareness and promote information to ensure maximum take-up of available train services

Group G Measures Associated with Improving Multi-Modal Interchange

RTS Theme – Measures Associated with Improving Multi-Modal Interchange							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	0	TACTRAN to ensure delivery of interventions. Promote measures to discourage private road transport, encourage more Park and Ride/Choose and encourage more efficient public transport	0	Effects will be greater over time as more of the interventions and associated actions are implemented		Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects	
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and associated links to bus and train stations via non-motorised transport	✓	Effects will be greater over time as more of the interventions and associated actions are implemented		Simultaneous improvement with interchanges together with significant change of traditional attitudes (where there is often a preference for cars) required to achieve switch to trains and buses which in turn would bring health and safety benefits (through a reduction in car/commuter traffic volume)	
To provide sustainable access to employment and essential services	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more of the interventions and associated actions are implemented		TACTRAN should promote information to maximise the use of Park and Ride/Choose and to ensure take-up of more sustainable modes e.g. train and bus.	
To improve air quality in the region and contribute to meeting national air quality and health objectives	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more of the interventions and associated actions are implemented		Effect dependant on level of modal shift. Measures have potential to help reduce traffic growth but unlikely to be significant	
To reduce transport related noise and vibration pollution	✓	TACTRAN to encourage delivery of all measures which support modal shift from car to PT	✓			Measures are broadly supportive of sub-objective but considered unlikely to be significant	
To reduce flood risks from transport	0	Park and Ride sites to be designed to ensure no increased flooding risks at sites or in their environs	0			Appraisal assumes no measures would significantly effect flooding	
To reduce the severance effects of traffic and infrastructure on communities	✓	TACTRAN to ensure benefits from traffic flow reductions "locked in" by appropriate measures	✓			Measures not predicted to significantly affect community severance	
To avoid negative impacts from visual intrusion from transport infrastructure	? x/✓	All new Park and Ride sites and new or improved infrastructure to be designed to a high standard taking account of potential visual impact. Site options appraisal should be undertaken to ensure least intrusive sites chosen taking account of other environmental impacts	0/x	Effects of new infrastructure will reduce with time as new planting matures		New infrastructure has potential for visual impact – significance of effects can be reduced by choosing appropriate sites and implementing high quality designs	
To contribute to improving health in the region	0	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	0	Effects will be greater over time as more of the interventions and associated actions are implemented		Substantial change of traditional attitudes required to achieve significant health and safety benefits. TACTRAN would need to actively support improvements to Park and Ride/Choose facilities and actively promote them	
Natural Heritage To protect and enhance the natural heritage of the region and beyond							

RTS Theme – Measures Associated with Improving Multi-Modal Interchange							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect and enhance biodiversity	? x/✓	All new Park and Ride sites and new or improved infrastructure to be designed to a high standard taking account of potential biodiversity impact. Site options appraisal should be undertaken to ensure least intrusive sites chosen taking account of other environmental impacts	? x/✓				New infrastructure has potential for biodiversity impact – significance of effects can be reduced by choosing appropriate sites and implementing high quality landscape designs taking opportunities to enhance local biodiversity wherever possible
To minimise the effects of transport on designated areas and protected species	? x/✓	Infrastructure sites to be chosen outwith designated areas. Protected species surveys to be undertaken at all chosen sites to ensure appropriate mitigation is included (if required)	0				Interventions are not predicted to affect designated sites. Effects on protected species not known at this stage. Surveys would ensure appropriate mitigation is identified
To protect and enhance the landscape of the region	? x/✓	All new Park and Ride sites and new or improved infrastructure to be designed to a high standard taking account of potential landscape impact. Site options appraisal should be undertaken to ensure least intrusive sites chosen taking account of other environmental impacts	0/x	Effects of new infrastructure will reduce with time as new planting matures			New infrastructure has potential for landscape impact – significance of effects can be reduced by choosing appropriate sites and implementing high quality designs. Landscape impact will reduce with time if earthworks are sensitively designed and as new planting matures
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	Implementation of SUDS and compliance with Controlled Activities Regulations for new projects	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	Sites to be chosen which do not affect important geological resources. All soils to be stored and reused in accordance with best practice	0				Appraisal assumes that no measures would significantly affect geological resources and soils
To protect the integrity of the region's National Parks against the effects of transport	0	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	0				Measures are not predicted to result in significant modal shift to directly benefit the National Parks and result in significant positive effects
Cultural Heritage							
To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	?x	Adequate mitigation to protect the cultural heritage from new infrastructure and projects including archaeological survey and appraisals of the effects of intervention on settings. Site options appraisals to take account of potential effects on cultural heritage	?0/x				Appraisal assumes that with implementation measures are unlikely to significantly affect archaeology or cultural heritage but actual impacts cannot be assessed. There may be some benefits to the setting of some resources through the reduction of traffic flows in their proximity
To maintain and enhance townscapes and their settings	? ✓	Any new infrastructure near towns would require to be designed to integrate with local townscapes	? ✓				Measures have potential to reduce traffic in towns but effects on townscape unlikely to be significant
Materials Assets and Resources							
To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	✓	TACTRAN to promote and ensure measures delivered	✓				Measures are supportive towards sustainable planning
To promote sustainable travel	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car, improve interchanges and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more of the interventions and associated actions are implemented			TACTRAN should follow through on its actions to support improvements with inter – modal changes (e.g. integrated ticketing), raise awareness and promote information to ensure maximum take-up of available bus and train services

Group H Community and Demand Responsive Transport

RTS Theme – Community and Demand Responsive Transport							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	0	TACTRAN to ensure the development, delivery and promotion of appropriate community transport services that will discourage the use of the private car and encourage more use of PT	0	Effects will be greater over time as actions are implemented			Effect dependent on level of modal shift. RTS has potential to reduce traffic in some locations. Further appraisal of strategy required to quantify effects
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and where possible non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
To provide sustainable access to employment and essential services	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and where possible non-motorised transport	✓	Effects will be greater over time as more measures are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes
To improve air quality in the region and contribute to meeting national air quality and health objectives	0	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and where possible non-motorised transport	0	Effects will be greater over time as more measures are implemented			Effect dependant on level of modal shift. Measures have potential to help reduce traffic growth but unlikely to be significant
To reduce transport related noise and vibration pollution	0	TACTRAN to encourage delivery of all measures which support modal shift from car to PT	0				Measures are broadly supportive of sub-objective but considered unlikely to be significant
To reduce flood risks from transport	0	No specific mitigation	0				Appraisal assumes no measures would significantly effect flooding
To reduce the severance effects of traffic and infrastructure on communities	0	No specific mitigation	0				Measures not predicted to significantly affect community severance
To avoid negative impacts from visual intrusion from transport infrastructure	0	No specific mitigation	0				Measures not predicted to significantly affect visual intrusion
To contribute to improving health in the region	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more measures are implemented			Significant change of traditional attitudes required to achieve significant health and safety benefits
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	No specific mitigation	0				Measures not predicted to significantly affect biodiversity
To minimise the effects of transport on designated areas and protected species	0	No specific mitigation	0				Measures not predicted to significantly affect designated areas
To protect and enhance the landscape of the region	0	No specific mitigation	0				Measures not predicted to significantly affect landscape resources
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage

RTS Theme – Community and Demand Responsive Transport							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect geological resources and soils
To protect the integrity of the region's National Parks against the effects of transport	0	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	0				Measures are not predicted to result in significant modal shift to directly benefit the National Parks and result in significant positive effects
Cultural Heritage							
To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Measures have potential to reduce negative effects of transport on townscapes but not considered to be significant
Materials Assets and Resources							
To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	0	TACTRAN to promote and ensure measures delivered	0				Measures are supportive towards sustainable planning
To promote sustainable travel	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as actions are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes

Group I (1) Road-Based Measures: Infrastructure

RTS Theme – Road-Based Measures: Infrastructure							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change							
To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	?	Appraise effects on traffic growth of new infrastructure proposals. Ensure PT etc measures delivered to offset possible increases in car based travel	?			Further appraisal of interventions required to determine effects on carbon emissions – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift	
Community Well-being							
To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	?	Appraise effects on traffic growth of new infrastructure proposals. Ensure PT etc measures delivered to offset possible increases in car based travel	?			Further appraisal of interventions required to determine effects on health and safety – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift	
To provide sustainable access to employment and essential services	?(x/✓)	TACTRAN to promote measures to “lock-in” benefits of traffic reduction	?(x/✓)			New road infrastructure could encourage car-based travel to work measures seeking to lock-in benefits of flow reductions could promote more sustainable means of accessing work and essential services	
To improve air quality in the region and contribute to meeting national air quality and health objectives	?	TACTRAN to promote measures to “lock-in” benefits of traffic reduction	?			Potential for reduction in traffic flows in cities could benefit local air quality but new roads have the potential to increase traffic with negative resultant effects on local air quality. EIA would be required for all new major roads to determine specific effects and inform the decision making process	
To reduce transport related noise and vibration pollution	?	TACTRAN to promote measures to “lock-in” benefits of traffic reduction	?			Potential for reduction in traffic flows in cities could benefit noise and vibration impacts from traffic but new roads have the potential to increase traffic with negative resultant effects on noise and vibration. EIA would be required for all new major roads to determine specific effects and inform the decision making process	
To reduce flood risks from transport	0	All new road schemes to be designed with SUDS measures and with attention to flood risk	0			Detailed design of all new road schemes would be required to take account of flood risk and to mitigate any potential impacts	
To reduce the severance effects of traffic and infrastructure on communities	?✓	TACTRAN to promote measures to “lock-in” benefits of traffic reduction	?✓			Traffic reductions as a result of by-passes would reduce community severance. New infrastructure would need to be designed to take account of the potential to increase community severance and for appropriate mitigation measures to be implemented. Changes to infrastructure which could increase HGV movements through settlements not currently affected may result in increased community severance which may require mitigation (there could also be decreases in HGV movements in other areas)	
To avoid negative impacts from visual intrusion from transport infrastructure	xx	High quality design of all new infrastructure	x		Impacts of the new schemes would decrease in time as new planting matures provided roads earthworks designed to reduce impacts at nearby properties	EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process	
To contribute to improving health in the region	?(0/✓)	TACTRAN to promote measures to “lock-in” benefits of traffic reduction	?(0/✓)			Further appraisal of interventions required to determine effects on health from emissions – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift	
Natural Heritage							
To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	x	Surveys to be undertaken to inform route choice and identify required mitigation	?x/0		Impacts of the new schemes would decrease in time as new planting matures and provides replacement habitat	All routes are located in sensitive locations and adequate survey and appraisal would be required to inform the EIAs	
To minimise the effects of transport on designated areas and protected species	x	Surveys to be undertaken to inform route choice and identify required mitigation	?x/0			All routes are located in sensitive locations and adequate survey and appraisal would be required to inform the EIAs and appropriate assessments where European sites could be affected	

RTS Theme – Road-Based Measures: Infrastructure							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect and enhance the landscape of the region	xx	Surveys required to identify routes which best integrate with local landscape. High quality design of all new infrastructure	x	Impacts of the new schemes would decrease in time as new planting matures provided roads earthworks designed to integrate with local landscape			EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	x	Use of SUDS, compliance with CAR and use of flood attenuation measures	0				EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Appropriate assessment would be required of all schemes with potential to affect European sites
To protect the region's geomorphology, geology, mineral, soils and peat resources	x	Surveys required to identify important resources and appropriate mitigation	?0				EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process
To protect the integrity of the region's National Parks against the effects of transport	0	Any port access improvement measures to be designed sensitively	0				Appraisal assumes no major new infrastructure in National Parks
Cultural Heritage							
To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	x	Routing to avoid archaeological and historic resources. Careful design to reduce impacts on setting of resources. Survey to identify unknown remains	?x	Impacts of the new schemes would decrease in time as new planting matures provided roads earthworks designed to reduce effects of the new roads on setting of historic and cultural resources			EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Planting proposals should be sited to ensure no direct effects on archaeological remains
To maintain and enhance townscapes and their settings	? ✓	TACTRAN to promote measures to "lock-in" benefits of traffic reduction	? ✓				Measures have potential to reduce negative effects of transport on townscapes but unlikely to be significant
Materials Assets and Resources							
To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	?0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	?0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	?✓	TACTRAN to promote and ensure measures delivered	?✓				All new major infrastructure to be designed in accordance with best practice and TACTRAN to promote sustainable planning, design and construction methods
To promote sustainable travel	x	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	0	Effects will be greater over time as more actions are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes to compensate for potential increases in motorised traffic using new road infrastructure

Group I (2) Road-Based Measures: Safety and Maintenance

RTS Theme – Road-Based Measures: Safety and Maintenance							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	0	No specific mitigation	0				Measures not predicted to significantly affect carbon emissions
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓✓	TACTRAN to ensure delivery of interventions. Implement actions to achieve road safety improvements	✓✓	Effects will be greater over time as more of the actions are implemented			Development of a regional road safety plan with associated education campaigns likely to contribute significantly to the delivery of this objective
To provide sustainable access to employment and essential services	0	No specific mitigation	0				Measures not predicted to significantly affect the sustainable access to employment and services
To improve air quality in the region and contribute to meeting national air quality and health objectives	0	No specific mitigation	0				Measures not predicted to significantly affect air quality
To reduce transport related noise and vibration pollution	0	No specific mitigation	0				Measures not predicted to significantly affect noise and vibration
To reduce flood risks from transport	0	No specific mitigation	0				Appraisal assumes no measures would significantly effect flooding
To reduce the severance effects of traffic and infrastructure on communities	0	No specific mitigation	0				Measures not predicted to significantly affect community severance
To avoid negative impacts from visual intrusion from transport infrastructure	0	No specific mitigation	0				Measures not predicted to significantly affect visual intrusion
To contribute to improving health in the region	✓	TACTRAN to ensure delivery of interventions. Implement actions to achieve road safety improvements	✓	Effects will be greater over time as more of the actions are implemented			Development of a regional road safety plan with associated education campaigns likely to be supportive of this objective
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	No specific mitigation	0				Measures not predicted to significantly affect biodiversity
To minimise the effects of transport on designated areas and protected species	0	No specific mitigation	0				Measures not predicted to significantly affect designated areas
To protect and enhance the landscape of the region	0	No specific mitigation	0				Measures not predicted to significantly affect landscape resources
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect geological resources and soils
To protect the integrity of the region's National Parks against the effects of transport	0	No specific mitigation	0				Measures not predicted to significantly affect National Parks

RTS Theme – Road-Based Measures: Safety and Maintenance							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that no actions would significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Appraisal assumes that no actions would significantly affect townscapes and their settings
Materials Assets and Resources To promote the sustainable use of the region’s assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	✓	TACTRAN to promote and ensure measures delivered	✓				Measures are supportive towards sustainable planning
To promote sustainable travel	0	No specific mitigation	0				Measures not predicted to significantly affect sustainable travel

Group J Freight Specific Measures

RTS Theme – Freight Specific Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	?✓	TACTRAN to ensure creation of Fright Quality Partnership and delivery of associated interventions. Promote measures to encourage inter-modal transfer between road, rail and sea-borne freight	?✓	Effects likely to be greater over time as more interventions and associated actions are implemented		No significant effect on global carbon emissions predicted. Improved road links to ports have potential to increase traffic and therefore emissions which could counterbalance any emissions reduction from inter-modal transfer of freight	
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	?	TACTRAN to ensure creation of Fright Quality Partnership and delivery of associated interventions. Promote measures to encourage inter-modal transfer between road, rail and sea-borne freight. Appraise effects on local communities of improved road links including land take associated with the creation of interchanges between rail, road and sea. High quality design of all new infrastructure	0			Potential for impacts (negative/positive) on local communities from changes in HGV movements associated with improved road links to ports. Careful design and planning of improvements could avoid some impacts	
To provide sustainable access to employment and essential services	0	No specific mitigation	0			Interventions and actions not predicted to significantly affect sustainable access to employment and essential services	
To improve air quality in the region and contribute to meeting national air quality and health objectives	?✓	TACTRAN to ensure creation of Fright Quality Partnership and delivery of associated interventions. Promote measures to encourage inter-modal transfer between road, rail and sea-borne freight. Appraise effects on local communities of improved road links associated with the creation of interchanges between rail, road and sea	?✓	Effects likely to be greater over time as more interventions and associated actions are implemented		Effect dependant on level of modal shift for freight (i.e. road to rail or sea). Measures have potential to help reduce HGV traffic growth but unlikely to be significant. Improved road links to ports have potential to increase traffic and therefore emissions which could counterbalance any emissions reduction from inter-modal transfer of freight	
To reduce transport related noise and vibration pollution	?✓	TACTRAN to ensure creation of Fright Quality Partnership and delivery of associated interventions. Promote measures to encourage inter-modal transfer between road, rail and sea-borne freight. Appraise effects on local communities of improved road links associated with the creation of interchanges between rail, road and sea	?✓	Effects likely to be greater over time as more interventions and associated actions are implemented		Effect dependant on level of modal shift for freight (i.e. road to rail or sea). Measures have potential to help reduce HGV traffic growth but unlikely to be significant. Improved road links to ports have potential to increase traffic and therefore associated noise and vibration which could counterbalance any noise reduction from inter-modal transfer of freight	
To reduce flood risks from transport	0	Implementation of SUDS and other flood attenuation measures as part of new infrastructure projects would help to mitigate flood risk resulting from construction of rail freight facilities at ports	0			New infrastructure will need to be designed and constructed to withstand sea level rise and the effects of climate change through increased fluvial flood risk	

RTS Theme – Freight Specific Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To reduce the severance effects of traffic and infrastructure on communities	?x	Appraise effects on local communities of improved road links associated with the creation of interchanges between rail, road and sea	?x				Changes in HGV patterns as a result of bridge etc improvements to port link roads could increase community severance in some settlements
To avoid negative impacts from visual intrusion from transport infrastructure	?x	Any new road improvement infrastructure would need to be designed in a way that blends in with any rural landscape or integrates with local townscapes	?				Careful design and planning of improvements could avoid some impacts
To contribute to improving health in the region	0	No specific mitigation	0				Appraisal assumes no measures would significantly effect health in the region
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	?x	Adequate biodiversity mitigation measures would be needed for any road improvements involving land take	0				Mitigation measures have the potential to enhance local biodiversity in the longer term with good management There may be some significant effects at some locations if new road infrastructure needed for improving links to ports. These would require definition as part of the appraisal for those projects. Careful design and planning of improvements could avoid some impacts
To minimise the effects of transport on designated areas and protected species	?x	Adequate mitigation measures in new road infrastructure plans to afford the appropriate protection for any affected designated sites and protected species	0				Mitigation measures have the potential to enhance local biodiversity in the longer term with good management There may be some effects at some locations if new road infrastructure needed for improving links to ports affects any designated site. Potential for disturbance impacts on Montrose Basin Local Nature Reserve (LNR) and RAMSAR site connected with road improvements to the A935 link to Montrose Harbour. These potential impacts would require definition as part of the appraisal for those projects. Careful design and planning of improvements could avoid some impacts
To protect and enhance the landscape of the region	?x	Adequate landscape mitigation and design measures for road improvement projects	0				New landscape planting will become more effective in the longer term if well maintained There may be some significant effects from new road improvement infrastructure for the road links to ports at some locations. These would require definition as part of the appraisal for those projects. Careful design and planning of improvements could avoid some impacts
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	Implementation of SUDS and compliance with Controlled Activities Regulations for road improvement projects	0				Routine monitoring of watercourses affected by new infrastructure would indicate the adequacy of implemented mitigation measures
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	All road improvement projects should be designed to avoid significant effects on designated areas and will need to manage and protect soils during construction and prevent erosion and contamination of soils during operation	0				Any new earthworks should be designed to ensure slope stability of the transport infrastructure over their design lives
To protect the integrity of the region's National Parks against the effects of transport	0	No specific mitigation	0				Measures not predicted to significantly affect National Parks
Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	?x	Adequate mitigation to protect the cultural heritage from new road improvement projects including archaeological survey and appraisals of the effects of intervention on settings	0				Careful design and planning of improvements could avoid some impacts
To maintain and enhance townscapes and their settings	? ✓	Any new infrastructure in towns would require to be designed to integrate with local townscapes	? ✓				Careful design and planning of improvements could avoid some impacts and create improvements

RTS Theme – Freight Specific Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Materials Assets and Resources To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	Encourage re-use of materials in construction schemes and seek to balance earthworks	0				
To adopt sustainable planning, design and construction methods	✓	Use of sustainable design and construction techniques. Attention to details in use and sourcing of materials. Project planning to avoid any areas of mineral reserves	✓				Effects will depend on potential for measure to improve more sustainable use of harbours for water transport or freight instead of road/rail freight
To promote sustainable travel	0	No specific mitigation	0				Measures not predicted to significantly affect sustainable travel

Group K Air Transport Measures

RTS Theme – Air Transport Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	x	If number of flights to increase significantly quantify potential effects and identify and implement appropriate carbon offset measures	?0	Dependant on offset measures if includes planting would take time to create effective carbon sink		Effect would only be neutral if carbon offset scheme successfully implemented	
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	0	TACTRAN to promote PT/non-motorised links to airport	0			Intervention would not promote healthy lifestyle	
To provide sustainable access to employment and essential services	0	No specific mitigation required	0			Intervention would not promote sustainable access to work and essential services	
To improve air quality in the region and contribute to meeting national air quality and health objectives	x	If number of flights to increase significantly predict effects at closest properties and ensure air quality limits would not be breached. If this is likely consider whether timetabling etc could reduce potential for impact	x			It is assumed that the level of increase in flights is relatively small and that no new major infrastructure is required	
To reduce transport related noise and vibration pollution	x	If number of flights to increase significantly predict effects at closest properties and ensure noise would not increase significantly. If this is likely identify appropriate mitigation	x			It is assumed that the level of increase in flights is relatively small and that no new major infrastructure is required	
To reduce flood risks from transport	0	No specific mitigation	0			It is assumed that the level of increase in flights is relatively small and that no new major infrastructure is required	
To reduce the severance effects of traffic and infrastructure on communities	?x	If traffic flows were considered likely to increase significantly in the environs of the airport appropriate measures to reduce community severance effects to be identified (crossings etc)	?x			Effects would depend on number of flights proposed and potential to increase traffic flows	
To avoid negative impacts from visual intrusion from transport infrastructure	0	Terminal upgrade to be designed to a high standard	0			Appraisal assumes no new infrastructure required other than improvements to the existing terminal	
To contribute to improving health in the region	?x	No specific mitigation	?x			Effects on local air quality from increased number of flights and traffic accessing the airport could have negative effects on health from emissions. Significance cannot be quantified as would depend on level of increases	
Natural Heritage To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0	Level of proposed increases in flights to be considered in context of potential disturbance effects to birds	0			Appraisal assumes level of increase in flight numbers would not be sufficient to cause significant additional disturbance to the Tay SPA and Ramsar site. If intervention was likely to be a significant change appropriate assessment could be triggered if it was considered that effects to the integrity of the SPA could result	

RTS Theme – Air Transport Measures							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To minimise the effects of transport on designated areas and protected species	0	Level of proposed increases in flights to be considered in context of potential disturbance effects to birds	0				Appraisal assumes level of increase in flight numbers would not be sufficient to cause significant additional disturbance to the Tay SPA and Ramsar site. If intervention was likely to be a significant change appropriate assessment could be triggered if it was considered that effects to the integrity of the SPA could result
To protect and enhance the landscape of the region	0	No specific mitigation	0				Measures not predicted to significantly affect landscape resources
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect aquatic resources and drainage
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect geological resources and soils
To protect the integrity of the region's National Parks against the effects of transport	0	No specific mitigation	0				Appraisal assumes no interventions and associated actions would significantly affect the integrity of the National Parks
Cultural Heritage							
To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect archaeology or cultural heritage
To maintain and enhance townscapes and their settings	0	No specific mitigation	0				Appraisal assumes that no measures would significantly affect townscapes and their settings
Materials Assets and Resources							
To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle	0				Measures would not significantly affect resources
To adopt sustainable planning, design and construction methods	?x/0	Sustainable construction methods to be employed for terminal improvements	?x/0				No major infrastructure planned
To promote sustainable travel	x	TACTRAN to promote PT access to airports and other measures in RTS to encourage modal shift	x				Carbon offset measures and promotion of sustainable access may reduce negative effect of promoting air travel

ANNEX H

APPRAISAL TABLES FOR ROAD-BASED INFRASTRUCTURE INTERVENTIONS

Intervention: IV_I1 – A90 Outer Bypass of Dundee including investigation of all options for A90 corridor through Dundee, including a package of associated bus priority, cycle lanes and pedestrian measures on or across the Kingsway, locking in the benefits to Dundee City

SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>1. Climate Change <i>To contribute to reducing carbon emissions through transport measures</i></p> <ul style="list-style-type: none"> To contribute to meeting the Scottish share in the reduction of carbon emissions 	<ul style="list-style-type: none"> Reduction / increase of green house gas emissions Decrease / increase in traffic resulting in noise, air quality, visual intrusion, community severance etc impacts 	<ol style="list-style-type: none"> High Global, Regional and Local 	<ul style="list-style-type: none"> Appraise effects on traffic growth of a new bypass before committing Ensure PT etc measures delivered to benefit community 	<ul style="list-style-type: none"> New bypass has potential to increase traffic and therefore emissions PT measures and non motorised vehicle measures have potential for reductions in emissions 	<ul style="list-style-type: none"> Further detail required to appraise effects
<p>2. Community well being <i>To protect the well being of communities and improve the regional quality of life</i></p> <ul style="list-style-type: none"> To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle To provide sustainable access to employment and essential services To improve air quality in the region and contribute to meeting national air quality and health objectives 	<ul style="list-style-type: none"> Changes in traffic flows Air quality impacts from traffic flow changes Effects on existing AQMAs Creation of further AQMA Traffic speed changes Modal shift from cars to PT Introduction of new or “visually intrusive” infrastructure? Effects on lifestyles (positive/negative) Reduction or 	<ol style="list-style-type: none"> High (Dundee City) Regional and Local 	<ul style="list-style-type: none"> Appraise effects on traffic growth of a new bypass before committing Ensure PT etc measures delivered to benefit community Introduction of measures to lock in benefits of traffic reduction on the Kingsway High quality design of all new infrastructure 	<ul style="list-style-type: none"> Potential for reduction in traffic flows in Dundee and therefore benefits to the city- may result in removal of AQMA in city centre Potential for significant adverse effects on rural communities from new bypass including villages, isolated settlements and hospitals 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new bypass Careful routing could avoid some impacts

Intervention: IV_I1 – A90 Outer Bypass of Dundee including investigation of all options for A90 corridor through Dundee, including a package of associated bus priority, cycle lanes and pedestrian measures on or across the Kingsway, locking in the benefits to Dundee City					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<ul style="list-style-type: none"> To reduce transport related noise and vibration pollution To reduce flood risks from transport To reduce the severance effects of traffic and infrastructure on communities To avoid negative impacts from visual intrusion from transport infrastructure To contribute to improving health in the region 	<ul style="list-style-type: none"> enhancement in accessibility Reduction or increase in community severance 				

Intervention: IV_I1 – A90 Outer Bypass of Dundee including investigation of all options for A90 corridor through Dundee, including a package of associated bus priority, cycle lanes and pedestrian measures on or across the Kingsway, locking in the benefits to Dundee City					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>3. Natural Heritage <i>To protect and enhance the natural heritage of the region and beyond</i></p> <ul style="list-style-type: none"> To protect and enhance biodiversity To minimise the effects of transport on designated areas and protected species To protect and enhance the landscape of the region To protect watercourses from the impacts of transport and maintain and enhance their water quality To protect the region's geomorphology, geology, mineral, soils and peat resources To protect the integrity of the region's National Parks against the effects of transport 	<ul style="list-style-type: none"> Direct and/or indirect effects on designated sites (nature conservation, landscape, geological etc) Impacts on protected species Direct and/or indirect effects on important habitats and species Positive and negative effects on biodiversity Impacts on landscape character Impacts on water quality, hydrology, character of watercourse, flooding Impacts on soils, agriculture, contaminated land 	<ol style="list-style-type: none"> High (Dundee City and environs) Regional and Local 	<ul style="list-style-type: none"> Plan route to avoid designated sites and sensitive areas High quality landscape design with associated habitat creation Use of SUDS, compliance with Controlled Activities Regulations (CAR), and use of flood attenuation measures Sustainable road design and construction Management of soils in accordance with best practice 	<ul style="list-style-type: none"> Potential for significant adverse effects on designated sites, habitats and biodiversity from new bypass Potential for impacts on Camperdown Country Park and Clatto Country Park Potential for adverse effects on landscape, soils and water resources although mitigation could reduce significance of impacts 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new bypass Careful routing could avoid some impacts

Intervention: IV_I1 – A90 Outer Bypass of Dundee including investigation of all options for A90 corridor through Dundee, including a package of associated bus priority, cycle lanes and pedestrian measures on or across the Kingsway, locking in the benefits to Dundee City					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>4. Cultural Heritage <i>To protect and enhance the cultural heritage and identity of the region and adjoining areas</i></p> <ul style="list-style-type: none"> To protect all (known and unknown) archaeological and historic resources of the region and their settings To maintain and enhance townscapes and their settings 	<ul style="list-style-type: none"> Direct and/or indirect impacts on archaeological and cultural heritage designated sites Impacts on the setting of archaeological and cultural heritage sites Impacts on unknown historic and/or archaeological remains Impacts on historic landscapes, important townscapes or conservation areas 	<ol style="list-style-type: none"> High Local 	<ul style="list-style-type: none"> Routing to avoid archaeological and historic resources Careful design to reduce impacts on setting of resources Survey to identify unknown remains 	<ul style="list-style-type: none"> Potential for significant effect on settings of historic resources Potential for significant effects on unknown archaeological resources 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new bypass Careful routing could avoid some impacts
<p>5. Material Assets and Resources <i>To promote the sustainable use of the region's assets and resources</i></p> <ul style="list-style-type: none"> To minimise waste, and recover and recycle, resources efficiently To adopt sustainable planning, design and construction methods To promote sustainable travel 	<ul style="list-style-type: none"> Depletion of finite resources Waste generation, recycling opportunities etc Increase/reduction in use of fossil fuels 	<ol style="list-style-type: none"> High Global, regional and local 	<ul style="list-style-type: none"> Use of sustainable design and construction techniques Attention to details in use and sourcing of materials Project planning to avoid any areas of mineral reserves Ensure PT etc measures delivered to promote modal shift 	<ul style="list-style-type: none"> Significance of effect unknown but likely to be some benefits and some disbenefits 	<ul style="list-style-type: none"> Effects will depend on potential for measure to accelerate traffic growth and success of achieving modal shift in the city

Intervention: IV_I2 – New crossing of the Tay linking the A9 to the A94 north of Scone, including a package of associated bus priority, cycle and pedestrian measures locking in the benefits to Perth city centre					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>1. Climate Change <i>To contribute to reducing carbon emissions through transport measures</i></p> <ul style="list-style-type: none"> To contribute to meeting the Scottish share in the reduction of carbon emissions 	<ul style="list-style-type: none"> Reduction / increase of green house gas emissions Decrease / increase in traffic resulting in noise, air quality, visual intrusion, community severance etc impacts 	<ol style="list-style-type: none"> High Global, Regional and Local 	<ul style="list-style-type: none"> Appraise effects on traffic growth of a new bypass before committing Ensure PT etc measures delivered to benefit local communities 	<ul style="list-style-type: none"> New bypass has potential to increase traffic and therefore emissions New bypass creates new link north of Scone with potential to create development pressures and stimulate traffic growth PT measures and non motorised vehicle measures have potential for reductions in emissions 	<ul style="list-style-type: none"> Further detail required to appraise effects
<p>2. Community well being <i>To protect the well being of communities and improve the regional quality of life</i></p> <ul style="list-style-type: none"> To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle 	<ul style="list-style-type: none"> Changes in traffic flows Air quality impacts from traffic flow changes Effects on existing AQMAs Creation of further AQMA 	<ol style="list-style-type: none"> High (Perth City) Regional and Local 	<ul style="list-style-type: none"> Appraise effects on traffic growth of a new bypass and crossing of the Tay before committing Ensure PT etc measures delivered to benefit local communities and that traffic flow reductions 	<ul style="list-style-type: none"> Potential for reduction in traffic flows in Perth and therefore benefits to the city – may result in removal of AQMA in city centre Potential for positive effects on rural communities from new bypass and crossing of 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new bypass Careful routing could avoid some impacts

Intervention: IV_I2 – New crossing of the Tay linking the A9 to the A94 north of Scone, including a package of associated bus priority, cycle and pedestrian measures locking in the benefits to Perth city centre					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<ul style="list-style-type: none"> To provide sustainable access to employment and essential services To improve air quality in the region and contribute to meeting national air quality and health objectives To reduce transport related noise and vibration pollution To reduce flood risks from transport To reduce the severance effects of traffic and infrastructure on communities To avoid negative impacts from visual intrusion from transport infrastructure To contribute to improving health in the region 	<ul style="list-style-type: none"> Traffic speed changes Modal shift from cars to PT Introduction of new or “visually intrusive” infrastructure? Effects on lifestyles (positive/negative) Reduction or enhancement in accessibility Reduction or increase in community severance 		<p>in the city are ‘locked in’</p> <ul style="list-style-type: none"> Introduction of measures to lock in benefits of traffic reduction in Perth City centre High quality design of all new infrastructure and in particular crossing of the River Tay 	the Tay as improves linkages with northern areas of Perth	

Intervention: IV_I2 – New crossing of the Tay linking the A9 to the A94 north of Scone, including a package of associated bus priority, cycle and pedestrian measures locking in the benefits to Perth city centre					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>3. Natural Heritage <i>To protect and enhance the natural heritage of the region and beyond</i></p> <ul style="list-style-type: none"> To protect and enhance biodiversity To minimise the effects of transport on designated areas and protected species To protect and enhance the landscape of the region To protect watercourses from the impacts of transport and maintain and enhance their water quality To protect the region's geomorphology, geology, mineral, soils and peat resources To protect the integrity of the region's National Parks against the effects of transport 	<ul style="list-style-type: none"> Direct and/or indirect effects on designated sites (nature conservation, landscape, geological etc) Impacts on protected species Direct and/or indirect effects on important habitats and species Positive and negative effects on biodiversity Impacts on landscape character Impacts on water quality, hydrology, character of watercourse, flooding Impacts on soils, agriculture, contaminated land 	<ol style="list-style-type: none"> High (Perth, Scone, River Tay and environs) Regional and Local 	<ul style="list-style-type: none"> STAG appraisal and Stage 1 and 2 DMRB appraisals to inform decision on most appropriate corridor and route Plan route to avoid designated sites and sensitive areas High quality landscape design with associated habitat creation Use of SUDS, compliance with Controlled Activities Regulations (CAR), and use of flood attenuation measures Sustainable road design and construction Management of soils in accordance with best practice 	<ul style="list-style-type: none"> Potential for significant adverse effects on designated sites (Scone Palace designed landscape), habitats and biodiversity from new bypass Potential for impacts on River Tay SAC and woodlands Potential for adverse effects on landscape, soils and water resources although mitigation could reduce significance of impacts Major intrusion of new route in sensitive location with potential for adverse effects on settlements and isolated properties. Careful design and landscaping would help mitigate impact Potential for impacts on River Tay and its catchment although implementation of best management practices, SUDS etc would reduce risks 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new bypass Careful routing could avoid some impacts Appropriate Assessment required to check whether proposal could affect the integrity of the River Tay SAC

Intervention: IV_I2 – New crossing of the Tay linking the A9 to the A94 north of Scone, including a package of associated bus priority, cycle and pedestrian measures locking in the benefits to Perth city centre					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>4. Cultural Heritage <i>To protect and enhance the cultural heritage and identity of the region and adjoining areas</i></p> <ul style="list-style-type: none"> To protect all (known and unknown) archaeological and historic resources of the region and their settings To maintain and enhance townscapes and their settings 	<ul style="list-style-type: none"> Direct and/or indirect impacts on archaeological and cultural heritage designated sites Impacts on the setting of archaeological and cultural heritage sites Impacts on unknown historic and/or archaeological remains Impacts on historic landscapes, important townscapes or conservation areas 	<ol style="list-style-type: none"> High Local 	<ul style="list-style-type: none"> Routing to avoid archaeological and historic resources Careful design to reduce impacts on setting of resources Survey to identify unknown remains 	<ul style="list-style-type: none"> Potential for significant effect on settings of historic resources including Scone Palace (designated as a listed building and historic gardens and designed landscapes) Potential for direct and indirect effects (setting) on archaeological resources including Roman Road Potential for significant effects on unknown archaeological resources 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new bypass Careful routing could avoid some impacts
<p>5. Material Assets and Resources <i>To promote the sustainable use of the region's assets and resources</i></p> <ul style="list-style-type: none"> To minimise waste, and recover and recycle, resources efficiently To adopt sustainable planning, design and construction methods To promote sustainable travel 	<ul style="list-style-type: none"> Depletion of finite resources Waste generation, recycling opportunities etc Increase/reduction in use of fossil fuels 	<ol style="list-style-type: none"> High Global, regional and local 	<ul style="list-style-type: none"> Use of sustainable design and construction techniques Attention to details in use and sourcing of materials Project planning to avoid any areas of mineral reserves Ensure PT etc measures delivered to promote modal shift 	<ul style="list-style-type: none"> Significance of effect unknown but likely to be some benefits and some disbenefits 	<ul style="list-style-type: none"> Effects will depend on potential for measure to accelerate traffic growth and success of achieving modal shift in the city

Intervention: IV_I3 - Provision of new link road between A84 Kildean and A9 University, and a new M9/A811 interchange, completing Stirling's Outer Ring road, including package of associated bus priority, cycle and pedestrian measures, locking in the benefits to Stirling City centre					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>1. Climate Change <i>To contribute to reducing carbon emissions through transport measures</i></p> <ul style="list-style-type: none"> To contribute to meeting the Scottish share in the reduction of carbon emissions 	<ul style="list-style-type: none"> Reduction / increase of green house gas emissions Decrease / increase in traffic resulting in noise, air quality, visual intrusion, community severance etc impacts 	<ol style="list-style-type: none"> High Global, Regional and Local 	<ul style="list-style-type: none"> Appraise effects on traffic growth of a new link road before committing Ensure PT etc measures delivered to benefit community 	<ul style="list-style-type: none"> New link road has potential to increase traffic and therefore emissions PT measures and non motorised vehicle measures have potential for reductions in emissions 	<ul style="list-style-type: none"> Further detail required to appraise effects
<p>2. Community well being <i>To protect the well being of communities and improve the regional quality of life</i></p> <ul style="list-style-type: none"> To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle To provide sustainable access to employment and essential services To improve air quality in the region and contribute to meeting national air quality and health objectives 	<ul style="list-style-type: none"> Changes in traffic flows Air quality impacts from traffic flow changes Effects on existing AQMAs Creation of further AQMA Traffic speed changes Modal shift from cars to PT Introduction of new or "visually intrusive" infrastructure? Effects on lifestyles (positive/negative) Reduction or 	<ol style="list-style-type: none"> High (Stirling) Regional and Local 	<ul style="list-style-type: none"> Appraise effects on traffic growth of a new link road before committing Ensure PT etc measures delivered to benefit community and traffic flow reductions in Stirling 'locked in' Introduction of measures to lock in benefits of traffic reduction in Stirling High quality design of all new infrastructure 	<ul style="list-style-type: none"> Potential for reduction in traffic flows in Stirling and therefore benefits to the city Scheme has potential to reduce traffic at Craigs Roundabout (potential for area to be designated as AQMA due to congestion) Potential for significant adverse effects on local communities from new link road including isolated settlements, school and severance of the communities of Cornton and 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new link road Careful routing could avoid some impacts Detailed appraisal of traffic effects on noise and air quality etc would be required as part of the EIA

Intervention: IV_I3 - Provision of new link road between A84 Kildean and A9 University, and a new M9/A811 interchange, completing Stirling's Outer Ring road, including package of associated bus priority, cycle and pedestrian measures, locking in the benefits to Stirling City centre					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<ul style="list-style-type: none"> • To reduce transport related noise and vibration pollution • To reduce flood risks from transport • To reduce the severance effects of traffic and infrastructure on communities • To avoid negative impacts from visual intrusion from transport infrastructure • To contribute to improving health in the region 	<p>enhancement in accessibility</p> <ul style="list-style-type: none"> • Reduction or increase in community severance 			<p>Cornton and Causewayhead and Bridge of Allan and Stirling</p> <ul style="list-style-type: none"> • Potential for increased traffic flows near university 	<ul style="list-style-type: none"> •

Intervention: IV_I3 - Provision of new link road between A84 Kildean and A9 University, and a new M9/A811 interchange, completing Stirling's Outer Ring road, including package of associated bus priority, cycle and pedestrian measures, locking in the benefits to Stirling City centre					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>3. Natural Heritage <i>To protect and enhance the natural heritage of the region and beyond</i></p> <ul style="list-style-type: none"> To protect and enhance biodiversity To minimise the effects of transport on designated areas and protected species To protect and enhance the landscape of the region To protect watercourses from the impacts of transport and maintain and enhance their water quality To protect the region's geomorphology, geology, mineral, soils and peat resources To protect the integrity of the region's National Parks against the effects of transport 	<ul style="list-style-type: none"> Direct and/or indirect effects on designated sites (nature conservation, landscape, geological etc) Impacts on protected species Direct and/or indirect effects on important habitats and species Positive and negative effects on biodiversity Impacts on landscape character Impacts on water quality, hydrology, character of watercourse, flooding Impacts on soils, agriculture, contaminated land 	<ol style="list-style-type: none"> High (Stirling and environs) Regional and Local 	<ul style="list-style-type: none"> Plan route to avoid significant impacts on designated sites and sensitive areas High quality landscape design with associated habitat creation Use of SUDS, compliance with Controlled Activities Regulations (CAR), and use of flood attenuation measures Sustainable road design and construction Management of soils in accordance with best practice 	<ul style="list-style-type: none"> Potential for significant adverse effects on designated sites, habitats and biodiversity from new link road Potential for impacts on River Forth SPA and River Teith SAC Potential for adverse effects on landscape, soils and water resources although mitigation could reduce significance of impacts Major intrusion of new route in sensitive location with potential for adverse effects on settlements and isolated properties (road crosses between Cornton and Causewayhead). Careful design and landscaping would help mitigate impact Potential for impacts on River Forth and its catchment although implementation of best management practices, SUDS etc would reduce risks 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new link road Careful routing could avoid some impacts Appropriate Assessment required to check whether proposal could affect the integrity of the River Forth SPA and River Teith SAC

Intervention: IV_I3 - Provision of new link road between A84 Kildean and A9 University, and a new M9/A811 interchange, completing Stirling's Outer Ring road, including package of associated bus priority, cycle and pedestrian measures, locking in the benefits to Stirling City centre					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>4. Cultural Heritage <i>To protect and enhance the cultural heritage and identity of the region and adjoining areas</i></p> <ul style="list-style-type: none"> To protect all (known and unknown) archaeological and historic resources of the region and their settings To maintain and enhance townscapes and their settings 	<ul style="list-style-type: none"> Direct and/or indirect impacts on archaeological and cultural heritage designated sites Impacts on the setting of archaeological and cultural heritage sites Impacts on unknown historic and/or archaeological remains Impacts on historic landscapes, important townscapes or conservation areas 	<ol style="list-style-type: none"> High Local 	<ul style="list-style-type: none"> Routing to avoid archaeological and historic resources Careful design to reduce impacts on setting of resources Survey to identify unknown remains 	<ul style="list-style-type: none"> Potential for significant effect on settings of historic resources including The Wallace Monument and Stirling Castle Potential for significant effects on unknown archaeological resources 	<ul style="list-style-type: none"> Environmental impact assessment (EIA) would be required for a new link road Careful routing could avoid some impacts
<p>5. Material Assets and Resources <i>To promote the sustainable use of the region's assets and resources</i></p> <ul style="list-style-type: none"> To minimise waste, and recover and recycle, resources efficiently To adopt sustainable planning, design and construction methods To promote sustainable travel 	<ul style="list-style-type: none"> Depletion of finite resources Waste generation, recycling opportunities etc Increase/reduction in use of fossil fuels 	<ol style="list-style-type: none"> High Global, regional and local 	<ul style="list-style-type: none"> Use of sustainable design and construction techniques Attention to details in use and sourcing of materials Project planning to avoid any areas of mineral reserves Ensure PT etc measures delivered to promote modal shift 	<ul style="list-style-type: none"> Significance of effect unknown but likely to be some benefits and some disbenefits 	<ul style="list-style-type: none"> Effects will depend on potential for measure to accelerate traffic growth and success of achieving modal shift in the city

Intervention: IV_J2 – Improved road links to the Ports of Montrose and Dundee and Perth Harbour					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>1. Climate Change <i>To contribute to reducing carbon emissions through transport measures</i></p> <ul style="list-style-type: none"> To contribute to meeting the Scottish share in the reduction of carbon emissions 	<ul style="list-style-type: none"> Reduction / increase of green house gas emissions Decrease / increase in traffic resulting in noise, air quality, visual intrusion, community severance etc impacts 	<ol style="list-style-type: none"> High Global, Regional and Local 	<ul style="list-style-type: none"> Predict potential impacts of HGV movements following improvements before implementing and identify further mitigation as appropriate 	<ul style="list-style-type: none"> Improved road links have potential to increase traffic and therefore emissions 	<ul style="list-style-type: none"> Further detail required to appraise effects
<p>2. Community well being <i>To protect the well being of communities and improve the regional quality of life</i></p> <ul style="list-style-type: none"> To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle To provide sustainable access to employment and essential services To improve air quality in the region and contribute to meeting national air quality and health objectives To reduce transport related noise and vibration pollution 	<ul style="list-style-type: none"> Changes in traffic flows Air quality impacts from traffic flow changes Effects on existing AQMAs Creation of further AQMA Traffic speed changes Modal shift from cars to PT Introduction of new or “visually intrusive” infrastructure? Effects on lifestyles (positive/negative) Reduction or enhancement in accessibility Reduction or increase 	<ol style="list-style-type: none"> High (Montrose, Dundee, Perth) Regional and Local 	<ul style="list-style-type: none"> Appraise effects on local communities of improved road links including land take associated with the creation of interchanges between rail, road and sea High quality design of all new infrastructure 	<ul style="list-style-type: none"> Potential for impacts (negative/positive) on local communities from changes in HGV movements 	<ul style="list-style-type: none"> Careful design and planning of improvements could avoid some impacts

Intervention: IV_J2 – Improved road links to the Ports of Montrose and Dundee and Perth Harbour					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<ul style="list-style-type: none"> • To reduce flood risks from transport • To reduce the severance effects of traffic and infrastructure on communities • To avoid negative impacts from visual intrusion from transport infrastructure • To contribute to improving health in the region 	in community severance				

Intervention: IV_J2 – Improved road links to the Ports of Montrose and Dundee and Perth Harbour					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>3. Natural Heritage <i>To protect and enhance the natural heritage of the region and beyond</i></p> <ul style="list-style-type: none"> • To protect and enhance biodiversity • To minimise the effects of transport on designated areas and protected species • To protect and enhance the landscape of the region • To protect watercourses from the impacts of transport and maintain and enhance their water quality • To protect the region's geomorphology, geology, mineral, soils and peat resources • To protect the integrity of the region's National Parks against the effects of transport 	<ul style="list-style-type: none"> • Direct and/or indirect effects on designated sites (nature conservation, landscape, geological etc) • Impacts on protected species • Direct and/or indirect effects on important habitats and species • Positive and negative effects on biodiversity • Impacts on landscape character • Impacts on water quality, hydrology, character of watercourse, flooding • Impacts on soils, agriculture, contaminated land 	<ol style="list-style-type: none"> 1. High 2. Regional and Local 	<ul style="list-style-type: none"> • Plan improvements to avoid impacts on designated sites and sensitive areas • Sustainable design and construction 	<ul style="list-style-type: none"> • Potential for impacts on designated sites, habitats and biodiversity from improved road links • Potential for disturbance impacts on Montrose Basin Local Nature Reserve (LNR), RAMSAR, SPA, SAC, SSSI • Potential for negative effects on landscape, soils and water resources although mitigation could reduce significance of impacts 	<ul style="list-style-type: none"> • Careful design and planning of improvements could avoid some impacts

Intervention: IV_J2 – Improved road links to the Ports of Montrose and Dundee and Perth Harbour					
SEA Objective • Sub Objective	Potential Impacts	1. Sensitivity of Resource 2. Scale of Impact	Mitigation	Significance of Effect	Comments
<p>4. Cultural Heritage <i>To protect and enhance the cultural heritage and identity of the region and adjoining areas</i></p> <ul style="list-style-type: none"> To protect all (known and unknown) archaeological and historic resources of the region and their settings To maintain and enhance townscapes and their settings 	<ul style="list-style-type: none"> Direct and/or indirect impacts on archaeological and cultural heritage designated sites Impacts on the setting of archaeological and cultural heritage sites Impacts on unknown historic and/or archaeological remains Impacts on historic landscapes, important townscapes or conservation areas 	<ol style="list-style-type: none"> High Local 	<ul style="list-style-type: none"> Design improved road links to avoid archaeological and historic resources Careful design to reduce impacts on setting of resources Survey to identify unknown remains 	<ul style="list-style-type: none"> Potential for impacts from larger scale road improvements on known and unknown archaeological resources and settings 	<ul style="list-style-type: none"> Careful design and planning of improvements could avoid some impacts
<p>5. Material Assets and Resources <i>To promote the sustainable use of the region's assets and resources</i></p> <ul style="list-style-type: none"> To minimise waste, and recover and recycle, resources efficiently To adopt sustainable planning, design and construction methods To promote sustainable travel 	<ul style="list-style-type: none"> Depletion of finite resources Waste generation, recycling opportunities etc Increase/reduction in use of fossil fuels 	<ol style="list-style-type: none"> High Global, regional and local 	<ul style="list-style-type: none"> Use of sustainable design and construction techniques Attention to details in use and sourcing of materials Project planning to avoid any areas of mineral reserves 	<ul style="list-style-type: none"> Significance of effect unknown but likely to be low 	<ul style="list-style-type: none"> Effects will depend on potential for measure to improve more sustainable use of harbours for water transport or freight instead of road/rail freight

ANNEX I

APPRAISAL TABLES FOR RTS PREFERRED STRATEGY

Combined RTS Interventions and Actions

RTS Theme – Combined RTS Interventions and Actions							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
Climate Change To contribute to reducing carbon emissions through transport measures							
To contribute to meeting the Scottish share in the reduction of carbon emissions	✓ (apart from major new infrastructure schemes)	TACTRAN to encourage delivery of RTS and ensure actions implemented. Promote interventions to discourage private car use and encourage public transport	✓	Effect will be greater over time as more actions and initiatives in the RTS are implemented		Effect dependant on level of modal shift. Many interventions in the RTS have the potential to reduce traffic growth (although unlikely to reverse it). Further appraisal of interventions required to determine effects on carbon emissions – some negative effects could result if new road infrastructure leads to traffic growth but some benefits could result from modal shift	
Community Well-being To protect the well being of communities and improve the regional quality of life							
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	TACTRAN to encourage delivery of RTS and ensure actions implemented. Promote interventions to discourage private car use and encourage public transport. Promote awareness campaigns of more sustainable healthy options	✓	Effect will be greater over time as more actions and initiatives in the RTS are implemented		Promotion of good health is dependant on reducing car dependency and its emissions and promoting more sustainable modes (e.g. cycling and walking). Further appraisal of interventions required to determine effects on health and safety – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift	
To provide sustainable access to employment and essential services	✓	TACTRAN to encourage delivery of RTS and ensure actions implemented. Promote interventions to discourage private car use and encourage public transport. Promote awareness campaigns of more sustainable options	✓	Effect will be greater over time as more actions and initiatives in the RTS are implemented		TACTRAN should focus on the importance of promoting sustainable access to employment and essential services. New road infrastructure could encourage car-based travel to work. Measures seeking to lock-in benefits of flow reductions could promote more sustainable means of accessing work and essential services	
To improve air quality in the region and contribute to meeting national air quality and health objectives	? ✓	TACTRAN to encourage delivery of RTS and ensure actions implemented. Promote interventions to discourage private car use and encourage public transport. TACTRAN to promote measures to “lock-in” benefits of traffic reduction as a result of new major infrastructure schemes	? ✓	Effect will be greater over time as more actions and initiatives in the RTS are implemented		Effect dependant on level of modal shift. Many measures in the RTS have potential to reduce local traffic flows and congestion but these benefits will need to be “locked in”. Potential for reduction in traffic flows in cities could benefit local air quality but new roads have the potential to increase traffic with negative resultant effects on local air quality. EIA would be required for all new major roads to determine specific effects and inform the decision making process. Implementation of local interventions could help to address specific local air quality hot spots in the region. Local Transport Strategies (LTSs) could provide the mechanism to deliver further benefits	
To reduce transport related noise and vibration pollution	0 (x for new infrastructure)	TACTRAN to encourage delivery of RTS and ensure actions implemented. Promote interventions to discourage private car use and encourage public transport. Adequate noise reduction measures to address potential impacts from new infrastructure proposals	0 / ✓	Effect will be greater over time as more actions and initiatives in the RTS are implemented		Measures which have potential to deliver modal shift are not predicted to significantly affect noise and vibration although local benefits could result from specific interventions. LTSs could provide the mechanism to deliver further benefits. The appraisal has assumed that freight measures would not significantly encourage increased road haulage. Potential for reduction in traffic flows in cities could benefit noise and vibration impacts from traffic but new roads have the potential to increase traffic with negative resultant effects on noise and vibration. EIA would be required for all new major roads to determine specific effects and inform the decision making process. Specific mitigation would be defined such as low noise surfacing, noise barriers, etc	
To reduce flood risks from transport	0	All new road schemes to be designed with SUDS measures and with attention to flood risk	0			Detailed design of all new road schemes would be required to take account of flood risk and to mitigate any potential impacts	
To reduce the severance effects of traffic and infrastructure on communities	?x	TACTRAN to promote measures to “lock-in” benefits of traffic reduction as a result of modal shift and major new road schemes	?0	Depends on timescale of implementation		Traffic reductions as a result of by-passes would reduce community severance. New infrastructure would need to be designed to take account of the potential to increase community severance and for appropriate mitigation measures to be implemented. Changes to infrastructure which could increase HGV movements through settlements not currently affected may result in increased community severance which may require mitigation (there could also be decreases in HGV movements in other areas)	

RTS Theme – Combined RTS Interventions and Actions							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To avoid negative impacts from visual intrusion from transport infrastructure	0 (x for new infrastructure)	Measures defined in the relevant environmental statements and appraisals will require to be implemented to reduce the visual impacts of new infrastructure	0 (x for new infrastructure)	Impacts of the new schemes would decrease in time as new planting matures provided roads earthworks designed to reduce impacts at nearby properties			EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Many interventions in the RTS have little potential for significant visual intrusion
To contribute to improving health in the region	?✓	TACTRAN to encourage delivery of RTS and ensure actions implemented. Promote interventions to discourage private car use and encourage public transport. TACTRAN to promote measures to “lock-in” benefits of traffic reduction as a result of new major infrastructure schemes	?✓	Effect will be greater over time as more actions and initiatives in the RTS are implemented			Further appraisal of interventions required to determine effects on health from emissions – some negative effects could result if new infrastructure leads to traffic growth but some benefits could result from modal shift
Natural Heritage							
To protect and enhance the natural heritage of the region and beyond							
To protect and enhance biodiversity	0 (x for new infrastructure)	Adequate biodiversity mitigation measures to be included in all infrastructure schemes including planting proposals to enhance local biodiversity. Surveys to be undertaken to inform route choice for new infrastructure and identify required mitigation	0 (?x for new infrastructure)	Mitigation measures have potential to enhance local biodiversity in the longer term with good management			There may be some significant effects from new infrastructure projects at some locations. These would require definition of specific mitigation as part of the EIA for those projects
To minimise the effects of transport on designated areas and protected species	0 (x for new infrastructure)	Surveys to be undertaken to inform route choice for new infrastructure and identify required mitigation	0 (?x for new infrastructure)	EIA and appropriate assessment would be required to define time effects of new infrastructure projects			All proposed new routes are located in sensitive locations and adequate survey and appraisal would be required to inform the EIAs and appropriate assessments where European sites could be affected
To protect and enhance the landscape of the region	0 (xx for new infrastructure)	Surveys required to identify routes which best integrate with local landscape. High quality design of all new infrastructure. Adequate landscape mitigation and design measures required for all infrastructure schemes including sensitive landforming and planting	0 (x for new infrastructure)	Impacts of the new schemes would decrease in time as new planting matures provided roads earthworks designed to integrate with local landscape			EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Many interventions in the RTS have no potential for landscape effects
To protect and enhance watercourses from the impacts of transport and maintain and enhance their water quality	0 (x for new infrastructure)	Use of SUDS, compliance with CAR and use of flood attenuation measures	0				EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Appropriate assessment would be required of all schemes with potential to affect European sites. Implementation of best construction practices would reduce the risk of significant effects. Routine monitoring of watercourses (where it is undertaken) affected by new infrastructure would indicate the adequacy of implemented mitigation measures
To protect the region's geomorphology, geology, mineral, soils and peat resources	0 (x for new infrastructure)	Surveys required to identify important resources and appropriate mitigation. All projects to be designed to avoid significant effects on designated areas and will need to manage and protect soils and drift deposits during construction and to prevent erosion and contamination of soils during operation. Any new earthworks should be designed to ensure slope stability over the design life of the infrastructure	?0				EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Many interventions in the RTS have no potential to affect geomorphology, geology, soils and peat resources

RTS Theme – Combined RTS Interventions and Actions							
Scale: ✓✓ clear contribution (strong compatibility), ✓ broadly supportive (compatible), 0 neutral or no discernible effect, x negative/incompatible, xx strongly incompatible, ? uncertain effect, ? (✓/x) uncertain possible positive/negative							
Sustainability Objective	Potential Impacts	Mitigation	Nature of Residual Effect	Assessment of Residual Effect			Comments
				Short term	Med term	Long term	
To protect the integrity of the region's National Parks against the effects of transport	? ✓	TACTRAN to encourage delivery of RTS and ensure actions implemented. Promote interventions to discourage private car use and encourage public transport in the National Park. TACTRAN to support the promotion of sustainable tourism working in partnership with the National Park Authorities and VisitScotland	✓	Effect will be greater over time as more actions and initiatives in the RTS are implemented			Appraisal assumes no major new infrastructure in National Parks
Cultural Heritage To protect and enhance the cultural heritage and identity of the region and adjoining areas							
To protect all (known and unknown) archaeological and historic resources of the region and their settings	0 (x for new infrastructure)	Routing of new infrastructure to avoid archaeological and historic resources. Careful design to reduce impacts on setting of resources. Survey to identify unknown remains. New planting proposals to be designed taking account of any potential risk to any unidentified archaeological remains, the setting of cultural heritage sites and historic landscapes	0/?x	Impacts of the new schemes would decrease in time as new planting matures provided roads earthworks designed to reduce effects of the new roads on setting of historic and cultural resources			EIA would be required for all new major roads to determine specific effects and mitigation and to inform the decision making process. Planting proposals should be sited to ensure no direct effects on archaeological remains. Modal shift would have potential to enhance the setting of historic townscapes and features through reductions in traffic flows and congestion etc
To maintain and enhance townscapes and their settings	? ✓	Relies on delivery of regional interventions in RTS and local measures in LTSs to reduce traffic in towns. TACTRAN to promote measures to "lock-in" benefits of traffic reductions as a result of new infrastructure schemes	? ✓	Effects will be greater over time as more actions are implemented			Measures have potential to reduce negative effects of transport on townscapes but unlikely to be significant. Traffic reduction measures offer enhancement of townscapes through de-cluttering of streets etc
Materials Assets and Resources To promote the sustainable use of the region's assets and resources							
To minimise waste and recover and recycle resources efficiently	0	TACTRAN to promote all opportunities to minimise waste, recover and recycle. Encourage re-use of materials in construction schemes and seek to balance earthworks for new infrastructure projects	?0				Compliance with End of Life Vehicles Directive should promote uptake and markets for vehicle recycling. Primary focus of RTS on modal shift measures reduces inefficient use of resources. Interventions would not significantly affect resources
To adopt sustainable planning, design and construction methods	✓	Design of interventions should incorporate sustainable planning principles. Attention to detail in use and sourcing of materials. TACTRAN to promote and ensure RTS interventions delivered	✓	Ongoing throughout RTS implementation			All new major infrastructure to be designed in accordance with best practice and TACTRAN to promote sustainable planning, design and construction methods
To promote sustainable travel	✓	TACTRAN to ensure delivery of interventions. Implement actions to discourage use of car and encourage use of PT and non-motorised transport	✓	Effects will be greater over time as more actions are implemented			TACTRAN should promote information to ensure take-up of more sustainable modes to compensate for potential increases in motorised traffic using new road infrastructure. The majority of the RTS seeks to promote more sustainable transport and achieve modal shift. Success will depend on general raising of awareness on sustainable modes of transport within the region and delivery of committed actions

ANNEX J

APPRAISAL TABLES FOR ALTERNATIVE STRATEGY
SCENARIOS

Annex J Environmental Appraisal of Alternatives

This annex reports the environmental assessment undertaken on the alternative scenarios presented within the draft RTS. These alternatives were as follows:

- Delivering Economic Prosperity
- Connecting Communities and Social Inclusion
- Environmental Sustainability and Health and Well-being

Due to the strategic nature of the interventions, the appraisal has been undertaken at a high level. An appraisal system has been developed and used based on the following scale of effects.

✓✓	Strong compatibility with the objective (or a strong positive effect)
✓	Broadly supportive of the objective (or a compatible/positive effect)
0	Neutral/no effect
X	Negative effect/incompatibility with the objective
XX	Strongly negative effect/incompatibility with the objective
? (✓/X)	Uncertain effect (positive/negative)

The appraisal was undertaken using the framework questions listed in Table 2.3 in Chapter 2 on Methodology.

The appraisal has been reported in a table which lists the SEA objectives and present the findings of the assessment in relation to these objectives for each of the interventions presented in Section 6.4 of the draft RTS.

Additional RTS Interventions	Delivering Economic Prosperity			Connecting Communities and Social Inclusion		CC1: Increase funding for additional bus services (particularly off-peak and/or in key high-demand corridors where the gap between PT and car-based accessibility is greatest	CC2: Consideration of bus quality contracts	CC3: Additional concessionary schemes designed to subsidise the cost of travel in the region	CC4: Increased investment in community and demand-responsive transport across the region, including the provision of an integrated network combining conventional PT with flexible feeder services and community transport in the rural areas	Environmental Sustainability and Health and Well-being	Env1: Support for any national policy for Carbon Trading	Env2: Investigate opportunities for Short Sea Shipping	Env3: Low emissions zones in city centres	Env4: Fleet bio-fuel promotion	Env5: Car clubs and car free housing estates
SEA Objectives															
Climate Change To contribute to reducing carbon emissions through transport measures	x	0			0	0	0	0		✓✓	✓	✓	✓	✓	
To contribute to meeting the Scottish share in the reduction of carbon emissions	x	0			?0	0	?0	?0		✓✓	✓	✓	✓	✓	
Community Well-being To protect the well being of communities and improve the regional quality of life	✓	✓			✓	0	✓	✓		✓	✓	✓	✓	✓	
To improve health and safety by providing appropriate means and modes of transport which contribute to a healthier, safer lifestyle	✓	✓			✓	0	✓	✓		0	0	✓	✓	✓	
To provide sustainable access to employment and essential services	x	0			✓	0	✓	✓		0	0	0	0	0	

Additional RTS Interventions	Delivering Economic Prosperity			Connecting Communities and Social Inclusion		CC1: Increase funding for additional bus services (particularly off-peak and/or in key high-demand corridors where the gap between PT and car-based accessibility is greatest	CC2: Consideration of bus quality contracts	CC3: Additional concessionary schemes designed to subsidise the cost of travel in the region	CC4: Increased investment in community and demand-responsive transport across the region, including the provision of an integrated network combining conventional PT with flexible feeder services and community transport in the rural areas	Environmental Sustainability and Health and Well-being	Env1: Support for any national policy for Carbon Trading	Env2: Investigate opportunities for Short Sea Shipping	Env3: Low emissions zones in city centres	Env4: Fleet bio-fuel promotion	Env5: Car clubs and car free housing estates
SEA Objectives		Ec1: Improvements to address congestion hotspots (A91 Corridor east of Stirling; Dundee City centre; A92 approaches to Dundee; Stirling and Perth city centres and A9 Western by-pass and A85 west of Perth)	Ec2: Address some Accident Hot Spots, in particular A9 dualling north of Perth												
To improve air quality in the region and contribute to meeting national air quality and health objectives		✓	0		?✓	0	?✓	?✓		✓	✓	✓	✓	✓	
To reduce transport related noise and vibration pollution		✓	0		? ✓	0	? ✓	? ✓		0	✓	✓	0	✓	
To reduce flood risks from transport		0	0		0	0	0	0		0	0	0	0	0	
To reduce the severance effects of traffic and infrastructure on communities		x	? ✓		? ✓	0	? ✓	? ✓		0	0	✓	0	✓	
To avoid negative impacts from visual intrusion from transport infrastructure		0	?x		0	0	0	0		0	0	0	0	✓	
To contribute to improving health in the region		? ✓	✓		✓	0	✓	✓		✓	✓	✓	✓	✓	

Additional RTS Interventions	Delivering Economic Prosperity			Connecting Communities and Social Inclusion		CC1: Increase funding for additional bus services (particularly off-peak and/or in key high-demand corridors where the gap between PT and car-based accessibility is greatest	CC2: Consideration of bus quality contracts	CC3: Additional concessionary schemes designed to subsidise the cost of travel in the region	CC4: Increased investment in community and demand-responsive transport across the region, including the provision of an integrated network combining conventional PT with flexible feeder services and community transport in the rural areas	Environmental Sustainability and Health and Well-being	Env1: Support for any national policy for Carbon Trading	Env2: Investigate opportunities for Short Sea Shipping	Env3: Low emissions zones in city centres	Env4: Fleet bio-fuel promotion	Env5: Car clubs and car free housing estates
SEA Objectives															
Natural Heritage To protect and enhance the natural heritage of the region and beyond	0/x	x			0	0	0	0		0	0	0	0	✓	
To protect and enhance biodiversity	0/x	x			0	0	0	0		0	0	0	0	✓	
To minimise the effects of transport on designated areas and protected species	0	0			0	0	0	0		0	0	0	0	0	
To protect and enhance the landscape of the region	0	x			0	0	0	0		0	0	0	0	0	
To protect watercourses from the impacts of transport and maintain and enhance their water quality	0	0			0	0	0	0		0	0	0	0	0	
To protect the region's geomorphology, geology, mineral, soils and peat resources	0	0			0	0	0	0		0	0	0	0	0	

Additional RTS Interventions SEA Objectives	Delivering Economic Prosperity	Ec1: Improvements to address congestion hotspots (A91 Corridor east of Stirling; Dundee City centre; A92 approaches to Dundee; Stirling and Perth city centres and A9 Western by-pass and A85 west of Perth)	Ec2: Address some Accident Hot Spots, in particular A9 dualling north of Perth	Connecting Communities and Social Inclusion	CC1: Increase funding for additional bus services (particularly off-peak and/or in key high-demand corridors where the gap between PT and car-based accessibility is greatest	CC2: Consideration of bus quality contracts	CC3: Additional concessionary schemes designed to subsidise the cost of travel in the region	CC4: Increased investment in community and demand-responsive transport across the region, including the provision of an integrated network combining conventional PT with flexible feeder services and community transport in the rural areas	Environmental Sustainability and Health and Well-being	Env1: Support for any national policy for Carbon Trading	Env2: Investigate opportunities for Short Sea Shipping	Env3: Low emissions zones in city centres	Env4: Fleet bio-fuel promotion	Env5: Car clubs and car free housing estates
To protect the integrity of the region's National Parks against the effects of transport	0	0			? ✓	0	? ✓	? ✓		0	0	0	0	0
Cultural Heritage To protect and enhance the cultural heritage and identify of the region and adjoining areas	0	?0/x			0	0	0	0		0	0	0	0	0
To protect all (known and unknown) archaeological and historic resources of the region and their settings	?0/x	?x			0	0	0	0		0	0	0	0	0
To maintain and enhance townscapes and their settings	✓	0			0	0	0	0		0	0	✓	0	✓
Materials Assets and Resources To promote the sustainable use of the region's assets and	0	0			0	0	0	0		✓	0	0	✓	✓

Additional RTS Interventions	Delivering Economic Prosperity Ec1: Improvements to address congestion hotspots (A91 Corridor east of Stirling; Dundee City centre; A92 approaches to Dundee; Stirling and Perth city centres and A9 Western by-pass and A85 west of Perth) Ec2: Address some Accident Hot Spots, in particular A9 dualling north of Perth		Connecting Communities and Social Inclusion	CC1: Increase funding for additional bus services (particularly off-peak and/or in key high-demand corridors where the gap between PT and car-based accessibility is greatest	CC2: Consideration of bus quality contracts	CC3: Additional concessionary schemes designed to subsidise the cost of travel in the region	CC4: Increased investment in community and demand-responsive transport across the region, including the provision of an integrated network combining conventional PT with flexible feeder services and community transport in the rural areas	Environmental Sustainability and Health and Well-being	Env1: Support for any national policy for Carbon Trading	Env2: Investigate opportunities for Short Sea Shipping	Env3: Low emissions zones in city centres	Env4: Fleet bio-fuel promotion	Env5: Car clubs and car free housing estates
SEA Objectives													
To minimise waste, and recover and recycle, resources efficiently	0	0		0	0	0	0		0	0	0	0	0
To adopt sustainable planning, design and construction methods	? ✓	0		0	0	0	0		✓	✓	✓	✓	✓
To promote sustainable travel	x	0		✓	0	✓	✓		✓	✓	✓	✓	✓

Comments

General

- Interventions are not described in detail in the RTS and thus comments are general.

Alternative Strategy 1: Delivering Economic Prosperity

- **Ec1:** Local air quality benefits could result from the reduction in congestion, however improvement measures could generate further traffic which could result in further emissions of greenhouse gases. Appraisal assumes that measures require only limited land-take and therefore impacts to natural and cultural heritage resources would be limited. All new infrastructure should be designed taking account of potential environmental impacts and mitigation to reduce negative effects.
- **Ec2:** Benefits are primarily to community safety. Environmental effects could result from new infrastructure. EIA would be required for all major projects and appropriate mitigation to be defined and implemented which would reduce the risk of significant negative effects.

Alternative Strategy 2: Connecting Communities and Social Inclusion

- **CC1:** Intervention has potential to enhance modal shift and promote more sustainable transport with local environmental benefits.
- **CC2:** Proposal requires to be implemented for effect. Implementation could result in modal shift with provision of better services.
- **CC3:** Fare subsidies could result in greater uptake of PT with minor modal shift.
- **CC4:** Increased investment in community and demand responsive transport considered unlikely to result in significant modal shift as likely to be taken up mainly by those without a car.

Alternative Strategy 3: Environmental Sustainability and Health and Well-being

- **Env 1 – 5:** Measures support reduction in fossil fuel dependency with resultant benefits from decreases in emissions. Whilst measures are positive in terms of the environment they may not be sufficient to result in modal shift great enough to halt traffic growth although they would compliment all other interventions in the RTS likely to result in modal shift or use of non-motorised means of transport.

Natural Capital Ltd
13 Coates Crescent
Edinburgh
EH37AF
Tel: 0131 2206121
Fax: 0131 2206131
Email: info@naturalcapital.co.uk

