Strategic Environmental Assessment of the Shetland Regional Transport Strategy

Scoping Report

Shetland Islands Council July 2006

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1.1

### Introduction

#### Objectives and Content of this Scoping Report

This Scoping Report has been produced as part of a Strategic Environmental Assessment (SEA) of the Shetland Regional Transport Strategy (RTS). The primary aims of the Scoping Report are to seek the views of Consultation Authorities and other stakeholders on the proposed approach to the SEA including the key environmental issues to be covered, baseline data sources and the level of detail proposed for the Environmental Report.

The report provides:

- A brief description of the Shetland RTS
- The key stages of the SEA and RTS
- The proposed SEA objectives
- An initial review of relevant environmental issues problems and opportunities
- An initial review of environmental baseline data
- Identification of the links to other relevant plans, programmes and objectives reviewed as part of SEA
- The approach to the assessment of the RTS and methods for assessing impacts
- A brief description of alternatives under consideration
- An outline of the structure of the Environmental Report
- The proposed consultation period for the Environmental Report

#### 1.2 Shetland Regional Transport Strategy

#### 1.2.1 Introduction

Regional Transport Partnerships (RTPs) came into being on 01 December 2005, following publication of the Transport (Scotland) Act 2005. Shetland Regional Transport Partnership is now required to prepare a statutory Regional Transport Strategy (RTS) for their area. The strategy will make the case for investment and infrastructure in that region and will provide a guide to co-ordinate the activities in Shetland. The Regional Transport Strategy will also make the case for specific projects that would be candidates for funding from the Scottish Executive through specific grants.

The Regional Transport Strategy, to be produced by April 2007, will:

- Provide a vision and objectives for transport over a long term (10-15 year) time frame
- Provide an analysis of the current situation
- Set out a programme of activities, projects and interventions
- Inform implementation and investment planning
- Make the case for any additional contributions from stakeholders
- Provide a key steer for Local Transport Strategies
- Support the National Transport Strategy and provide an input to the Strategic Projects Review

The RTS will form one component of a hierarchy of plans which would also include:

- Investment Plans
- Delivery Plans
- Annual Reports

#### 1.2.2 Local and Regional Issues

The Shetland Transport Partnership is a single authority partnership. Whilst the majority of other local authorities will be developing their own Local Transport Strategies (in accordance with guidance issued in February 2005) and contributing to the development of the relevant Regional Transport Strategy (in accordance with Final guidance issued in March 2006), the Shetland Transport Strategy covers both aspects. Some key facts regarding the RTS are presented in Table 1.1.

What makes the Shetland Transport Strategy different from other RTSs will be the breadth of coverage of the strategy. At the very localised level it will address issues such as the development of local footpaths within and between settlements, and the distribution of public transport information. This is contrasted with issues such as significant potential strategic capital investment, inter-island links and policies relating to improvements to the external links from Shetland to the UK and European mainland.

The Shetland Transport Strategy responds to these in a number of ways:

1. There will be three clear strands to the strategy – External Links, Inter-Island Links, and Internal Links

2. Within an over-arching vision, specific sets of objectives will be developed, which relate to each of the above themes

3. There will be a hierarchy of appraisal – this is discussed further in Chapter 7

Name of Responsible Authority	Shetland Regional Transport Partnership	
Title of Strategy	Shetland Regional Transport Strategy	
What Prompted the Strategy	Legislation – Transport (Scotland) Act 2005	
Strategy Subject	Transport	
Period Covered	10-15 years	
Frequency of Updates	RTS to be revised and refreshed every 4 years in line with the local government electoral cycle.	
	Investment plan covering the first 5 to 10 years of the strategy that sets out a programme of capital investment required for the successful implementation of the RTS - to be updated when the RTP judged it appropriate.	
	Delivery or business plan: 3-year plan for the implementation of the RTS, updated annually to reflect local and central government planning and funding cycles. Includes plans for revenue and capital spending and borrowing.	
	Annual report: Yearly updates of progress	
Strategy Area	Shetland Islands	
Strategy Purpose	To set out the Shetland RTP's intentions for transport for the next 10-15 years.	
Contact Point	Michael Craigie Projects Unit Manager Shetland Islands Council Capital Programme Service Gremista	

#### Table 1.1 Key Facts Regarding the RTS

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#### 1.3 Strategic Environmental Assessment (SEA)

1.3.1

The Purpose of SEA and Reasons for carrying out this SEA of the Shetland RTS

On the 20th July 2004 it became a legal requirement under the Environmental Assessment of Plans and Programmes (Scotland) Regulations 2004, for all spatial plans and programmes to be subject to SEA. These regulations transpose the requirements of European Directive 2001/42/EC, commonly referred to as the 'SEA Directive.'

The Partnership Agreement (2003) committed the Scottish Executive to expanding SEA legislation in Scotland beyond the requirements of the SEA Directive. As a result, the Environmental Assessment (Scotland) Act 2005 came into force in February 2006. A high profile element of this legislation is the requirement for Strategies to be subject to SEA.

The objectives of the SEA Directive, as set out in Article 1, are to:

'Provide for a high level of protection to the environment' and to;

Contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development'.

The SEA Act prescribes the SEA should be applied to plans which:

- Are likely to have significant environmental effects
- Are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects requiring an EIA or require an 'appropriate assessment' in accordance to the Habitats Directive.
- Are subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and which are required by legislative, regulatory or administrative provisions.

The Shetland RTS has the potential to have significant environmental effects by for example. promoting major transport infrastructure projects. In addition, the RTS is required by legislation; the Transport (Scotland) Act 2005.

#### 1.3.2 Guidance

A number of documents exist which provide guidance for the SEA process itself. The most relevant in the context of the RTS are:

- Information for Responsible Authorities on Procedures for Consultation with the Scottish Consultation Authorities and Access to Information and Advice (October 2005)
- A Practical Guide to the Strategic Environmental Assessment Directive (ODPM, September 2005 - hereafter referred to as the SEA Guidance)
- SEA Templates (Scottish Executive, September 2005)
- Scottish Transport Appraisal Guidance (STAG)
- 'Scotland's Transport Future: Guidance on Regional Transport Strategies' (March 2006)

#### 1.3.3 The SEA Process and the Shetland RTS

Key aims of SEA are to increase transparency in decision-making and to integrate environmental considerations within the development of the RTS. This is achieved by predicting and evaluating the potential environmental effects of the RTS, predicting effects of alternatives, presenting the findings of the assessment in an Environmental Report and consulting on the findings of the SEA. Following this, a Post-Adoption Statement will be produced to highlight how the findings of the SEA and consultation have been taken into account in the development of the RTS.

It is important to note that the SEA does not dictate the development of the RTS. SEA is a tool to inform the development of the strategy, allowing relevant issues to be addressed. The flow diagram in Figure 1.1 illustrates how the SEA process integrates with the development of the Shetland RTS. Table 1.2 provides further information regarding Stages A and B with the additional components of Stage B to Stage E presented in Chapter 8.

SEA is an iterative process and in order to comply with the Act it must proceed in parallel and in close liaison with the RTS. The findings from each stage of the SEA will be used to inform the development of the next, ensuring that environmental considerations are addressed early in the process.

#### 1.3.4 This Scoping Report

The purpose of the Scoping stage of SEA is to set out the context, baseline and objectives for the SEA. This Scoping Report has been developed to consult on the proposed *scope* of this SEA in relation to the unique qualities of this RTS and the area to which it applies. Comments from the Responsible Authority and the Consultation Authorities (Historic Scotland, SNH and SEPA) will be taken into account in the remaining aspects of the SEA and the production of the Environmental Report.

A 'Scoping Workshop' was held with some key stakeholders in order to help define the appropriate scope of this SEA. The issues discussed at the workshop were circulated for comment amongst others who were unable to attend. Views expressed have been incorporated within this report where appropriate. A list of all who contributed is presented in Appendix B.

Table 1.2 provides an overview of the Scoping stage of this SEA and highlights the location of each element within this report. The remaining stages of the SEA following production of this Scoping Report are presented in Chapter 8.

Task	Description	
Task A1: Identify other relevant plans, programmes and	<ul> <li>In liaison with stakeholders, identification of plans and programmes of relevance to the RTS</li> </ul>	
objectives	Details in Section 2	
Task A2: Collect relevant baseline information	<ul> <li>Identification of potential sources of baseline data relevant to the SEA</li> <li>Collection of baseline data from various sources e.g. Shetland Islands Council, Government / other authorities with environmental responsibilities and Census 2001.</li> <li>Organisation of baseline data – GIS <i>Details in Section 4</i></li> </ul>	
Task A3: Identify key environmental issues	<ul> <li>Issues identified from discussions with stakeholders and an initial review of published documents</li> </ul>	
	Details in Section 3	

#### Table 1.2 Scoping

Task	Description	
Task A4: Develop SEA objectives	<ul> <li>Review of existing SEA objectives from a variety of sources e.g. guidance and SEA objectives from other similar strategies</li> <li>Development of SEA objectives for Shetland RTS taking account of the baseline situation, views of stakeholders and requirements of the SEA Act <i>Details in Section 5</i></li> </ul>	
Task B1: Test the RTS objectives against the SEA objectives	<ul> <li>Allows potential conflicts to be identified and amendments to be made if appropriate Details in Section 6</li> </ul>	
Task B2: Develop strategic alternatives	<ul> <li>Identification of strategic options</li> <li>Details in Section 7</li> </ul>	
Task A5: Consult on the scope of the SEA	<ul> <li>Production of a Scoping Report to summarise the findings from Stage A1 to B2</li> <li>Suggest method for completing the SEA</li> <li>Identify consultation period for Environment Report</li> <li>Consultation via the SEA Gateway</li> </ul>	





2.1

## 2 Other Relevant Plans, Programmes and Environmental Objectives

#### Identification of Plans and Programmes that are Relevant to the RTS

This section lists other plans and programmes that are relevant to the Shetland RTS. The environmental objectives within these other plans and programmes have informed the development of SEA objectives (see Chapter 5). The links between the SEA objectives and the environmental objectives within other plans and programmes are identified in Appendix A. Appendix A highlights the relationships between these other environmental objectives and the Shetland RTS and SEA.

Table 2.1 lists the plans, programmes and legislation that have been identified as being of particular relevance to the RTS

Table 2.1	Other Relevant Pla	ans, Programmes	and Legislation

Local and Regional Plans and Programmes
The Shetland Local Plan (2004) The Shetland Structure Plan (2001-2016) Living Shetland Project: Local Biodiversity Action Plan (LBAP) Shetland Local Transport Strategy (2000-2003) HITRANS Regional Transport Strategy for the Highland and Islands of Scotland (2004) Shetland Community Safety Strategy (2005-2010) Shetland Access Strategy (2005) Shetland Joint Health Improvement Plan Community Cultural Strategy: A Vision for Life in Shetland (2004-2008) Orkney & Shetland Area Waste Plan
National Plans and Programmes
<ul> <li>'Seas the Opportunity' A Strategy for the Long Term Sustainability of Scotland's Coasts and Seas</li> <li>National Cycling Strategy (Department for Transport) (1996)</li> <li>Scottish Climate Change Programme (2000)</li> <li>Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2000)</li> <li>UK Biodiversity Action Plan (1994)</li> <li>National Transport Strategy (currently under development)</li> <li>National Transport Strategy Consultation - Environmental Report</li> <li>Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland</li> <li>National Waste Plan</li> <li>UK Energy White Paper: Our Energy Future – creating a low carbon economy</li> <li>National Legislation</li> </ul>
Transport (Scotland) Act 2005 Environmental Assessment (Scotland) Act 2005 Nature Conservation (Scotland) Act 2004 Road Traffic Reduction Act 1997 Wildlife and Countryside Act 1981 The Conservation (Natural Habitats & c) Regulations 1994 The Air Quality Limit Values (Scotland) Regulations 2003 Water Environment and Water Services (Scotland) Act 2003

The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 Protection of Wrecks Act 1973 Ancient Monuments and Archaeological Areas Act 1979 Land Reform (Scotland) Act 2003 Water Environment (Controlled Activities) Regulations 2005 The Pollution Prevention and Control (Scotland) Regulations 2000 International

Kyoto Protocol to the UN Framework Convention on Climate Change (1992) (1997 – not yet in force)

The EC Directive on the Conservation of Wild Birds 79/409/EEC 1979

The EC Directive on the conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC 1992

Directive 2000/60/EC establishing a framework for the community action in the field of water policy ('The Water Framework Directive')

Directive 1996/62/EC on ambient air quality and management

In addition to the above, the planning policy advice and guidance listed below has been identified as relevant to the RTS. These have a more project specific

#### **Planning Policy Guidance**

SPP 2: Economic Development SPP 3: Planning for Housing NPPG: Archaeology and Planning SPP 7: Planning and Flooding NPPG 8: Town Centres and Retailing NPPG: 9: The Provision of Roadside Facilities on Motorways and Other Trunk Roads in Passed to the Future (Historic Scotland's policy for the sustainable management of the historic environment) Memorandum of Guidance on Listed Buildings and Conservation Areas 1998 NPPG: Planning and Waste Management NPPG 11: Sport, Physical Recreation and Open Space NPPG 13: Coastal Planning NPPG 14: Natural Heritage SPP 15: Planning for Rural Development NPPG 17: Transport and Planning SPP17: Transport and Planning Maximum Parking Standards Addendum to NPPG17 NPPG 18: Planning and the Historic Environment

#### **Planning Advice Notes**

PAN 42: Archaeology – The Planning Process & Schedules Monument Procedures
PAN 46: Planning for Crime Prevention
PAN 51: Planning and Environmental Protection
PAN 52: Planning and Small Towns
PAN 56: Planning and Noise
PAN 57: Transport and Planning
PAN 58: Environmental Impact Assessment
PAN 59: Improving Town Centres
PAN 60: Planning for Natural Heritage
PAN 63: Waste Management Planning
PAN 65: Planning and Open Space
PAN 66: Best Practice Handling Planning Applications Affecting Trunk Roads (2003)
PAN 71: Conservation Area Management (2004)

PAN 73: Rural Diversification

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### Key Environmental Issues

#### 3.1 Background

When considering the environmental issues associated with transport in Shetland, it is important to put these into context. Environmental problems normally associated with transport planning do not necessarily apply to the Shetland RTS.

Shetland is over 70 miles closer to the Norwegian town of Bergen than it is to Edinburgh. Its nearest neighbour, Orkney, is 100 miles to the south. The extent of Shetland's remoteness is unique in the UK. Ferry services to Aberdeen take 12 hours in good weather and flights to the central belt of Scotland can cost up to £400. Links to the mainland are crucial to Shetland's economy yet the distance, expense and exposure to the elements makes it necessary for Shetland to be more self-sufficient than other areas of Scotland.

The archipelago that makes up the Shetland Isles encompasses over 100 islands, 15 of which are inhabited. The distance from Hermaness in the North to Sumburgh Head in the South is almost the same as that from Edinburgh to Aberdeen however the population is just 22,000.

Whilst Shetland as a whole may be viewed as remote from mainland Scotland, communities within Shetland are yet more remote. Nine islands are connected to the Shetland mainland by council ferry services. The most remote of these is Fair Isle, which lies approximately 25 miles to the south-west of Sumburgh Head.

In 2004, almost three quarters of a million passenger journeys were made on the five most commonly used ferry routes in Shetland. In addition, almost 350 thousand vehicles travelled by ferry on these routes. Air services operate similar routes although some of these are on a charter only basis. These inter-island air and sea links, whilst vital to sustaining outlying communities, can be unpredictable in poor weather.

Shetland has 900 miles of dramatic coastline, which is home to many important and rare species of plant and animal. There are also many well-preserved historic sites including Viking settlements, brochs and ancient crofts – all of which are important contributors to Shetland's strong and unique cultural identity.

Significant environmental issues of relevance to transport are likely to be those which affect communities, landscape, cultural heritage and biodiversity. Whilst 'traditional' transport-related problems will be addressed by the SEA, local air quality is of lesser significance. There are fewer than 12,000 private cars/light good vehicles in Shetland and as such vehicle movements are relatively low, therefore major congestion and pollution are not significant problems for Shetland.

#### 3.2 Identifying Environmental Issues

The identification of environmental issues provides an opportunity to focus the assessment on issues of specific importance to Shetland and of relevance to this strategy. Problems can be addressed in the development of policy for the RTS. In addition, the environmental issues have informed the development of SEA objectives which will be used to assess the effects of RTS polices.

Table 3.1 lists some of the key environmental issues of relevance to transport in Shetland. These were identified primarily through consultation with stakeholders with knowledge of historic, existing and potential future issues of concern for the environment. These views were supplemented by the review of other plans and programmes (Chapter 2) and the examination of baseline information (Chapter 4).

SEA Category	Environmental Issue	Implication for RTS / SEA
Biodiversity, Flora and Fauna	The effects on biodiversity resulting from the construction of new roads, or road widening. In some instances new roads may be over-designed to cater for the levels of local traffic	Future road construction or
	Poor design, construction and maintenance of roads has led to direct effects on biodiversity, in addition to erosion and poor roadside colonisation by vegetation	widening should be of a scale appropriate to traffic levels and should incorporate measures to protect or enhance native biodiversity. RTS could incorporate
	Inappropriate non-native plant species have been seeded in roadside verges	policies to avoid such problems
	Culverts have led to the loss of habitats associated with roadside ditches	
	Some members of the public want sections of grass road verges to be maintained as walkways	Opportunity to be addressed through a verge maintenance policy
	Road kills of certain species is of concern e.g. otters (European Protected Species) – use of signage and underpasses can reduce this	Opportunity to encourage signage
	Dredging, associated with many forms of transport links - ferry piers, bridges, etc. can have negative impacts on coastal and marine ecology	RTS may include similar projects that require dredging; the SEA will suggest policies to reduce environmental impacts
	Potential impacts of transport infrastructure and transport-related activities on marine environment including UK and European designated sites	The SEA will help reduce impacts on designated sites and biodiversity in a wider sense
	Potential for fixed links to allow pests to cross waters between islands and affect sensitive sites/species	This will be considered in the SEA
	Potential impacts of transport infrastructure provision on protected species. This is a particularly concern in coastal/marine environments (e.g. due to the provision of piers/fixed links) and on protected species such as otters, birds and cetaceans	The SEA will help reduce impacts on designated sites and biodiversity in a wider sense
	Potential negative impacts of bridges on bird migration routes	Impacts will be considered in the appraisal of options and the SEA

Table 3.1	Key Environmental Issues
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SEA Category	Environmental Issue	Implication for RTS / SEA	
	Disturbance of legally protected habitats and species due to road maintenance e.g. under the Nature Conservation (Scotland) Act 2004	Opportunities to alter maintenance regimes	
	Any impacts of transport on trees are potentially significant due to their scarcity in Shetland	Potential impacts will be addressed in the SEA	
	New and upgraded roads have been inappropriately designed by for example not following the contours of the landscape and cutting into steep slopes, leading to erosion and poor colonisation by vegetation	More attention can be given to design for future road upgrades proposed in the RTS, to reduce erosion and poor colonisation.	
	Light pollution - street lights have been placed where they are not always necessary or appropriate e.g. adjacent to new footpaths out with settlements	Opportunity to address through a street lighting policy	
	Landscape and visual impacts of transport projects through inappropriate design. For example 'hard engineering' approaches have been taken where this is not always necessary or appropriate to their setting e.g. car parks		
	Impacts of unnecessarily large roadside lay-bys	Opportunity to implement policies to create infrastructure which uses designs more appropriate to Shetland's landscape and built heritage	
andscape and	Impacts of major transport infrastructure		
Cultural Heritage	Impacts of street furniture e.g. bus stops - design sometimes inappropriate to setting; affecting natural landscapes, streetscape or the historic environment		
	Loss of structures of cultural importance – for example, historically important listed piers have been replaced In the past, rather than repaired		
	Potential for loss of or damage to listed buildings, ancient monuments or impacts on their setting		
	Impacts of roadside ditches, increasing the visual footprint of roads	To be considered in the SEA	
	Shetland has a rich archaeological heritage and there is potential for disturbance of archaeological sites, known and unknown, including their settings. Sites can be hidden due to encroachment of peat	To be addressed by the SEA and policies incorporated to reduce impacts	

SEA Category	Environmental Issue	Implication for RTS / SEA	
	Badly designed roads and poorly controlled run-off can lead to flooding of adjacent areas and erosion. In extreme cases, major landslips have occurred, blocking roads, damaging infrastructure and endangering life. Greater consideration could be given to SUDS (Sustainable Drainage Systems) for transport projects	The RTS has the potential to	
Water and Soil	Uncovered storage of road grit can pollute water bodies and land adjacent to roads, potentially conflicting with requirements of the Water Framework Directive	reduce flooding through policies that promote SUDS and better design.	
	Rock salt run-off from roads can pollute adjacent water bodies		
	Pollution of water bodies from transport activities/projects has the potential to affect designated areas		
Air Quality and Contribution to	Local air quality on Shetland is not an issue of concern. However, Significant future development around Sullom Voe could lead to cumulative impacts on local air quality	SEA monitoring can include air quality, which is measured at present	
Climate Change	Shetland's contribution to greenhouse gas emissions is influenced by its isolation and the need to transport people and goods by air or sea	CO <sub>2</sub> emissions will be considered when comparing transport options	
Vulnerability to the Effects of Climate Change	Sea-level rise associated with climate change has the potential to affect transport infrastructure in coastal locations. Storm hazard in Shetland is perhaps greater than anywhere else in the British Isles and the threat of storms is likely to increase due to climate change. The inland limit of storm-driven water is therefore likely to increase due to this combination of effects of climate change The above problem relating to the effects of climate change could be exacerbated in some areas due to the erosion of coastal sediment. There is an extremely limited supply of coastal offshore sediment to feed beaches, which carry roads, protect agricultural land and major infrastructure e.g.	Opportunity for the RTS promote new/upgraded infrastructure that is less vulnerable to the effects of climate change, by for example avoiding low-lying coastal areas and steep peat covered slopes	
	Sumburgh airport, ferry terminals and installations		

SEA Category	Environmental Issue	Implication for RTS / SEA	
	Coastal defences, some of which protect transport infrastructure, are not lasting for their predicted lifespan. In addition, the presence of coastal defences can have detrimental effects on nearby coastlines by deflecting erosion to other areas		
	Safety – upgrading of roads can increase vehicle speeds, which has safety implications for all, particularly pedestrians e.g. pony riding / children on main roads	The RTS will have a significant focus on safety, including policies to improve safety. The SEA will also test	
Population and Human Health	Inappropriately constructed straight roads encourage driving at higher speeds	impacts of the RTS on safety	
	Accessibility to health services can be a problem for outlying communities, particularly in poor weather or to those without access to private transport	The RTS will have a significant focus on accessibility, particularly for remote communities	
	Major peat landslips can cause significant damage to transport infrastructure and private property. Such landslides can be exacerbated by slope destabilisation due to inappropriately placed/designed roads and associated run-off	Through the SEA, the RTS will be assessed on its potential to cause such problems in the future	
Material Assets	New infrastructure can result in the loss of material assets e.g. agricultural land and materials from quarries and borrow pits	The RTS could promote the re-use of materials for infrastructure projects, where this is possible/appropriate	
	There is the potential for demolition of or damage to historic sites and buildings e.g. listed buildings, ancient monuments, archaeological sites, designed gardens and landscapes. In addition, there is the potential for the setting of these to be affected	Opportunity to implement policies to create infrastructure which uses designs more appropriate to Shetland's landscape and built heritage. Policies could be introduced to avoid or reduce impacts	
General Issues	Development Control - Scattered and low density character of settlements can have traffic implications e.g. requiring additional roads and creating difficulties in providing effective public transport for all which therefore encourages private car use	The RTS could promote better links with development planning and development control, however transport infrastructure will generally respond to demand, which is heavily influenced by incremental development	

SEA Category	Environmental Issue	Implication for RTS / SEA
	Environmental impacts can result from developments that do not require planning permission and/or which do not require an EIA. As such, statutory consultation is not undertaken and the effects are unlikely to be assessed and mitigated.	The SEA allows the identification of some projects that may not be subject to EIA, thereby allowing early opportunity for comment by stakeholders
	Historically there has been very limited monitoring of the environment and of the environmental effects of transport polices and projects	The SEA will devise a monitoring framework for the environmental effects
	Major development proposals could have implications for transport infrastructure and for vehicle movements e.g. Super Quarry near Sullom Voe, 500 houses, oil rig decommissioning site, major wind farm, fish farms	The appraisal of transport options/alternatives will take these into account, when determining which options/alternatives are most appropriate

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## 4 The Baseline Situation

#### 4.1 Baseline Data and the SEA Process

Environmental baseline information or data provides the basis for predicting, evaluating and monitoring the environmental effects of the RTS. The SEA predicts changes to the baseline that are likely to occur as a result of the implementation of the strategy. Baseline information also provides a starting point for monitoring the actual effects of the strategy. In addition, the review of baseline information has informed, and was informed by the identification environmental issues/problems (see Chapter 3).

A summary of the baseline data collected for this SEA is presented in Appendix C. For each SEA topic the following is provided:

- The SEA objective(s) relevant to the topic
- A brief overview of the information collected
- Gaps in the information currently held (where relevant).

#### 4.1.1 Level of Detail

For the purposes of this report the baseline information presented in Appendix C is succinct. Further information will be presented in the Environmental Report where this is required to inform the assessment of specific polices or projects (see Section 7.4).

#### 4.1.2 Changes to Baseline

Changes to the environment may result from transport-related activities but they will also be caused by other forms of human activities and natural processes that are unconnected to transport. Therefore, in undertaking the assessment it is necessary to be aware of how the 'baseline' is likely to change without implementing the RTS. The Environmental Report will therefore describe a 'do nothing' scenario, where the likely changes to the environment without implementing the RTS will be described, as far as possible given the strategic nature of the assessment.

#### 4.1.3 Baseline Data and Monitoring

Following implementation of the RTS, monitoring of impacts will be undertaken (see Section 5.2). Indicators, based on existing baseline data sources, will be defined to facilitate monitoring.

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# 5 SEA Objectives

#### 5.1 SEA Objectives

The use of SEA Objectives is a recognised way in which the potential effects on the environment of implementing a plan can be assessed. The SEA objectives are used to appraise the whole RTS, including its objectives and policies.

The term 'objective' is defined in the SEA Guidance as 'a statement of what is intended, specifying the intended direction of change'. The objectives and appraisal criteria are used to assess the effects of the RTS on the environment by assessing whether predicted changes to the baseline will have positive, negative or neutral effects on the SEA objectives.

SEA objectives were developed following the scoping workshop and took into account:

- The SEA Guidance
- Examples of objectives used for relevant plans
- Knowledge amongst stakeholders of local environmental issues and local policy
- Baseline data review

The proposed SEA objectives, shown in Table 5.1, address each of the required SEA Directive topics: biodiversity; landscape; cultural heritage; water; air; climatic factors; soil; flora; fauna; human health; population and material assets. In addition, key criteria for each objective are listed. These key criteria will be used in undertaking the assessment of RTS policies (see Section 7.3) e.g. when assessing whether a policy will 'protect maintain and enhance biodiversity', particular consideration will be given to the potential impacts on European and nationally protected sites and species.

We welcome comments on these objectives and criteria.

Ref	SEA Category	SEA Objective	Key Criteria to be Considered in the Assessment
1	Biodiversity, Flora and Fauna	Protect, maintain and enhance biodiversity	<ul> <li>European protected sites e.g. SPA</li> <li>Nationally protected sites e.g. SSSI</li> <li>Other designated sites</li> <li>Protected species</li> <li>BAP priority habitats and species</li> <li>Habitats adjacent to roads</li> </ul>
2	Landscape	Safeguard and enhance the quality and distinctiveness of the area's landscape (built and natural)	<ul> <li>Designated sites e.g. NSA (see also Cultural Heritage)</li> <li>Potentially sensitive receptors e.g. residential areas, recreation facilities, important footpaths</li> <li>Light pollution</li> </ul>

Table 5.1 Draft SEA Objectives

Ref	SEA Category	SEA Objective	Key Criteria to be Considered in the Assessment
3	Cultural Heritage	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	<ul> <li>Areas designated for importance in terms of cultural heritage e.g. Conservation Areas</li> <li>Listed Buildings</li> <li>Scheduled Ancient Monuments</li> <li>Known and unknown archaeology</li> </ul>
4	Air	Reduce air pollution	Key pollution indicators e.g. PM <sub>10</sub>
5	Climate	Reduce Shetland's contribution to climate change	<ul> <li>Overall transport-related CO<sub>2</sub> emissions</li> </ul>
6	Climate	Reduce vulnerability to the effects of climate change	<ul> <li>Flooding of transport infrastructure</li> <li>Travel disruption due to weather</li> </ul>
7	Water	Protect, maintain and enhance water quality	<ul> <li>Pollution of water bodies</li> <li>Coastal processes</li> <li>Catchment hydrology</li> </ul>
8	Population	Improve accessibility and reduce social exclusion	<ul> <li>Accessibility of public transport</li> <li>Accessibility of goods and services, including health services</li> </ul>
9	Population	Enhance access to the natural and built environment	<ul> <li>Public transport links to natural and historic environment</li> <li>Footpath network</li> </ul>
10	Human Health	Improve human health	<ul> <li>Noise and vibration</li> <li>Crime and fear of crime relating to transport</li> <li>Transport accidents</li> <li>Walking and cycling</li> </ul>
11	Material Assets	Protect land and material assets	<ul> <li>Land slips</li> <li>Private property</li> <li>Quality agricultural land</li> </ul>
12	Material Assets	Reduce, reuse, recycle and recover waste	<ul> <li>Materials used due to transport- related activity</li> <li>Potential for waste to be generated by transport-related activity</li> </ul>

#### 5.2 Indicators

The Environmental Report will set out proposals to monitor the effects of the RTS once it has been implemented. These monitoring proposals will be based on a set of indicators, which should be as closely linked as is possible to the SEA objectives.

Not all indicators are measurable and where it is not possible to accurately monitor the effects of the Shetland RTS alternative approaches may be considered e.g. periodic meetings and reporting between Council staff, statutory consultees and other local organisations to collate information on the effects of transport-related activities in Shetland.

Table 5.2 contains a set of draft indicators. We welcome any comments or suggestions regarding these.

Ref	SEA Category	SEA Objective	Indicators		
1	Biodiversity, Flora and Fauna	Protect, maintain and enhance biodiversity	<ul> <li>Reported damage to designated sites</li> <li>Reported damage/disturbance to habitats and species</li> <li>Achievement of BAP targets</li> <li>Number of habitats created, better managed or restored due to transport</li> </ul>		
2	Landscape	Safeguard and enhance the quality and distinctiveness of the area's landscape (built and natural)	<ul> <li>Areas where transport has had significant impact on landscape</li> <li>Total land take due to transport development</li> </ul>		
3	Cultural Heritage	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	<ul> <li>Number of applications for Listed Building Consent (inc demolitions) and Scheduled Monument Consent associated with transport projects</li> </ul>		
4	Air	Reduce air pollution	<ul> <li>Numbers of private vehicles</li> <li>Levels of key pollutants</li> </ul>		
5	Climate	Reduce Shetland's contribution to climate change	<ul> <li>Transport-related CO<sub>2</sub> emissions</li> </ul>		
6	Climate	Reduce vulnerability to the effects of climate change e.g. flooding, disruption to travel by extreme weather, etc.	<ul> <li>% of new road length incorporating SUDS features</li> <li>Weather-related damage to transport infrastructure</li> <li>Weather-related disruption to travel e.g. flooding and flight cancellation</li> </ul>		
7	Water	Protect, maintain and enhance water quality	<ul> <li>Number of transport-related SUDS</li> <li>Flood risk</li> <li>Quality of water bodies</li> </ul>		
8	Population	Improve accessibility and reduce social exclusion	<ul> <li>Average distance to public transport e.g. bus stop</li> <li>Average distance to local services</li> </ul>		
9	Population	Enhance access to the natural and built environment	<ul> <li>Visitor numbers to sites of natural and historic interest</li> </ul>		
10	Human Health	Improve human health	<ul> <li>Complaints due to noise/vibration</li> <li>Crime incidents and fear of transport-related crime</li> <li>Road traffic accidents</li> <li>Walking and cycling stats</li> </ul>		
11	Material Assets	Protect land and material assets	<ul> <li>Incidents of damage to private property, in relation to transport</li> <li>Agricultural land lost to transport development</li> </ul>		
12	Material Assets	Reduce, reuse, recycle and recover waste	<ul> <li>Transport-related waste to landfill</li> <li>Transport-related waste reused/recycled</li> </ul>		

Table 5.2 Draft Indicators

# 6 Testing the RTS Objectives

This stage of the SEA Scoping process involves testing the Shetland RTS objectives against the SEA objectives. The purpose of this is to confirm the compatibility of the two sets of objectives and to highlight any potential areas of conflict. If appropriate, the RTS objectives could be amended to remove conflicts, therefore reducing potentially adverse environmental effects. Where it is not appropriate to make modifications at this stage, mitigation measures can be considered during the assessment phase of the SEA and modifications made to the RTS policies as appropriate.

The RTS objectives are set out in Table 6.1 and are listed Appendix D under the relevant national transport objectives. The Shetland context for these RTS objectives is also explained. The test was undertaken using the matrix presented in Table 6.2. Comments regarding incompatibilities are presented in the matrix itself.

Generally, incompatibilities occur where the RTS objectives are likely to promote projects that will have physical effects on the environment. Due to the nature of a transport strategy, which is likely to support major projects, incompatibilities with environmental objectives are inevitable. The high-level nature of the RTS objectives, the implications of which are not currently known, and their consistency with national objectives, means that they required no amendments at this stage. Amendments to specific policies and proposals in the RTS may be identified during the assessment process when the effects of specific policies and projects are more fully understood.

Headline Subject (based on National Transport Objectives)	RTS Objectives
Economy	<ul> <li>Work to ensure ongoing reliability of Shetland's transport networks.</li> <li>Work to ensure that external and inter-island ferry and air links, are affordable to all (passengers, livestock and freight)</li> <li>Work to improve the robustness of the transport system (public and private) against significant potential increases in fuel prices</li> <li>Support measures that efficiently address current and anticipated capacity constraints on the islands' transport links</li> <li>Deliver a transport system that is economically efficient, maximising the overall benefits for Shetland for a given sum of investment.</li> <li>Work to optimise the wider economic benefits of the external links for Shetland</li> <li>Work to achieve beneficial service development and market growth on Shetland's public transport networks.</li> </ul>
Social Inclusion and	Work to ensure continued operation and availability of external, inter-island and internal lifeline transport links to specified service levels Support measures to ensure access for all on the transport network

Table 6.1 RTS Objectives

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Headline Subject (based on National Transport Objectives)	RTS Objectives
Accessibility	Seek to ensure that the timings and frequency of internal and external passenger services take account of the specific requirements of those accessing essential health and welfare services in Shetland and on the Scottish Mainland Maximise accessibility (frequency, operating day, service delivery options) to and from each community within constraints of funding, demand, technical and operational feasibility, and taking account of convenient access to
Environmental	essential services, and the social and economic well-being of the community Work to improve accessibility for vulnerable groups to essential services Reduce carbon dioxide and greenhouse gas emissions, and the consumption
Protection	of non-renewable resources arising from transport, travel and infrastructure in control of the Council and its Partners
	Encourage and facilitate reductions in carbon dioxide and greenhouse gas emissions, and the consumption of non-renewable resources arising from transport and travel in control of private users and other operators.
	Encourage and facilitate walking and cycling for short trips Minimise impacts of transport and associated infrastructure on the coastal and marine environments
	Reduce impacts of transport and transport infrastructure on landscape, the historic environment and biodiversity
	Support species native to Shetland through roadside Biodiversity Action Plan and appropriate management and maintenance of road network
	Seek to minimise the adverse affects on natural drainage systems from roads run-off
	Seek to reduce the vulnerability of transport / infrastructure to climate change
Safety	Work to ensure compliance with all relevant safety and security requirements
	Encourage the elimination of drink driving
	Encourage improvement in seat belt compliance
	Implement measures to reduce fatalities, particularly in single vehicle accidents
	Discourage excessive and inappropriate vehicle speeds
Integration	Deliver effective and integrated public transport links at Shetland's principal passenger transport terminals
	Facilitate effective transport integration opportunities at Shetland's principal passenger transport terminals
	opportunities at Shetland's principal Mainland ferry terminals and airports
	Maintain integrated freight facilities at each relevant ferry terminal
	Deliver integrated and multi-modal ticketing across Shetland's public transport network
	Provide effective journey planning information for visitors and residents for trips within, to and from Shetland

The criteria used to test the objectives of the RTS against the SEA objectives comprise:

- ✓ Objectives are compatible
- Objectives have the potential to conflict
- Not directly compatible or incompatible

Assumption: the 'Integration' and 'Safety' objectives do not require significant physical development

(see Table 6.1 for full wording of RTS objectives)							
<b>SEA Objective</b> (see Chapter 5)	A. Economic Growth	B. Social Inclusion	C. Environment	D. Safety	E. Integration	<b>Comments</b> *Letters (e.g. A and B) below refer to the <i>RTS</i> objectives	
Protect, maintain and enhance biodiversity	×	×	~	-	-	<ul> <li>A. Biodiversity may be negatively affected by the provision of new infrastructure</li> <li>B. Promotion of social inclusion/accessibility may result in major developments, such as fixed links or upgraded/new ferry piers, with potential for significant impacts</li> </ul>	
Safeguard and enhance the quality and distinctiveness of the area's landscape (built and natural)	×	×	~	-	-	A. The built and natural environment both have the potential to be negatively affected by the provision of new infrastructure B. Promotion of social inclusion/accessibility may result in major developments, such as fixed links or upgraded/new ferry piers, with potential for significant impacts	
Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	×	×	~	-	-	A. Historic and culturally important features may be lost due to provision of new infrastructure, or their setting may be negatively affected B. Promotion of social inclusion/accessibility may result in major developments, such as fixed links or upgraded/new ferry piers, with potential for significant impacts	
Reduce air pollution	-	×/-	~	-	-	B. Increased numbers of vehicle movements will increase overall emissions, however in the context of Shetland this is likely to be negligible	
Reduce Shetland's contribution to climate change	×	×/-	~	-	-	<ul> <li>A. Economic growth may lead to increased external and internal transport activity and increase CO<sub>2</sub> emissions.</li> <li>B. Increased numbers of vehicle movements will increase overall emissions, however in the context of Shetland this is likely to be negligible</li> </ul>	
Reduce vulnerability to the effects of climate change	~	-	~	-	-		
Protect, maintain and enhance water quality	×	×	~	-	-	A. Physical development can affect marine and freshwater environments, coastal environments can be particularly sensitive to major infrastructure	

### Table 6.2 Testing RTS Objectives

Improve accessibility and reduce social exclusion	✓	~	V	-	~	
Enhance access to the natural and built environment	✓	√	~	-	~	
Improve human health	-	~	~	~	-	
Protect land and material assets	*	-	~	-	-	A. There is the potential for land or other material assets to be lost to new infrastructure
Reduce, reuse, recycle and recover waste	-	-	~	-	-	

## Approach to Assessing Alternatives and the Effects of the RTS

#### 7.1 Introduction

This chapter sets out the methods proposed to assess the effects of the Shetland RTS.

During the development of the RTS, a number of alternative strategic scenarios will be considered. These scenarios will comprise packages of possible transport schemes relating to, for example, road upgrades and public transport measures.

It is proposed that the alternative strategic scenarios are initially appraised using the STAG1 methodology. At a strategic level, this will assess the impact of the scenarios on the RTS objectives, implementability criteria, and also impacts on economy, environment, safety, integration and accessibility.

The results of this appraisal will then give a steer to the most likely preferred package of measures.

Due to the potentially significant costs and impacts of the range of schemes being considered within each strategic scenario, it is also necessary to consider in more detail the individual schemes that make up each scenario. This also affords the opportunity to mix and match individual schemes from different strategic scenarios, in order to identify the most advantageous preferred package.

Again, each of the individual schemes will be appraised using the STAG1 approach, highlighting performance against RTS objectives, implementability criteria, and also impacts on economy, environment, safety, accessibility and integration. The STAG1 process will be used to 'sieve' these transport options and during this process, some options will be deemed inappropriate and will be dropped. Others however, will be packaged together.

When the preferred option is identified it will then be appraised in greater detail. This will comprise a detailed environmental assessment of policies (SEA) and an expanded STAG1 appraisal of the major projects included within the preferred option.

The remainder of this chapter focuses on the methodology for the environmental appraisal which falls within SEA. It also highlights how and where the STAG and SEA processes will be applied.

#### 7.2 Strategic Alternative Scenarios

The appraisal of strategic alternatives will inform the development of individual of transport schemes. Each scenario will include transport options for external, internal and inter-island links and will be based on different possibilities for funding of capital expenditure, and also different approaches to the provision of accessibility. The five scenarios, including a 'do minimum' option, are summarised in Table 7.1.

The overall impacts of the five scenarios will be appraised using STAG1 which will identify the overall impacts of each. In addition, each scenario will be subject to an environmental appraisal as part of the SEA. This will be a relatively high-level appraisal, using the SEA objectives (and assessment criteria) to identify potential environmental impacts.

As part of the STAG1 process, there will also be appraisals to determine the extent to which each scenario is likely to meet the objectives of the RTS (see Appendix F).

The appraisals using RTS objectives, STAG1 and SEA all contribute to the identification of the preferred option.

Option	Overview
'Do Minimum'	LTS 2000 rolled forward - a continuation of current spending patterns.
Cut Backs	Options designed to cut cost e.g. if there were reduced revenue or capital finances available.
Spend to Save	Development of infrastructure and services in the short term in order to save finances in the longer term e.g. infers the availability of external capital, but reduced revenue. Could also include measures to generate income.
Comfort	An improvement of current levels of service and hence improved levels of rural accessibility based on increasing levels of revenue expenditure. Built on the premise of that the RTP would receive more revenue, but no extra capital.
Aspirational	A scenario including all of the potential strategies and options that the RTP would wish to implement if there were no financial constraints i.e. reliant on the RTP receiving more revenue and more external capital.

#### Table 7.1 Strategic Alternative Scenarios

#### 7.3 Appraisal of Transport Options

As described above, the various transport options will be appraised using STAG1 which will identify impacts on economy, environment, safety, accessibility and integration. Each option will be appraised using the matrix presented in Appendix F. The matrix is based on RTS objectives and the STAG criteria.

The results of these appraisals of will be used to 'sieve' options, helping to identify the most advantageous. The options that will be appraised will relate to one of the three themes: external links, inter-island links or internal links. Options for **external** links include the following categories:

- Air links Passenger
- Air links Freight
- Sea links UK Passenger
- Sea links UK Freight
- Sea links European

For **inter-island** links there is a hierarchy of dependencies. A sequential appraisal is therefore required to determine:

- Fixed links policy yes or no
- Fixed links how many, where and phasing
- Consequential ferry and terminal replacement requirements
- Decisions related to the small isles unaffected by fixed links
- Decisions related to reliability improvements at Fetlar and Skerries
- Minor operational decisions relating to the ferry service
- Decisions related to the air service different service levels, different mainland airport options

Options for each of the scenarios for internal links will be split into:

- Roads discrete schemes
- Public transport
- Some options will not specify specific schemes, they will set a policy context regarding how schemes will be prioritised
- Possibility of a 'transport brokerage' option, with central point to call to find out what forms of transport are in the area at the desired time

 Walking, cycling, and travel awareness – as with public transport, this will not specify specific schemes but will set a policy context i.e. how schemes will be prioritised

#### 7.4 Preferred Option – The Draft RTS

Following the appraisal of strategic alternative scenarios, and individual schemes, a preferred option will be identified and a draft RTS prepared. The draft RTS will include a set of policies, which will range from general aspirations (e.g. improving safety on roads) to promoting specific projects (e.g. a road improvement at a given location). The projects will have been selected following the STAG1 appraisal described in Section 7.3.

The draft RTS will be subject to appraisal at a greater level of detail. The major projects promoted by the RTS for example, ferry terminal upgrades or fixed links, will be appraised using an expanded STAG1 approach. The environmental aspect of this will address specific localised effects of individual projects and as a result, more detailed environmental baseline information is likely to be required. It is possible that some information may not be available regarding the exact location and design of some projects. In such cases, predicted impacts will be based on certain assumptions. It should be noted that this more detailed project level appraisal is not a replacement for Environmental Impact Assessment (EIA). EIA is likely to be required for major projects with likely significant environmental effects.

All of the policies within the RTS will be subject to an environmental assessment as part of the SEA. These will be appraised using the SEA objectives and assessment criteria. The remainder of this chapter sets out the proposed methodology for the environmental appraisal of these policies.

#### 7.4.1 Appraising the Effects of the RTS and its Polices

The purpose of this stage of the SEA process is to predict and evaluate the environmental effects of the policies presented in the RTS. The appraisal process developed for the SEA of the Shetland RTS involves the following phases:

- Predicting the potential effects of implementing each of the RTS policies on the environment
- Determining the importance of the receptors
- Evaluating the significance of the effects of implementing each of the RTS policies
- Considering mitigation measures
- Appraising of potential cumulative impacts

#### 7.4.2 Predicting the Effects of the draft RTS

The first phase in the assessment of the significance of the environmental effects of the RTS is to predict what effects are likely to occur.

The prediction of the effects of the RTS against the SEA objectives (see Chapter 5) and identifies how the baseline situation is likely to change following implementation of the RTS policies. The assessment therefore considers whether predicted changes to the baseline will affect the achievability of the SEA objectives.

The predicted changes in the baseline that would arise from implementation of the RTS are then described in terms of the magnitude of the effects and direction of change. Significance is determined by considering the importance of the receptor in relation to the magnitude of change on that receptor and taking account of best practice guidance on impact evaluation. In undertaking the assessment, reference will be made to the key criteria for each SEA objective listed in Table 5.1. Further explanation of these terms and how significance will be determined is described below.

#### 7.4.3 Effect Magnitude

For the purpose of this SEA, the magnitude of the predicted effect will be measured as negligible, minor, moderate or major. Magnitude is a combined measure of the geographical scale of the effect; the probability of the effect, the duration of the effect; whether changes in the baseline are permanent or temporary, reversible or irreversible, direct or indirect; the frequency of the effects and the rate of change. Direction of change is measured as positive, negative or neutral. The following is a summary of how the magnitude of the predicted effect will be determined:

Magnitude	Description
Negligible	No effect on the baseline. Effects would be one or more of the following: possible, short term, indirect
Minor	Slight change in the baseline. Effects would be one or more of the following: likely, short term, direct or indirect
Moderate	Identifiable change in the baseline. Effects would be one or more of the following: definite, medium term, direct or indirect, reversible
Major	Substantial identifiable change in the baseline. Effects would be one or more of the following: definite, long term, direct, irreversible

The terms used to describe effect magnitude, above, relate to the following descriptions of the predicted effects that the RTS may potentially have on the environment.

Predicted Effect	Description
Probability	Definite Likely Possible
Geographical Scale	Community or Local (settlement / town) Regional (Shetland) National (UK) European or International
Frequency	Frequent Rare

#### 7.4.4 Importance of the Receptors

To enable an evaluation of the significance of the effects of the RTS, the importance of receptors must be identified. The key criteria linked to the SEA objectives are primarily based on specific receptors found on Shetland. The following criteria have been developed to describe the importance of the receptors.

Importance of Receptors	Description
Low	No statutory recognition / designation, not vulnerable or sensitive to change
Medium	Local or regional recognition / designation, sensitive to change
High	International or national statutory recognition / designation, features with legal protection, receptors vulnerable or highly sensitive to change

#### 7.4.5 Evaluating the Effects of the RTS (Significance)

The significance of effects will depend on the magnitude of the effect in relation to the importance of the receptors. The following matrix has been developed to determine the significance of the effects that the RTS policies would have on the environment.

Importance of	Magnitude			
the Receiving Environment	Negligible	Minor	Moderate	Major
Low	Not Significant	Not Significant	Not Significant	Significant
Medium	Not Significant	Not Significant	Significant	Highly Significant
High	Not Significant	Significant	Highly Significant	Highly Significant

#### 7.4.6 Presenting the Results of the Assessment

It is important to consider what the findings of the assessment are to be used for. The Environmental Report is prepared for public consultation and it will therefore be clear and understandable for the lay-reader.

The matrix presented in Appendix E shows how the results will be presented. The completed matrix will be presented as an Appendix to the Environmental Report with key findings summarised within the text of the main body of the report. The following key has been used in the example assessment matrix to illustrate the results of the prediction of the effects that implementation of the RTS would have on the environment.

Description of Magnitude		
-	Negligible level of magnitude	
Min (+ve or –ve)	Minor level of magnitude	
Mod (+ve or -ve)	Moderate level of magnitude	
Maj (+ve or –ve)	Major level of magnitude	

The following symbols are used to illustrate the evaluation (significance) of the effects of the implementation of the RTS (see Section 7.4.5 for description of significance).

Symbol	Meaning
$\checkmark\checkmark$	The policy will have a highly significant, positive effect
~	The policy will have a significant, positive effect
?	There is uncertainty over the effect
•	The effect of the policy is positive but not significant
0	The effect of the policy is negative but not significant
-	There is no effect/ it is not applicable
*	The policy will have a significant, negative effect
**	The policy will have a highly significant, negative effect
D	Depends on implementation of policy

#### 7.4.7 Mitigation Measures

Mitigation measures will be developed to avoid, reduce remedy or compensate negative effects and to enhance (where appropriate) positive effects, that the implementation of the RTS may have on the environment. Opportunities for environmental enhancements may also be identified. The recommendations for mitigation may include both proactive measures e.g. actions taken prior to implementation of the RTS such as amendments to policies, and/or reactive measures e.g. actions to be taken following implementation of RTS such as technical measures to reduce impacts. Recommendations for mitigation may include:

- Changes to the RTS as a whole
- Deletion or refinement of policies or proposals
- Addition of new policies or proposals
- Refinements to policy criteria to enhance positive effects or avoid, reduce, or offset negative effects
- Technical measures to be applied during the implementation stage e.g. buffer zones, application of design principles
- Identification of areas (projects) where an Environmental Impact Assessment (EIA) or Appropriate Assessment may be necessary
- Recommendations for changes to other plans and programmes

Mitigation measures will be set out in detail in the Environmental Report.

#### 7.4.8 Cumulative Impacts

The SEA will consider the cumulative and synergistic effects that may result from the implementation of the RTS. Cumulative effects may arise where the effects of two or more actions combine to create a greater effect than a single proposal on a particular receptor (e.g. sites of ecological interest, the landscape). In some instances the environmental effects of individual actions may be insignificant when considered in isolation (e.g.  $CO_2$  emissions) but the combined effects of several actions in the plan may have a significant effect.

In undertaking the assessment of cumulative effects, the SEA will focus on the key environmental topics e.g. landscape, heritage, water etc. The combined effects on each of these key issues will be identified, as far as possible given available information. For example, the total effects of the RTS on biodiversity will be considered for Shetland as a whole, and where possible, for specific areas where more than one transport-related activity will take place.

#### 7.4.9 Assumptions

The SEA may take into consideration a number of assumptions on the delivery and implementation of the RTS. For example, a proposed new ferry terminal may be assumed to be in a particular location and its predicted impacts will be based on this assumption. All assumptions will be clearly set out in the Environmental Report.

A qualitative approach will be taken to predicting effects for each environmental topic using the baseline information presented in Appendix C. There will be no quantified prediction of effects as part of the SEA policy appraisal, for example no traffic modelling will be undertaken. However, the expanded STAG1 appraisal of major projects (see Section 7.4) will be at a greater level of detail. Additional baseline data will be collected where appropriate and part of this appraisal will be based on quantified predictions of effects. The results of this appraisal will be summarised in the Environmental Report.

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## 8 SEA Framework – Next Steps

#### Next Steps

This section states the proposed approach to the remaining stages of the SEA. The assessment will be undertaken in parallel to and close liaison with the development of the draft Shetland RTS. Remaining tasks required to complete the SEA are presented in Table 8.1.

Table 8.1	Next Steps
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Task	Description
Task B3: Predict the potential effects if the draft RTS	Prediction of how the proposed RTS will change the baseline situation Assessment of the scale and duration of the change Assessment of whether the change is direct or indirect Assessment of potential for cumulative effects associated with implementation of the RTS, either with time or associated with other strategic actions / development
Task B4: Evaluate the significance of these effects and the effects of strategic alternatives	Analysis of the significance of predicted environmental effects of the RTS Predict and evaluate the significance of environmental effects of implementing each strategic alternative Suggest ways to mitigate effects of strategic alternatives Select the preferred option and provide information to support the selection
Task B5: Mitigate negative effects, maximise positive effects	Where significant adverse effects are identified, make recommendations to modify the proposals to reduce / prevent the adverse effect Make recommendations to enhance environmental benefits, even if adverse effects were not identified
Task B6: Develop proposals to monitor the effects of the RTS	Production of a monitoring framework which will contain: Suggestions for monitoring the effects of the implementing the RTS Recommendations for updating and reviewing the baseline data to ensure that the effects of the RTS can be monitored effectively Recommendations for addressing 'adverse' effects identified during monitoring Recommendations for incorporating the results of the monitoring into future strategies
Task C1: Prepare Environmental Report	See Section 8.2 (below)
Task D1: Consult on the RTS and Environmental Report	Consult the public, community groups, authorities with environmental responsibilities and other local stakeholders on the RTS and Environmental Report
Tasks D2 and D3: Assess significant changes required and provide information regarding decision- making	Consider comments from public consultation and make changes to RTS where appropriate Produce Post-Adoption Statement, containing details of how the findings of the RTS and comments from public consultation on the Environmental Report have been addressed

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Task	Description
Task E1 and E2: Develop aims and methods for monitoring and Respond to adverse effects	Implement Task B6, with potential amendments from public consultation

#### 8.2 Structure of the Environmental Report

The Environmental Report is likely to be structured as follows:

- Non-technical Summary
- Introduction
- Relevant Plan, Programmes & Objectives
- Key Environmental Issues
- SEA Objectives
- The Baseline Situation
- Testing the RTS objectives
- SEA Methodology
- Assessing the Effects of the RTS
- Assessment of Effects of Alternatives
- Incorporating the Results of the SEA and Scoping responses in to the RTS
- Monitoring Framework

#### 8.3 Proposed Consultation Period for the Environmental Report and Draft RTS

A period of 8 weeks is proposed for public consultation on the draft Shetland RTS and accompanying Environmental Report. Following this, a Post-Adoption Statement will be produced, which will provide details of how the findings of the SEA and consultation comments have been taken into account in the Final RTS.

Appendix A - Other Relevant Plans and Programmes

Appendix B - SEA Workshop Attendees

Appendix C - The Baseline Situation

Appendix D - RTS Objectives

Appendix E - Example Assessment Matrix

Appendix F - Option Appraisal Framework

Name of Plan / Programme	Main Requirements of Environmental Objectives	Where addressed by this SEA	Relationship with RTS		
Local and Regional Plans and Programmes					
The Shetland Local Plan and The Shetland Structure Plan (2001-2016)	<ul> <li>To protect, sustain and enhance Shetland's natural resources and cultural heritage for future generations to enjoy and ensure that new development contributes to environmental quality</li> <li>To ensure the sustainable use, development and management of the coastal area</li> <li>To encourage the adequate provision of water supplies and drainage for all new developments and to protect and enhance the quality of Shetland's marine and freshwater resources</li> <li>To promote sustainable waste management and ensure the efficient, safe and clean collection, storage, treatment and disposal of waste for the whole of Shetland</li> <li>To promote the sustainable and efficient use of energy resources to maximise social, environmental and economic benefit within Shetland</li> <li>To conserve Shetland's aggregate resources and mineral deposits and ensure that, where possible, the Island's needs can be met using local resources; and to encourage commercial extraction in suitable locations</li> <li>To deliver an integrated transport system, that meets the needs of Shetland people and seeks to minimise impact on the environment</li> </ul>	SEA objectives 1, 2, 3, 4, 5, 6, 7, 11, 12	The RTS will address transport requirements which are influenced to a large part by the Shetland development plans, particularly patterns of residential development. Development Plans also contain transport policies. Many of the environmental objectives within the development plans are addressed either directly as RTS objectives, or as SEA objectives, used to assess the RTS.		
Living Shetland Project: Local Biodiversity Action Plan (LBAP)	<ul> <li>Conservation and restoration of habitats and species</li> </ul>	SEA objective 1	RTS has potential for significant negative effects on biodiversity through major projects and		

### Appendix A Other Relevant Plans, Programmes and Environmental Objectives

			for enhancements through maintenance regimes
Shetland Local Transport Strategy (2000-2003)	<ul> <li>Sustain the economy of Shetland through maintaining an appropriate level of accessibility by road, sea and air, both for internal and external transport.</li> <li>Reduce the need for travel through decentralisation of development opportunities, thereby reducing commuting</li> <li>Improve and enhance access to Lerwick town centre and all other existing settlements by all forms of transport and provide for appropriate levels of car parking</li> <li>Improve facilities for disabled access.</li> <li>Develop public transport corridors and promote innovative and flexible public transport usage</li> <li>Promote awareness of travel options in order to limit traffic growth</li> <li>Improve environmental conditions by promoting traffic calming measures that increase the safety of all road users.</li> <li>To maintain the asset and make improvements to the road network in order to support gains in safety, environmental, accessibility, integration or economic terms</li> <li>Maximise facilities for walking and cycling as an alternative means of transport</li> </ul>	To be superseded by RTS. Some aspects also addressed by SEA objectives 8, 10	To be superseded by Shetland RTS.
HIIRANS Regional Transport Strategy for the Highland and Islands of Scotland (2004)	<ul> <li>We want to see a reduction in costs to the users of the transport network and reduced costs in the movement of goods. Cost of transport is one of the most pressing concerns of communities and businesses in the region because of the long distances to be travelled.</li> <li>We want to improve journey times by investment in better infrastructure particularly roads, public transport vehicles and</li> </ul>	SEA objectives 8	To be superseded by Shetland RTS.
	<ul> <li>vessels, and the rail network.</li> <li>Over the strategy period modernising the road network will be a key priority.</li> <li>We want to improve integration in the public transport system to increase choice, reduce delays and waiting periods, and make public transport more attractive. We also want to increase the choice of destinations provided by public transport particularly for movements to centres outside the Region. We want to improve the frequency and flexibility of public transport particularly in rural areas and in the external links to centres outside the region. Developing the region's air service network will be a key priority.</li> </ul>		
--------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------	---------------------------------------
Shetland	<ul> <li>Crime and fear of crime: To</li> </ul>	SEA	The RTS will
Community	reassure individuals by	objective 10	address road safety,
(2005-2010)	communities		aims of this strategy
(2005-2010) Shetland Access	<ul> <li>communities</li> <li>Young people: To reduce children and young peoples' experiences of crime and increase their personal safety (by becoming risk aware)</li> <li>Road safety: To make Shetland's roads safer for everyone</li> <li>Water safety: To increase awareness, within the community, of the potential dangers at sea and on the coastline of what measures can be taken to minimise the risks</li> <li>Access for disabled people: The Council will</li> </ul>	SEA objectives 8	aims of this strategy The RTS will
Strategy	people: The Council will	objectives 8	address some of the
(2005)	projects are compliant with	and 9	out in this strategy
	the Disability Discrimination		est in the ordiogy
	Act 1995		
	will establish and support the		
	work of a Local Access		
	Forum		
	Code: The Council will work		
	with SNH in the promotion of		
	the Scottish Outdoor Access		
	Code. In developing access	1	

	<ul> <li>opportunities, consideration will be given to how the Code can assist in visitor management</li> <li>Paths for Health: The Council and its partners will develop a range of Paths for Health Leaflets for each Community Council area based around the major settlements</li> <li>Route Improvements: The Council and its partners will audit and assess the promoted routes in Shetland and will work with communities and landowners to create better access along Shetland's coast and the other promoted routes</li> <li>Development of Long Distance Routes: The development of nationally promoted, locally managed long distance routes that are of high quality, is a medium to long-term goal</li> </ul>		
Shetland Joint Health Improvement Plan	<ul> <li>Reduce Obesity (Promote a "Walking Bus" or similar healthy transportation to schools to improve exercise levels, reduce pollution and improve road safety around schools - pursued through Health Promoting Schools and active schools programme)</li> </ul>	SEA objective 10	RTS has the potential to affect walking and cycling, though provision of infrastructure and promotion.
Shetland Cultural Strategy: A Vision for Life in Shetland (2004-2008)	<ul> <li>Access, participation and potential: Encourage active and participative lifestyles, equality of opportunity, personal and community development through increased access to and participation in the broadest range of cultural activities throughout Shetland, particularly for people who may be excluded</li> <li>Creativity and heritage: Celebrate, promote and invest in the islands' distinctive creativity, diverse culture, heritage and environment and promote these within Shetland and to the wider world</li> <li>Learning, economy and regeneration: Contribute to the regeneration of</li> </ul>	SEA objectives 3 and 9	RTS has the potential to improve accessibility and access to the natural/built/historic environment

Orkney & Shetland Area Waste Plan	<ul> <li>Shetland's quality of life, image and economy through the strategic and creative use of human, physical, geographic and financial resources</li> <li>Reduce, reuse, recycle and recover waste</li> </ul>	SEA objective 12	Transport projects can potentially generate large amounts of waste. RTS has the potential to create
			policies to reuse materials and consider full life cycle impacts when choosing materials
National Plans and	d Programmes		
'Seas the Opportunity' A Strategy for the Long Term Sustainability of Scotland's Coasts and Seas	<ul> <li>Objectives</li> <li>To promote wider public awareness, understanding and appreciation of the value of the marine and coastal environments and pressures on them</li> <li>To enhance and conserve the overall quality of our coasts and seas, their natural processes and their biodiversity</li> <li>To integrate environmental and biodiversity considerations into the management of marine related activities</li> <li>To identify means of working with natural processes to protect against coastal flooding and to maintain inter-tidal and coastal habitats of importance for biodiversity</li> <li>To understand the cumulative effects of activities in the marine and coastal areas</li> </ul>	SEA objectives 1, 2 and 7	Major projects and transport-related activities promoted by the RTS have the potential to negatively affect the coastal and marine environment.
National Cycling Strategy (Department for Transport) (1996)	<ul> <li>Increase cycle use</li> <li>Achieve convenient cycle access to key and major destinations and provide cycle parking facilities at these destinations.</li> <li>Improve cycle safety and reduce cycle theft by</li> </ul>	SEA objective 10	RTS has potential to help contribute to cycling objectives. Where appropriate, measures will be taken to do this.

Spottich Climate	<ul> <li>improving security and recovery.</li> <li>Provide increased cycle use within all local highways and traffic management schemes</li> <li>Design safe and convenient cycle use of the road network</li> <li>Reallocate road spacing to cycling.</li> <li>Raise awareness, expertise and status amongst transport providers, service providers, employers, potential cyclists and other road users.</li> <li>Encourage and enable cycling amongst school children, and encourage cycle use for business trips.</li> <li>Unlock financial resources to meet the strategy objectives.</li> <li>To make the best use of existing infrastructure and resources and to integrate cycling into other programmes.</li> <li>Progress the national cycling strategy and monitor the results of the strategy.</li> </ul>		Moccurror within the
Change Programme (2000)	<ul> <li>To improve business use of energy, use renewable sources of electricity, cut emissions from the transport sector, continue cutting emissions from agriculture, improve energy efficiency and to ensure the public sector takes a leading role for example by developing green travel plans.</li> </ul>	objective 5	RTS will have the potential to affect transport movements and therefore overall $CO_2$ emissions. SEA will assess impacts on $CO_2$ emissions.
Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2000)	<ul> <li>Plans to improve and protect ambient air quality in the UK, to protect people's health and the environment without unacceptable economic or social costs. Details of national air quality standards and objectives for nine pollutants.</li> </ul>	SEA objective 4	Transport has implications for air quality however in Shetland this is unlikely to be a significant problem. Impacts are predicted through the SEA and air quality is monitored by SIC
UK Biodiversity Action Plan (1994) and Scotland's Biodiversity: It's in	<ul> <li>Conservation of habitats and species</li> <li>Outlines a number of actions with</li> </ul>	SEA objective 1	RTS has potential for significant negative effects on biodiversity through major projects and for enhancements

Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland	the overall aim of conserving biodiversity for the health, enjoyment and well being of the people of Scotland now and in the future		through e.g. maintenance regimes. The SEA will assess effects with the intention of avoiding/mitigating impacts.
National Transport Strategy	Currently under development	NA	NÁ
National Transport Strategy SEA Environmental Report	<ul> <li>To conserve biodiversity at all levels and accord to the protection of statutory nature conservation sites</li> <li>To improve the living environment for all communities, particularly through improved access to services and opportunities</li> <li>To promote the health of the human population with improved air quality, improved access to facilities and greater opportunity for engagement in physical activity</li> <li>To safeguard the quantity and quality of the soil resource</li> <li>To reduce the impact the quantity and quality of the water environment resulting from transport infrastructure.</li> <li>To improve air quality through reducing emissions and pollution</li> <li>To reduce energy consumption and CO<sub>2</sub> emissions and the associated impacts of climate change (e.g. flooding)</li> <li>To manage, maintain and promote efficient use of the existing transport infrastructure and the efficient use of resources in the development of new infrastructure.</li> <li>To safeguard the features of the historic environment</li> <li>To safeguard the character, diversity and unique qualities of the landscape</li> <li>To limit noise related nuisances from operation of the transport system and development of new</li> </ul>	SEA objective 1 SEA objective 8 SEA objectives 10 and 4 SEA objective 11 SEA objective 7 SEA objective 4 SEA objective 5 and 6 SEA objective 3 SEA objective 2 SEA objective 2 SEA objective 2 SEA objective 10	Informs this SEA

	infrastructure		
National Waste Plan	<ul> <li>To increase the amount of waste collected by local authorities that is recycled</li> </ul>	SEA objective 12	Transport projects can potentially generate large amounts of waste. RTS has the potential to create policies to reuse materials and consider full life cycle impacts when choosing materials
UK Energy White Paper: Our Energy Future – creating a low carbon economy	<ul> <li>Cut the UK's carbon dioxide emissions - the main contributor to global warming - by some 60% by about 2050 with real progress by 2020</li> <li>Maintain the reliability of energy supplies</li> <li>Promote competitive markets in the UK and beyond, helping to raise the rate of sustainable economic growth and to improve our productivity</li> <li>Ensure that every home is adequately and affordably heated</li> </ul>	SEA objective 5	Transport is a significant contributor of $CO_2$ and the RTS will influence overall emissions. Policies can be developed to reduce emissions and the SEA will assess effects on $CO_2$ output
National Legislation	on		
Transport (Scotland) Act 2005	<ul> <li>Proposals for development of Regional Transport Partnerships, Regional and National Transport Strategies</li> <li>Enables a national concessionary scheme</li> <li>Procedures for tackling road works</li> </ul>	The Shetland RTS is required by this legislation. Relevant SEA objective 8.	Requirement to produce Shetland RTS
Environmental Assessment (Scotland) Act 2005	<ul> <li>Extends Scottish legislation for SEA beyond the requirements of the 'SEA Directive'</li> </ul>	SEA as a whole	Requirement to carry out SEA of this RTS
Nature Conservation (Scotland) Act 2004	<ul> <li>Conservation of biodiversity</li> <li>Increases protection for Sites of Special Scientific Interest (SSSI)</li> <li>Amends legislation on Nature Conservation Orders,</li> <li>Provides for Land Management Orders for SSSIs and associated land</li> <li>Strengthens wildlife enforcement legislation</li> </ul>	SEA objective 1	RTS has potential for significant negative effects on biodiversity and designated sites. The SEA will assess effects with the intention of avoiding/mitigating impacts. This legislation may restrict transport developments
Road Iraffic	<ul> <li>Requires Local Authorities to</li> </ul>	SEA	RIS has potential to

1997 Wildlife and	<ul> <li>levels of local road traffic in their area, and a forecast of the growth of these levels"</li> <li>and to specify targets for "a reduction in the levels of local road traffic in the area or a reduction in the rate of growth in the level of such traffic"</li> </ul>	SEA	RTS has notential for
Countryside Act 1981	animals and plants), countryside, national parks, public rights of way and the designation of protected areas such as sites of special scientific interest or limestone pavement orders.	objective 1, 2 and 9	significant negative effects on biodiversity and designated sites. The SEA will assess effects with the intention of avoiding/mitigating impacts
The Conservation (Natural Habitats & c) Regulations 1994	<ul> <li>Measures relating to the conservation of natural habitats and of wild fauna and flora.</li> <li>Provides for the designation and protection of 'European Sites'. (SCIs, SACs, SPAs and RAMSAR sites)</li> <li>Protection of European Protected Species (e.g. otters and cetaceans)</li> </ul>	SEA objective 1	RTS has the potential to affect designated sites. The SEA will assess effects on listed buildings /conservation areas with the intention of avoiding /mitigating impacts. This legislation may restrict transport developments
The Air Quality Limit Values (Scotland) Regulations 2005	<ul> <li>Duty to ensure compliance with limit values of relevant pollutants in ambient air</li> <li>Sets target values and long term objectives for levels of ozone in ambient air</li> <li>Assess ambient air quality</li> <li>Production of action plans where there is a risk of exceeding limit values for any of the relevant pollutants</li> </ul>	SEA objective 4	Transport has implications for air quality however in Shetland this is unlikely to be a significant problem. Impacts are predicted through the SEA and air quality is monitored by SIC
Water Environment and Water Services (Scotland) Act 2003	<ul> <li>Protection of water environment</li> <li>Production of river basin management plans</li> </ul>	SEA objective 7	RTS has potential to affect water quality. SEA will assess effects and avoid/mitigate impacts
The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997	<ul> <li>Listing of buildings of special architectural or historic interest</li> <li>'Building preservation notice' Temporary listing</li> <li>Restriction on work affecting listed buildings</li> <li>Authorisation of works listed building consent</li> </ul>	SEA objective 2, 3	The RTS has the potential to have impacts on listed buildings and conservation areas. In addition, this legislation may restrict certain transport projects. The SEA will assess

	<ul> <li>Applications for listed building consent</li> <li>Power to impose conditions on grant of listed building consent</li> <li>Revocation and modification of listed building consent</li> <li>Rights of owners compensation</li> <li>Prevention of deterioration and damage</li> <li>Conservation Areas designation Preservation and enhancement of conservation areas</li> </ul>		effects on listed building/conservation areas with the intention of avoiding/mitigating impacts
Protection of Wrecks Act 1973	<ul> <li>Provides protection for designated wrecks which are deemed to be important by virtue of their historical, archaeological or artistic value or are designated as dangerous by virtue of their contents</li> </ul>	SEA objectives 3 and 10	The SEA will assess potential effects on protected wrecks of the RTS
Ancient Monuments and Archaeological Areas Act 1979	<ul> <li>To consolidate law relating to ancient monuments and to provide for the inspection and recording of matters of archaeological interest and to regulate such activities.</li> <li>Provides for nationally important archaeological sites to be statutorily protected as scheduled ancient monuments</li> <li>Section 2 requires Scheduled Monument Consent to be granted prior to undertaking certain works</li> </ul>	SEA objective 3	The RTS has the potential to have negative impacts on ancient monuments, known and unknown archaeology. The SEA will assess potential impacts on these, with the intention of avoiding impacts
Land Reform (Scotland) Act 2003	<ul> <li>Increases the public right of access, within certain controls, to private land</li> </ul>	SEA objective 9	The SEA will assess the ability of the RTS to improve access to the natural and built environment
Water Environment (Controlled Activities) Regulations 2005	<ul> <li>Requires authorisation over point source discharges, abstractions, impoundments and engineering activities</li> </ul>	SEA objective 7	Some activities promoted by the RTS may require a CAR discharge licence
The Pollution Prevention and Control (Scotland) Regulations 2000	<ul> <li>Aims to control pollution from industrial sources. It requires the prevention or reduction of emissions from installations and promotes techniques that reduce the amount of waste and releases overall</li> </ul>	SEA objectives 4, 7 and 12	RTS has potential for increased air pollution through increased transport and construction. Effects will be mitigated and monitored where appropriate

International			
Kyoto Protocol to the UN Framework Convention on Climate Change (1992) (1997 – not yet in force)	<ul> <li>The stabilization of atmospheric concentrations of greenhouse gases at a level that would prevent dangerous anthropogenic interference with the climate system.</li> </ul>	SEA objective 5	Transport is a significant contributor of $CO_2$ and the RTS will influence overall emissions. Policies can be developed to reduce emissions and the SEA will assess effects on $CO_2$ output
The EC Directive on the Conservation of Wild Birds 79/409/EEC 1979	<ul> <li>Protect birds naturally occurring in the European territory, applies to birds, eggs, nests and habitats.</li> <li>Preserve, maintain or re- establish a sufficient diversity and area of habitats. Maintain populations of species taking into account ecological, scientific, economic and cultural requirements.</li> <li>Pay particular attention to wetlands especially those of international importance.</li> </ul>	SEA objective 1	RTS has potential for significant negative effects on biodiversity through major projects and for enhancements through maintenance regimes. SEA will assess effects on designated sites and species
The EC Directive on the conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC 1992	<ul> <li>Preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and of wild fauna and flora.</li> <li>Maintain and restore natural habitats and of wild fauna and flora, working towards ensuring bio diversity and taking account of economic social and cultural requirements and regional and local characteristics.</li> </ul>	SEA objective 1	RTS has potential for significant negative effects on biodiversity through major projects and for enhancements through maintenance regimes. SEA will assess effects on designated sites and species
Directive 2000/60/EC establishing a framework for the community action in the field of water policy ('The Water Framework Directive')	<ul> <li>To establish a frame work for the protection of inland surface waters, transitional waters, coastal waters and groundwater</li> <li>To enhance protection and improvement of the aquatic environment and promote sustainable water use.</li> </ul>	SEA objectives 6 and 7	RTS has potential to affect water quality. SEA will assess impacts
Directive 1996/62/EC on ambient air quality and management	<ul> <li>To protect the environment as a whole and human health.</li> <li>To maintain ambient air quality where it is good and to improve it in other cases using limit values and/or alert</li> </ul>	SEA objective 4	Transport has implications for air quality however in Shetland this is unlikely to be a significant problem. Impacts are

threshold set for ambient air	predicted through
pollution levels.	the SEA and air
Preserve best ambient air	quality is monitored
quality compatible with	by SIC
sustainable development	

#### Appendix B SEA Scoping Workshop Attendees

28 February 2006, Grantfield, Lerwick

In Attendance:

Stephen Cooper, SIC Austin Taylor, SIC Victor Hawthorne, SIC Karen Hall, SNH Jill Slee Blackadder, Shetland Field Studies Group Paul Finch, Faber Maunsell Iain Bell, Faber Maunsell Ewan Walker, Faber Maunsell Jim Grant, SIC

A number of people were not able to attend due to heavy snow which fell the morning of the workshop. These included representatives of the Shetland Amenity Trust, RSPB and other SIC departments. Additional comments were later received from:

Environmental Health, SIC Simon Montgomery, Historic Scotland David Okill, SEPA Annie Say, Natural Capital Environmental and Sustainable Development Consultancy

# Appendix C The Baseline Situation

This appendix highlights aspects of the environmental baseline that are relevant to transport in Shetland. The environmental information and data is presented in the context of the SEA topics referred to elsewhere in this Scoping Report with the relevant SEA objectives listed in each section. The assessment will address the potential effects of RTS on the baseline situation set out in this appendix. For example, the potential for development on or close to designated sites will be considered.

# **Baseline Overview**

Number of islands:	100+
Number of inhabited islands:	15
Total Area of Shetland:	1,468 sq km (567 sq miles or 165,629 ha)
Total Length of Coastline:	1,450 km (900 miles)
Total length of roads:	1,044.7km (649.2 miles)
Largest outlying island:	Yell: 212 sq km (83 sq miles)
Smallest inhabited island	Out Skerries: 4 sq km (2 sq miles)

Distance to Lerwick from Major Cities/Towns in kilometres (miles):

Aberdeen	338 (211)
Bergen	360 (225)
Edinburgh	477 (298)
Oslo	650 (406)
London	957 (598)
Longitude (Lerwick):	60° 09' N
Latitude (Lerwick):	01° 09' W
Population (2004):	21,940

# 1. Biodiversity, Flora and Fauna

# SEA Objectives:

- Protect, maintain and enhance biodiversity
- Enhance access to the natural and built environment

# **Baseline Description**

#### Designated Areas

Due to their importance in terms of habitats and species, certain sites have been protected under European or National legislation. Designated sites are summarised in Table A.1 and an explanation of each type of designation is listed below. Locations of these sites are highlighted on Figure 1.

#### Table A.1 Designated Areas

Designation	Total Number	Area within Shetland (ha)	% of Total Area of Shetland <sup>*</sup>
Site of Special Scientific Interest (SSSI)	81	20,138	12.2%
Special Areas of Conservation (SAC)	12	15,348	9.3%
Special Protection Areas (SPA)	12	15,157	9.2%
Ramsar	1	5,470	3.3%
Marine Consultation Areas	4	Info not	Info not
		available	available
National Nature Reserve (NNR)	3	1,307	0.8%

Source - SNH and JNCC, some designations may overlap.

#### Special Areas of Conservation (SAC)

SAC sites are designated under the EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora – known as the Habitats Directive. Sites are designated due to the presence of one or more habitats or species listed in the Directive and management plans are written to ensure 'favourable conservation status.' The 12 SACs in Shetland are at the following locations:

Ronas Hill – North Roe
Sullom Voe
The Vadills
Tingon
Yell Sound Coast
Papa Stour

#### Special Protection Areas (SPA)

Special Protection Areas (SPAs) are strictly protected sites classified in accordance with Article 4 of the EC Directive on the conservation of wild birds (79/409/EEC), also known as the Birds Directive, which came into force in April 1979. They are classified for rare and vulnerable birds, listed in Annex I to the Birds Directive, and for regularly occurring migratory species. The 12 SPAs in Shetland include Foula, one of only 7 known EU breeding sites for Leach's Petrel. The full list of SPAs in Shetland is as follows:

Fetlar	Papa Stour
Foula	Ramna Stacks and Gruney
Hermaness, Saxa Ford and Valla Field	Ronas Hill – North Roe and Tingon
Mousa	Fair Isle
Noss	Lochs of Spiggie and Brow
Otterswick and Graveland	Sumburgh Head

#### Ramsar Sites

Ramsar sites are designated under the 1971 Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, to which the UK was a signatory. The Ramsar designation for Shetland encompasses Ronas Hill – North Roe and Tingon.

#### Sites of Special Scientific Interest (SSSI)

These are areas of special interest by reason of their flora, fauna, or geographical or physiographical features. Shetland has 81 designated for the interests listed below. Some sites are designated for several reasons.

Geology (31 sites) Geomorphology (7 sites) Montane habitats (1 site) Intertidal Habitats (6 sites) Aquatic Flora (6 sites) Rare Plants (5 sites) Serpentine Vegetation (4 sites) Other Heatherland (4 sites) Marsh and Meadow (4 sites) Limestone and Grassland (1 site) Sand Dune Flora (2 sites) Seabirds (9 sites) Wildfowl (3 sites) Aquatic Fauna (3 sites) Mammals (3 sites) Trees and Woodland (4 sites)

#### National Nature Reserves (NNR)

NNRs are sites of special natural interest, and provide opportunities for environmental education and the informal enjoyment of nature by the public. Shetland has three NNRs; two of Britain's largest seabird colonies can be found at Noss and Hermaness. Rare plants can be found at the Keen of Hamar, one of which, Edmonton's chickweed, is only found at one other site in the world.

#### Marine Consultation Areas (MCA)

Designated due to the quality and sensitivity of the marine environment, there are four MCAs in Shetland:

The Houb, Fugla Ness	Brindister Voe and The Vadills
Whiteness Voe	Swinister Voe and the Houb of Fora Ness

#### Local Protection Areas (LPA)

These are council designations which are listed in the local plan and are regarded by the local community as being worthy of protection. Reasons can include scenic or historic value or presence of flora or fauna. It is the Council's policy to keep these areas free from development unless the development provides facilities which benefit the community as a whole. See Figure 2.

#### **RSPB** Reserves

There are 4 RSPB reserves in Shetland, which are located at Sumburgh Head, Mousa, Fetlar and Loch of Spiggie.

#### Habitats and Species

#### European Protected Species

The Wildlife and Countryside Act 1981 and the Habitats Regulations both provide protection to a number of internationally important species, due to potential development in coastal and marine areas. For the Shetland RTS, the most relevant species are otters and cetaceans. The aforementioned legislation makes it an offence to deliberately or recklessly capture, kill, injure or disturb any such animal. In addition, damage to or destruction of breeding and nesting sites is an offence.

A total of 23 different species of cetaceans have been recorded in Shetland's waters in recent years, the most common being pilot whales, common porpoises and harbour porpoises. Killer whales, minke whales, Risso's dolphins and white-sided dolphins are also recorded relatively frequently. Sperm whales and humpback whales are also seen on occasion. Shetland is also home to 18% of the UK grey seal population and 12% of the UK otter population.

The Special Areas of Conservation (SAC) referred to above can be designated due to the presence of sufficient populations cetaceans or otters. SACs may also be designated due to the presence of certain plants or habitats.

#### Priority Habitats and Species

As part of the Living Shetland Local Biodiversity Action Plan, priority habitats and species have been identified. Priority habitats include roadside verges, machair, herb-rich meadows,

wet meadows and arable crops. In some cases, habitat action plans have been developed. One such plan for roadside verges is currently under development. In addition, specific action plans have been developed for the following priority species:

Arable weeds	Hawkweeds
Bumble bees	Palarope
Harbour porpoise	Breeding Waders
Oyster plant	Farmlands birds
Skylark	Merlin
Arctic char	Red-throated diver
Eider	

The presence of some species in Shetland is highly significant in a national sense, for example 90% of the UK population of the red-necked phalarope is present in Shetland. Similarly, Shetland is home to approximately 95% of the UK's Whimbrel population. Coastal cliffs provide important nesting sites for breeding seabirds. Shetland is home to one tenth of the total seabird population of Britain; in excess of one million birds of 22 species.

The varied coastline of Shetland support diverse habitats and species. Voes (inlets / sea lochs) provide shelter and muddy conditions exist at the heads of some of the longer voes, which are inhabited by species such as cockles and lugworms. In deep water, relatively rare reefs are formed from large horse mussels. Sandeels, which are an important food source for Shetland's many seabirds, mammals and commercial fish stocks are supported by finite offshore supplies of sand. Commercial fish species are discussed in more detail in Section 7 of this Baseline appendix.

# Access to the Natural and Built Environment

No relevant baseline information was obtained relating to access the built or natural environment. If available, the Environmental Report will contain information relating to numbers of visitors to sites of natural and cultural value.

# 2. Landscape

#### SEA Objectives:

- Safeguard and enhance the quality and distinctiveness of the area's landscape (built and natural)
- Enhance access to the natural and built environment

# **Baseline Description**

Parts of Shetland's spectacular coastal landscape have been recognised through its designation as a National Scenic Area (see below). Inland landscapes are characterised by rolling hills, heather and rough grassland with historic buildings and features. Historic land use practices, particularly crofting and peat cutting, have helped to create a diversity of landscapes.

The locations of the 9 primary landscape types identified by SNH are shown on Figure 4. These are:

- Coastal edge
- Coastal island
- Farmed and settled lowlands and coast
- Farmed and settles voes and sounds
- Inland loch

- Inland valleys
- Major uplands
- Peatland and moorland
- Undulating moorland with lochs

# National Scenic Areas (NSA)

These are areas of exceptional scenic value and comprise some of the best examples of Scotland's landscapes. One NSA in Shetland covers seven of Shetland's finest sections of coastline. Figure 3 shows the locations of these seven areas.

# Gardens and Designed Landscapes

The Inventory of Gardens and Designed Landscapes identifies the gardens and designed landscapes in Scotland that are of national significance, including private gardens, parks and policeis in country estates, public parks, cemeteries and botanical gardens. The inventory refers to 4 sites in Shetland, these are:

- Belmont House
- Brough Lodge
- Lunna House
- Gardie House

# Tree Preservation Orders

Under the Town and Country Planning (Scotland) Act 1997, Shetland Islands Council must be given prior notification of intended works to trees. It is an offence to chop down, top, lop or wilfully destroy trees protected by a TPO without consent. There are 2 TPOs in Shetland; at Helendale House and the rear of Montfird Hospital, both in Lerwick. Possible future TPO sites include:

- Seafield at the Ness of Sound
- Scalloway
- Busta House
- Halligarth, Baltasound
- Tresta

*Local Protection Areas*, detailed in the Biodiversity section of this appendix, may also be designated by Shetland Islands Council due to landscape value.

# 3. Cultural Heritage

# SEA Objectives:

- To preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features
- Enhance access to the natural and built environment

# **Baseline Description**

# **Designated Areas**

# Scheduled Ancient Monuments

Scheduled monuments are given legal protection under the Ancient Monuments and Archaeological Areas Act 1979, as they are considered to be of national importance. Shetland currently has 403 scheduled ancient monuments, which fall under the following categories:

Prehistoric: ritual and funerary	111
Prehistoric: domestic and defensive	227
Crosses and carved stones	3
Ecclesiastical	21
Secular	50
Industrial	17

# **Conservation Areas**

A Conservation Area is 'an area of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance' (Planning (Listed Buildings and Conservation Areas) Act 1990). There are three Conservation Areas in Shetland, 2 in Lerwick and 1 in Scalloway. Their locations are shown in Figure 2.

# Listed Buildings

Buildings are listed by Historic Scotland for their special architectural or historic interest. They are assigned to one of three categories depending on relative importance:

- Category A Of national or international importance either historic or architectural, or fine little-altered examples of a particular period, style or building type
- Category B Of regional or more than local importance, or major examples of a particular period, style or building type which may have been altered
- Category C Of local importance, lesser examples of any period, style or building type, as originally constructed or altered; and simple, traditional buildings grouped well with other in categories A and B or part of a planned group such as an estate or industrial complex

There are currently 347 listed buildings in Shetland; 17 category A, 174 category B and 156 category C.

#### Gardens and Designed Landscapes

The Inventory of Gardens and Designed Landscapes identifies the gardens and designed landscapes in Scotland that are of national significance, including private gardens, parks and policeis in country estates, public parks, cemeteries and botanical gardens. The inventory refers to 4 sites in Shetland, these are:

- Belmont House
- Brough Lodge
- Lunna House
- Gardie House

#### Shetland Sites and Monuments Record

In addition to designated areas and buildings, the Shetland Amenity Trust maintains the Sites and Monuments Record. This holds records of all known sites, ranging from pre-historic to the Cold War. There are currently 7229 recorded sites, which include:

Broch / possible broch141Burnt mounds340Chambered cairns118Viking / Norse houses52Souterrains26Military remains436Fishing stations32Wheelhouses7

Archaeological Sites

In addition to the protected sites listed above, there is also the potential for transport-related activities to affect Shetland's many archaeological sites. Shetland's rich archaeological heritage includes Viking sites, standing stones, ancient crofts and ruined chapels. Whilst many sites are identified within the Sites and Monuments Register, there is the potential for unknown archaeological sites to be affected.

# **Designated Wrecks**

There are 2 protected wrecks in Shetland waters, which have been designated due to their importance in terms historical and archaeological value. These have exclusion zones surrounding the wrecks, within which it is an offence, without a licence, to tamper with, damage or remove any objects or part of the vessel or to carry out any diving or salvage operation. The wrecks are the Wrangles Palais, which sank in 1687 (100m exclusion zone) and the Kennemerland, which sank in 1664 (250 m exclusion zone). Their locations are highlighted on Figure 5.

# 4. Water Environment and Effects of Climate Change

#### SEA Objectives:

- Protect, maintain and enhance water quality
- Reduce vulnerability to the effects of climate change e.g. flooding, disruption to travel by extreme weather, etc.

# **Baseline Description**

#### Pollution

In 2004, SEPA recorded a total of 24 water pollution events. A number of these were related to transport activities, such as oil spills from passing vessels. Although commonly associated with agriculture, diffuse pollution is also associated with run-off from roads, however due to relatively low traffic levels in Shetland this is not currently a substantial problem.

#### Flooding and Surface Run-Off

The most common cause of historical flooding events has been inundation by the sea. However, the trend has shifted in recent times and heavy rainfall is now the cause of the majority of incidents. Burns in Shetland tend to be short and steep, which can increase flood risk during heavy rainfalls. This is likely to be exacerbated by climate change in the future, as predictions for Shetland are for extended periods of drought followed with more severe bursts of rain. The effects of flooding are significant for transport as a large proportion of flooding incidents affect roads. Of the 36 reported flooding incidents recorded in the 5<sup>th</sup> Biennial Flooding Report, 11 affected transport infrastructure, including roads, car parks, bridges and paths. Of the total of 36 incidents, 8 were flooded by inundation from the sea.

The Development Plans Service at Shetland Islands Council is carrying out a survey of watercourses that are likely to be affected by future development. From this, the capacity of watercourses to carry surface water discharge from developments will be determined. The results of this work will be important for transport developments in determining the most appropriate forms of drainage for different areas.

Culverts are used for draining many roads around Shetland and are often associated with exacerbating run-off problems and leading to flooding, where blockages occur. As part of the implementation of the Water Framework Directive, the Controlled Activities Regulations (CAR) now require licences to be issued for culverts. Licences will also be required for all engineering structures, such as bridges. Sustainable Drainage Systems (SUDS) be used to

ensure water courses are not overloaded however, to date they have not been used for road developments in Shetland.

The predicted drier summers and wetter winters will potentially create an increased likelihood of peat landslips, with associated danger to road infrastructure, property and indeed human safety. Reducing run-off from developments may help to reduce the risk of such incidents.

#### Vulnerability to the Effects of Climate Change

Although the relative significance of rainfall related flooding events has increased, coastalrelated flooding is still a highly significant issue and again, climate change is predicted to cause further problems. Shetland is thought to be sinking at a rate of approximately 2-3 mm per year and sea level rise over the next century has been predicted to be between 0.5 and 1 metre. Even at present, storm hazard on Shetland is potentially greater than anywhere else in the UK and maximum wave heights around Shetland have been rising in recent decades. In addition, increases in the frequency and severity of storms are predicted, with coastal water extreme levels forecasted to become 5 to 10 times more likely by the 2050s. The combination of the above factors will extend the inward limit of storm driven water and whilst this is not a problem for many areas of Shetland's rocky coastlines, voe heads could be significantly affected due to the funnelling of storm surges.

Existing coastal defences will need to be replaced or modified to adapt to the effects of climate change. Modest predictions suggest that in order to bring the level of protection back to that of the 1990s, defences will need to be increased in height by 10 to 30 cm. Less conservative estimates suggest required increases of almost 80 cm.

Erosion of beaches from rising sea levels and increased wave action is a current problem which is predicted to become more significant in coming years. Offshore sediment supplies are finite and the potential for natural recharging of these beaches is therefore limited. Human activity such as provision of coastal defences and other physical structures can cause additional erosion. Beaches carry some roads in Shetland therefore the implications of erosion are serious for transport.

#### 5. Air Quality and Emissions

#### SEA Objectives:

- Reduce Shetland's contribution to climate change
- Reduce air pollution

#### **Baseline Description**

The Air Quality Strategy provides a framework for air quality control through air quality management and air quality standards. These and other air quality standards and their objectives have been enacted in Scotland through the Air Quality (Scotland) Regulations 1997, as amended, most recently in 2002. The Environment Act 1995 requires Local Authorities to undertake air quality reviews. Air quality objectives exist for the following pollutants:

Benzene 1,3-Butadiene Carbon Monoxide Lead Nitrogen Dioxide Particles (PM10) Sulphur Dioxide In areas where an air quality objective is not anticipated to be met, Local Authorities are required to establish Air Quality Management Areas (AQMA) and to develop and implement Air Quality Action Plans that detail the measures to be taken to work towards reducing pollution levels to below the objective targets. There are no AQMAs in Shetland.

Shetland Islands Council is due to publish a 'Local Air Quality Management - Updating and Screening Assessment' document. This will contain data relating to emissions of pollutants listed above and will provide this for key transport areas, for example narrow streets in Lerwick and port areas including Sullom Voe. If available, this baseline data will be presented to accompany the final Environmental Report. Currently local air quality in Shetland is good, due to the limited number of pollution sources and its isolated, exposed location.

Climate change is caused in part by the emission of greenhouse gases, which accelerates the Earth's natural greenhouse effect. Carbon dioxide  $(CO_2)$  is the main anthropocentric contributor to climate change and transport is a major source of this. The UK is committed to meeting its targets for reducing the emission of greenhouse gases by 20% by 2010; a greater challenge than targets set under the Kyoto Protocol.

# 6. Soil, Agricultural Land and Material Assets

#### SEA Objectives:

- Protect land and material assets
- Reduce, reuse, recycle and recover waste

# **Baseline Description**

#### Material Assets

It should also be noted that transport-related development has the potential to affect material assets such as buildings and public amenity land. In addition, quarries may be required to obtain materials required for construction. No datasets have been identified which provide relevant information regarding these. The RTS is likely to make reference to major projects in specific areas. Where information is known regarding the location of specific proposed developments, additional baseline information will be collected to appraise these and this will be presented in the Environmental Report.

#### Agricultural Land

In recent years there has been a decline in agricultural activity. As can be seen below in Table A.2, the total land used for tillage was almost 437 hectares in 2001. This figure fell to 400 by 2003. Intensive sheep farming has increased its dominance of the agricultural economy, particularly over the past 30 years.

As can be seen from Figure 6, the amount of land suitable for agriculture in Shetland is limited and as such, fertilisation and reseeding of moorland has been used to increase agricultural productivity. The amount classed as improved or good grassland is also somewhat limited, as can be seen from Figure 7. Farmers have been encouraged to manage land in a more environmentally sensitive manner since Shetland was designated an *Environmentally Sensitive Area* in 1993.

Table A.2	Agricultural Land Use in Shetland
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Agricultural Land Use Practice	Hectares
Vegetables for human consumption	17.35
Other crops	2.31
Bare fallow	131.59
Total tillage	436.51
Grass under 5 years old	2580.61
Arable	3017.12
Total crops and grass	22016.11
Sole right rough grazing	56179.8

Source: Scottish Agricultural Census 2001

# Figure 6







Source: MacAulay Land Use Institute, cited in SNH Landscape Assessment

#### Fishing and Aquaculture Industries

In 2003, a total of 31,659,776 tonnes of wet fish was landed in Shetland. The seas around Shetland are known spawning and nursery areas for Norway pout, lemon sole, haddock, herring, sandeel and whiting. The fishing industry is supported by the following species:

Pelagic fishery – mackerel, herring, blue whiting White fishery – haddock, cod, anglerfish, nephrops Inshore fishery – scallops, crabs, lobsters, nephrops

Fish farms occupy the many of the suitable voes and produce salmon, sea-trout, char, halibut, cod and shellfish, mussels being the most common. In 2003 there were 46 salmon farms, which produced a total of 63, 948 tonnes. If more up to date information is available, this will be included in the Environmental Report.

# 7. Population and Human Health

#### SEA Objectives:

- Improve accessibility and reduce social exclusion
- Enhance access to the natural and built environment
- Improve human health

#### **Baseline Description**

# Accessibility and Social Exclusion

Shetland Islands Council is currently undertaking a survey with regard to deprivation and social exclusion. This will focus on a number of issues including 'accessibility.' This information will be included in the updated baseline appendix, which will accompany the SEA Environmental Report.

#### Access to the Natural and Built Environment

No relevant baseline information was obtained relating to access the built or natural environment.

#### Health and Healthy Lifestyles

The following data (Table A.8) provides an overview of the proportions of people who are in good and poor health. It is difficult to relate this to directly transport as there are a great many potential influencing factors on health, for example diet. Furthermore, when viewing these figures one should take into account that the population is declining and aging. However, transport choices can have a significant influence on health and Table A.9 provides details of the transport modes taken to work for those aged between 16 and 74. A forthcoming survey will provide further information relating to transport choices. The results of this produce a more detailed baseline for healthy lifestyles in relation to transport and will accompany the Environmental Report.

Health Issues	Percentage of
	populations
	affected
Average age of a person with good health	32.29
Average age of a person with a limiting long term illness	59.58
Percentage of economically inactive people who are permanently sick/	15.45
disabled	
Percentage of households with one or more carers resident	15.45
General health: - % Good	71.72
- % Fairly good	21.55
- % Not good	6.73
% Has a limiting long term illness	15.74
% Does not have a limiting long term illness	84.26
Life Expectancy at birth (2002-4)	74.2
Source: Scottish Executive Statistics	

# Table A.8Health in Shetland

#### Table A.9 Travel to work by mode

Transport Mode	Percentage
Car (inc taxis, passengers and car pools)	74.24
Bus	4
Other	14.91
Work from home	6.86

Source: Scottish Executive Statistics 2001

#### <u>Crime</u>

Northern Constabulary divide crime figures into 7 categories. Baseline figures for these 7 categories in 2005 are detailed below in table A.3. These figures of course relate only to

crimes that have been reported to or detected by the police. In 2004, the detection rate for groups 1-5 was 68.5%.

Category	Crime	Number of Recorded Crimes
1	Non-sexual crimes against a person	28
2	Crimes involving indecency	24
3	Crimes of dishonesty	232
4 Fire raising, vandalism etc 243		243
5	Other crimes	173
6	Miscellaneous offences	498
7	Road traffic / vehicle related offences	711

Table A.3Crime Figures in Shetland, 2005

Source: Northern Constabulary

Road traffic and vehicle related offences are substantially lower than in the 1980s and early 1990s. However there has been an increase in the number of these offences in recent years. Table A.4 shows that of the figures available, 2005 had the largest number of offences for a decade.

Year	Number of Offences
1981	874
1986	926
1991	1278
1996	524
2001	697
2003	544
2004	717
2005	711

 Table A.4
 Road Traffic and Vehicle Related Offences for Shetland

Source: Shetland Islands Council

#### Fear of Crime

The Community Safety Strategy for Shetland highlights a 'reassurance gap' between the community perception of crime and actual crime levels. The fear of crime is higher than the probability of being a victim of such a crime. In 2003, Shetland had the second lowest number of recorded crime of all the Scottish Local Authority areas. Shetland Islands Council has a 2010 target to 'increase the feeling of being safe, secure and inclusive within the community by 20%.'

Table A.5 Concern about Chine in Shetland	Table A.5	Concern about	Crime in	Shetland
-------------------------------------------	-----------	---------------	----------	----------

Type of Crime	% of Respondents				
	Concerned				
Vandalism or deliberate damage to your home, property or car	80.5				
Having your home broken into	80.4				
Being attacked, assaulted or robbed in the street	64.1				
Having your car stolen or broken into	55.6				
Being insulted or threatened	53.5				
Being attacked, assaulted or robbed in your own home	52.6				
Being the victim of an attempted rape, rape or serious sexual offence	25.5				
Being a victim of domestic abuse	7.5				

Source: Shetland Islands Council

# <u>Safety</u>

The following information relates to road accidents in Shetland for 2005:

# Table A.6 Road traffic Accidents in Shetland, 2005

Accidents / Injuries	Number of Accidents
Total number of accidents	160
Total number of accidents involving death or injury	38
Number of persons killed	2
Number of persons seriously injured	8
Number of persons slightly injured	43
Total casualties	53

Source: Northern Constabulary

Shetland has adopted casualty reduction targets using a baseline average over the 5 years from 1994 to 1998. Targets for 2010 and baseline figures are:

# Table A.7Road safety Targets

Target	Baseline
(for 2010)	(1994-1998)
Reduce the number of people killed or seriously injured (KSI) in road	23.6
crashes by <b>40%</b>	
Reduce the number of children killed or seriously injured in road	3.6
crashes by <b>50%</b>	
Reduce the number of people slightly injured in road crashes per 100	58.4
million vehicle km by <b>10%</b>	

#### **Baseline Information Sources**

- Shetland Islands Council
- Historic Scotland
- Scottish Natural Heritage
- Scottish Environment Protection Agency
- Joint Nature Conservation Committee
- Northern Constabulary
- Gillespies 1998. A Landscape Assessment of the Shetland Isles, Scottish Natural Heritage Review No 93.
- Natural Heritage Futures: Shetland, 2002, SNH
- Scotland's Census Results Online (SCROL)
- Scottish Sustainable Marine Environment Initiative (SSMEI) Shetland Pilot Proposal Final report (2005), Scottish executive Wildlife and Habitats Unit, 9P1698
- Shetland in Statistics 2005, Shetland Islands Council
- Scottish Marine Renewables SEA Scoping Report, February 2006, Scottish Executive (Faber Maunsell, Metoc)
- Listed Buildings and Conservation Areas, Advice Note 2, 2004, Shetland Islands Council
- Development Plan Monitoring Report, January 2005, Shetland Islands Council
- Shetland Structure Plan 2001-2016, Shetland Islands Council, 2000
- Shetland Local Plan, Shetland Islands Council, 2004
- Shetland: Island Guide (Colin Baxter island Guides), Jill Slee Blackadder
- 5<sup>th</sup> Biennial Flood Report, Shetland Islands Council, 2005
- Climate Change and Coastal Hazards on Shetland, Summary of Presentations to Shetland Islands Council, February 2005
- Facts and Figures 2003/2004, SNH







1

IVIIIes	CIS: CMS	Chkid: EW	Kev	
Figure 3 : Landscape Designations	Date: 22/03/06	Scale: 350,000	ney	National Scenic Area
SIC FABER M	AUNSELL	Tel: +44 (0) 131 311 4000		

SIC





SIC





SIC

# Appendix D Shetland RTS Objectives

This appendix highlights the Shetland RTS objectives, in the context of the national transport objectives. These national objectives were set out by the Scottish Executive in the June 2004 white paper 'Scotland's Transport Future'.

# 1. Economy

# National Objective

To promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency.

# Shetland Context

In a Shetland context efficiency implies a particular responsibility to ensure the reliability and affordability of services and networks which are uniquely vulnerable to weather and natural forces and often costly to provide. The Partnership will continue to pay particular attention to the level of service, quality and efficiency of all transport links provided. The Partnership will give priority to maintaining affordable fare levels on external and internal services.

# Objectives

- 1. Work to ensure ongoing reliability of Shetland's transport networks.
- 2. Work to ensure that external and inter-island ferry and air links, are affordable to all (passengers, livestock and freight)
- 3. Work to improve the robustness of the transport system (public and private) against significant potential increases in fuel prices
- 4. Support measures that efficiently address current and anticipated capacity constraints on the islands' transport links
- 5. Deliver a transport system that is economically efficient, maximising the overall benefits for Shetland for a given sum of investment.
- 6. Work to optimise the wider economic benefits of the external links for Shetland
- 7. Work to achieve beneficial service development and market growth on Shetland's public transport networks.

# 2. Social Inclusion and Accessibility

#### National Objective

To promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network.

#### Shetland Context

Social inclusion has a very direct relevance for Shetland in that the provision of reasonably convenient and economical services to small and scattered communities is particularly difficult. The maintenance of transport services are essential to all Shetlanders but are unavoidably more expensive to provide because of remoteness and dispersion and the frequent need for air and ferry crossings. To achieve this shared objective the Partnership will seek imaginative solutions to the problems associated with serving small populations in remote communities and will consider how the need to travel can be reduced, for example by new forms of service delivery.

# Objectives

- 1. Work to ensure continued operation and availability of external, inter-island and internal lifeline transport links to specified service levels
- 2. Support measures to ensure access for all on the transport network
- 3. Seek to ensure that the timings and frequency of internal and external passenger services take account of the specific requirements of those accessing essential health and welfare services in Shetland and on the Scottish Mainland
- 4. Maximise accessibility (frequency, operating day, service delivery options) to and from each community within constraints of funding, demand, technical and operational feasibility, and taking account of convenient access to essential services, and the social and economic well-being of the community.
- 5. Work to improve accessibility for vulnerable groups to essential services

# 3. Environmental Protection

# National Objective

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.

#### Shetland Context

In a Shetland context, environmental quality is a particular concern. However, any responsible transport strategy must also address the contribution that local action can make in addressing the global impact of transport. The Partnership will give particular attention to safeguarding the environmental qualities of Shetland in its transport strategies, minimising the potential impacts of projects and services on the landscape, wildlife and archaeology of the islands. In order to address global concerns, the Partnership will seek to promote transport technologies and modes that minimise emissions. This will include encouraging the use of alternative fuels, car sharing, walking and cycling. Such an approach will complement efforts to improve health and to offer 'greener' tourism opportunities.

# Objectives

- 1. Reduce carbon dioxide and greenhouse gas emissions, and the consumption of nonrenewable resources arising from transport, travel and infrastructure in control of the Council and its Partners
- 2. Encourage and facilitate reductions in carbon dioxide and greenhouse gas emissions, and the consumption of non-renewable resources arising from transport and travel in control of private users and other operators.
- 3. Encourage and facilitate walking and cycling for short trips
- 4. Minimise impacts of transport and associated infrastructure on the coastal and marine environments
- 5. Reduce impacts of transport and transport infrastructure on landscape, the historic environment and biodiversity
- 6. Support species native to Shetland through roadside Biodiversity Action Plan and appropriate management and maintenance of road network
- 7. Encourage design of transport infrastructure that is appropriate to Shetland
- 8. Seek to minimise the adverse affects on natural drainage systems from roads run-off
- 9. Seek to reduce the vulnerability of transport / infrastructure to climate change

#### 4. Safety

#### National Objective

To improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, drivers, passengers and staff.

#### Shetland Context

This general Ministerial objective will run through all strategy and operational decisions which the Partnership will make.

#### **Objectives**

- 1. Work to ensure compliance with all relevant safety and security requirements
- 2. Implement measures that seek to achieve National Road Safety Targets
- 3. Encourage the elimination of drink driving
- 4. Encourage improvement in seat belt compliance
- 5. Implement measures to reduce fatalities, particularly in single vehicle accidents
- 6. Discourage excessive and inappropriate vehicle speeds.

#### 5. Integration

#### National Objective

To improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport.

#### Shetland Context

Transport integration by the alignment of timetables, ready provision of passenger information and through-ticketing is again of particular importance to Shetland where transitions between road transport, air and ferry services and longer travel distances are – by the nature of the islands - much more frequent than is typically the case throughout Scotland.

#### Objectives

- 1. Deliver effective and integrated public transport links at Shetland's principal passenger transport terminals
- 2. Facilitate effective transport integration opportunities at Shetland's principal passenger transport terminals
- 3. In partnership with other RTPs, encourage effective transport integration opportunities at Shetland's principal Mainland ferry terminals and airports
- 4. Maintain integrated freight facilities at each relevant ferry terminal
- 5. Deliver integrated and multi-modal ticketing across Shetland's public transport network
- 6. Provide effective journey planning information for visitors and residents for trips within, to and from Shetland

# Appendix E Example Assessment Matrix (For illustrative purposes only; policies are not taken from the developing Shetland RTS)

	SEA Objectives																	
Example Policies		Environmental Objectives							Social Objectives									
		Biodiversity	_andscape	Historic Environment	Nater Quality	Nater Resource	and & Soil	Naste	Air Quality	Climate Change	Social Exclusion	Human Health	Access to Natural & ilt Environment	Traffic Accidents	Crime	Importance of Receptor		С
	1		5	Э.	4.	5.		8.		9.6	10.	7.	12. Bu	13.	14,	Env	Social	-
The Council will incorporate proposals into all new road and traffic management schemes to cater for the needs and the safety of pedestrians.	Magnitude	Min -ve	Min -ve	Min -ve	_	_	_	_	_	_	Min +ve	Min +ve	Min +ve	Min +ve	_	MEDIUM		is to
	Significance	•	•	•	_	_	_	_	_	_	•	•	•	•	_		MEDIUM <sup>-</sup>	th Th th nc ac
The Council will, in partnership with operators, encourage the investigation of less polluting and more efficient fuels for public transport.	Magnitude	_	_	_	_	_	_	_	Min +ve	Min +ve		_	_	_	_			Т
	Significance	_	_	_	_	_	_	_	•	•		_	_	_	_	MEDIUM	MEDIUM	qı
The Council will endeavour to work with the Port Authority in its efforts to improve the Harbour and attract international ferry services	Magnitude	Min -ve	Min -ve	Min -ve	Mod -ve	Min -ve	_	_	Min +ve	Min +ve	_	_	_	_	_	LOW	LOW	Tł
	Significance	•	•	•	•	•	_	_	•	•		_	_	_	_			ot
The Council will give priority to road improvement schemes which provide improvement to accessibility, safety, public transport operation and those pecessitated	Magnitude	Mod -ve	Mod -ve	Mod -ve	Min -ve	Min -ve	Min -ve	Min -ve	Min -ve	Min -ve	Min +ve	_	Min +ve	Min +ve	_			lt de
	Significance	×	×	×	•	•	•	•	•	•	•	_	•	•	_	MEDIUM	MEDIUM	re th th
by structural damage or failure.	Significance	×	×	•	•	•	•	•	-	_	_	_	_	•	_			Al

omments

he environmental importance has been identified as medium as it assumed that this may involve extra width required on roads etc accommodate safety measures for pedestrians and therefore here is the potential for minor non significant negative effects. he social importance is identified as medium as the emphasis for his policy is human safety therefore there is the potential for minor on significant benefits to the reduction of casualties from traffic ccidents and the encouragement of walking as part of a healthier festyle.

he use of alternative fuels will have potential benefits on local air uality and climate.

he improvement of the Harbour has is potential to have minor egative but non significant impacts on the environmental ojectives.

is assumed that this policy will involve some form of evelopment; therefore the environmental importance of the eceptor has been identified as medium as any development has ne potential to affect an area of environmental value. The policy nerefore could potentially have a significant negative effect on iodiversity, landscape and heritage depending on location. Ithough it potentially could have a minor non significant positive npact on the social objectives.

# Appendix F Option Appraisal Framework – (Major Projects)

1. SCHEME DETA	ILS	
Scheme Details	Name	Description
	Option	Description
Area Details	Population	Number
	Trend	Trend – Census
	SIMD	Rank
Financial	Do Min Capital	£
Summary	Option Capital	£
-	Do Min Revenue	£
	Option Revenue	£
2. PLANNING OB	JECTIVES	
Vision	Fit	Yes / No justification
Strategy	Fit	Ves / No. justification
Economy	1 Reliability	
Leonomy	2 Affordability to all (nassengers, livestock and freight)	
	3 Robustness against significant potential increases in fuel	
	prices	
	4. Current and anticipated capacity constraints	
	5. Deliver a transport system that is economically efficient,	
	6. Optimise the wider economic benefits of the external links	
	7. Beneficial service development and market growth on	
	Shetland's public transport networks	
Social Inclusion	1. Continued operation and availability of services and	
and	infrastructure	
Accessibility	2. Access for all	
	3. Accessing essential health and welfare services in	
	Shetland and on the Scottish Mainland	
	4. Maximise accessibility within constraints of funding,	
	demand, technical and operational feasibility, and taking	
	account of convenient access to essential services, and	
	the social and economic well-being of the community.	
	5. Work to improve accessibility for vulnerable groups to	
	essential services	
Environment	1. Reduce carbon dioxide and greenhouse gas emissions -	
	2. Encourage reductions in carbon dioxide and greenhouse	
	gas private users and other operators.	
	5. Encourage and facilitate walking and cycling for short	
	1 Minimise impacts of transport and accordated	
	infrastructure on the coastal and marine environments	
	5 Reduce impacts of transport and transport infrastructure	
	on landscape the historic environment and hiodiversity	
	6. Support species native to Shetland through roadside	
	Biodiversity Action Plan and appropriate management	
	and maintenance of road network	
	7. Encourage design of transport infrastructure that is	
	appropriate to Shetland	
	<ol> <li>Seek to minimise the adverse affects on natural drainage systems from roads run-off</li> <li>Seek to reduce the vulnerability of transport / infrastructure to climate change</li> </ol>	
-------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	
Safety	<ol> <li>Ensure compliance with internal and external safety and security requirements</li> <li>Seek to achieve National Road Safety Targets</li> <li>drink driving</li> <li>seat belt compliance</li> <li>reduce fatalities, particularly in single vehicle accidents</li> <li>excessive and inappropriate vehicle speeds.</li> </ol>	
Integration	<ol> <li>Deliver effective and integrated public transport links</li> <li>Deliver effective transport integration opportunities and facilities</li> <li>effective transport integration opportunities on UK Mainland</li> <li>Maintain integrated freight facilities</li> <li>multi-modal ticketing</li> <li>effective journey planning information</li> </ol>	
External	Structure Plan (2016) and Local Plan	
Objectives	SIC Econ 2012	
	Shet Ent Business Plan	
	SIC Corporate Plan / Community Plan	
	Health 2020 – Transport Issues	

IMPLEMENTABILITY				
Capital	SIC	Multiple of spend		
Affordability	S Exec	Multiple of spend in		
		rural area		
	EU	Eligibility		
Revenue	SIC	Multiple of spend		
Affordability	S Exec	Multiple of spend		
PPP suitability				
Technically		Description / Risk		
Feasible				
Operationally		Description / Risk		
Feasible				
Public Support		Description		
Accept / Reject / Modify		Reasons		

GOVERNMENT TRANSPORT OBJECTIVES – STAG 1 Criteria				
Environment	7pt Score	Comment		
Safety	7pt Score	Comment		
Econ – TEE	7pt Score	Comment		
Econ – EALI	7pt Score	Comment		
Integration	7pt Score	Comment		
Accessibilty	7pt Score	Comment		
GOVERNMENT TRANSPORT OBJECTIVES – Selected STAG 2 Criteria				
Econ – TEE	Outline NPV			
Accessibility	Impact on PT Frequency			
	Impact on PT Routes			

	Impact on Deprived Area?	
	Impact on Target Groups?	
	Impact on Users – PAX, Vehs	Change in numbers
		Description of other
		impacts
	Impact on Non Users – PAX, Vehs	Change in numbers
		Description of other
		impacts
Accept / Reject / Modify / Prioritise		Reasons

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Scoping Report for the Strategic Environmental Assessment of the Shetland Regional Transport Strategy

Rev No	Comments	Date
3	Minor amendments following comments on second draft	12 July 2006
2	Amendments following comments on first draft	12 June 2006
1	Draft Scoping Report	27 March 2006

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