Environmental Report
Strategic Environmental Assessment of the Shetland Regional Transport Strategy

Shetland Islands Council
November 2006

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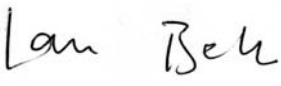
Approved by:  .....
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Environmental Report

Rev No	Comments	Date
1	First draft for review by Client and amendments	22/11/06
2	Following comments from Client	28/11/06

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Job No 47236IEDE November 2006

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1 Non-Technical Summary

1.1 The Shetland Transport Strategy

The purpose of the Shetland Transport Strategy is to set out Shetland Transport Partnership's policies for managing, maintaining and developing the transport network. The policies contained in the document also provides the basis for funding applications for transport related projects.

1.2 Strategic Environmental Assessment (SEA)

This Environmental Report presents the findings of a Strategic Environmental Assessment (SEA) of the Shetland Transport Strategy. Faber Maunsell was commissioned by Shetland Islands Council (SIC) to carry out the SEA and to produce this Environmental Report.

The purpose of SEA is to integrate environmental considerations within the Transport Strategy and this is done in two key ways. Firstly, SEA allows the potential environmental impacts of the Transport Strategy to be predicted and, where appropriate, these predictions can be used to inform the development of the policies in the strategy. Secondly, in setting out the predicted environmental impacts in this publicly available Environmental Report, the public and other stakeholders can comment on the strategy and its potential impacts.

Prior to the assessment of impacts, a Scoping Report was produced which set out the proposed method and level of detail for the SEA. The Scoping Report also set out relevant environmental problems, key aspects of the current state of the environment and relationships with other plans and programmes. This was submitted to the Scottish Executive and allowed Historic Scotland, Scottish Natural Heritage (SNH) and the Scottish Environment Protection Agency (SEPA) to provide comments and recommendations. These comments were taken into account in the assessment and the preparation of the Environmental Report.

1.3 Alternatives

A high-level appraisal of 5 strategic alternative scenarios was carried out using the Scottish Transport Appraisal Guidance (STAG). These alternatives are set out in the Table below:

Table 1.1 Strategic Alternative Scenarios

Option	Overview
Do Minimum	A strategy based around the continuation of the current approach, based upon the priorities established in the 2000 Local Transport Strategy. This implies a continuation of current approach to access and spending. It includes upgrading/replacement of ferry terminals.
Cut Backs	A strategy designed to reduce revenue or capital finances to levels which are available on a sustainable basis. This implies a reduction in rural accessibility, and a greater reliance on private transport. Includes upgrading/replacement of ferry terminals.
Spend to Save	Development of infrastructure in the short term in order to save money in the longer term. This could also include measures to generate income. Includes construction of fixed links between islands (e.g. tunnels).
Comfort	An improvement of current levels of service, and hence improved levels of accessibility, based on increasing levels of expenditure. Includes upgrading/replacement of ferry terminals.
Aspirational	A strategy including all of the potential options that could be implemented if there were no financial constraints. Includes construction of fixed links.

The STAG appraisal predicted the effects of the above alternatives on environment, safety, economy, integration and accessibility/social inclusion. This appraisal was carried out to determine the most appropriate approach for the Transport Strategy. The preferred option taken forward was a combination of the Cuts Backs and Spend to Save options. Policies support some projects including replacement ferry terminals and road improvements.

1.4 SEA of Transport Strategy: Method and Results

The likely environmental impacts of the Transport Strategy's policies were assessed. Many of the policies are neutral in terms of environmental effects and a number are predicted to have positive environmental impacts. The majority of significant negative impacts are predicted to occur as a result of the construction of transport infrastructure, ferry terminals and roads.

Mitigation measures were developed to avoid, reduce or offset predicted negative impacts. These include new policies which have been incorporated within the Transport Strategy. In addition, Shetland Islands Council have committed to implementing specific measures in the construction and maintenance of transport infrastructure to mitigate potential impacts. These have also been incorporated within the Transport Strategy.

In spite mitigation measures, there is the potential for some environmental impacts to remain. Key impacts predicted and their causes are summarised below:

1.4.1 Biodiversity

The policies of the Transport Strategy which promote specific projects have the potential for negative impacts on biodiversity. Many of the infrastructure projects promoted are in coastal locations and therefore have the potential to affect protected species, for example otters and seals. There is also the potential for impacts on protected sites including Natura Sites and reference has been made within the SEA to the need for Appropriate Assessment to comply with legal requirements. The strategy incorporates policies and mitigation measures which aim to avoid, reduce or offset impacts on protected sites and species (see Section 1.5 below).

1.4.2 Landscape Character and Visual Amenity

There is the potential for negative impacts on landscape character and visual amenity due to the construction of transport infrastructure. The significance of impacts is dependent on the scale and design of new infrastructure and the strategy includes a policy to promote design which is appropriate to its location. Impacts are most likely to be significant for larger infrastructure or where there are potential receptors in the vicinity. A policy relating to good design practice has been incorporated into the Strategy.

1.4.3 Cultural Heritage

A policy to investigate the dredging of the south mouth of Skerries has the potential for negative effects on a protected wreck (the 'Kennemerland'). No protected historic buildings are predicted to be physically affected by the policies of the Transport Strategy; however, there is the potential for the setting of some of these to be negatively affected. As with landscape and visual amenity, the significance of impacts is dependent on the scale and design of new infrastructure. There is also the potential for disturbance of archaeology (known and unknown) due to the construction of new infrastructure. The strategy includes a policy to promote design of infrastructure which is appropriate to its location to minimise impacts on heritage.

1.4.4 Local Air Quality

No significant effects on local air quality are predicted.

1.4.5 Climate Factors

Negative impacts on Shetland's contribution to climate change are possible, primarily as a result of the promotion of increased external ferry and air services. The strategy does not state the likely number of increases in ferry or aircraft movements and therefore at present, it is not possible to determine the likely significance of impacts.

Positive impacts are predicted on improving the vulnerability of Shetland's Transport infrastructure to the effects of climate change. Many of the projects promoted by the strategy relate to improving ferry terminals, which could improve the reliability of services in adverse weather conditions which are likely due to climate change.

1.4.6 Water Quality

The overall effect of the strategy on the water environment is not predicted to be significant. There is the potential for negative impacts from construction, however, these effects are not predicted to be significant with the implementation of statutory mitigation requirements. A policy relating to SUDS has also be incorporated into the Strategy.

1.4.7 Population and Human Health

Impacts on population and human health are predicted to be positive due to the promotion of physical activity, as well as improvements in safety and accessibility.

1.4.8 Material Assets

Impacts on material assets are not predicted to be significant. There is the potential for land-take and use of natural resources in the construction of infrastructure, however this is not predicted to be significant.

1.5 Mitigation

The SEA process identified a number of existing problems and potential effects resulting from the proposed Transport Strategy. As a result, the Transport Strategy was altered to incorporate a number of new policies aimed at avoiding, reducing or offsetting predicted environmental impacts and existing problems. The policies included in the strategy are as follows:

EPM1 Natura 2000 sites

Potential Impacts on the integrity of Natura 2000 sites (or proposed Natura 2000 sites) will in the first instance be prevented by locating transport activities likely to cause disturbance away from such sites. Where activities could directly, indirectly or in combination with other proposals affect the interests of a Natura site, the proposals will be screened for the potential for significant effects to the interests of the site in consultation with Scottish Natural Heritage (SNH). If the screening indicates potential for significant effects studies will be completed to inform an Appropriate Assessment.

EMP2 Protected Species

Potential impacts on protected species will be avoided in the first instance by locating transport activities likely to cause disturbance away from sites associated with protected species. In other cases Shetland Transport Partnership (STP) and Shetland Islands Council (SIC) will seek to avoid impacts by complying with protected species legislation and by licensing proposed disturbance through the relevant licensing authority – Scottish Executive Environment and Rural Affairs Department (SEERAD) or SNH.

EMP3 Scheme Design

New transport infrastructure will minimise impacts on key ecological, heritage, landscape and topographical features. The scale and design of all schemes will be fitting to the local landscape character and aligned or located in a manner which uses the existing landform to good effect and which minimises the scale of required earthworks. In addition:

- Design profiles will reflect existing natural slopes and be designed to avoid risks of landslips
- The scale of road improvement schemes will be in keeping with the local environs
- Effective environmental mitigation will be part of all transport infrastructure designs.

EMP4 Waste

Wherever practicable, SIC will ensure that waste materials associated with transport infrastructure are reduced, reused, recycled or recovered.

EMP5 Water

Where appropriate, Sustainable Urban Drainage Systems (SUDS) will be used in development of transport infrastructure.

EMP6 Alternative Fuels

SIC will undertake a study into the use of alternative fuels (including biofuels) and energy conservation measures for the Council's fleet of vehicles.

In addition to the above policies, SIC have committed to implementing a number of measures to mitigate negative impacts of individual transport projects. These have been incorporated within the Transport Strategy. These include measures which attempt to avoid impacts on designated sites and protected buildings/features through the use of more detailed project-specific appraisals (e.g. Environmental Impact Assessment (EIA) and Appropriate Assessment). Mitigation measures also include commitments to schemes which are appropriately and sensitively designed for their location.

1.6 Monitoring and Adoption

This Environmental Report sets out proposed indicators which would be used to monitor the environmental effects of the Transport Strategy. Following adoption of the final strategy, a Post-Adoption SEA Statement will be produced which will set out the final monitoring framework. This will also provide information regarding how the SEA and comments from consultation have been taken into account in the final strategy.

1.7 Consultation

Comments on this Environmental Report can be sent to the address below until 26 January 2007.

Transport Strategy Consultation
Shetland Transport Partnership
Grantfield
Lerwick
Shetland Islands
ZE1 0NT

Comments can also be sent by fax to 01595 744503 or submitted by email to transport.strategy@shetland.gov.uk.

A copy of this Environmental Report and the draft Transport Strategy are available to download at http://www.shetland.gov.uk/transport/stp/

2 Introduction

2.1 The Purpose of this Environmental Report

As part of the preparation of Shetland Regional Transport Strategy. Shetland Islands Council carried out a Strategic Environmental Assessment (SEA). SEA is a systematic method for considering the likely environmental effects of plans, programmes and strategies. SEA aims to:

- integrate environmental factors into strategy preparation and decision-making;
- improve the Transport Strategy and enhance environmental protection;
- increase public participation in decision making; and
- facilitate openness and transparency of decision-making.

SEA is required by the Environmental Assessment (Scotland) Act 2005[1]. The key SEA stages are:

Scoping	Deciding on the scope and level of detail of the Environmental Report, and the consultation period for the report – this is done in consultation with Scottish Natural Heritage, The Scottish Ministers (Historic Scotland) and the Scottish Environment Protection Agency
Environmental Report	Publishing an Environmental Report on the Transport Strategy and its environmental effects, and consulting on that report
Adopting	Providing information on: the adopted Transport Strategy; how consultation comments have been taken into account; and methods for monitoring the significant environmental effects of the implementation of the strategy
Monitoring	Monitoring significant environmental effects in such a manner so as to also enable Shetland Transport Partnership to identify any unforeseen adverse effects at an early stage and undertake appropriate remedial action

The purpose of this Environmental Report is to:

- provide information on the Shetland Transport Strategy and the SEA process;
- identify, describe and evaluate the likely significant effects of the Shetland Transport Strategy and its reasonable alternatives; and
- provide an early and effective opportunity for the Consultation Authorities (Historic Scotland, Scottish Natural Heritage and the Scottish Environment Protection Agency) and the public to offer views on any aspect of this Environmental Report.

[1] http://www.opsi.gov.uk/legislation/scotland/acts2005/20050015.htm

2.2 SEA Activities to date

Table 2.2 summarises the SEA activities to date in relation to the Shetland Transport Strategy.

Table 2.2 SEA Activities to Date

SEA Action/Activity	When Carried Out	Notes
Scoping the consultation periods and the level of detail to be included in the Environmental Report	Jul 2006	Scoping Report submitted for statutory consultation 12/07/06, comments received 15/08/06. Details of how comments have been addressed are presented in Appendix G.
Outline and objectives of the Transport Strategy	Late 2005-Jun 2006	Informed by extensive public consultation
Relationship with other plans, programmes, strategies and environmental objectives	Feb-Jul 2006	Presented in Scoping Report, update presented in Section 3.3 and Appendix A of this report
Environmental baseline established	Feb-Jul 2006	Informed by SEA Scoping workshop and further consultation with Consultation Authorities and Council officers. Presented in Scoping Report, updated in Appendix B of this report
Environmental problems identified	Feb-Jul 2006	Informed by SEA Scoping workshop and further consultation with Consultation Authorities and Council officers. Presented in Scoping Report, updated in Section 3.5 of this report
Assessment of future of Shetland without the Transport Strategy	Oct 2006	Presented in Section 3.6
Alternatives developed and appraised	Feb-Sep 2006	Presented in Section 5
Environmental assessment methods established	Jun 2006	Proposed method set out in Scoping Report
Selection of alternatives to the strategy to be included in the environmental assessment	Sep 2006	Presented in Section 5
Identification of environmental problems that may persist after implementation and measures envisaged to prevent, reduce and offset any significant adverse effects	Oct 2006	Mitigation measures set out in Section 6.2
Monitoring methods proposed	Oct 2006	Presented in Section 7
Consultation timescales	29 Nov 2006 – 26 Jan 2007	

3 The Shetland Transport Strategy and Context

3.1 Outline and Objectives of the Shetland Transport Strategy

3.1.1 Background to the Transport Strategy

Regional Transport Partnerships (RTPs) came into being on 1st December 2005, following publication of the Transport (Scotland) Act 2005. Shetland Transport Partnership is now required to prepare a statutory Regional Transport Strategy (RTS). The draft strategy has been developed for the purpose of public consultation and makes the case for investment and infrastructure in Shetland and provides a guide to co-ordinate transport activities in Shetland. The strategy also makes the case for specific projects that would be candidates for funding from the Scottish Executive through specific grants.

The Shetland Transport Strategy fulfils requirements for both local and regional transport strategies. Its remit therefore ranges from minor proposals to major infrastructure projects and strategic policies.The final version of the Shetland 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
- Support the National Transport Strategy and provide an input to the Strategic Transport Projects Review

The final Shetland Transport Strategy will form one component of a hierarchy of plans which will also include:

- Investment Plans
- Delivery Plans
- Annual Reports

3.2 Key Facts Relating to the Shetland Transport Strategy

Key facts relating to the strategy are set out in Table 3.1 below:

Table 3.1 Key Facts Relating to the Shetland Transport Strategy

Name of Responsible Authority	Shetland Transport Partnership (STP)
Title of Strategy	Shetland Transport Strategy
What Prompted the Strategy	Legislation - Transport (Scotland) Act 2005
Strategy Subject	Transport
Period Covered	10-15 years
Frequency of Updates	The Transport Strategy is to be revised and refreshed every 4 years in line with the local government electoral cycle. ▪ The 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 strategy) will be updated when the Shetland Transport Partnership considers it appropriate ▪ Delivery of a business plan: a 3-year plan for implementing the Transport Strategy will be updated annually to reflect local and central government planning and funding cycles. This includes plans for revenue and capital spending/borrowing ▪ Annual progress reports will be prepared
Strategy Area	Shetland Islands
Strategy Purpose	To set out Shetland Transport Partnership's intentions for transport for the next 10-15 years.
Contact Point	Michael Craigie Head of Transport Shetland Islands Council Gremista Lerwick Shetland ZE1 0PX (tel) 01595 744 160 (fax) 01595 744 136 (mo) 07717 514 139 michael.craigie@shetland.gov.uk

3.2.1 Contents of the Transport Strategy

The draft Transport Strategy has been produced for consultation purposes. The first part of the document sets out the context for the Strategy; the key issues for Shetland's transport which the strategy must address. It then sets out the overall vision and objectives of the Strategy. In the development of the Transport Strategy, a number of alternative options were considered. These were appraised using the Scottish Transport Appraisal Guidance (STAG) and this process and its outcomes are summarised in the strategy document.

The latter part of the strategy sets out the proposed policies which will direct the development and maintenance of Shetland's transport network. The policies, which include a support for number of proposed transport schemes, are divided into three sections; external links, inter-island links and internal links.

The remainder of the strategy document states intentions for delivery and prioritisation of the policies set out previously. Proposals for monitoring performance against the objectives, targets and performance indicators adopted in the strategy, are then set out in the final chapter.

The overall structure is as follows:

- Key Issues Shaping the Transport Strategy
- Vision and Objectives
- Policies
  - External Links
  - Inter-island Links
  - Internal Links
- Delivery
- Monitoring

3.2.1.1 Transport Strategy Objectives

The objectives of the Shetland Transport Strategy sit within Scotland's five national transport objectives as set out in Scotland's Transport Future (2004)[2]; economy, social inclusion and accessibility, environmental protection, safety and integration. The Shetland transport objectives were developed following consultation exercises and analysis of opportunities and constraints which exist currently and are predicted for the future. Shetland's transport objectives are as follows:

Economy

1. Work to ensure ongoing reliability of the islands' 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 across each of the five main objectives 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.

Social Inclusion and Accessibility

1. Support the retention of measures to ensure continued operation and availability of external, inter-island and internal lifeline freight, livestock and passenger services and infrastructure 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 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

[2] Transport White Paper http://www.scotland.gov.uk/library5/transport/stfwp-00.asp

Environmental Protection

1. Reduce carbon dioxide and greenhouse gas emissions, and the consumption of non-renewable resources arising from transport, travel and infrastructure in control of the STP, SIC 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 the 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.

Safety

1. Ensure compliance with internal and external 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.

Integration

1. Deliver effective and integrated public transport links to and from Shetland's principal passenger transport terminals at Sumburgh and Holmsgarth, with the inter-island ferry service terminals, and the inter-island air service.
2. Deliver effective transport integration opportunities and facilities at Shetland's principal passenger transport terminals at Sumburgh and Holmsgarth, and at Shetland's principal public transport hubs within Lerwick.
3. In partnership with other RTPs, encourage effective transport integration opportunities at Shetland's principal UK 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

3.2.1.2 Transport Strategy Policies

In total, the Transport Strategy contains 107 policies which are grouped under the themes of External Links, Inter-island Links and Internal Links. The policies which relate to Inter-island Links contain a number of projects for specific infrastructure projects and the Internal Links policies contain proposals for road improvement schemes. Table 3.2 summarises the main policies and projects (where relevant) for each of these themes.

Table 3.2 Shetland Transport Strategy Policies

Policy Theme	Policies
External Links	
Air Services	12 policies aimed at seeking improvements to existing external air services. These include improved services to the UK mainland and Scandinavia, the continuation/development of the Air Discount Scheme, supporting development and improvements at Sumburgh Airport including improved public transport links and transport interchange facilities at the airport, monitoring of external air services, promoting fuel efficiency and supporting the continued provision of air freight services.
Ferry Services	13 policies covering support for continued lobbying for improvements to the Northern Isles Ferry Service, the investigation of additional Scandinavian ferry links, the ongoing strategic development of Shetland's ports and consideration of the creation of a single port authority for Shetland.
Inter-island Links	
Fixed Links	4 policies covering fixed links including support for the principle of fixed links between the Shetland Mainland and the islands of Bressay, Yell, Unst and Whalsay. The Transport Strategy supports proposals for the Bressay Bridge and for undertaking feasibility studies to confirm the robustness of the business case for links to Unst, Yell and Whalsay. If studies confirm a feasible business case for fixed links, the Transport Strategy will be reviewed and an additional environmental assessment carried out. The policies support proposals for the Bressay Bridge.
Inter-island Ferry Links	10 policies covering inter-island passenger and freight ferry services including fares, concessionary schemes, operation, community ferry hires system, service performance monitoring, fuel efficiency, safety and public transport integration.
	Policies include proposals to support or promote the following projects: ▪ Replacement ferry terminal at Gutcher ▪ Replacement ferry terminal at Belmont ▪ Replacement ferry terminal at Laxo ▪ Upgraded ferry terminal at Vidlin ▪ Whalsay - either a harbour extension at Symbister or development of a new ferry terminal at North Voe ▪ Fetlar - new berthing structure at Hamars Ness ▪ Skerries - diving survey to investigate the widening of the South Mouth
Inter-island Air Services	9 policies covering the continued operation and development of inter-island air services, fares, monitoring of operational performance/utilisation and safety/security.
Internal Links	
Walking, Cycling, Behavioural Change	9 policies covering the promotion of walking and cycling, provision of appropriate infrastructure including footways, cycle routes and storage facilities. Behavioural change policies relate to the promotion of school and work place travel plans.
Local Road Network	23 policies covering road improvements, road and bridge maintenance, safety, flooding issues, street lighting, winter maintenance and the development of park and ride/transport interchange facilities. Policies include proposals for 7 road improvement schemes.
Public Transport	21 policies covering the provision of public transport services, fares, integration and infrastructure.

Environment	
Environment	6 environmental policies, which were developed through the SEA process, cover external, inter-island and internal links. These relate to protected sites/species, scheme design, waste, drainage and the use of alternative fuels.

3.3 Relationship with other Plans, Programmes, Strategies and Environmental Objectives

Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes an outline of the Transport Strategy's relationships with other relevant plans, programmes and strategies (PPS), and how the environmental protection objectives of each PPS has been taken into account in the preparation of the Transport Strategy. This section covers these issues.

Table 3.3 lists the PPS that have been identified as being of relevance to the Shetland Transport Strategy. The relationship between the strategy and each PPS is explained in Appendix A. Appendix A also highlights how the requirements of these PPSs that are relevant to the SEA have been addressed.

Table 3.3 Other Relevant Plans, Programmes and Strategies

Local and Regional Plans
▪ Shetland Local Plan ▪ Shetland Structure Plan ▪ 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 ▪ Shetland Cultural Strategy: A Vision for Life in Shetland (2004-2008) ▪ Orkney & Shetland Area Waste Plan
National Plans and Programmes
▪ Scotland's Transport Future - Transport White Paper June 2004 ▪ 'Seas the Opportunity' A Strategy for the Long Term Sustainability of Scotland's Coasts and Seas ▪ National Cycling Strategy (Department for Transport) (1996) ▪ Scottish Climate Change Programme (2000) ▪ Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2000) ▪ UK Biodiversity Action Plan (1994) and Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland ▪ Passed to the Future (Historic Scotland's policy for the sustainable management of the historic environment) ▪ National Transport Strategy ▪ National Transport Strategy SEA Environmental Report ▪ Choosing our Future: Scotland's Sustainable Development Strategy ▪ Memorandum of Guidance on Listed Buildings and Conservation Areas 1998 ▪ National Waste Strategy ▪ UK Energy White Paper: Our Energy Future – creating a low carbon economy
National Legislation
▪ 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 2005
- Countryside and Rights of Way Act 2000
- 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
- National Planning Framework 2004
- Water Environment (Controlled Activities) Regulations 2005
- The Pollution Prevention and Control (Scotland) Regulations 2000

International

- Directive 79/409/EEC on the Conservation of Wild Birds 1979
- Directive 92/43/EEC on the conservation of Natural Habitats of Wild Fauna and Flora 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
- Kyoto Protocol to the UN Framework Convention on Climate Change (1992) (1997 – not yet in force)
- Directive 2003/30/EC On the Promotion of Biofuels and Other Renewable Fuels for Transport
- Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment

3.4 Environmental Baseline Situation

The SEA Act requires the Environmental Report to include a description of 'the relevant aspects of the current state of the environment' and 'the environmental characteristics of areas likely to be significantly affected'.

Environmental baseline information/data provides the basis for predicting, evaluating and monitoring the environmental effects of the strategy. It has informed the environmental problems detailed in Section 3.5 and the setting of SEA Objectives (see Section 4.2).

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

- The SEA objective(s) relevant to the topic
- Indicators (where available)
- Baseline data/information
- Data gaps
- Trends and targets (where possible)

3.5 Environmental Problems

Schedule 3 Paragraph 4 of the Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes a description of existing environmental problems, in particular those relating to any areas of particular environmental importance. The purpose of this section is to explain how existing environmental problems will affect or be affected by Transport Strategy and whether the strategy is likely to aggravate, reduce or otherwise affect existing environmental problems.

Environmental problems were identified through discussions with Shetland Islands Council, Historic Scotland, Scottish Natural Heritage (SNH), Scottish Environment Protection Agency (SEPA) and other stakeholders, as well as through analysis of baseline data. Relevant environmental problems and their implications for the strategy are summarised in Table 3.4.

Table 3.4 also highlights some environmental problems which have the potential to arise due to transport-related activities. It should be noted that this does not form a comprehensive list of

environmental effects that could arise from the Transport Strategy. The likely environmental effects of the strategy that have been predicted and analysed as part of this SEA are presented in Section 6.

Table 3.4 Environmental Problems Relevant to the Shetland Transport Strategy

Environmental Problems	Implications
Biodiversity	
There is potential for construction and maintenance of transport infrastructure to cause negative impacts on areas which are designated for their importance for natural heritage. These include: ▪ European protected sites: Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar Sites. ▪ Nationally protected sites: Sites of Special Scientific Interest (SSSIs) ▪ Locally designated sites (Local Protection Areas)	The Transport Strategy has 2 objectives relating to biodiversity. This SEA predicts the likely effects of strategy policies and major schemes on protected sites and species using SEA objective 1 Policies have been developed to mitigate potential impacts on Natura sites and European Protected Species
There is the potential for the construction and maintenance of transport infrastructure to have negative impacts on species, including European Protected Species (EPS), nationally protected species and priority LBAP species. These could include impacts in coastal and marine environments from the construction of fixed links and ferry terminals. The associated noise could disturb seals, otters, cetaceans and some birds. Construction could also affect sedimentation patterns, with subsequent effects on species	
With regard to the upgrading of roads, the scope for modifying standard solutions to suit local circumstances has not been maximised in the past. Greater attention could be given to mitigating impacts or enhancing biodiversity through 'softer' engineering approaches	Road scheme policies 4&5 commit STP/SIC to developing road scheme designs and carrying out maintenance which is 'appropriate to Shetland', supporting species native to Shetland. The transport strategy also includes a policy to promote infrastructure which is appropriate to its location in scale and design
Poor design, location, construction and maintenance of roads has caused erosion, leading to poor colonisation by vegetation	
Inappropriate non-native plant species have been seeded in some roadside verges	
Local requirements for roadsides constrain options for mitigating visual impacts and enhancing biodiversity. For example, verges are used in some areas as walkways, restricting opportunities for biodiversity enhancements. In other areas visibility must be maximised and species such as long grasses are inappropriate for road safety reasons	This is an inherent conflict between the needs of some communities and the objectives and policies of the strategy. The strategy does contain some proposals for footways.
Culverts have led to the loss of habitats associated with roadside ditches	The transport strategy contains a policy promoting the use of Sustainable Urban Drainage Systems (SUDS) which would provide opportunities to enhance biodiversity
Road kills are a problem in some areas, particularly for European Protected Species such as otters. The loss of individuals can impact on the demographic structure and stability of local populations	A policy has been included in the strategy to address potential impacts on protected species
Dredging associated with inter-island transport (fixed	A number of projects promoted by

links, ferry terminals, ferry access improvements) can have negative effects on coastal and marine ecology	the strategy have the potential to have negative impacts on coastal and marine ecology. These are highlighted at a strategic level in this report, with mitigation measures to prevent, reduce or offset impacts (see Section 6.2). More detailed appraisals (e.g. Appropriate Assessment, EIA) will be required for some projects to identify specific impacts
There is the potential for fixed links to allow pests to cross between islands and affect sensitive sites or species	Bressay Bridge which was proposed prior to the Transport Strategy's development is the only fixed link currently being promoted and mitigation is included in the ES to reduce the effect of this potential impact. This will be an important consideration if fixed links are found to be feasible and the strategy reviewed as a result
Landscape and Visual Amenity	
Roadside erosion and a lack of colonisation by vegetation, as well as negatively affecting biodiversity as stated above, can have negative effects on visual amenity and landscape character	Road scheme policies 4&5 commit STP/SIC to developing road scheme designs and carrying out maintenance 'appropriate to Shetland', supporting species native to Shetland and implementing the Roadside Biodiversity Action Plan
Light pollution from street lighting - street lights have been placed where they are not always necessary or appropriate, for example adjacent to new footpaths out with settlements	Addressed to an extent by the strategy's lighting policies regarding modern lighting apparatus
Inappropriate design – transport infrastructure has to date given insufficient attention to 'softer' engineering approaches in the provision of infrastructure. Hard engineering approaches to for example roads and car parks are not always appropriate to their setting	The transport strategy includes a policy to promote transport infrastructure which is appropriate to its location in scale and design
Impact on landscape quality through the deterioration of a valued landscape feature as a result of the introduction of transport infrastructure such as unsympathetic road widening	The transport strategy includes a policy to promote transport infrastructure which is appropriate to its location in scale and design
The scale and design of smaller infrastructure, for example lay-bys, bus stops and other street furniture, is not always appropriate to its setting	The transport strategy includes a policy to promote transport infrastructure which is appropriate to its location in scale and design
Cultural Heritage	
The inappropriate design of infrastructure can also have negative impacts on the historic and cultural environment, particularly in sensitive areas such as in proximity to Scheduled Ancient Monuments (SAM), Listed Buildings, Conservation Areas and areas of important local archaeology. This can have direct impacts and can also affect the setting of historic buildings and features	The transport strategy includes a policy to promote transport infrastructure which is appropriate to its location in scale and design
The construction of infrastructure can lead to the loss of or damage to historic features. For example, some listed piers have been replaced rather than repaired in the past	Potential impacts on historic features have been predicted through this SEA, and mitigation measures developed (see Section 6.2). Effects of transport on the listed building and Scheduled Ancient Monuments are to be monitored following

	implementation of the strategy
The maintenance and management of existing infrastructure may affect historic environment features, for example historic bridges and piers	The transport strategy includes a policy to promote transport infrastructure which is appropriate to its location in scale and design
There is the potential for construction and maintenance of infrastructure to cause disturbance of known archaeological sites and their settings as well as known sites which may be hidden due to, for example the encroachment of peat	Mitigation measures were developed to prevent, reduce or offset impacts (see Section 6.2)
Water and Soil	
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	The transport strategy includes a policy to promote transport infrastructure which is appropriate to its location in scale and design. Regarding run-off, the strategy also contains a policy which promotes the use of SUDS
Uncovered storage of road grit can pollute water bodies and land adjacent to roads, potentially conflicting with requirements of the Water Framework Directive	Winter maintenance policy 1 promotes the provision of grit bins
The pollution of water bodies from transport construction and maintenance has the potential to affect designated areas	Mitigation measures have been developed through the SEA process (including new policies related to protected sites) to prevent, reduce or offset impacts
Air Quality and Contribution to Climate Change	
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 if not adequately mitigated	No transport developments are proposed for this area. This issue should be considered in future planning applications for the area
Shetland's greenhouse gas emissions are influenced by its isolation and the need to transport people and goods by road, air and sea	Potential impacts of the strategy on greenhouse gas emissions are stated in this report. This tension is inevitable for isolated island communities
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 Transport Strategy contains an objective to reduce the vulnerability of transport and infrastructure to the effects of climate change. Several projects proposed would reduce the impact of storms and rising seas on transport
The provision of coastal infrastructure can affect coastal processes (including sedimentation patterns) which can lead to erosion and increased vulnerability to sea level rise and storm damage. Offshore sediment, which is very limited around Shetland, feeds beaches which carry roads and protect major infrastructure, for example Sumburgh airport	Impacts of major schemes on sedimentation patterns should be addressed in more detailed appraisals e.g. EIA, Appropriate Assessments (where European sites could be affected)
Population and Human Health	
The upgrading and straightening of roads can encourage high vehicle speeds, which has safety implications for all, particularly pedestrians e.g. pony riding / children on main roads	The Transport Strategy contains a number of policies relating to road safety, including the implementation of traffic calming and road safety schemes, which link to the Shetland Road Safety Plan
Accessibility to health services can be a problem for	The Transport Strategy aims to

outlying communities, particularly in poor weather or to those without access to private transport	improve services to the islands and integration between public transport modes. Beyond this, this problem is out with the scope of the Transport Strategy
Material Assets	
Major peat landslips have caused significant damage to transport infrastructure and private property. Such landslides can be exacerbated by slope destabilisation due to inappropriately placed/designed roads and the associated run-off	The transport strategy includes a policy to promote transport infrastructure which is appropriate to its location in scale and design, including the following commitment: 'The scale of road improvement schemes will be in keeping with the local environs'
New infrastructure can result in the loss of material assets, for example agricultural land. Construction also uses materials from quarries/borrow pits	To reduce resource use, the strategy includes the following policy: 'wherever practicable, SIC will ensure that waste materials associated with transport infrastructure are reduced, reused, recycled or recovered' to reduce the use of new resources
General Issues	
Development Control - Scattered and low density settlements has implications for transport, for example requiring additional roads and creating difficulties in providing effective public transport, which therefore encourages private car use	This problem can be addressed through development planning and control processes
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 environmental effects are unlikely to be assessed and mitigated	This SEA highlights a number of projects which may not require EIA, allowing and promoting early comment from statutory consultees
Historically there has been very limited monitoring of the environment and of the environmental effects of transport policies and projects in Shetland	Proposals for monitoring of environmental impacts of transport are set out in Section 7
Major development proposals could have implications for transport infrastructure and for vehicle movements, for example proposals for a Super Quarry near Sullom Voe, major housing developments, an oil rig decommissioning site, major wind farms, fish farms, etc	Transport implications will be addressed in applications for planning consent

3.6 Likely Evolution of the Environment Without the Shetland Transport Strategy

This section considers the likely future changes to Shetland's environment without the new Transport Strategy. This focuses on changes which would take place as a result of transport related activities and does not covered all other possible activities, although the wider context is briefly noted.

By way of context, it must be noted that other activities can have a substantial influence on Shetland's environment. Development in Shetland is controlled by the following plans:

- Shetland Local Plan (adopted, 2004)
- Shetland Structure Plan 2001-2016 (Written Statement, 2000)

While the effects of these plans have not been assessed as part of this SEA, their relationship with the Transport Strategy is identified here and in Appendix A. The Shetland Structure Plan identifies the following issues:

- A declining and aging population combined with migration from smaller islands to main towns.
- Despite the predicted decline in population there is an increasing demand for new housing, particularly around main towns. This is in part due to a reduced average number of people per dwelling.
- The economy is considered to be fragile and there are policies promoting economic diversification. Employment sectors which are being promoted include knitwear, renewable energy projects (such as major wind farms), aquaculture and fish processing and tourism development.

Table 3.5 on the following page summarises the changes to the environment without the Transport Strategy, focusing on transport related changes.

Table 3.5 Likely Evolution of the Environment without the Strategy

SEA Category	Possible Changes without Transport Strategy
Biodiversity	The ecological impacts from projects promoted by the Transport Strategy would not occur. The Roadside BAP which has been produced by SIC would reduce the effects of road maintenance and generally improve the quality of roadside habitat. This would apply irrespective of the Transport Strategy.
Landscape	The landscape and visual impacts of projects promoted by the Transport Strategy would not occur. Existing problems relating to inappropriate transport infrastructure design and lighting would remain; the Transport Strategy includes measures to tackle these problems.
Cultural Heritage	The effects on cultural heritage of projects promoted by the Transport Strategy, including effects on archaeology, would not occur. Transport links islands and communities and in this sense has an important relationship with Shetland's cultural heritage. The Transport Strategy will retain these links.
Local Air Quality	Local air quality is good and would remain so, with or without the Transport Strategy.
Climate Factors	Without the Transport Strategy greenhouse gases associated with Shetland's transport and traffic are predicted to be slightly less.
Water environment	The effects on the water environment resulting from projects promoted by the Transport Strategy would not occur. However, the Transport Strategy promotes the use of SUDS.
Material Assets	The effects of major projects on material assets (e.g. loss of land) would not occur if the Transport Strategy is not implemented. Transport is linked to economic development. Improved transport links may facilitate other development activities including land for employment, leisure and residential uses.
Population including Human health	The effects on population as a result of not implementing the Transport Strategy are not known. Transport links are vital in maintaining population levels on Shetland and its more remote islands. Some economic development activities may not be realised without improved links which in turn may affect population levels. Proposals for improvements to public transport and for cyclists and pedestrians would not be implemented resulting in poorer accessibility and fewer opportunities for exercise. An increase in road traffic increases the risk of road traffic accidents. However, road safety schemes would not be implemented without the Transport Strategy.

4 Carrying out the Assessment

4.1 Introduction

This chapter summarises the approach taken in the assessment of the draft Transport Strategy and its alternatives. It sets out the SEA objectives that were used to appraise the Transport Strategy. The assessment of alternatives using the Scottish Transport Appraisal Guidance (STAG) is also introduced and uncertainties/assumptions stated. A full methodology for the assessment is presented in Appendix D.

4.2 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 Transport Strategy, including its objectives and policies.

The objectives and 'matters for consideration' were used to assess the effects of the strategy on the environment by assessing whether predicted changes to the baseline would have positive, negative or neutral effects on the SEA objectives.

The development of SEA objectives took into account:

- SEA Guidance
- Examples of objectives used for relevant plans
- Knowledge amongst stakeholders (including the Consultation Authorities) of local environmental issues and local policy
- The baseline data review
- Existing environmental problems

The proposed SEA objectives, shown in Table 4.1, 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, 'matters for consideration' are listed for each objective. These were used in undertaking the assessment of the Transport Strategy's policies 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.

Table 4.1 SEA Objectives

Ref	SEA Objective	Matters for Consideration in the Assessment	SEA Category
1	Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ LBAP priority habitats and species ▪ Habitats adjacent to roads ▪ Coastal processes ▪ Erosion and sedimentation ▪ Effects of construction and operation phases of developments	Biodiversity, Flora and Fauna
2	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities, important footpaths ▪ Light pollution	Landscape
3	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes ▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	Cultural Heritage
4	Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO2 and PM10	Air
5	Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	Climate
6	Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	Climate
7	Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality	Water
8	Improve accessibility and reduce social exclusion	▪ Accessibility of public transport ▪ Accessibility of goods and services, including health services	Population
9	Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Population

Ref	SEA Objective	Matters for Consideration in the Assessment	SEA Category
10	Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Human Health
11	Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of 'improved' versus 'unimproved' land ▪ Land contamination ▪ Soil/peat	Material Assets
12	Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	Material Assets

4.3 Testing the Objectives of the Transport Strategy

This stage of the SEA Scoping process involved testing the objectives of the Transport Strategy against the SEA objectives. The purpose was to highlight any potential areas of conflict. If appropriate, the strategy's objectives could have been amended to remove conflicts, therefore reducing potentially adverse environmental effects.

The objectives of the Transport Strategy (presented previously in Section 3.1) were tested using the matrix in Appendix C, which contains comments regarding potential incompatibilities.

Incompatibilities tended to occur where objectives of the Transport Strategy have the potential to result in transport schemes, with associated physical effects on the environment. A core function of the strategy is to promote methods to improve accessibility and some of these methods could involve physical development. It was therefore deemed inappropriate at this stage to alter strategy's objectives to preclude all development in an island location dependent on good transport links within the islands and to the mainland.

Later stages in the SEA and in the development of the strategy provided opportunities to mitigate impacts of policies and associated developments.

4.4 Assessment Methods

The assessment was carried out on two levels. Five strategic alternatives were considered in the development of the draft Transport Strategy. These were appraised using the Scottish Transport Appraisal Guidance[3] (STAG1). Alternatives and STAG are discussed further in Chapter 5.

Following the development of a preferred option for the Transport Strategy, policies were developed to support the key themes (External, Internal and Inter-island Links) and these policies were assessed using the SEA objectives presented in Table 4.1. A number of policies support or promote specific transport schemes. Geographical information was available for the schemes promoted by the Transport Strategy and it was therefore possible to appraise them in greater detail.

Full details of the methods used to assess the environmental impacts of the policies are presented in Appendix D. The SEA environmental assessment process involved:

[3] http://www.scot-tag.org.uk/stag/index.html

- Predicting the **potential environmental effects** of each policy. Where specific transport schemes were named within policies, these schemes were appraised in more detail in the context of their location. This is discussed further in Appendix D and results are summarised in Section 6
- Determining the likely **magnitude** of the effects and the importance of the receptors
- Determining the **sensitivity** of receptors
- Evaluating the **significance** of the effects of implementing each policy of the Transport Strategy
- Predicting the **cumulative effects** of the policies
- Developing **mitigation** measures to prevent, reduce or offset effects
- Revising assessment taking into account agreed mitigation measures

4.5 Uncertainties and Assumptions

Due to the strategic nature of the strategy being appraised, uncertainties and assumptions were inevitable in this SEA. Of note are:

- The general nature of many policies means that they cannot be attributed to a particular location and impacts are therefore uncertain.
- For named projects promoted by the Transport Strategy it is not possible to accurately predict all environmental effects due to a lack of information relating to the design of schemes.
- In assessing impacts, the mitigation measures set out in Section 6.2 have been taken into account. There are opportunities to mitigate impacts of projects further during detailed design and by undertaking Environmental Impact Assessments (EIA). However at this strategic level a precautionary approach has been used and in determining whether an impact would be significant.

5 Alternatives

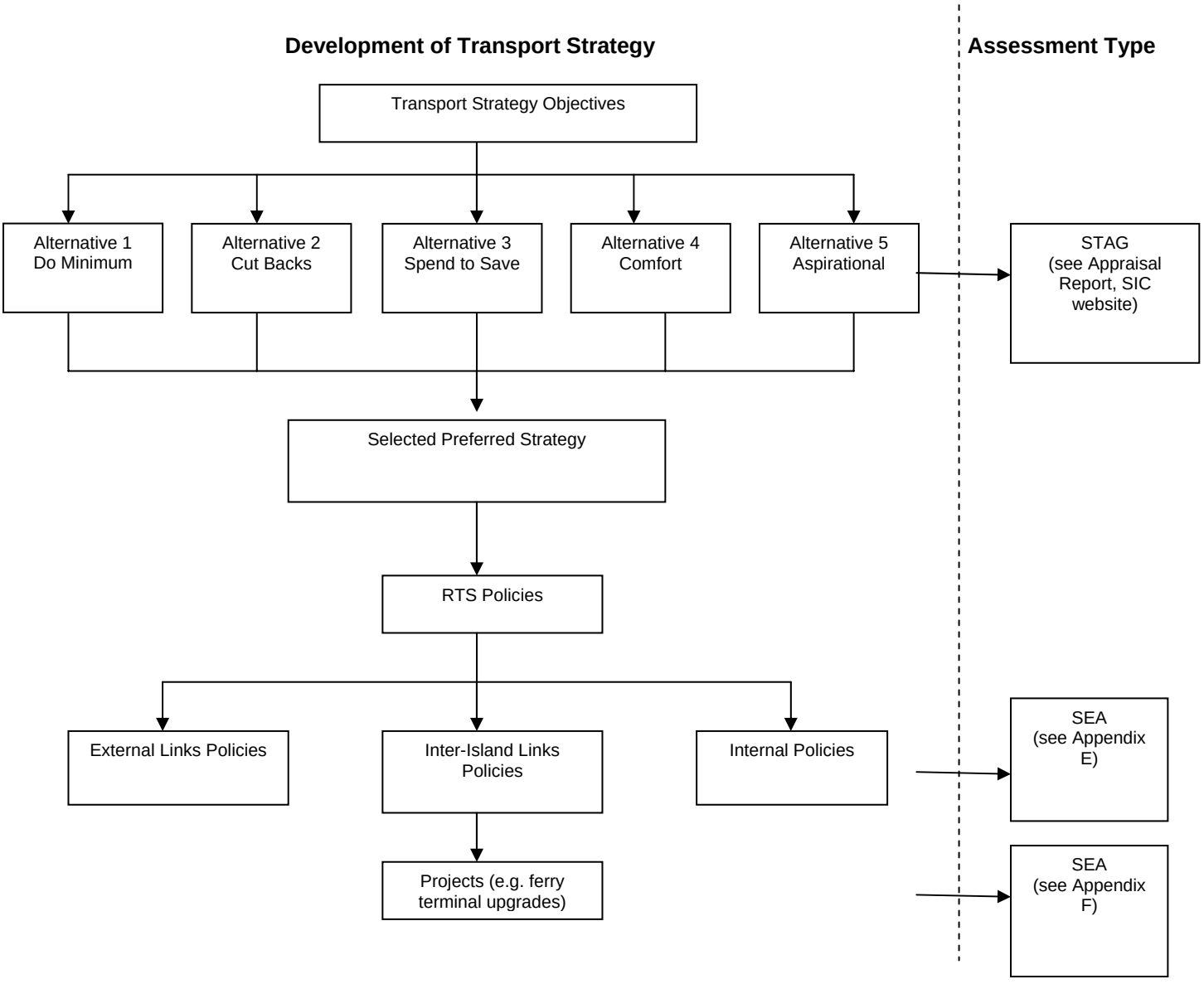
5.1 Introduction

As part of the development of the Transport Strategy, different approaches to achieving the strategy's objectives were considered. Five *strategic scenarios* were developed and appraised (see Section 5.2). Appraisals, which addressed the measures (including projects) which would form part of these scenarios, were carried out to highlight likely impacts and to determine how closely the Transport Strategy's objectives would be met by each alternative strategic scenario.

The appraisals of alternative scenarios and measures were used in combination to develop the preferred strategic option. For the preferred strategic option, policies were developed and these are assessed using this SEA, the results of which are presented in Section 6.

Figure A (below) summarises the development of the strategy and assessments applied at the different stages.

Figure A Transport Development and Assessments



5.2 Strategic Alternative Scenarios

5.2.1 Overview of the Strategic Alternative Scenarios

The five strategic scenarios which were considered in the development of the preferred option are based on different possibilities for both capital expenditure funding. The five scenarios are summarised in Table 5.1.

Table 5.1 Strategic Alternative Scenarios

Option	Overview
Do Minimum	A strategy based around the continuation of the current approach, based upon the priorities established in the 2000 LTS. This implies a continuation of current approach to rural accessibility and spending priorities. Includes upgrading/replacement of ferry terminals.
Cut Backs	A strategy designed to reduce revenue or capital finances to levels which are available on a sustainable basis. This implies a reduction in rural accessibility, and a greater reliance on private transport. Includes upgrading/replacement of ferry terminals.
Spend to Save	Development of capital infrastructure in the short term in order to save revenue finances in the longer term. This could also include measures to generate income. Includes construction of fixed links.
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 that the STP would receive more revenue, but no extra capital. Includes upgrading/replacement of ferry terminals.
Aspirational	A strategy including all of the potential options that the STP would wish to implement if there were no financial constraints i.e. reliant on the STP receiving more revenue and more external capital. Includes construction of fixed links.

5.2.2 Appraisal Methods

The strategic scenarios were appraised to provide an initial steer on the most appropriate strategic direction for the Transport Strategy. Appraisals used the Scottish Transport Appraisal Guidance (STAG) which considers effects on economy, environment, safety, integration and accessibility/social exclusion.

The appraisal also considered the 'deliverability' of each strategic scenario. The outcomes of both forms of appraisal are summarised in Section 4 of the Transport Strategy with the reasoning provided for the choice of the preferred option.

5.2.3 Appraisal Results

5.2.3.1 STAG Results

The detailed results of the strategic scenario appraisals are presented in the Transport Strategy Appraisal Report, presented as a one of the background supporting reports. Table 5.2 summarises the results of the STAG appraisal of strategic scenarios. Scores are assigned on a scale of +3 (most positive) to +3 (most negative).

Table 5.2 Appraisal of Strategic Scenarios[4]

Transport Objectives	Strategic Scenarios				
	Do minimum	Cut Backs	Spend to Save	Comfort	Aspirational
Environment	**-2** Main impacts in the reconstruction of maritime infrastructure. Other impacts are considered to be able to managed or mitigated (developments would include ferry terminals)	**-2** Construction impact & increased emissions (developments would include ferry terminals)	**-3** Risk of negative impacts during construction (developments would include fixed links)	**-2** Construction impacts of ferry and terminal replacement programme. Potential for slight reduction in emissions (developments would include ferry terminals)	**-3** Risk of adverse impacts (developments would include fixed links)
Safety	**0** Generally has no appreciable overall impact	**-1** Few opportunities for addressing issues	**-1** Few opportunities for addressing issues. Likely to encourage more private car use	**+1** Opportunities for addressing issues.	**+1** Opportunities for addressing issues.
Economy	**+1** Moderate positive impact, in providing accessibility support to more remote areas, as opposed to "draw down" of support	**-/+** Negative for remote areas. Could improve performance in central areas	**+2** Wide range of impacts for different areas	**+2** Opportunity to improve viability of some remote areas	**+2** Opportunity to improve viability of some remote areas. Economic boost due to infrastructure works
Integration	**+1** Supports ongoing integration of Shetland's transport network	**-2** Reduces integration opportunities	**0** Reduces integration opportunities for public transport users – although potentially removes integration problems associated with ferry crossings	**+2** Increases integration opportunities	**+2** Increases integration opportunities
Accessibility	**+2** Addresses continuation of links to islands	**-2** Significant risk of accessibility and social inclusion problems	**-1** Some risk of accessibility and social inclusion problems	**+2** Should address accessibility and social inclusion problems	**+2** Should address accessibility and social inclusion problems

[4] Reference: *Transport Strategy Appraisal Report*

5.2.3.2 Individual Scheme Appraisal

Following from the appraisal of strategic alternatives, individual appraisals were undertaken of the alternative schemes and policies which could make up the preferred strategy. This appraisal was again undertaken using the STAG appraisal framework. These appraisals are presented in the Transport Strategy Appraisal Report.

The outcomes from the individual scheme appraisal were used to confirm the preferred strategy.

5.2.3.3 The Preferred Strategic Approach

The initial appraisals confirmed that no individual scenario would achieve the Transport Strategy's objectives on its own.

The focus of more detailed appraisal for the next 10 to 15 years has therefore been placed on:

a) Limited cost (to STP/SIC) options for improving the performance of external links
b) Cut-backs / Spend to Save approach to inter-island links
c) Cut-backs / Spend to Save approach to internal links

Policies were developed for the preferred option and the likely environmental effects of these policies were assessed as part of the SEA. Chapter 6 presents a summary of the findings of this process.

6 Assessment of Effects and Mitigation

6.1 Introduction

This chapter presents the findings of the assessment of the policies contained in the draft Transport Strategy. It also sets out mitigation measures developed to prevent, reduce or off-set impacts. The assessment of the preferred option for the Transport Strategy was undertaken in stages. The first stage was an appraisal of each policy presented in the strategy (including those which promote specific projects) using the method described in Section 4.4 and Appendix D (the results are presented in Appendices E and F). The second stage was to consider the combined effects of each policy theme. The third stage was to summarise the effects of the Transport Strategy on each of the SEA topics and identify the likely cumulative effects of the strategy.

The assessments of effects and development of mitigation was undertaken in an iterative manner. Potential effects were identified, mitigation measures were developed and the policies were re-assessed taking into account agreed mitigation measures. As a result the effects described in Section 6.2 and 6.3 are the residual effects of the Transport Strategy which assume that the mitigation measures set out in Section 6.4 will be implemented.

The following section sets out the mitigation measures that have been developed, including new policies and measures to be implemented in the design and construction of individual projects. It is followed by a summary of the predicted effects of the Transport Strategy's policies and the overall effects on each SEA topic.

6.2 Mitigation

This section contains mitigation measures developed to avoid, reduce or offset significant adverse effects that the Transport Strategy may have on the environment. Mitigation takes two forms:

- New or amended policies to mitigate effects or assist in achieving the objectives of the Transport Strategy with respect to the environment
- Measures that SIC are committed to implementing for individual projects promoted by the policies of the Transport Strategy

These mitigation measures were taken into account in assessing the significance of the effects of policies. For this reason, and to assist the reader, this section precedes the assessment of effects.

6.2.1 New Policies

The following policies were developed to mitigate environmental impacts predicted through the SEA process and have been incorporated within the Transport Strategy.

6.2.1.1 EPM1 Natura 2000 sites

Potential Impacts on the integrity of Natura 2000 sites (or proposed Natura 2000 sites) will in the first instance be prevented by locating transport activities likely to cause disturbance away from such sites. Where activities could directly, indirectly or in combination with other proposals affect the interests of a Natura site, the proposals will be screened for the potential for significant effects to the interests of the site in consultation with SNH. If the screening indicates potential for significant effects studies will be completed to inform an Appropriate Assessment.

6.2.1.2 EPM2 Protected Species

Potential impacts on protected species will be avoided in the first instance by locating transport activities likely to cause disturbance away from sites associated with protected species. In other cases STP and SIC will seek to avoid impacts by complying with protected species legislation and by licensing proposed disturbance through the relevant licensing authority – Scottish Executive Environment and Rural Affairs Department (SEERAD[5] or SNH).

6.2.1.3 EPM3 Scheme Design

New transport infrastructure will minimise impacts on key ecological, heritage, landscape and topographical features. The scale and design of all schemes will be fitting to the local landscape character and aligned or located in a manner which uses the existing landform to good effect and which minimises the scale of required earthworks. In addition:

- Design profiles will reflect existing natural slopes and be designed to avoid risks of landslips
- The scale of road improvement schemes will be in keeping with the local environs
- Effective environmental mitigation will be part of all transport infrastructure designs

6.2.1.4 EPM4 Waste

Wherever practicable, SIC will ensure that waste materials associated with transport infrastructure are reduced, reused, recycled or recovered

6.2.1.5 EPM5 Water

Where appropriate, Sustainable Urban Drainage Systems (SUDS) will be used in development of transport infrastructure

6.2.1.6 EPM6 Alternative Fuels

SIC will undertake a study into the use of alternative fuels (including biofuels) and energy conservation measures for the Council's fleet of vehicles

6.2.1.7 FL4 Fixed Links

Any engineering feasibility studies into this potential infrastructure will include an assessment of any potential environmental impacts, including effects on biodiversity (including all designated sites and protected species), cultural heritage, the landscape, the water environment and other relevant issues.

[5] Scottish Executive Environment and Rural Affairs Department

6.2.2 Mitigating Impacts of Transport Projects

For the projects that are promoted by the policies of the Transport Strategy, SIC is committed to implementing the following mitigation measures and have incorporated them within the strategy. These measures are listed under the aspects of the environment that have the potential to be affected.

6.2.2.1 Biodiversity

- Sensitive sites (protected sites, second tier sites, semi natural habitat) will be avoided where possible.
- Where appropriate, measures to enhance biodiversity will be implemented. Such measures may include seeding locally native species on roadside verges and other schemes
- Any scheme with the potential to affect Natura sites (SAC and SPA) will be subject to an Appropriate Assessment as required by the Habitats Directive
- Specialist surveys will be required for any schemes with the potential to adversely affect species protected under the Habitats Directive, the Birds Directive, the Wildlife and Countryside Act or priority Biodiversity Action Plan (BAP) species / habitats. Potential licensing requirements will be discussed and taken forward with SNH or SEERAD.
- Any developments likely to affect European Protected Species (EPS) will require specialist surveys to be carried out and for mitigation to be identified prior to consent being issued.
- Schemes with the potential to affect nationally or internationally designated sites will be subject to formal screening to determine whether EIA is required.

6.2.2.2 Landscape and Visual Amenity

- Any schemes that will potentially have an effect on National Scenic Areas or Gardens and Designed Landscapes will be subject to formal screening to determine whether EIA is required.
- Landscape and visual appraisals will be carried out for all major schemes to determine the likely effects of the scheme on landscape character and visual amenity.
- High quality design and construction principles will be applied to all new developments and modifications and improvements to existing schemes
- All schemes will be appropriately and sensitively designed for their location
- All schemes will be maintained to ensure they remain in good condition
- All schemes will retain existing important and distinctive landscape features where possible
- Where important and distinctive landscape features must be removed/modified or landscape character will be temporarily altered, Landscape Management Plans will be produced highlighting how the affected areas will be restored, reinstated and enhanced
- All landscape schemes will incorporate biodiversity enhancements where appropriate e.g. use of native species
- The Transport Strategy will improve the quality and appropriateness of street furniture (e.g. lighting and signage) to ensure they are appropriate to their setting, create a cohesive treatment and enhance streetscape quality

6.2.2.3 Cultural Heritage

- New transport related schemes in Conservation Areas will be of a high quality and will be designed to ensure they are appropriate to the character of the Conservation Area and its setting
- Any scheme with the potential to affect Gardens and Designed Landscapes, listed buildings or their settings will consider take into account the Memorandum of Guidance on Listed Buildings and Conservation Areas 1998[6] and will be subject to formal screening to determine whether an EIA is required

[6] http://www.historic-scotland.gov.uk/index/policyandguidance/memorandumofguidance.htm

- Surveys will be undertaken prior to the implementation of schemes to determine whether they will affect sites of archaeological importance and the setting of archaeological features
- Landscape character assessments will incorporate Historic Land-Use Assessments (HLA) to inform all related assessments in terms of the historic elements of landscapes

6.2.2.4 Water Quality

- The council will require that all new transport-related developments implement Sustainable Urban Drainage Systems (SUDS)
- All new transport schemes and improvement works will be carried out in accordance with relevant legislation for the protection of surface and groundwater (including the Water Framework Directive). These will also take into account SEPA's Pollution Prevention Guidelines (PPG):
  - PPG1: General Guide to the Prevention of Pollution
  - PPG2: Above Ground Oil Storage tanks
  - PPG5: Works In, Near or Liable to Affect Watercourses
  - PPG6: Working at Demolition and Construction Sites
  - PPG21: Pollution Incident Response Planning
- All engineering, building or other works in inland surface waters will require authorisation under the Water Environment (Controlled Activities) (Scotland) Regulations 2005 and may require licensing by SEPA
- Transport schemes and improvement works will implement appropriate means to minimise pollution from surface run-off e.g. oil separators and silt traps
- Schemes with the potential to affect Ramsar sites (designated wetlands) will be formally screened to determine whether an EIA is required
- In accordance with Scottish Planning Policy 7 (SPP:7), flood risk assessments will be carried out for all new schemes and transport infrastructure improvements

6.2.2.5 Environmental Impact Assessment

Where required, projects will be subject to Environmental Impact Assessment (EIA). The need for EIA will be determined on a project by project basis in liaison with the planning authority and following the requirements of the Environmental Impact Assessment (Scotland) Regulations. Matters relating to the screening developments for EIA are included in the statements above.

6.3 Effects of the Policies of the Transport Strategy

This section summarises the results of the environmental assessment of the Transport Strategy's policies for the three main themes (External Links, Inter-island Links and Internal Links). Every policy is assessed in Appendix E and results are summarised below.

A small number of these policies support or promote specific transport schemes. As geographical information was available for these schemes, it was possible to assess their effects in more detail then the generic policies. However, it should be noted that for most schemes information was only available regarding their approximate location and no details relating to the scale and design of projects was available. The assessments of effects of these schemes therefore reflects the limited information available on their design.

6.3.1 Significance of Predicted Environmental Effects

Appendix D explains the method used to describe significance. The following terms are used for both positive and negative effects:

- *Highly significant*
- *Significant*
- *Not significant* (positive or negative effects predicted but not considered to be significant)
- *No effect* or *negligible*

6.3.2 External Links

6.3.2.1 Air Passenger and Freight

Summary of Policies

These policies are aimed at maintaining and improving access to the UK mainland and Scandinavia by air. The policies include support for improved air services, development of Sumburgh airport, continuation and development of the Air Discount Scheme and improving integration of air services with public transport.

Summary of Assessment

Policies which relate to discounted and affordable fares are predicted to have positive impacts on social exclusion through accessibility improvements. The potential using Scatsta as a diversionary airport in adverse weather conditions would also improve accessibility.

The majority of negative impacts relating to air passenger and freight policies are due to the potential for increased flights and the associated CO_2 emissions. The extent of impacts on contributions to climate change is therefore dependent on the number of additional flights that would result from these policies. Local air quality also has the potential to be negatively affected although due to existing air quality and Shetland's location, this is not predicted to be as significant.

Negative impacts on the physical environment are also predicted due to development associated with improvements to Sumburgh Airport. These improvements have the potential to affect biodiversity, landscape, cultural heritage, water quality and waste production. There is also the opportunity to make use of waste materials in construction.

6.3.2.2 Ferry Services

Summary of Policies

The aim of these policies is to maintain and improve ferry links to the UK mainland and Scandinavia. This is to be achieved through lobbying for improvements to the Northern isles Ferry Services, investigating additional routes to Scandinavia and developing Shetland's ports.

Summary of Assessment

Positive impacts on accessibility are predicted through policies to adhere to disability legislation. Positive impacts on accessibility are also predicted through improvements to integration facilities at Aberdeen Harbour and through improved cabin provision.

There is the potential for negative environmental impacts due to a policy to support the development of harbours and associated facilities. If physical coastal development occurred through this policy, there would be the potential for impacts on biodiversity (including protected sites and species), landscape, cultural heritage and water quality. However this policy is highly strategic and detailed information regarding potential outcomes are not currently known. An EIA may be required for projects considered a result of this policy as explained in Section 6.2.2.5.

Emissions to air will increase slightly as a result of increased ferry movements. There remains potential to affect water quality through pollution events from ferries but the risk is not likely to be greater then currently exists.

6.3.3 Inter-island Links

6.3.3.1 Fixed Links

Summary of Policies

These policies cover the possible future development of fixed links. Fixed links are supported in principle, however only the Bressay Bridge is currently promoted by the Transport Strategy. The policies promote studies to investigate the feasibility of providing fixed links to Yell, Unst and Whalsay.

Summary of Assessment

The potential impacts of developing fixed links are not being assessed as part of this SEA. This is because the Shetland Transport Strategy is based on the assumption that fixed links, with the exception of the Bressay Bridge, are not within the current budget for the Strategy. Following feasibility studies, if it is determined that fixed links are to be taken forward, the Transport Strategy will be reviewed and subject to a further SEA. A policy has been included in the strategy to ensure that environmental effects are considered in engineering feasibility studies.

The Bressay Bridge is supported by the Transport Strategy and unlike other proposed projects this is at an advanced stage in the planning process. An Environmental Impact Assessment (EIA) of the proposal was carried out in 2003 and the predicted impacts of a bridge were set out in the Environmental Statement. Potential effects include the possible disturbance of protected species and impacts on visual amenity (positive or negative according to personal preferences with regards to new infrastructure). Significant positive effects are predicted for accessibility (see Appendix E for further details).

6.3.3.2 Ferry Links

Summary of Policies

These policies are aimed at improving inter-island passenger and freight ferry service levels and facilities. The policies promote the upgrading or replacement of ferry terminals for links from Yell-Unst and mainland-Whalsay as well as supporting the development of a new berthing structure on Fetlar to improve service reliability. Policies also aim to improve accessibility through appropriate fares, concessions and service provision.

Summary of Assessment

More detailed information regarding the likely effects of these policies is provided in the project appraisal matrices (Appendix F) with a summary also include in the policy assessment matrix (Appendix F). The key impacts arising from policies relating to inter-island ferry links are due to proposals for physical development. A number of new terminals are required (Belmont, Gutcher, Whalsay, Laxo) and upgrading work is required at Vidlin. A berthing structure/breakwater is supported at Hamars Ness on Fetlar to reduce the vulnerability of ferry services to adverse weather conditions.

The potential effects of the above construction are potentially significant. As these structures are in coastal environments, there is the potential for construction to cause disturbance to European Protected Species (EPS) such as cetaceans, otters and seals and other sensitive species such as nesting birds. This disturbance would however be relatively short-term in duration.

In some cases, there is the potential for negative effects on Natura 2000 sites. The Fetlar SPA is approximately 1 km from the site of the proposed berthing structure/breakwater. Although the site is some distance from the proposed structure, there is the potential for disturbance to

species associated with the SPA during the construction phase. It is therefore recommended that this project is screened for Appropriate Assessment (under the Conservation (Natural Habitats & c) Regulations, 1994).

In addition to the above effects on biodiversity, new or substantially upgraded structures have the potential to negatively affect landscape character and visual amenity. The significance of such impacts is dependent on the scale and design of upgrades, details of which were not available at the time of this assessment. Similarly, these structures have the potential for negative effects on the setting of historic buildings/features although the significance of these impacts is dependent on the scale and design (including materials) of the proposed structures. If the setting of a historic building is affected then effects will be significant. Construction itself has the potential to disturb archaeology, both known and unknown. There is also the potential for construction to generate substantial noise and vibration. Where this is in the vicinity of dwellings, effects on human health are potentially significant.

A policy to investigate the effects of rock dredging the South Mouth at Out Skerries has the potential for negative effects on a historic wreck and marine biodiversity. The 'Kennemerland' is a protected wreck with a 250 m exclusion zone therefore any works within the exclusion zone would have significant negative effects.

6.3.3.3 Inter-island Air Services

Summary of Policies

Policies in this section focus on the continued operation of air services, fares, safety and security.

Summary of Assessment

Overall the negative impacts of these policies tend not to be significant as it is assumed that infrastructure is not required. There is the potential for increased emissions due to increased service provision and although the extent of increases in flight numbers is not confirmed, it is not expected to be sufficient to create significant increases in emissions. There is also the potential for species to be disturbed and for landscape or the setting of historic features to be negatively affected. However, such effects are not considered to be significant due to the relatively minor expected increases in flight numbers.

6.3.4 Internal Links

6.3.4.1 Walking, Cycling, Travel Behaviour Change

Summary of Policies

Walking and cycling are promoted by policies to provide infrastructure such as footways and cycle routes. Policies are also included to support the development of school and work travel plans.

Summary of Assessment

Policies to promote walking and cycling, both as specific policies and within workplace travel plans, have the potential for health improvements through increased physical activity. Emissions to air may also be slightly reduced.

The provision of footway schemes should benefit pedestrian safety and improve accessibility for those without access to private cars. Similarly, depending on their location, footways have the potential to improve access to the natural and historic environment. Design improvements such as dropped kerbs will provide benefits for those with impaired mobility.

The introduction of new infrastructure such as footways does have potentially significant environmental effects. Depending on the scale and location of schemes, new footways have

potentially negative impacts on biodiversity; this would be of greatest significance within or close to designated sites. Landscape character/visual amenity may also be negatively affected by the introduction of new infrastructure and there is the potential for archaeology (known and unknown) to be disturbed through construction. Construction also has the potential to negatively affect water quality, soil quality and the production of waste materials.

6.3.4.2 Local Road Network

Summary of Policies

These policies relate to the maintenance and development of Shetland's road network. Policies include support for a number of road improvement schemes, as well as maintaining roads and bridges. Safety issues are also addressed through policies to promote traffic calming, winter maintenance and flooding. Support is also provided for park and ride and transport interchange facilities.

Summary of Assessment

The Transport Strategy includes a policy to continue to implement the Roadside Biodiversity Action Plan (BAP) during routine maintenance work and in the development of road schemes. This policy is likely to continue to have positive impacts on biodiversity and landscape/visual amenity and where enhancements are not possible these policies may help to mitigate negative impacts.

A policy to promote the use of modern street lighting apparatus should improve safety and reduce the impacts of light pollution on landscape character and the historic environment. Road safety should also benefit from policies to carry out education campaigns, road maintenance/road improvements and to monitor accidents. The use of traffic calming measures should also contribute to improved road safety.

Depending on their location, traffic calming measures have the potential for negative impacts on landscape/streetscape and the historic environment. This is of greatest significance in sensitive areas such as Conservation Areas, where the setting of historic buildings could be affected.

Bridge maintenance has the potential to negatively affect the historic environment, where bridges have historic value. Maintenance activities also have the potential to negatively affect water quality and biodiversity in the vicinity.

Winter maintenance has positive impacts in terms of road safety but also has the potential for negative impacts on water quality and biodiversity, due to the potential effects of salt run-off on adjacent water bodies and ecosystems.

There is also the potential for negative impacts on biodiversity, landscape and cultural heritage (known and unknown archaeology) from the development of informal park and ride/interchange facilities. This should have minor benefits in terms of reducing transport emissions.

The most significant environmental impacts predicted from Road Network policies are due to the promotion of road improvement schemes. The assessment of environmental effects was limited by a lack of information relating to scheme design.

Significant negative effects on landscape character and visual amenity are predicted due to improvements to the A971 between Haggersta and Cova as the scheme is adjacent to the National Scenic Area (NSA). The Scalloway road/footway improvement scheme will be located approximately 300-400 m from the NSA and adjacent to a Conservation Area. Other schemes (e.g. B9081 Mid Yell Link to A968), which although not located within or adjacent to such designated sites, have the potential for significant negative effects on landscape character and visual amenity. This is dependent on the scale and design of schemes.

All road improvement schemes have the potential for negative effects on cultural heritage as archaeology (known and unknown) may be disturbed. Listed buildings and SAMs are present in the vicinity of a number of schemes (Haggersta-Cova, Papa Stour, Walls, Giberston Road, Scalloway) and the setting of these features therefore the potential to be negatively affected.

A proposal for a footpath scheme in Walls has the potential for negative effects on biodiversity as it may be as close as 50 m to the Kirkigarth and Bardister SSSI. Proposals for structural improvements to the existing road on Papa Stour have the potential for a number of significant negative effects on biodiversity. The island contains a number of protected sites; the existing road fringes the Papa Stour SPA/SSSI and the island is surrounded by an SAC. It will be necessary to screen this project to determine the need for an Appropriate Assessment.

6.3.4.3 Public Transport

Summary of Policies

These policies aim to promote the use of public transport through improved services and better integration between services e.g. flights and buses. Policies also address fares and the provision of public transport infrastructure.

Summary of Assessment

Positive impacts on accessibility/social exclusion are predicted for public transport policies relating to improved services, better integration with inter-island ferries/flights, provision of transport for the social work sector and free transport for the elderly/disabled. There is the potential for positive impacts on CO_2 emissions and local air quality as a result of Policy EMP6 which supports the investigation of using alternative fuels.

Depending on their design and location, bus shelters have the potential to negatively affect landscape character and the setting of historic features and cause visual intrusion.

6.4 Summary of Effects on SEA Topics and Potential Cumulative Effects

6.4.1 Introduction

This section summarises the overall impacts of the policies of the draft Shetland Transport Strategy on the SEA topics. This includes the potential for cumulative, where the combined effects of a number of policies on a particular receptor (e.g. cultural heritage) are of greater significance than the individual policies.

In assessing impacts, the mitigation measures set out in Section 6.2 have been taken into account. Many of the impacts result from projects supported by the Transport Strategy. There are opportunities to mitigate impacts further during detailed design and by undertaking EIAs of individual projects. Reference is made to EIA below, however at this strategic level a precautionary approach has been used and in determining whether an impact would be significant we have not assumed that EIA would remove all impacts.

6.4.2 Biodiversity

Overall, the policies of the Transport Strategy are predicted to have a negative impact on biodiversity (unless properly designed and adequately mitigated) due to proposed infrastructure projects, for example ferry terminals and road improvement schemes. There is the potential for coastal developments to disturb European Protected Species such as seals, otter and cetaceans. Furthermore, there is the potential for the Fetlar SPA to be negatively affected by the construction of a new berthing structure, which is approximately 1 km from the site. The SEA recommends that when design details are available, this project is screened to determine the need for an Appropriate Assessment. Other than this scheme, no further impacts are predicted on Natura 2000 sites.

The strategy includes a policy to support the upgrading of the road between Laxo and Vidlin. The extent of this upgrade had not been determined at the time of this assessment and

therefore the significance of impacts cannot be accurately predicted. However, construction has the potential for negative impacts on the Laxo Burn SSSI which at the closest point is 60 m from the road unless adequately mitigated at the project level.

The Transport Strategy does contain policies (EPM1 and EPM2) and mitigation measures which should reduce the impacts of infrastructure on protected sites and species. However, the potential for some negative impacts on biodiversity remains.

6.4.3 Landscape and Visual Amenity

The majority of the policies of the Transport Strategy are predicted to have little or no effect on landscape character or and visual amenity. However the policies which promote the provision of new and upgraded infrastructure (e.g. roads and ferry terminals) have the potential for negative effects in the areas where these are developed. Larger schemes or those with receptors such as residential dwellings in the vicinity are predicted to have more significant effects, depending on their design and the mitigation implemented at the project phase.

The scale, location and design of infrastructure will have an influence on the significance of effects and in the majority of cases these details are not currently known. The strategy contains a policy (EPM3) to promote design of infrastructure which is appropriate to its location. This policy and mitigation measures regarding design should help to reduce impacts on landscape and visual amenity.

There is the potential for negative effects on the National Scenic Area due to road improvement proposals between Haggersta and Cova. This has the potential to be significant, depending on the scale and design of the improvements.

6.4.4 Cultural Heritage

The policies which promote new or upgraded transport infrastructure have the potential for negative effects on cultural heritage. No historic features on land (including listed buildings and Scheduled Ancient Monuments) with statutory protection are predicted to be physically affected by the construction of transport infrastructure, however there is the potential for the setting of historic features to be negatively affected in some areas. There is also the potential for archaeology (known and unknown) to be directly affected by construction activities.

There is the potential for negative effects on the ‘Kennemerland’, a protected wreck in the South Mouth of Skerries, with a 250 m exclusion zone. Currently a diving survey is proposed to investigate the potential for rock dredging in this approximate location. Works within the exclusion zone could be significant.

The Transport Strategy contains a policy (EPM3) to promote the design of infrastructure which is appropriate to its location and to minimise impacts on heritage. In addition, the strategy has incorporated a number of measures to mitigate the impacts of transport projects on the historic environment.

6.4.5 Local Air Quality

The overall effects of the Transport Strategy on local air quality are not predicted to be significant. There are no Air Quality Management Areas in Shetland and the 2003 Local Air Quality Updating and Screening Assessment stated that even under the worst case conditions it is likely that Shetland Islands Council will meet all the National Air Quality Objectives set out by the Government. The use of alternative fuels, bus enhancement measures and the promotion of cycling will contribute to improving local air quality. Proposals for increased air and ferry services are likely to result in increased emissions however given the existing air quality conditions, these increases are not predicted to cause significant effects. There is the potential for the construction of transport infrastructure to cause increases in dust however this is

expected to be short-term and localised and could be controlled by implementation of best management practices on site.

6.4.6 Climatic Factors

The policies of the Transport Strategy focus on accessibility improvements, partly through increasing air and ferry services. As a result the overall impact of the strategy on contributions to climate change is predicted to be negative. The significance of this impact is very much dependent on the extent of increases in vehicle, ferry and air movements and this information was not available to inform the assessment. There is however the potential the increase in Shetland's contributions to climate change to be significant.

A number of the transport projects promoted by the Transport Strategy will reduce the vulnerability of Shetland's transport infrastructure to the effects of climate change. In particular, proposals to replace and upgrade ferry terminals and berthing facilities should improve the reliability of ferry services in adverse weather conditions, widely predicted to occur due to global warming.

6.4.7 Water Quality

There is the potential for policies which promote new/upgraded transport infrastructure to cause negative impacts on water quality, particularly in the coastal locations where ferry terminal upgrades/replacements are proposed. These impacts are likely to be limited to the construction phase and as such, overall impacts are not predicted to be significant.

There is also the potential for negative impacts on water bodies due to road upgrades. However these impacts are not predicted to be significant due to commitments to implement appropriate measures to mitigate impacts on water quality including SUDS.

6.4.8 Population and Human Health

The policies of the Transport Strategy are predicted to have a positive impact on population and human health. Road safety improvements are likely through the implementation of campaigns and the provision of infrastructure. Increased physical activity is promoted through policies relating to walking and cycling. Improvements in transport services and integration between services should have positive impacts on accessibility and rural social exclusion.

6.4.9 Material Assets

Impacts on material assets are not predicted to be significant. The construction of transport infrastructure has the potential for an increased need for materials from quarries/borrow pits, however SIC has committed to a policy of maximising the reuse and recycling of materials.

There is the potential for land-take due to the upgrading of roads however, the proposed road upgrades are relatively minor and are not predicted to have a significant effect.

7 Monitoring

This section of the Environmental Report presents proposals for monitoring the environmental effects of implementing the Shetland Transport Strategy. Monitoring is an ongoing process which is undertaken throughout the duration of the strategy. The purpose of monitoring is to determine whether the strategy is performing as predicted by examining how the baseline changes following implementation of the strategy.

7.1 The Purpose of Monitoring

Monitoring is important for identifying whether the Transport Strategy is having an adverse effect on the environment. If adverse effects are identified, these can be addressed. Any future reviews of the strategy can take this information into account, with the intention of avoiding similar effects. Similarly, information gained from monitoring can help to improve future predictions of environmental effects, by highlighting the effects of this strategy and by filling existing data.

7.2 Carrying out Monitoring

Monitoring involves the use of 'indicators'. An indicator is a measure of how the environmental baseline has changed. Indicators can comprise both quantitative (facts and figures) or qualitative (descriptive) information.

To ensure that monitoring is effective and that any identified impacts can be responded to, if possible the indicators should be reviewed on an annual or two-yearly basis. The causes of any identified changes can then be analysed and dealt with appropriately.

It should be noted that information gathered from monitoring should also be considered in the context of activities out with the transport strategy. For example, biodiversity can be affected by transport activities but also by other activities such as aquaculture or residential development. If monitoring identifies impacts which are not caused by the Transport Strategy, these can be referred to the appropriate authority.

7.3 The Monitoring Framework

The monitoring proposals in this chapter were determined through analysis of the environmental effects and available baseline information. An initial list of indicators was set out in the SEA Scoping Report and the Consultation Authorities were given the opportunity to comment on these.

The proposed SEA monitoring framework is set out in Table 7.1. Following consultation on the draft Transport Strategy and this Environmental Report, a final monitoring framework will be developed and presented in the SEA Post-Adoption Statement. Where possible, the finalised monitoring framework will be linked to relevant targets.

Table 7.1 Monitoring Framework

SEA Category	Indicator	Data Source
Biodiversity, Flora and Fauna	Reported damage to protected sites (SAC, SPA, SSSI) caused by transport-related activities	SNH
Biodiversity, Flora and Fauna	Number of successful licence applications for derogations of the Habitats Directive to disturb European Protected Species	SNH and SEERAD
Biodiversity, Flora and Fauna	Achievement of LBAP targets (LBAP currently under development)	SIC
Landscape and Visual Amenity	Provision of street lighting in areas where these did not previously exist (baseline data not currently available)	SIC
Landscape and Visual Amenity	Proportion of transport projects accompanied by outline landscape design (baseline data not currently available)	SIC
Cultural Heritage	Number of applications for Scheduled Monument Consent, related to transport	Historic Scotland
Cultural Heritage	Outcomes of applications for Scheduled monument consent, related to transport	Historic Scotland
Cultural Heritage	Number of applications for Listed Building Consent (inc demolitions) related to transport	SIC
Cultural Heritage	Outcomes of applications for Listed Building consent related to transport	SIC
Water	Water pollution events related to transport (Baseline data not currently available, which is specific to transport)	SEPA
Water	Number of flooding events to affect transport infrastructure	SIC
Water	Percentage of new road length incorporating SUDS features	SIC
Climate Change	Weather-related disruption to travel e.g. flooding and flight cancellation	SIC
Human Health	Road traffic offences	SIC
Human Health	Transport-related crime	SIC
Human Health	Road safety figures	SIC
Human Health	Physical activity - travel to work/study by mode	SIC

8 Next Steps

Table 8.1 lists future milestones in the development of the Shetland Transport Strategy and the SEA, and the dates when these are expected to be completed.

Table 8.1 Anticipated Transport Strategy and SEA Milestones

Expected Date	Milestone
26 January 2007	Final date for receipt of comments on the Draft Transport Strategy and Environmental Report
March 2007	Publication of the final Transport Strategy
March/April 2007	Publication of the Post-Adoption SEA Statement, which will: ▪ highlight how the SEA and consultation on the SEA have influenced the development of the Transport Strategy ▪ state the framework for monitoring the effects of the Transport Strategy

Appendices

Appendix A Other Plans, Programmes, Strategies and Environmental Objectives
Appendix B Environmental Baseline Situation
Appendix C Testing the Objectives of the Transport Strategy
Appendix D Assessment Methods
Appendix E Policy Assessment Matrix
Appendix F Inter-Islands Links Assessment Matrices
Appendix G Addressing Comments on SEA Scoping Report

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

Plan / Programme / Strategy	Objectives or Requirements of Plan / Programmes / Strategy	Relevant SEA Objectives	Relationship with the Shetland Regional Transport Strategy
Local and Regional Plans and Programmes			
The Shetland Local Plan and The Shetland Structure Plan (2001-2016)	▪ 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 ▪ To ensure the sustainable use, development and management of the coastal area ▪ 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 ▪ To promote sustainable waste management and ensure the efficient, safe and clean collection, storage, treatment and disposal of waste for the whole of Shetland ▪ To promote the sustainable and efficient use of energy resources to maximise social, environmental and economic benefit within Shetland ▪ 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 ▪ To deliver an integrated transport system, that meets the needs of Shetland people and seeks to minimise impact on the environment	SEA objectives 1, 2, 3, 4, 5, 6, 7, 11, 12	The draft RTS addresses 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 which are then used to assess the RTS
Living Shetland Project: Local Biodiversity Action Plan (LBAP)	▪ Conservation and restoration of habitats and species	SEA objective 1	The RTS has the potential to affect biodiversity through transport-related development and through maintenance regimes. The RTS include policies to address biodiversity in road development and maintenance, through

			the use of the roadside BAP. Mitigation measures have been developed to reduce the effects of transport on biodiversity, particularly protected sites and species
Shetland Local Transport Strategy (2000-2003)	▪ Sustain the economy of Shetland through maintaining an appropriate level of accessibility by road, sea and air, both for internal and external transport. ▪ Reduce the need for travel through decentralisation of development opportunities, thereby reducing commuting ▪ 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 ▪ Improve facilities for disabled access. ▪ Develop public transport corridors and promote innovative and flexible public transport usage ▪ Promote awareness of travel options in order to limit traffic growth ▪ Improve environmental conditions by promoting traffic calming measures that increase the safety of all road users. ▪ To maintain the asset and make improvements to the road network in order to support gains in safety, environmental, accessibility, integration or economic terms ▪ Maximise facilities for walking and cycling as an alternative means of transport	To be superseded by RTS. Some aspects also addressed by SEA objectives 8, 10	To be superseded by the final Shetland RTS
HITRANS Regional Transport Strategy for the Highland and Islands of Scotland (2004)	▪ 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. ▪ We want to improve journey times by **investment in better infrastructure** particularly roads, public transport vehicles and vessels, and the rail network. **Over the strategy period modernising the road network will be a key priority.** ▪ We want **to improve integration in the public transport**	SEA objective 8	To be superseded by the final Shetland RTS

	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.**		
Shetland Community Safety Strategy (2005-2010)	▪ **Crime and fear of crime:** To reassure individuals by building confident communities ▪ **Young people:** To reduce children and young peoples' experiences of crime and increase their personal safety (by becoming risk aware) ▪ **Road safety:** To make Shetland's roads safer for everyone ▪ **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	SEA objective 10	The RTS and SEA address road safety, contributing to some aims of this strategy.
Shetland Access Strategy (2005)	▪ **Access for disabled people:** The Council will ensure that all new access projects are compliant with the Disability Discrimination Act 1995 ▪ **Local Access Form:** SIC will establish and support the work of a Local Access Forum ▪ **Scottish Outdoor Access Code:** The Council will work with SNH in the promotion of the Scottish Outdoor Access Code. In developing access opportunities, consideration will be given to how the Code can assist in visitor management ▪ **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 ▪ **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 ▪ **Development of Long Distance Routes:** The development of nationally promoted, locally managed long distance routes that	SEA objectives 8 and 9	The RTS address some of the access issues set out in this strategy

	are of high quality, is a medium to long-term goal		
Shetland Joint Health Improvement Plan	▪ 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)	SEA objective 10	The RTS includes policies to encourage walking and cycling
Shetland Cultural Strategy: A Vision for Life in Shetland (2004-2008)	▪ **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 ▪ **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 ▪ **Learning, economy and regeneration:** Contribute to the regeneration of Shetland's quality of life, image and economy through the strategic and creative use of human, physical, geographic and financial resources	SEA objectives 3 and 9	The RTS includes policies to address accessibility
Orkney & Shetland Area Waste Plan	▪ Reduce, reuse, recycle and recover waste	SEA objective 12	Transport projects can potentially generate large amounts of waste. The RTS has included a policy regarding the reduction, reuse, recycling and recovery of waste.
National Plans and Programmes			
Scotland's Transport Future - Transport White Paper June 2004	▪ Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency. ▪ Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of		The headline objectives of the RTS are based on these 5 national transport objectives

	the transport network. ▪ Protect out environment and improve health by building and investing in public transport and other types of sustainable transport which minimise emissions and consumption or resources and energy. ▪ Reduce accidents and enhance personal safety of pedestrians, drivers, passengers and staff. ▪ Improve integration and ensure smooth connections between different forms of transport.		
'Seas the Opportunity' A Strategy for the Long Term Sustainability of Scotland's Coasts and Seas	*Objectives* ▪ To promote wider public awareness, understanding and appreciation of the value of the marine and coastal environments and pressures on them ▪ To enhance and conserve the overall quality of our coasts and seas, their natural processes and their biodiversity ▪ To integrate environmental and biodiversity considerations into the management of marine related activities ▪ 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 ▪ To understand the cumulative effects of activities in the marine and coastal areas	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. The SEA assess the effects on coastal environments and mitigation measures have been developed to avoid, reduce or offset impacts
National Cycling Strategy (Department for Transport) (1996)	▪ Increase cycle use ▪ Achieve convenient cycle access to key and major destinations and provide cycle parking facilities at these destinations. ▪ Improve cycle safety and reduce cycle theft by improving security and recovery. ▪ Provide increased cycle use within all local highways and traffic management schemes ▪ Design safe and convenient cycle use of the road network ▪ Reallocate road spacing to cycling. ▪ Raise awareness, expertise and status amongst transport	SEA objective 10	The RTS contains policies to promote cycling

	providers, service providers, employers, potential cyclists and other road users. ▪ Encourage and enable cycling amongst school children, and encourage cycle use for business trips. ▪ Unlock financial resources to meet the strategy objectives. ▪ To make the best use of existing infrastructure and resources and to integrate cycling into other programmes. ▪ Progress the national cycling strategy and monitor the results of the strategy.		
Scottish Climate Change Programme (2000)	▪ 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.	SEA objective 5	As noted in the Environmental Problems section (Table 2.2), there is a tension between improving accessibility and reducing CO_2 emissions, particularly for remote and isolated communities.
Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2000)	▪ 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.	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 Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland	▪ Conservation of habitats and species Outlines a number of actions with the overall aim of conserving biodiversity for the health, enjoyment and well being of the people of Scotland now and in the future	SEA objective 1	The RTS has the potential to affect biodiversity through transport-related development and through maintenance regimes. The RTS include policies to address biodiversity in road development and maintenance, through the use of the roadside BAP. Mitigation measures have been developed to reduce the effects of transport on biodiversity, particularly protected sites and species
Passed to the Future (Historic Scotland's policy for the sustainable management of the	▪ Recognising Value ▪ All actions should include long-term strategies for management, conservation, use, maintenance and monitoring, and good stewardship of the historic environment should have	SEA objective 3	The SEA assesses the potential effects of the RTS on the historic environment and contains mitigation measures to avoid, reduce or offset impacts

historic environment)	regard to its capacity for change as well as to the sustainable use of resources. Assessing impact on the historic environment. ▪ Sustainable management should involve everyone.		
National Transport Strategy	The Strategy is based upon the Scottish Executive's five transport objectives: ▪ To promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency ▪ To protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy ▪ To promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network ▪ To improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, drivers, passengers and staff ▪ To improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport The aims of the NTS are: ▪ Cover all modes ▪ Cover all travellers ▪ Be medium to long-term in nature ▪ Provide the context for the Strategic Projects Review ▪ Be based on wide-ranging public consultation - which is underway ▪ Be complemented by the Regional Transport Strategies (RTSs) ▪ Be evidence based		The headline objectives of the RTS are based on these 5 national transport objectives
National Transport Strategy SEA	▪ To conserve biodiversity at all levels and accord to the protection of statutory nature conservation sites	All SEA objectives are relevant and	Informs this SEA

Environmental Report	▪ To improve the living environment for all communities, particularly through improved access to services and opportunities ▪ To promote the health of the human population with improved air quality, improved access to facilities and greater opportunity for engagement in physical activity ▪ To safeguard the quantity and quality of the soil resource ▪ To reduce the impact the quantity and quality of the water environment resulting from transport infrastructure. ▪ To improve air quality through reducing emissions and pollution ▪ To reduce energy consumption and CO_2 emissions and the associated impacts of climate change (e.g. flooding) ▪ To manage, maintain and promote efficient use of the existing transport infrastructure and the efficient use of resources in the development of new infrastructure. ▪ To safeguard the features of the historic environment ▪ To safeguard the character, diversity and unique qualities of the landscape ▪ To safeguard the quality of the visual amenity ▪ To limit noise related nuisances from operation of the transport system and development of new infrastructure	compatible	
Choosing our Future: Scotland's Sustainable Development Strategy	▪ Respecting the limits of the planet's environment, resources and biodiversity – to improve our environment and ensure that the natural resources needed for life are unimpaired and remain so for future generations. ▪ Meeting the diverse needs of all people in existing and future communities, promoting personal well-being, social cohesion and inclusion, and creating equal opportunity for all. ▪ Building a strong, stable and sustainable economy which provides prosperity and opportunities for all, and in which environmental and social costs fall on those who impose them (Polluter Pays) and efficient resource use is incentivised. ▪ Promoting good governance ▪ Using Sound science responsibly.	All SEA objectives are relevant and compatible	The principles which underpin sustainable development are addressed in the high-level objectives of the Shetland RTS, which contains social, environmental and economic objectives

Memorandum of Guidance on Listed Buildings and Conservation Areas 1998	▪ Provides information on procedures for activities which may affect listed buildings, conservation areas and gardens and designed landscapes.	SEA objective 3	The RTS has the potential to affect the setting of listed buildings and conservation areas. Mitigation measures have been developed to avoid, reduce or offset impacts. These include taking this guidance into account for developments which have the potential to affect listed buildings and Gardens and Designed Landscapes
National Waste Strategy	The aim is to encourage more effective use of natural resources through greater efficiency, waste minimisation, recycling and increased value recovery from waste. The main objectives include: ▪ Ensuring that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment and, in particular, without causing nuisance through noise or odours. ▪ Establishing an integrated and adequate network of waste disposal installations, taking account of the best available technology not involving excessive costs. ▪ Encouraging the prevention or reduction of waste production and its harmfulness, in particular by the development of clean technologies more sparing in their use of natural resources.	SEA objective 12	Transport projects can potentially generate large amounts of waste. The RTS has included a policy regarding the reduction, reuse, recycling and recovery of waste.
UK Energy White Paper: Our Energy Future – creating a low carbon economy	▪ Cut the UK's carbon dioxide emissions - the main contributor to global warming - by some 60% by about 2050 with real progress by 2020 ▪ Maintain the reliability of energy supplies ▪ Promote competitive markets in the UK and beyond, helping to raise the rate of sustainable economic growth and to improve our productivity ▪ Ensure that every home is adequately and affordably heated	SEA objective 5	Transport is a significant contributor of CO_2 and the RTS will influence overall emissions. As noted in the Environmental Problems section (Table 2.2), there is a tension between improving accessibility and reducing CO_2 emissions, particularly for remote and isolated communities.
National Legislation			

Transport (Scotland) Act 2005	▪ Proposals for development of Regional Transport Partnerships, Regional and National Transport Strategies ▪ Enables a national concessionary scheme ▪ Procedures for tackling road works	The Shetland RTS is required by this legislation. Relevant SEA objective 8	Requires the preparation of the Shetland RTS
Environmental Assessment (Scotland) Act 2005	▪ Extends Scottish legislation for SEA beyond the requirements of the 'SEA Directive'	SEA as a whole	Requires this SEA to be carried out
Nature Conservation (Scotland) Act 2004	▪ Conservation of biodiversity ▪ Increases protection for Sites of Special Scientific Interest (SSSI) ▪ Amends legislation on Nature Conservation Orders, ▪ Provides for Land Management Orders for SSSIs and associated land ▪ Strengthens wildlife enforcement legislation	SEA objective 1	The RTS has the potential to affect biodiversity through transport-related development and through maintenance regimes. The RTS include policies to address biodiversity in road development and maintenance, through the use of the roadside BAP. Mitigation measures have been developed to reduce the effects of transport on biodiversity, particularly protected sites (including SSSIs) and species
Road Traffic Reduction Act 1997	▪ Requires Local Authorities to create "an assessment of the levels of local road traffic in their area, and a forecast of the growth of these levels" ▪ 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"	SEA objective 5	Alternative modes of transport (walking, cycling, public transport) are promoted by the RTS although road traffic reduction is not explicitly addressed
Wildlife and Countryside Act 1981	▪ Protection of wildlife (birds, 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.	SEA objective 1, 2 and 9	The RTS has the potential to affect biodiversity through transport-related development and through maintenance regimes. The RTS include policies to address biodiversity in road development and maintenance, through the use of the roadside BAP. Mitigation measures have been developed to reduce the effects of transport on biodiversity, particularly protected sites

			and species
The Conservation (Natural Habitats & c) Regulations 1994	▪ Measures relating to the conservation of natural habitats and of wild fauna and flora. ▪ Provides for the designation and protection of 'European Sites'. (SCIs, SACs, SPAs and RAMSAR sites) ▪ Protection of European Protected Species (e.g. otters and cetaceans)	SEA objective 1	The RTS has the potential to affect biodiversity through transport-related development and through maintenance regimes. The RTS include policies to address biodiversity in road development and maintenance, through the use of the roadside BAP. Mitigation measures have been developed to reduce the effects of transport on biodiversity, particularly protected sites and species
The Air Quality Limit Values (Scotland) Regulations 2005	▪ Duty to ensure compliance with limit values of relevant pollutants in ambient air ▪ Sets target values and long term objectives for levels of ozone in ambient air ▪ Assess ambient air quality ▪ Production of action plans where there is a risk of exceeding limit values for any of the relevant pollutants	SEA objective 4	Transport-related air quality is not considered to be a significant issue in Shetland
Countryside and Rights of Way Act 2000	▪ Provides new rights of public access to areas of open land and provisions for extending the right to coastal land ▪ Improves rights of way legislation, by encouraging the creating new routes and clarifying existing routes ▪ Increases protection for sites of special scientific interest ▪ Strengthens wildlife enforcement legislation ▪ Provides for better management of areas of outstanding natural beauty	SEA objective 9	The RTS seeks to improve integration of transport services, therefore improving access to the natural environment for those without access to private cars
Water Environment and Water Services (Scotland) Act 2003	▪ Protection of water environment ▪ Production of river basin management plans	SEA objective 7	This SEA assesses the effects of the RTS on water quality and proposes mitigation measures to avoid, reduce or offset impacts
The Planning (Listed Buildings and Conservation Areas)	▪ Listing of buildings of special architectural or historic interest ▪ 'Building preservation notice' Temporary listing ▪ Restriction on work affecting listed buildings	SEA objective 2, 3	The RTS has the potential to have impacts on the setting of listed buildings and conservation areas. Mitigation

(Scotland) Act 1997	▪ Authorisation of works listed building consent ▪ Applications for listed building consent ▪ Power to impose conditions on grant of listed building consent ▪ Revocation and modification of listed building consent ▪ Rights of owners compensation ▪ Prevention of deterioration and damage ▪ Conservation Areas designation Preservation and enhancement of conservation areas		measures have been developed to avoid, reduce or offset impacts, including taking into account the Memorandum of Guidance on Listed Buildings and Conservation Areas 1998 for activities with the potential to negatively affect listed buildings
Protection of Wrecks Act 1973	▪ 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	SEA objectives 3 and 10	The RTS has the potential for negative impacts on a protected wreck.
Ancient Monuments and Archaeological Areas Act 1979	▪ 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. ▪ Provides for nationally important archaeological sites to be statutorily protected as scheduled ancient monuments ▪ Section 2 requires Scheduled Monument Consent to be granted prior to undertaking certain works	SEA objective 3	The RTS has the potential for negative impacts on ancient monuments, known and unknown archaeology. The SEA assesses the potential impacts and contains mitigation measures to avoid, reduce or offset impacts
Land Reform (Scotland) Act 2003	▪ Increases the public right of access, within certain controls, to private land	SEA objective 9	The SEA will assess the ability of the RTS to improve access to the natural and built environment
National Planning Framework 2004	▪ Document offers perspective on Scotland's long term spatial development and highlights the important role transport plays in this development. includes investment in transport infrastructure and recognises the need to 'effect a shift to more sustainable modes of transport'		The RTS promotes walking, cycling and public transport and states the case for investment in transport infrastructure
Water Environment (Controlled Activities) Regulations 2005	▪ Requires authorisation over point source discharges, abstractions, impoundments and engineering activities	SEA objective 7	Some activities promoted by the RTS may require a CAR discharge licence. This SEA assesses the effects of the RTS on water quality and proposes mitigation measures to avoid, reduce or offset impacts
The Pollution Prevention	▪ Aims to control pollution from industrial sources. It requires the	SEA objectives 4, 7	Air quality is routinely monitored and

and Control (Scotland) Regulations 2000	prevention or reduction of emissions from installations and promotes techniques that reduce the amount of waste and releases overall	and 12	transport-related air quality is not considered to be an issue in Shetland
International			
The EC Directive on the Conservation of Wild Birds 79/409/EEC 1979	▪ Protect birds naturally occurring in the European territory, applies to birds, eggs, nests and habitats. ▪ 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. ▪ Pay particular attention to wetlands especially those of international importance.	SEA objective 1	The RTS has the potential to affect biodiversity through transport-related development and through maintenance regimes. The RTS include policies to address biodiversity in road development and maintenance, through the use of the roadside BAP. Mitigation measures have been developed to reduce the effects of transport on biodiversity, particularly protected sites (including SPAs) and species
The EC Directive on the conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC 1992	▪ Preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and of wild fauna and flora. ▪ 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.	SEA objective 1	The RTS has the potential to affect biodiversity through transport-related development and through maintenance regimes. The RTS include policies to address biodiversity in road development and maintenance, through the use of the roadside BAP. Mitigation measures have been developed to reduce the effects of transport on biodiversity, particularly protected sites (including SACs) and species
Directive 2000/60/EC establishing a framework for the community action in the field of water policy ('The Water Framework Directive')	▪ To establish a frame work for the protection of inland surface waters, transitional waters, coastal waters and groundwater ▪ To enhance protection and improvement of the aquatic environment and promote sustainable water use.	SEA objectives 6 and 7	This SEA assesses the effects of the RTS on water quality and proposes mitigation measures to avoid, reduce or offset impacts
Directive 1996/62/EC on	▪ To protect the environment as a whole and human health.	SEA objective 4	This SEA assesses the effects of the

ambient air quality and management	▪ To maintain ambient air quality where it is good and to improve it in other cases using limit values and/or alert threshold set for ambient air pollution levels. ▪ Preserve best ambient air quality compatible with sustainable development		RTS on water quality and proposes mitigation measures to avoid, reduce or offset impacts
Kyoto Protocol to the UN Framework Convention on Climate Change (1992) (1997 – not yet in force)	▪ The stabilisation of atmospheric concentrations of greenhouse gases at a level that would prevent dangerous anthropogenic interference with the climate system.	SEA objective 5	Transport is a significant contributor of CO_2 and the RTS will influence overall emissions. As noted in the Environmental Problems section (Table 2.2), there is a tension between improving accessibility and reducing CO_2 emissions, particularly for remote and isolated communities.
Directive 2003/30/EC On the Promotion of Biofuels and Other Renewable Fuels for Transport	▪ Calls for the dependence on oil in the transport sector to be reduced by using alternative fuels such as biofuels. ▪ Member States should ensure that a minimum proportion of biofuels and other renewable fuels is placed on their markets, and, to that effect, shall set national indicative targets. A reference value for these targets shall be 5,75 %, calculated on the basis of energy content, of all petrol and diesel for transport purposes placed on their markets by 31 December 2010.		The use of biofuels is not explicitly address by the RTS
European Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment	Requires Strategic Environmental Assessment (SEA) of certain plans and programmes, including: ▪ Preparation of an Environmental Report on the likely significant effects of the draft plan or programme ▪ Consultation on the draft plan or programme and the accompanying Environmental Report ▪ Taking into account the Environmental Report and the results of consultation in decision making ▪ Providing information when the plan or programme is adopted and showing how the results of the environmental assessment have been taken into account	All SEA objectives are relevant	Requires this SEA to be carried out, implemented in Scotland by the Environmental Assessment (Scotland) Act 2005

Appendix B The Baseline Situation

This Appendix describes the environmental baseline characteristics of Shetland that are of relevance to the Transport Strategy. It should be noted that due to the Shetland's relatively low population density and geographic location, some environmental problems normally associated with transport planning do not necessarily apply to the Shetland Transport Strategy.

Environmental information / data is presented for each SEA topic and where possible and appropriate, the following information is presented; baseline situation, relevant SEA objectives, relevant indicators, trends, targets and data gaps.

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 from Lerwick to 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

Shetland is home to many habitats which are designated under international or national legislation or by Shetland Council. This section sets out these areas and highlights their respective level of protection. Their locations are presented on Figure 1. This section also provides details regarding species which are protected under European or national legislation, together with further information on priority species and habitats.

Designated Areas

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

Source: www.snh.gov.uk

Special Areas of Conservation (SAC)

SACs 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. In the UK, sites are protected under the The Conservation (Natural Habitats, &c.) Regulations 1994, 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 as follows:

East Mires and Lumbister
Hascosay
Mousa
Tingon
Yell Sound Coast
Ronas Hill – North Roe
Fair Isle
Keen of Hamar
North Fetlar
The Vadills
Sullom Voe
Papa Stour

Source: www.snh.gov.uk

Sites of Special Scientific Interest (SSSI)

These areas are protected under the Wildlife and Countryside Act (1981) as amended by the Nature Conservation (Scotland) Act 2004. Sites are designated due to the presence of important flora, fauna or geographical or physiographical features. Shetland has 81 sites designated for the interests listed below. Some sites are designated for several reasons.

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

Source: Shetland Islands Council

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

Source: www.snh.gov.uk

Local Protection Areas (LPA)

These are council designations which are listed in the local plan and are regarded by the Council as 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.

Table 1.1 below summarises the designated sites on Shetland while Figure 1 highlights the location of these sites.

Table 1.1 Designated Areas

Designation	Total Number	Area within Shetland (ha)	% of Total Area of Shetland*
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 available	Info not available
National Nature Reserve (NNR)	3	1,307	0.8%

Source: www.snh.gov.uk

Habitats and Species

Species protected under the Wildlife and Countryside Act 1981 (as amended by the Nature Conservation (Scotland Act) 2004)
This act lists species of bird (Schedule 1), animals (Schedule 5) and plants (Schedule 8) that are afforded particular protection. Some of these species are also protected as EPS under the Habitats Directive. This act also protects all species of breeding birds.

European Protected Species (EPS)
The Wildlife and Countryside Act 1981 and the Habitats Regulations both provide protection to a number of internationally important species. For the Shetland Transport Strategy, the most relevant of these species are otters and cetaceans, due to the potential for development in coastal and marine areas. 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. In addition to cetaceans, Shetland is also home to 18% of the UK grey seal population and 12% of the UK otter population, both of which are EPS.

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

Priority Habitats and Species

As part of the Living Shetland *draft* 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
Harbour porpoise,
Skylark
Breeding Waders
Merlin
Hawkweeds
Eider
Bumble bees
Oyster plant
Arctic char
Red necked Phalarope
Farmlands birds
Red-throated diver

Source: Shetland Islands Council Draft LBAP

The presence of some species in Shetland is highly significant in a national context, for example 90% of the UK population of the red-necked phalarope is present in Shetland. Similarly, Shetland is home to approximately 90% 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 from 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, 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.

Indicators

- Reported damage to designated sites, caused by transport activities
- Number of successful licence applications for derogations of the Habitats Directive to disturb European Protected Species
- Achievement of LBAP targets

Trends

No relevant trend data has been identified

Targets

No relevant targets have been identified which relate to biodiversity

Data gaps

Data gaps identified are:

- Reported damage to designated sites, caused by transport activities
- Reported damage/disturbance to protected species due by transport activities – SNH hold ad hoc info regarding road kill of e.g. otter
- Number of successful licence applications for derogations of the Habitats Directive to disturb European Protected Species
- Number of habitats created, better managed or restored due to transport
- Achievement of LBAP targets
- Number of habitats created, better managed or restored due to transport
- Trends
- Targets

2. Landscape and Visual

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

Shetland comprises over 100 islands, 15 of which are inhabited. The total land area is 556 square miles with over 900 miles of coastline. The extent of Shetland's geographic isolation is unique in the UK; Lerwick is approximately 70 miles closer to the Norwegian town of Bergen than it is to Edinburgh and its nearest neighbour, Orkney, is 100 miles to the south.

Landscape Character

SNH, in conjunction with partner Councils, has undertaken detailed review and classification of the various landscape areas and types in Scotland. The Shetland Islands landscape character assessment, dated 1998 (SNH Review No. 93) identifies seven primary landscape types which are further subdivided into detailed landscape character areas. 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 the diverse landscapes. These landscape types are listed below and their locations are shown on Figure 4.

- Coastal edge
- Farmed and settled lowlands and coast
- Farmed and settles voes and sounds
- Inland valleys
- Major uplands
- Peatland and moorland
- Undulating moorland with lochs

Designated Areas

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 the seven zones, which are listed below:

- Hermaness (including Muckle Flugga and the western slopes of Saxa Vord)
- Fethaland (broad coastal strip from Uyea to Burravoe in Northmavine)
- Eshaness (including Hillswick Ness and the intervening coastline)
- Muckle Roe (western half of the island)
- Foula
- Fair Isle
- South West Mainland (from Fitful Head to Weisdale Voe and Skeld and including Burra, Trondra and the islands to the north)

Source: www.snh.gov.uk

Gardens and Designed Landscapes
The Inventory of Gardens and Designed Landscapes identifies the gardens and designed landscapes in Scotland that are of national significance because of their natural heritage and cultural importance. These include private gardens and parks 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

Source: www.snh.gov.uk

Tree Preservation Orders (TPO)
Under the Town and Country Planning (Scotland) Act 1997, Shetland Islands Council must be given prior notification of intended works to protected 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

Source: Shetland Islands Council

Local Protection Areas
These areas have been detailed in the Biodiversity section of this appendix however it should be noted that they may also be designated by Shetland Islands Council due to landscape value.

Indicators
- Provision of street lighting in areas where these did not previously exist
- Proportion of transport projects accompanied by outline landscape design

Trends
No relevant trend data in relation to landscape has been identified.

Targets
- Transport schemes should have no net adverse effect on the character or quality of protected landscapes, historic settlements and key landscape features
- All new lighting schemes should be designed to reduce glare and lateral light displacement

Data gaps
Data gaps identified are:
- Areas where transport has had significant impact on landscape
- Effects of new transport schemes on protected landscapes (e.g. NSA, Gardens and Designed Landscapes), townscapes, historic settlements, key landscape features – data not currently available
- Total land take due to transport development
- Trends
- Targets

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

Shetland possesses a rich heritage and is home to many sites of historical value including Viking settlements, brochs, standing stones, ancient crofts and ruined chapels. These are all important contributors to Shetland's strong and unique cultural identity. A number of areas and features have been designated due to their historical importance. Details are presented below and their locations are highlighted on Figure 5.

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 365 scheduled ancient monuments which fall under the following categories:

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

Source: Shetland Islands Council

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 5.

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 348 listed buildings in Shetland; 17 category A, 174 category B and 156 category C.

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 broch	141
Chambered cairns	118
Souterrains	26
Fishing stations	32
Burnt mounds	340
Viking / Norse houses	52
Military remains	436
Wheelhouses	7

Source: Shetland Islands Council

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 (100 m exclusion zone) and the Kennemerland, which sank in 1664 (250 m exclusion zone). Their locations off Skerries are highlighted on Figure 5.

Indicators

- Number of applications for Listed Building Consent (inc demolitions) and Scheduled Monument Consent, related to transport
- Outcomes of applications for Listed Building/Scheduled monument consent, related to transport

Trends

No relevant trend data has been identified.

Targets

No relevant targets have been identified.

Data gaps

Data gaps identified are:

- Number of applications for Listed Building Consent (inc demolitions) and Scheduled Monument Consent, related to transport
- Outcomes of applications for Listed Building/Scheduled monument consent, related to transport
- Trends
- Targets

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

Water Quality

The Scottish Environment Protection Agency (SEPA) monitors surface water quality in watercourses, estuaries and other water bodies. In addition under the Water Framework Directive, enacted in Scotland in the Water Environment and Water Services (Scotland) Act 2003, SEPA has new responsibilities relating the management and protection of river catchments (river basin districts), which includes the groundwater resource within those catchments.

SEPA classifies rivers in terms of water quality from A1 (excellent), A2 (good) to D (seriously polluted) this classification is based on a combination of chemical, biological and aesthetic criteria. Similarly estuarine waters are also classified from A to D.

Within Shetland SEPA carry out a range of monitoring of surface and coastal waters. A selection of the most up to date available data is contained within Table 4.1 below.

Table 4.1 Water Quality Monitoring

Surface Water Body/ Coastal length Monitored	Classification
Burn of Voxter/Burn of Laxdale	A2
Burn of Dale	A2
Stromfirth Burn	A2
Burn of Weisdale	A2
South Burn of Burrafirth	A2
Burn of Laxo Bigging	A2
Laxo Burn	A2
Burn of Bouster	A2
Burn of Arisdale	B
Bressay Sound	B
Breesay Sound (at Lerwick)	C
Yell Sound (Colla Firth)	B
Sullom Voe	B
Mid Yell Voe	C
Balta Sound (Unst)	B
Vidlin Voe	B
Vassa Voe (Cat Firth)	A
West Burra (Hamnavoe)	A
East Voe of Scalloway	C

Source: www.sepa.gov.uk

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 5th 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, coastal-related 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.

Indicators

- Water pollution events related to transport
- Number of flooding events to affect transport infrastructure
- % of new road length incorporating SUDS features
- Weather-related disruption to travel e.g. flooding and flight cancellation

Trends

It is difficult to identify trends with regards to water quality, pollution events and flooding without historical data. Generally water quality throughout Scotland has been noted by SEPA within their National Water Quality 2005 report to be improving.

Targets

Locally there are no relevant targets which relate to the water environment.

At a national level, SEPA has targets to lower the stretches of rivers and coastal waters with classifications of C and D by 351km and 145km respectively. These targets have already been exceeded.

Data gaps

- Historic information regarding surface/coastal water quality, pollution events and flooding:

5. Air Quality and Climate Change

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.

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.

Indicators

- Numbers of private vehicles
- Levels of key pollutants
- Transport-related CO_2 emissions
- Weather-related damage to transport infrastructure

Trends

Private car ownership on the island has increased from 7048 in 1981 to 11,697 in 2004 however growth has slowed down in the last 3 years.

Targets

National targets exist for a number of pollutants[1]. The Local Air Quality Updating and Screening Assessment undertaken in 2003 states that even under the worst case conditions it is likely that Shetland Islands Council will meet all the National Air Quality Objectives set out by the Government.

Data gaps

Data gaps identified are:

- Levels of key pollutants

[1] http://www.airquality.co.uk/archive/standards.php

- Transport-related CO_2 emissions
- Local targets

6. Soil, Land and Material Assets

SEA Objectives:

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

Baseline Description

Material Assets

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.

Agricultural Land

In recent years there has been a decline in agricultural activity. As can be seen below in Table 6.1, the total land used for tillage in Shetland 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.

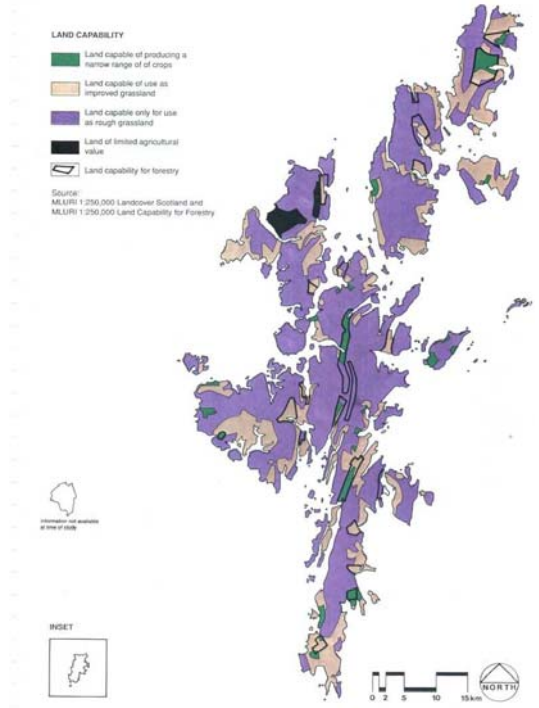
As can be seen from Figure 6, the amount of land suitable for agriculture in Shetland is limited and as such, fertilisation and reseeding of moorland has been used to increase agricultural productivity. The amount classed as improved or good grassland is also somewhat limited, as can be seen from Figure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

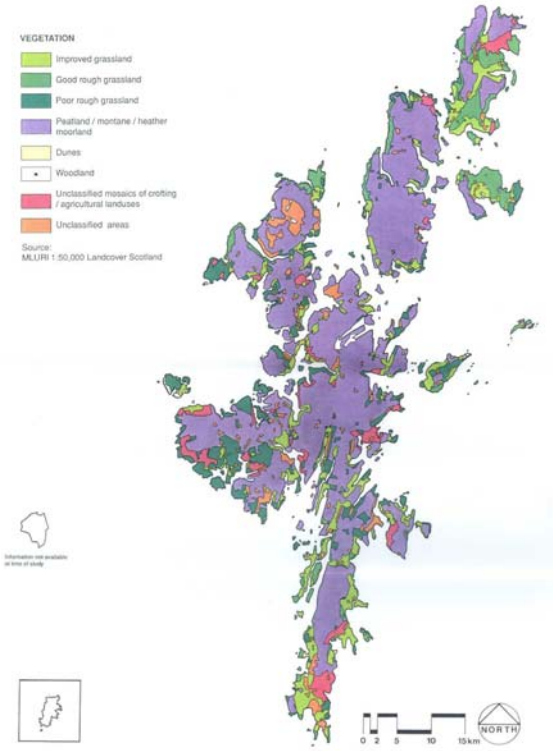
Table 6.1 Agricultural Land Use in Shetland

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 Land Capability





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.

Indicators

- Incidents of damage to private property, in relation to transport
- Transport-related waste to landfill
- Transport-related waste reused/recycled

Trends

There has been a reduction in tilled land and an increase in sheep farming in recent years.

Targets

No relevant targets have been identified relating to soil and agriculture.

Data gaps

Data gaps identified are:

- Incidents of damage to private property, in relation to transport
- Agricultural land lost to transport development
- Transport-related waste to landfill
- Transport-related waste reused/recycled
- Trends
- Targets

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

A recent report[2] by Shetland Islands Council found that a section of the Shetland community, namely those without easy access to private car use, have difficulty in accessing certain services and opportunities. This affects peoples' opportunity to access employment, education, social events and to purchase healthy food at a reasonable cost. This is a particular problem for those in outlying communities or those with mobility problems. No data has been identified which could be used as an indicator for this issue.

Access to the Natural and Built Environment

No relevant baseline information was obtained relating to access to the built or natural environment, in the context of public and private transport.

Health and Healthy Lifestyles

The following data (Table 7.1) 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 7.2 provides details of the transport modes taken to work for those aged between 16 and 74.

Table 7.1 Health in Shetland

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/ disabled	15.45
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

[2] Deprivation and Social Exclusion in Shetland, 2006
http://www.shetland.gov.uk/datashare/upload/documents/FINALSOCDEP290506_1.pdf

Table 7.2 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

Crime

In 2005, Northern Constabulary recorded 711 road traffic / vehicle-related offences in Shetland. These 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 7.3 shows that of the figures available, 2005 had the largest number of offences for a decade.

Table 7.3 Road Traffic and Vehicle Related Offences for Shetland

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

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 7.4 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 car stolen or broken into	55.6

Source: Shetland Islands Council

Safety

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

Table 7.5 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

Indicators

- Average distance to public transport e.g. bus stop
- Average distance to local services
- Visitor numbers to sites of natural and historic interest
- Complaints due to noise/vibration
- Crime incidents and fear of transport-related crime
- Road traffic accidents
- Walking and cycling stats

Trends

There is not enough data available to identify trends.
Increase in number of road traffic/vehicle-related offences since the mid-1990s

Targets

Road safety targets have been outlined in Table 7.6 below. 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 7.6 Road Safety Targets

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

Source: Shetland Islands Council

Data gaps

Data gaps identified are:

- Average distance to public transport e.g. bus stop
- Average distance to local services
- Access to the natural and built environment
- Complaints due to noise/vibration
- Road traffic accidents
- Walking and cycling stats
- Trends

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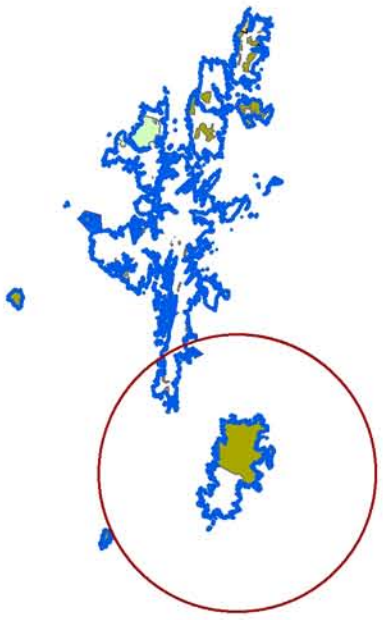

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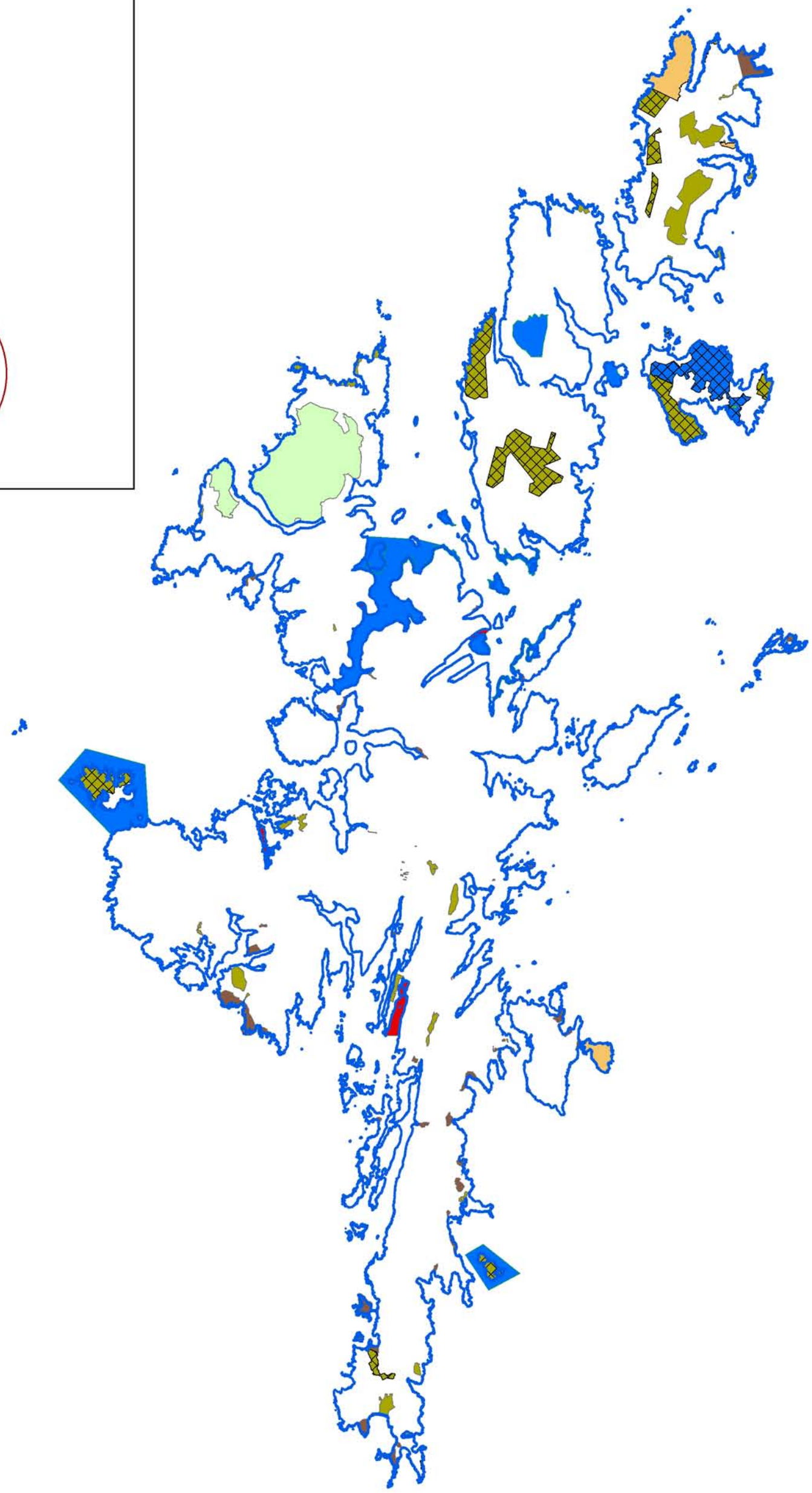

0 5 10 Miles

Figure 1: Natural Heritage Designations

A Rev	23/10/06 Date	Update SNH Sites Revision
GIS: CMS		Chk'd: EW
Date: 22/03/06		Scale: 350,000

Key

- National Nature Reserve
- Ramsar
- SPA
- SAC
- SSSI
- Local Protection Areas
- Marine Consultations Areas

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Figure 2: Gardens & Designed Landscapes, Local Protection Areas & Conservation Areas

Rev	Date	Revision
A	23/10/06	Update Gardens & Designed Landscape data
GIS: CMS		Chk'd: EW
Date: 22/03/06		Scale: 350,000

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Key

- Local Protection Areas
- Conservation Areas
- Gardens & Designed Landscape

SIC

SIC

SIC

N

Herma Ness

Fair Isle

Fethaland

Esha Ness

Muckle Roe

Foula

South West Mainland

0 2.5 5 10
Miles

Figure 3 : Landscape Designations

GIS: CMS	Chk'd: EW
Date: 22/03/06	Scale: 350,000

Key

National Scenic Areas

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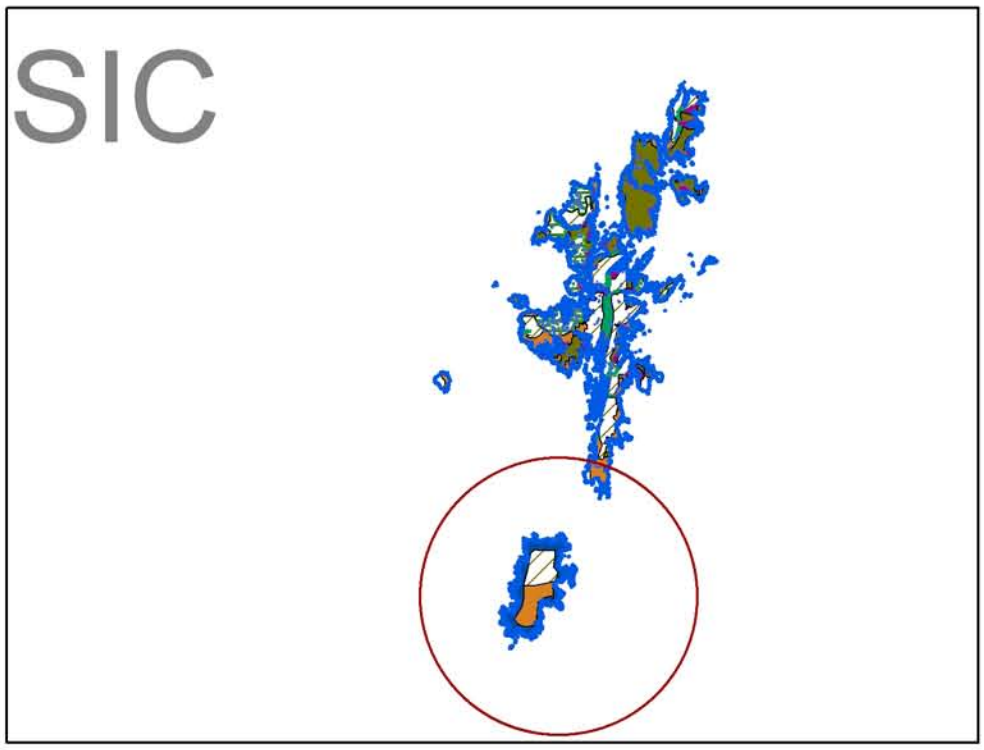

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0 2.5 5 10
Miles

Figure 4 : Landscape Character

Rev	Date	Revision
A	23/10/06	Update LCA data
GIS: CMS		Chk'd: EW
Date: 22/03/06		Scale: 350,000

Key

- Coastal Edge
- Coastal Island
- Farmed Settled Lowland and Coast
- Farmed and Settled Voes and Sounds
- Inland Loch
- Inland Valleys
- Major Uplands
- Peatland and Moorland
- Undulating Moorland with Lochs

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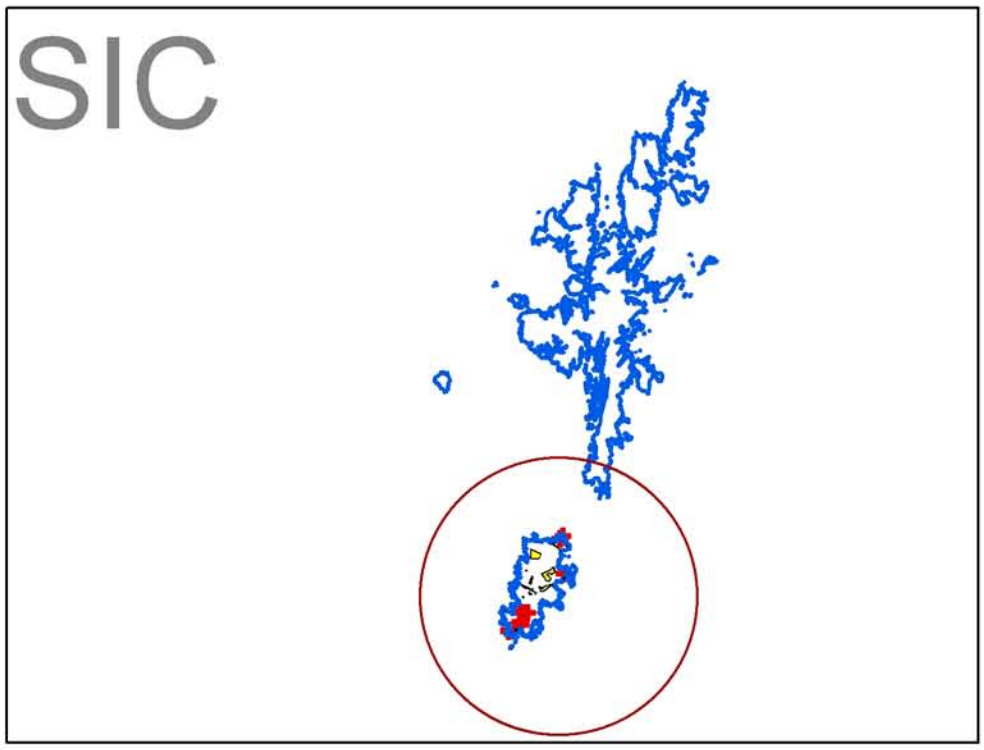

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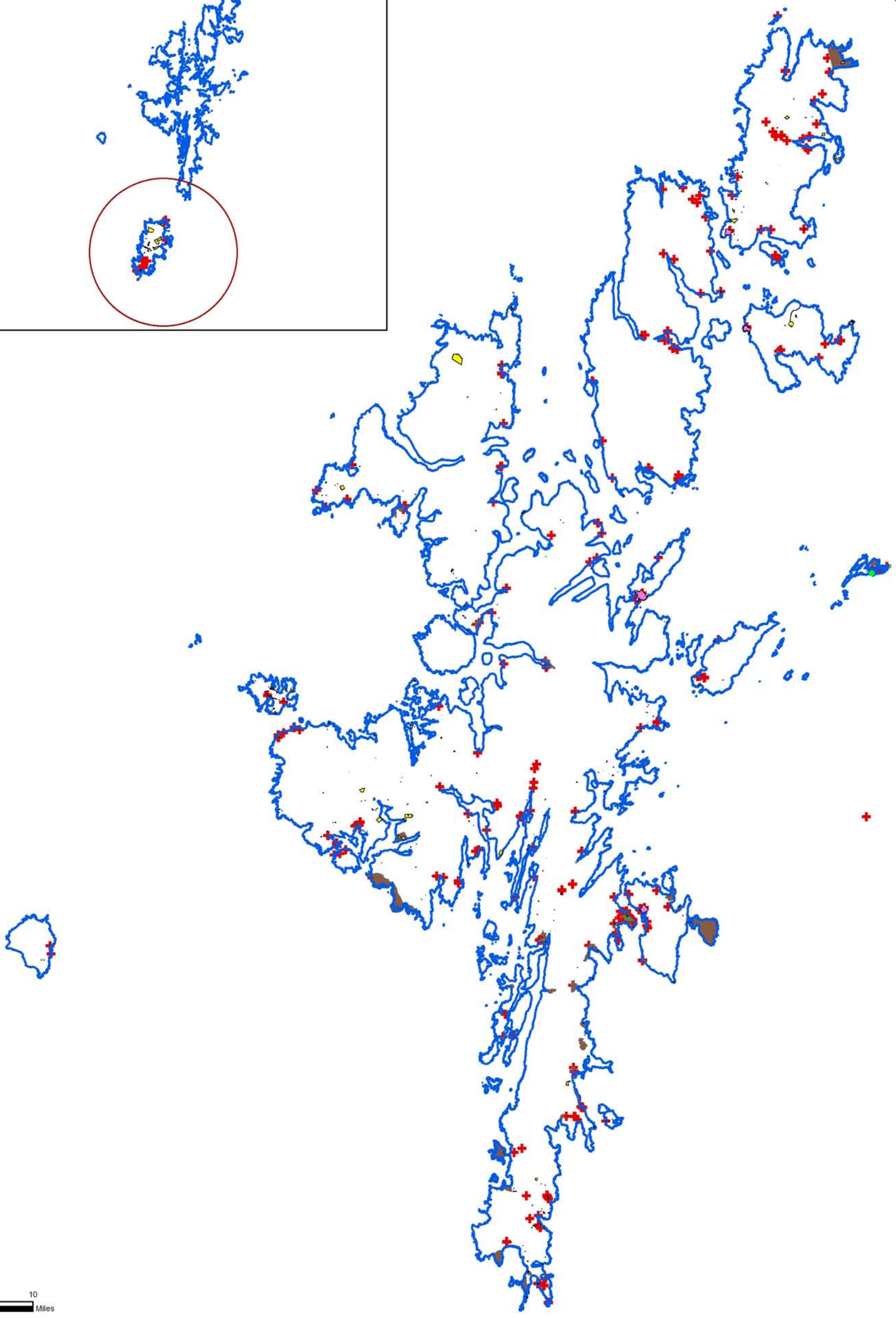

0 5 10 Miles

Figure 5 : Cultural Heritage Designations

A Rev	23/10/06 Date	Update Historic Scotland sites Revision
GIS: CMS		Chk'd: EW
Date: 22/03/06		Scale: 350,000

Key

- Listed Buildings
- Local Protection Areas
- Conservation Areas
- Scheduled Monuments
- Gardens & Designed Landscape
- Designated Wrecks

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Appendix C Testing Transport Strategy Objectives

SEA Objective (see Chapter 5)	Transport Strategy Objective (see Chapter 2 for full wording of Transport Strategy objectives)					Comments *Letters (e.g. A and B) below refer to the ***Transport Strategy*** objectives
	A. Economic Growth	B. Social Inclusion	C. Environment	D. Safety	E. Integration	
Protect, maintain and enhance biodiversity	×	×	✓	-	-	A. Biodiversity may 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
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	×	×/-	✓	-	-	A. Economic growth may lead to increased external and internal transport activity and increase CO_2 emissions. B. Increased numbers of vehicle movements will increase overall emissions, however in the context of Shetland this is likely to be negligible
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
Improve accessibility and reduce social exclusion	✓	✓	✓	-	✓	
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	-	-	✓	-	-	

The criteria used to test the objectives of the Transport Strategy 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

Appendix D Assessment Methods – Transport Strategy Preferred Option

This Appendix provides details of how the assessment was carried out of the preferred option for the Transport Strategy and how the level of significance of impacts was determined.

Predicting the Effects of the Transport Strategy

The first phase of the environmental assessment of the Transport Strategy was to predict the likely environmental effects. This involved identification of likely changes to the baseline situation caused by implementing the strategy. The predicted effects on the baseline were determined by comparing how the baseline would change with each policy of the Transport Strategy compared to the 'do minimum' scenario i.e. how the baseline would change in absence of the strategy, but taking into account other environmental changes which could be expected (see Section 2.6). The predicted changes to the baseline were then described in terms of the magnitude and direction of change (i.e. positive or negative).

This prediction of effects was qualitative rather than quantitative. The strategic nature of the Transport Strategy means that no modelling data was available to assist in the prediction of effects of policies. However, given the relatively low population in Shetland, modelling data would be of limited value in terms of the environmental assessment.

Each policy was appraised against each of the SEA objectives, however it was considered necessary to appraise a number of policies to a greater level of detail. This was most appropriate for policies which promoted specific transport schemes such as replacement ferry terminals or major upgrades to roads.

Effect Magnitude

For the purpose of this SEA, the magnitude of the predicted effect was 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 (taking into account future changes) which 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. Table D.1 contains a summary of how the magnitude of predicted effects was determined.

Table D.1 Terminology for Determining Effect Magnitude

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
Major	Substantial identifiable change in the baseline. Effects would be one or more of the following: definite, long term, direct

The terms used to describe effect magnitude above, relate to the following types of potential environmental effects.

Table D.2 Types of Effects

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

Sensitivity of the Receptors

To enable an evaluation of the significance of the environmental effects of the Transport Strategy, the sensitivity of receptors must be identified. Receptors are the aspects of the environment that are affected. The 'matters for consideration' (see Table 3.1) linked to the SEA objectives are primarily based on specific receptors found in Shetland and the following criteria have been developed to describe the sensitivity of these:

Table D.3 Sensitivity of Receptors

Sensitivity 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

Determining the Significance of Environmental Effects

The significance of effects will depend on the magnitude of effects and the sensitivity of the receptors. The following matrix has been developed to determine the significance of the effects that the Transport Strategy's policies would have on the environment.

Table D.4 Determining the Significance of Effects

Sensitivity of the Receiving Environment	Magnitude			
	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

Presenting the Results of the Assessment

The matrices presented in Appendices E and F highlight the predicted environmental effects of the Transport Strategy's policies – displaying magnitude, sensitivity significance and providing explanatory comments. Mitigation measures set out in Section 6.2 are taken into account in the assessment. Appendix E provides more detailed comments regarding effects of transport schemes that are named in the policies of the Transport Strategy. The matrix in Appendix F provides details of impacts of each policy. The following key (Table D.5) explains how effect magnitude is displayed in the matrix. Table D.6 illustrates the meaning of the symbols used to display significance.

Table D.5 Assessment Matrix Key - Magnitude

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

Table D.6 Assessment Matrix Key – Significance

Symbol	Meaning
✓✓	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
○	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

Section 5 summarises the predicted environmental effects that are set out in Appendices E and F.

Cumulative and Synergistic Effects

Cumulative effects may arise where the effects of two or more policies combine to create a greater effect on a particular receptor (e.g. landscape). In some instances the environmental effects of individual policies may be insignificant when considered in isolation (e.g. CO_2 emissions) but the combined effects of several policies of the Transport Strategy may be significant.

In undertaking the assessment of cumulative effects, the SEA focuses on the key environmental categories e.g. biodiversity, landscape, cultural heritage etc. The combined effects on each of these key issues has been identified; as far as possible given available information. The predicted cumulative impacts are presented in Section 5.

Iteration

The assessments of effects and development of mitigation was undertaken in an iterative manner. Effects were identified, mitigation measures were developed and the policies were re-assessed taking into account agreed mitigation measures. As a result the effects described in Section 5.2 and 5.3 are the residual effects of the Transport Strategy which assume that the mitigation measures set out in Section 5.4 will be implemented.

Appendix E Policy Assessment Matrix

See Appendix D for explanation of assessment methods. The symbols used in the Table are as follows:

Key Effect Significance

Symbol	Meaning
✓✓	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
○	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

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
External Links – Air Passenger																
APS 1: STP will work in partnership with existing air operators in order seek improvements to existing services (frequencies, routes, timetable), delivery of affordable fares, and improved customer care.	Magnitude	-	-	-	Min -ve	Mod -ve	-	-	-	-	-	Min +ve	-	M	M	Negative impacts are predicted if this policy results in increases in air services result from this policy. Air quality is not expected to be significant due to the existing air quality; greenhouse gas emissions are likely to be of greater significance - the significance of impacts is dependent on the extent of increases in flights. Positive impacts on accessibility are predicted due to affordable fares.
	Signif.	-	-	-	○	×	-	-	-	-	-	●	-			
APS 2: STP will press the Scottish Executive for the continuation of Air Route Development Fund, and will specifically seek support for growth of routes to and from Shetland. STP places particular emphasis on the introduction of new and improved services between Shetland and UK Mainland, and Shetland and Scandinavia.	Magnitude	-	-	-	Min -ve	Mod -ve	-	-	-	-	-	-	-	M	L	Negative impacts are predicted if this policy results in increases in air services result from this policy. Air quality is not expected to be significant due to the existing air quality; greenhouse gas emissions are likely to be of greater significance - the significance of impacts is dependent on the extent of increases in flights.
	Signif.	-	-	-	○	×	-	-	-	-	-	-	-			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
APS 3: STP will continue to pursue the introduction of Public Service Obligations for lifeline flights to and from Shetland. In the short term, it will continue to lobby for continuation and development of the Air Discount Scheme, which offers discounts to islanders on flights between Shetland and UK Mainland. It will continue to present the case for the Air Discount Scheme to be extended to visitors to Shetland.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	L	M	Positive impacts on accessibility are predicted due to discounted fares
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
APS 4: STP will fully participate in Scottish Executive's planned future evaluation of the Air Discount Scheme, and use the outcomes to support the case for Public Service Obligations for the Shetland/UK Mainland link.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
APS 5: STP will support Highlands and Islands Airport Limited in their continued development and improvement of Sumburgh Airport and will support in principle further enhancements that improve operations and reliability at the Airport.	Magnitude	Mod -ve	Mod -ve	Mod -ve	-	-	-	Mod -ve	-	-	Mod -ve/+ve	-	-	H	L	Physical development has the potential for significant negative effects on biodiversity (e.g. effects on European Protected Species on coastal locations – seals, otters and cetaceans), landscape/visual amenity, cultural heritage (e.g. known and unknown archaeology and historic features) and water quality. In addition land may be lost to development and significant quantities of waste are likely to be generated. The development does however provide an opportunity for the reuse of waste
	Signif.	✘	✘	✘	-	-	-	✘	-	-	✘/✓	-	-			
APS 6: STP will seek to facilitate formal protocols for the use of Scatsta as a diversionary airport for scheduled services to and from Shetland, during periods of adverse weather conditions affecting operational reliability.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	L	M	Positive impacts predicted for accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
APS 7: STP will work with neighbouring Regional Transport Partnerships and other stakeholders for improved Public Transport services and facilities at	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	Positive impacts predicted for accessibility

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
Shetland's UK gateway airports (Aberdeen, Inverness, Edinburgh and Glasgow).	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
APS 8: STP will take a proactive approach to the monitoring of external air services, with a focus on service levels, service reliability and fare levels.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
APS 9: STP supports the principle that external air services and airports are operated in full accordance with relevant safety and security regulations.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Min +ve	L	M	Positive impacts predicted for safety
	Signif.	-	-	-	-	-	-	-	-	-	-	-	●			
APS 10: STP supports the principle that external air services and airports in Shetland are in accordance with Disability Discrimination Act policy, recognising their importance in the transfer of those requiring health-treatment.	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	Positive impacts predicted for accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
APS 11: With a concern for both reducing the impacts of climate change, and reducing the impact of fuel price increases, STP will support external air operators' attempts to secure improvements in fuel efficiency.	Magnitude	-	-	-	-	Min +ve	-	-	-	-	-	-	-	M	L	Significance of impacts is dependent on the extent of changes in fuel efficiency
	Signif.	-	-	-	-	●	-	-	-	-	-	-	-			
External Links – Air Freight																
AFS 1: STP supports the continued provision of air freight services on a commercial basis.	Magnitude	-	-	-	Min -ve	Mod +ve	-	-	-	-	-	-	-	L	M	Minor negative impacts on air quality and more significant negative impacts are predicted for climate change contributions
	Signif.	-	-	-	○	✘	-	-	-	-	-	-	-			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
Summary of Impacts: External Links – Air Passenger and Freight Policies relating to discounted and affordable fares are predicted to have positive impacts on social exclusion through accessibility improvements. The potential using Scatsta as a diversionary airport in adverse weather conditions would also improve accessibility. The majority of negative impacts relating to air passenger and freight policies are due to the potential for increased flights and the associated CO_2 emissions. The extent of impacts on contributions to climate change is therefore dependent on the number of additional flights that would result from these policies. Local air quality also has the potential to be negatively affected although due to existing air quality and Shetland's location, this is not predicted to be as significant. Negative impacts on the physical environment are also predicted due to development associated with improvements to Sumburgh Airport. These improvements have the potential to affect biodiversity, landscape, cultural heritage, water quality and waste production. There is also the opportunity to make use of waste materials in construction.																
External Links – UK Mainland Ferry																
UKF 1: STP supports the existing arrangements for procurement and tendering of the Northern Isles Ferry Service.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
UKF 2: STP will continue to lobby for improvements to the Northern Isles Ferry service. Specific issues include: a) increased provision of cabins; b) ensuring that timetabling proposals and service delivery are suitable for the needs of Shetland; and c) delivery of appropriate and affordable freight and livestock arrangements.	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	Minor positive impacts are predicted for accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
UKF 3: STP will consider options for the future development of the Northern Isles Ferry Service,	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
including alternative vessel options and route configurations, in order to inform future reviews of the service. The review of options will build on ongoing work undertaken through the Northern Maritime Corridor study , taking into account the needs of passengers, and the different elements of Shetland's economy.	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			policy, therefore no environmental effects are predicted
UKF 4: In order to inform the development of alternative ferry options, STP plans to commission surveys and analysis of inbound and outbound passenger, freight and livestock movements, by both ferry and air services.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
UKF 5: STP will work with NESTRANS (the North-East Scotland Regional Transport Partnership) and other stakeholders to deliver improved transport integration opportunities and facilities at Aberdeen Harbour, considering passengers, freight and livestock.	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	Minor positive impacts are predicted for accessibility. It is assumed that this policy would not result in physical development
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
UKF 6: STP will work to take a proactive approach to the monitoring of external ferry services, with regards to service reliability, cabin and vehicle deck availability, freight and livestock issues, fare levels, and customer care.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
UKF 7: STP will support the principle that external ferry services are delivered in full accordance with relevant safety and security regulations.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Min +ve	L	L	Minor positive impacts are predicted for safety
	Signif.	-	-	-	-	-	-	-	-	-	-	-	●			
UKF 8: STP will support the principle that external ferry services in Shetland are delivered in accordance with Disability Discrimination Act policy.	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	Minor positive impacts are predicted for accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
UKF 9: With a concern for both reducing the impacts of climate change, and reducing the impact of fuel price increases, STP will support attempts to secure improvements in fuel efficiency.	Magnitude	-	-	-	-	Min +ve	-	-	-	-	-	-	-	M	L	Minor positive impacts are predicted for climate change contributions, although the significance of positive impacts is dependent on the extent of improvement
	Signif.	-	-	-	-	●	-	-	-	-	-	-	-			
External Links – European/Scandinavian Ferry Link																
ESF 1: STP will continue to support the continued operation of the existing Smyril Line Ferry link to Faroe and Scandinavia.	Magnitude	-	-	-	-	Min -ve	-	Min -ve	-	-	-	-	-	M	L	Negative impacts on climate change contribution are predicted due to ship movements. There is also the potential for negative impacts on water quality
	Signif.	-	-	-	-	○	-	○	-	-	-	-	-			
ESF 2: STP will continue to support the investigation of the potential for complementary Scandinavian ferry links.	Magnitude	-	-	-	-	Min -ve	-	Min -ve	-	-	-	-	-	M	L	Negative impacts on climate change contribution are predicted due to ship movements. There is also the potential for negative impacts on water quality as above
	Signif.	-	-	-	-	○	-	○	-	-	-	-	-			
External Links – Ports and Harbours																
PH 1: STP supports the ongoing strategic development of Shetland's Ports and Associated Facilities, particularly in the light of Shetland's changing economic opportunities.	Magnitude	?	?	?	?	?	?	?	?	?	?	?	?	H	L	The significance of impacts of the development is dependent on which ports are developed. For example, the development of Sullom Voe would be significant due to it's location in a Natura site. Significance of other impacts e.g. landscape/cultural heritage, would also be dependent on the location and scale of development
	Signif.	?	?	?	?	?	?	?	?	?	?	?	?			
PH 2: STP will explore the desirability and feasibility of the creation a single port authority for Shetland.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
Summary of Impacts: External links - Ferry Services Positive impacts on accessibility are predicted through policies to adhere to disability legislation. Positive impacts on accessibility are also predicted through improvements to integration facilities at Aberdeen Harbour and through improved cabin provision. There is the potential for negative environmental impacts due to a policy to support the development of harbours and associated facilities. If physical coastal development occurred through this policy, there would be the potential for impacts on biodiversity (including protected sites and species), landscape, cultural heritage and water quality. However this policy is highly strategic and detailed information regarding potential outcomes are not currently known. An EIA may be required for projects considered a result of this policy as explained in Section 6.4.2.1 Mitigation. Emissions to air will increase slightly as a result of increased ferry movements. There remains potential to affect water quality through pollution events from ferries but the risk is not likely to be greater then currently exists.																
Inter-island Links – Fixed Links																
FL1: STP supports the principle of developing fixed links between Shetland Mainland, and the main offshore islands of Bressay, Yell, Unst and Whalsay.	Magnitude	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			Current information suggests that links other than Bressay would not have viable business cases, and so the strategy for inter-island links assumes ongoing operation of ferries. This will be revised in the light of emerging findings. The impacts of developing fixed links are not being assessed as part of this SEA. Other policies of the Shetland Transport Strategy are based on the assumption that fixed links will not be developed, with the exception of the Bressay Bridge. Following a feasibility study, if it is determined that fixed links are to be taken forward, the strategy will be reviewed and subject to a further SEA, with associated STAG, EIA and Appropriate Assessments where relelvant
	Signif.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
FL2: STP and SIC are currently committed to a fixed link to Bressay, taking the form of a bridge	Magnitude	Mod -ve	Mod -ve/+ve	**Mod -ve**	Min -ve	-	-	Min -ve	Mod +ve	Mod -ve	Mod -ve	Mod +ve	Min -ve	M	M	See inter-island links assessment matrix – Appendix F
	Signif.	×	✘ /✓	✘	-	-	-	-	✓	✘	✘	✓	-			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
FL3: In the short-term, STP proposes to commission feasibility work to confirm the robustness of business cases for fixed links between Yell and Unst (Bluemull Sound) and Shetland Mainland and Yell (Yell Sound) with particular emphasis on agreeing with regulatory bodies the appropriate standards and specifications that would apply.	Magnitude	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			Current information suggests that links other than Bressay would not have viable business cases, and so the strategy for inter-island links assumes ongoing operation of ferries. This will be revised in the light of emerging findings. The impacts of developing fixed links are not being assessed as part of this SEA. Other policies of the Shetland Transport Strategy are based on the assumption that fixed links will not be developed. Following a feasibility study, if it is determined that fixed links are to be taken forward, the strategy will be reviewed and subject to a further SEA.
	Signif.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
FL4: Any engineering feasibility studies into this potential infrastructure will include an assessment of any potential environmental impacts, including effects on biodiversity (including all designated sites and protected species), cultural heritage, the landscape, the water environment and other relevant issues.	Magnitude	Mod +ve	Mod +ve	Mod +ve	Mod +ve	Mod +ve	Mod +ve	Mod +ve	Mod +ve	Mod +ve	Mod +ve	-	-	M	L	This policy should lead to the early identification of environmental effects, informing decision-making and allowing early development of mitigation measures
	Signif.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-			
Summary of Impacts: Inter-island Links - Fixed Links The potential impacts of developing fixed links are not being assessed as part of this SEA. Other policies of the Shetland Transport Strategy are based on the assumption that fixed links, with the exception of the Bressay Bridge, will not be developed. Following a feasibility study, if it is determined that fixed links are to be taken forward, the strategy will be reviewed and subject to a further SEA. The Bressay Bridge is referred to in the Transport Strategy however, unlike other proposed projects this is at an advanced stage in the planning process. An Environmental Impact Assessment (EIA) of the proposal was carried out in 2003 and the predicted impacts of a bridge were set out in the Environmental Statement. These were…(to be added on receipt of ES)															
Inter-island Links – Ferry Links																

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
1. Bluemull Assuming a Yell-Unst fixed link is not found to be viable in the short to medium term, STP proposes the following actions. a) Recognising that fares will be re-introduced to the route in 2008. b) Replacing existing terminals at Gutcher and Belmont. c) Within the terminal redevelopment, considering the option of a berthing facility for the 2nd vessel at Gutcher. d) Replacement of the existing vessels MV Fivla and MV Geira. e) Exploration of the feasibility of an additional crew/passenger only vessel. f) Continued monitoring of weather related reliability issues at Fetlar – with a view to gathering robust evidence to support the provision of berthing protection at Hamar's Ness. Analysis of log book data provides a baseline for further study. STP is committed to an urgent resolution of this outstanding issue, recognising that this will only be achieved through the collation and presentation of robust evidence. A short term aspiration of the communities was for the introduction of an additional crew to allow the second vessel to be manned for seven days of the week. STP recognises that this would enable the existing Bluemull timetable to be regularised, and provide a consistent level of service between Monday and Saturday. This could be undertaken on either a full time, or seasonal basis, addressing the seasonal peaking which occurs on the route. However, spending constraints do not currently facilitate this opportunity.	Magnitude	Min -ve	Mod -ve	Mod -ve	Min -ve	-	Min +ve	Min -ve	-	-	Mod +/ve-ve	Min +ve	Min -ve	See Appendix F	See Appendix F	See inter-island links assessment matrix – Appendix F
	Signif.	✘	✘	✘	-	-	-	-	-	-	✓/✘	-	-			

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2. Whalsay STP recommends the following option: a) Finalisation of option appraisal work for the Whalsay terminal, with a specific focus on the feasibility and costs of a new terminal at North Voe, relative to an extension of Symbister Harbour. b) Replacement of the existing terminal at Laxo, with further appraisal/construction to Vidlin as a diversionary port. c) Replacement of existing terminal on Whalsay – either Symbister harbour extension, or a new terminal at North Voe. d) Simultaneous or phased procurement of two replacement vessels, similar to MV Daggri and MV Dagalien. MV Linga could be disposed of, or utilised elsewhere on the network.	Magnitude	Min -ve	Mod -ve	Mod -ve	Min -ve	-	Min +ve	Min -ve	-	-	Mod +ve/-ve	Min +ve	Mod -ve	See Appendix F	See Appendix F	See inter-island links assessment matrix – Appendix F
If sufficient funding cannot be secured, the following is a do-minimum option. a) Replacement of existing terminal at Laxo, refurbishment of Vidlin as a diversionary port. b) Refurbishment of existing terminal at Symbister Harbour. Procurement of replacement vessel for MV Hendra – such as a scaled down version of MV Daggri and MV Dagalien.	Signif.	✘	✘	✘	-	-	-	-	-	-	✘/✓	-	✘			
3. Bressay STP proposes continued operation of existing ferry service until construction of a Bressay bridge. At this point MV Leirna will be disposed of, and the existing linkspans and terminals de-commissioned.	Magnitude	-	-	-	Min -ve	Min -ve	-	Min -ve	-	-	-	-	-	M	M	Ferry services will continue to emit CO_2 and other air pollutants, although levels are not considered to be significant. There is also the potential for marine pollution events.
	Signif.	-	-	-	○	○	-	○	-	-	-	-	-			
4. Yell Following recent investment, STP proposes continued operation of the current ferry service.	Magnitude	-	-	-	Min -ve	Min -ve	-	Min -ve	-	-	-	-	-	M	M	Ferry services will continue to emit CO_2 and other air pollutants, although levels are not considered to be significant.

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The existing vessels MV Daggri and MV Dagalien will require to be replaced early in the next twenty year implementation period, assuming that a fixed link has not been developed. A review of the terminal facilities will be carried out if a fixed link is ruled out.	Signif.	-	-	-	○	○	-	○	-	-	-	-	-			There is also the potential for marine pollution events.
5. Fair Isle STP proposes continued operation of current ferry service. STP supports the medium to long term replacement of MV Good Shepherd. Due to changing patterns in visitor trips, the community expressed the desire for an additional weekly sailing during the Autumn shoulder period. Currently, this could be secured at minimal additional cost.	Magnitude	-	-	-	Min -ve	Min -ve	-	Min -ve	-	-	-	-	-	M	M	Increased ferry service level will increase emissions of CO_2 and other air pollutants, although levels are not considered to be significant. There is also the potential for marine pollution events.
	Signif.	-	-	-	○	○	-	○	-	-	-	-	-			
6. Foula In the short term, STP proposes ongoing operational and performance monitoring of the independent service operator. This will inform a medium term review of route delivery options, including continued tendering, or a combined Papa Stour / Foula service based on Shetland Mainland.	Magnitude	-	-	-	-	?	-	-	-	-	-	?	-	L	L	The outcomes of monitoring will inform a process to determine the most appropriate option. This has potential implications for accessibility and emissions, however it is not possible to determine likely impacts at this stage.
	Signif.	-	-	-	-	?	-	-	-	-	-	?	-			
7. Papa Stour In the short term, STP supports the option of deploying MV Thora during summer timetable to overcome passenger capacity constraints. In the short term, STP also recognises the desirability of the provision of an additional return sailing on the route – although no additional funding is identified for this. In the longer term, the replacement of MV Snolda provides the opportunity to overcome current passenger capacity constraint. The additional cost of the proposed additional sailing could be partially off-set by withdrawing the scheduled inter-island air service to Papa Stour.	Magnitude	-	-	-	Min -ve	Min -ve	-	Min -ve	-	-	-	-	-	M	M	Increased ferry service level will increase emissions of CO_2 and other air pollutants, although levels are not considered to be significant. There is also the potential for marine pollution events.
	Signif.	-	-	-	○	○	-	○	-	-	-	-	-			

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8. Skerries STP proposes the following implementation plan. a) A review of delivery of ferry service to Skerries, considering: i. A Vidlin based service ii. A new freight delivery structure iii. Improved public transport connections between Lerwick and Vidlin b) STP recognises the community's aspirations for the dredging of the South Mouth entrance, in order to provide an alternative safe ferry route, with the aim of providing reliability benefits. Analysis of log book data provides a baseline for further assessment. STP is committed to an urgent resolution of this outstanding issue, recognising that this will only be achieved through the collation and presentation of robust evidence.	Magnitude	Min -ve	-	Mod -ve	-	-	Mod +ve	Mod -ve	-	-	Min -ve	Mod +ve	Mod -ve	See Appendix F	See Appendix F	See inter-island links assessment matrix – Appendix F
	Signif.	✘	-	✘✘	-	-	✓	✘	-	-	-	✓	-			
Tendering of Services FOP 1: STP is aware that the current interpretation of European Legislation potentially raises the prospect of Shetland's Inter-Island Ferry Service being subject to competitive tendering. STP will continue to review its delivery of ferry services to ensure that it is fully prepared for this potential requirement	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			

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Fare Levels FOP 2**:** STP supports the delivery of fare structures on their lifeline services that are affordable to users. However, it also recognises the necessity to balance this requirement with wider budgetary constraints, and external factors including increases in fuel prices. a) Fares are currently suspended on Bluemull Sound services to allow economic regeneration after the RAF Saxa Vord Closure. They are due to be reinstated in 2008. b) Recent operational reviews have resulted in fare increases on all other inter-island ferry services. c) STP will commit to considering options for generating additional revenue on the inter-island ferry services. This may include tourist "hop-scotch" promotions, improved marketing of services and destinations, as well as options for encouraging higher off-peak utilisation.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
FOP 3: National concessionary fares schemes currently apply to local bus routes, external air services, and external ferry services. However, they do not currently apply to inter-island ferries, with concessions currently being subsidised by SIC. SIC and STP will vigorously lobby the Scottish Executive to have this anomaly promptly resolved.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	L	M	If successful, this policy would have positive effects on accessibility/social exclusion
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
FOP 4: In relation to the inter-islands ferries network, STP is currently facing significant	Magnitude	?	?	?	?	?	?	?	?	?	?	?	?			The outcomes of the policy are not currently known therefore it is not possible to predict impacts

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pressures to reduce operational costs, and achieve efficiency savings. A range of options are being considered at an operational level to achieve these savings including: a) Altering frequencies to better match supply with demand; b) Considering alternatives to the practice of 24 hour manning and operation on the Yell Sound Service; and c) Re-configuring the Skerries service. d) In the medium term, there are also options to consider alternative vessel deployment patterns, and merging the Papa Stour and Foula services.	Signif.	?	?	?	?	?	?	?	?	?	?	?	?			
Community Hires / Community Bank FOP 5: STP will continue to support the current community ferry hires system, and seek to further develop and improve the flexibility of the system.	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	There is the potential for increased transport flexibility for small island communities
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
Monitoring FOP 6: STP will monitor the operational performance of the inter-island ferry service though the development and implementation of an e-log system. Consultation will also continue to be undertaken with relevant Community Councils.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
Fuel Efficiency FOP 7: STP recognises the importance of a fuel efficient ferry network and will place a greater emphasis on fuel efficiency in the purchase of future vessels, and operation of existing ferry fleet.	Magnitude	-	-	-	-	Min +ve	-	-	-	-	-	-	-	M	L	The use of less fuel has the potential to reduce contributions to climate change
	Signif.	-	-	-	-	●	-	-	-	-	-	-	-			

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DDA Policy FOP 8: STP will continue to ensure that ferry services in Shetland operate in accordance with Disabled Discrimination Act policy.	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	This policy to continue with existing commitments to the Disability Discrimination Act has benefits in terms of accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
Compliance FOP 9: STP will continue to ensure that ferry services are operated in compliance with applicable national safety and security regulations.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Min +ve	L	M	This policy has benefits with regard to safety
	Signif.	-	-	-	-	-	-	-	-	-	-	-	●			
Freight Services FOP 10: STP will continue to ensure the ongoing operation and availability of freight facilities for Fair Isle, Foula, Papa Stour and Skerries.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			

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Summary of Impacts: Inter-island Links – Ferry Links More detailed information regarding the likely effects of these policies is provided in the project appraisal matrices (Appendix F). The key impacts arising from policies relating to inter-island ferry links are due to proposals for physical development. A number of new terminals are required (Belmont, Gutcher, Whalsay) and upgrading work is required at others (Laxo and Vidlin). A berthing structure/breakwater is proposed at Hamars Ness on Fetlar to reduce the vulnerability of ferry services to adverse weather conditions. The potential effects of the above construction are potentially significant. As these structures are in coastal environments, there is the potential for construction to cause disturbance to European Protected Species (EPS) such as cetaceans, otters and seals. This disturbance would however be relatively short-term in duration. In some cases, there is the potential for negative effects on Natura 2000 sites. The Fetlar Special Protection Area (SPA) is approximately 1 km from the site of the proposed berthing structure/breakwater. Although the site is some distance from the proposed structure, there is the potential for disturbance to species based in the SPA during the construction phase. It is therefore recommended that this project is screened for Appropriate Assessment to determine the likelihood of effects on the SPA and whether a full assessment is required. In addition to the above effects on biodiversity, new or substantially upgraded structures have the potential to negatively affect landscape character and visual amenity. The significance of such impacts is dependent on the scale and design of upgrades, details of which were not available at the time of this assessment. Similarly, these structures have the potential for negative effects on the setting of historic buildings/features although the significance of these impacts is dependent on the scale and design (including materials) of the proposed structures. Construction itself has the potential to disturb archaeology, both known and unknown. There is also the potential for construction to generate l noise and vibration. Where this is in the vicinity of dwellings, effects on human health are potentially significant. A policy to investigate the effects of rock dredging the South Mouth at Out Skerries has the potential for negative effects on a historic wreck. The 'Kennemerland' is a protected wreck with a 250 m exclusion zone and the significance of impacts on the wreck is very much dependent on the precise location were dredging would occur.																
Inter-island Air Services																
Tingwall Airport IIA 1: STP continues to support the continued operation of Tingwall Airport as the Mainland Hub for the service.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	M	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
Unst Airport IIA 2: STP is aware of interest in re-opening Unst Airport in order to provide direct chartered air	Magnitude	Min -ve	Min -ve	Min -ve	Min -ve	Min -ve	-	-	Min +ve	-	-	Mod +ve	-	M	M	It is assumed that all necessary infrastructure is currently in place and that reopening of the airport would not require construction of additional infrastructure.

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services to support the re-development of RAF Saxa Vord. STP will continue to support this initiative. .	Signif.	○	○	○	○	○	-	-	●	-	-	✓	-			Flight services have the potential to disturb species, affect visual amenity and the setting of historic features, however, this is not considered to be significant as flights would be infrequent. Emissions would increase due to flights, although not significantly. Increased access to the island could have a significantly positive impact on Unst's declining population.
Fair Isle IIA 3: STP supports the ongoing development of air services to Fair Isle. One means to achieve this may be through increased use of chartered services for visitors to the island.	Magnitude	Min -ve	Min -ve	Min -ve	Min -ve	Min -ve	-	-	Min +ve	-	-	Min +ve	-	M	M	Increased flight frequency has the potential for negative impacts on biodiversity, visual amenity, the setting of historic features and emissions to air, however, none of these impacts are considered to be significant. Access to the island would improve, although again this is not considered to be significant.
	Signif.	○	○	○	○	○	-	-	●	-	-	●	-			
Foula IIA 4: STP recognises that the community of Foula has expressed an aspiration for the existing winter service to include a second day return trip opportunity to Shetland Mainland. However, no funding is currently identified to allow this.	Magnitude	Min -ve	Min -ve	Min -ve	Min -ve	Min -ve	-	-	Min +ve	-	-	Min +ve	-	M	M	Increased flight frequency has the potential for negative impacts on biodiversity, visual amenity, the setting of historic features and emissions to air, however, none of these impacts are considered to be significant. Access to the island would improve, although again this is not considered to be significant.
	Signif.	○	○	○	○	○	-	-	●	-	-	●	-			
Papa Stour IIA 5: Papa Stour has recently benefited from the development of a Ro-Ro ferry service. In combination with a review of ferry service patterns, it is recommended that continuation of the scheduled air service is also reviewed. STP supports the continued maintenance and licensing of the Papa Stour air strip.	Magnitude	-	-	-	Min +ve	Min +ve	-	-	Min -ve	-	-	Min -ve	-	M	M	Negative impacts of reduced access to papa Stour via air are not considered to be significant. The positive impacts of reduced air emissions are again not considered to be significant
	Signif.	-	-	-	●	●	-	-	○	-	-	○	-			
Skerries IIA 6: STP supports ongoing development of the Skerries Air Service. .	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	M	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted

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	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
Fares Policy IIA 7: STP currently operates a differential fares policy on the inter-islands air service, with Island residents receiving significant reductions on standard fares. STP supports the continuation of this policy.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	L	M	This policy has positive impacts on social exclusion/accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
Consultation and Monitoring IIA 8: STP proposes continued monitoring of the operational performance and utilisation of the present inter-island air service. It will continue to consult with relevant community councils and island communities.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
IIA 9**:** STP will continue to ensure that the inter-islands air service is operated in compliance with applicable national safety and security regulations.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Min +ve	L	H	
	Signif.	-	-	-	-	-	-	-	-	-	-	-	✓			
Summary of Impacts: Inter-island Air Services Overall the negative impacts of these policies tend not to be significant as it is assumed that infrastructure is not required. There is the potential for increased emissions due to increased service provision and although the extent of increases in flight numbers is not confirmed, it is not expected to be sufficient to create significant increases in emissions. There is also the potential for species to be disturbed and for landscape or the setting of historic features to be negatively affected. However, such effects are not considered to be significant due to the relatively minor expected increases in flight numbers.																
Internal Links - Walking																
WAL 1: STP and SIC will support the continued provision of footway schemes. The aim is to provide safe and attractive local pedestrian networks within settlement areas, with the	Magnitude	Min/Mod -ve	Mod -ve	Min -ve	Min +ve	Min +ve	-	Min -ve	Min +ve	Min -ve	Min -ve	Mod +ve	Mod +ve	M	M	Significant positive impacts are predicted for safety and accessibility. The provision of footways in settlements should also discourage car use for short journeys, reducing emissions, although this is

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emphasis on access to local facilities (schools, health centres, halls, shops, and leisure facilities).	Signif.	○/✘	✘	○	●	●	-	○	●	○	○	✓	✓			unlikely to be significant. There is the potential for negative impacts on cultural heritage through impacts on known or unknown archaeology. Biodiversity may also be negatively affected in roadside areas, this is not predicted to be significant although this is dependent on the location of schemes as impacts would be of greater significance in sensitive areas such as designated sites e.g. Natura sites. Landscape and streetscape character has the potential to be significantly affected by the provision of footways, as could visual amenity.
WAL 2: STP and SIC will continue to improve the accessibility and amenity of the footpath network within the main settlements, for example through the provision of dropped kerbs and tactile paving.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	Mod +ve	M	M	
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	✓			
WAL 3: STP and SIC will continue to use community consultation as a means of identifying potential footway schemes.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	M	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
WAL 4: Where appropriate, STP and SIC will recognise opportunities to utilise redundant stretches of the road network for walking/cycling purposes, and as part of the core paths network.	Magnitude	Min -ve	Min +ve	-	Min +ve	Min +ve	-	-	Min +ve	-	Min +ve	Mod +ve	Min +ve	M	M	This policy has potentially significant positive effects due to improvements to accessibility and promotion of physical activity (walking and cycling).
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
Internal Links - Cycling																
CYC 1: STP and SIC support the promotion of cycling within Shetland. This takes the form of cycle training within schools, the provision of secure cycle stands at key locations within main	Magnitude	-	Min -ve	Min -ve	-	-	-	-	Min +ve	-	-	-	Min +ve	M	M	No significant impacts are predicted as a result of this policy. The promotion of cycling should have benefits for the health of some and training should have safety benefits. There is the potential for

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settlements, and promoting the inclusion of cycling facilities within workplace travel plans.	Signif.	-	○	○	-	-	-	-	●	-	-	-	●			negative impacts on streetscape and the historic environment due to the provision of cycle stands, although this is dependent on location – Mitigation ensures design is appropriate to location therefore impacts in sensitive areas should not be significant
CYC 2: STP supports the development and promotion of cycling for tourists and leisure purposes. The most appropriate opportunities appear to be for the continued promotion and maintenance of the national cycle network, and support for a cycle route guide that could detail cycle hire and repair facilities, appropriate on and off road routes, and ferry connections.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no additional infrastructure cycle routes will be constructed as a result of this policy
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
Internal Links – Travel Behaviour Change																
TBC 1: STP and SIC will actively promote the development of school travel plans. Benefits include the promotion of safe journeys to school; the promotion of active lifestyles; and the promotion of increased environmental awareness.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Mod +ve	M	M	Safety and physical activity are promoted through this policy
	Signif.	-	-	-	-	-	-	-	-	-	-	-	✓			
TBC 2: STP and SIC will actively promote the development of a workplace travel plan for STP and SIC. Key components include the promotion of flexible working practices, the promotion of car sharing, promotion of walking and cycling for local trips between offices, and travel reduction by means of video and tele-conferencing.	Magnitude	-	-	-	Min +ve	Min +ve	-	-	-	-	-	-	Min +ve	M	M	There is the potential for fewer car journeys due to this policy although impacts on air quality and greenhouse gas emissions are not considered to be significant. Physical activity is also promoted for shorter journeys, with positive impacts on health.
	Signif.	-	-	-	●	●	-	-	-	-	-	-	●			
TBC 3: STP and SIC will actively support the development of workplace travel plans for other major employers in Shetland – both public sector and private sector. The key to the success of such	Magnitude	-	-	-	Min +ve	Min +ve	-	-	-	-	-	-	Min +ve	M	M	There is the potential for fewer car journeys due to this policy although impacts on air quality and greenhouse gas emissions are not considered to be significant. Physical activity is also

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initiatives is the development of measures that are both appropriate to Shetland, and beneficial to the organisations.	Signif.	-	-	-	●	●	-	-	-	-	-	-	●			promoted for shorter journeys, with positive impacts on health.

Summary of Impacts: Internal Links - Walking, Cycling, Travel Behaviour Change

Policies to promote walking and cycling, both as specific policies and within workplace travel plans, have the potential for health improvements through increased physical activity. Emissions to air may also be slightly reduced.

The provision of footway schemes should benefit pedestrian safety and improve accessibility for those without access to private cars. Similarly, depending on their location, footways have the potential to improve access to the natural and historic environment. Design improvements such as dropped kerbs will provide benefits for those with impaired mobility.

The introduction of new infrastructure such as footways does have potentially significant environmental effects. Depending on the scale and location of schemes, new footways have potentially negative impacts on biodiversity; this would be of greatest significance within or close to designated sites. Landscape character/visual amenity may also be negatively affected by the introduction of new infrastructure and there is the potential for archaeology (known and unknown) to be disturbed through construction. Construction also has the potential to negatively affect water quality, soil quality and the production of waste materials.

Local Road Network – Road Schemes

LRS 1: SIC will continue to appraise and prioritise potential road improvement schemes using an established two-stage, multi-criteria, objective appraisal approach, taking due consideration of the objectives established for the Transport Strategy. Schemes will be prioritised both on the basis of strategic priority, but also on the basis of improving roads to reduce ongoing maintenance burden. Schemes will continue to be progressed through community consultation, and a SIC Member-Officer Working Group.	Magnitude	?	?	?	?	?	?	?	?	?	?	?	?	?	?	The environmental effects of road schemes developed following this appraisal process are not known at this stage
	Signif.	?	?	?	?	?	?	?	?	?	?	?	?			
LRS 2: SIC currently have firm proposals for the implementation of the following significant road improvement schemes, which are identified with the current Capital Plan (see table 7.1)	Appraised individually, see below:															

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LRS 2 – Road Scheme 1 A971 Haggersta to Cova Road improvement scheme on main route to West Side – widening with walkway/cycle path between whiteness Primary School and the main housing developments at Cova	Magnitude	Neg	Mod -ve	Min -ve	-	-	-	Neg	-	Neg	Neg	Mod +ve	Min -ve/ Mod +ve-	H	M	Assessment reflects relevant impacts identified in Environmental Statement by Environmental Resources Management, Nov 2005. This policy has potentially significant negative effects on landscape character as the road is adjacent to the National Scenic Area. There is the potential for effects on South Whiteness SSSI which is designated for Saltmarsh and the presence of Shetland mouse ear hawkweed, however the closest point is over 1.2 km from the road as such effects are not considered to be significant. Six historical sites (5 of which are listed in the Scottish Monuments Record) are predicted to be directly affected by the scheme. Effects on the setting of listed buildings and known archaeological sites are predicted to be short-term only. Effects on human health through noise and vibration will occur but are not predicted to be significant. Similarly, dust is will be generated but this is not predicted to be significant. Significant positive impacts on road safety and accessibility are predicted due to the construction of walkways.
	Signif.	○	✘✘	✘	-	-	-	○	-	○	●/○	✓	✓/○			
LRS 2 – Road Scheme 2 Germatwatt Footways, Walls Footpath scheme	Magnitude	Mod -ve	Min -ve	Mod -ve	-	-	-	Min -ve	-	Min -ve	Min -ve/+ve	Min +ve	-	M	M	There is the potential for negative impacts on biodiversity from construction, as the lochs of Kirkigarth and Bardister SSSI (mesotrophic loch/open water) is approximately 50 m from the proposed works. Impacts on landscape character/visual amenity are not predicted to be significant. There is the potential for negative impacts on cultural heritage, due to possible disturbance of archaeology. A SAM is 40 m from the development and the setting of this feature is not predicted to be significantly affected. Improvements to accessibility are predicted
	Signif.	✘	○	✘	-	-	-	○	-	○	●/○	●	-			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
LRS 2 – Road Scheme 3 A970 Oversund Junction improvement, Lerwick	Magnitude	Min -ve	Min -ve	Mod -ve	-	-	-	Min -ve	-	Min -ve	Min -ve/+ve	-	-	M	M	This proposal is not predicted to affect any designated sites or protected historic buildings/features. There is the potential for disturbance to archaeology but no other significant impacts are predicted.
	Signif.	○	○	✘	-	-	-	○	-	○	●/○	-	-			
LRS 2 – Road Scheme 4 B9081 Mid Yell Link to A968 Phase 1 – New off line carriageway link to north of existing junction at Mid Yell. Old stretch of carriageway retained as footway. Phase 2 – Road improvement widening short stretch of single track lane, to dual lane.	Magnitude	Min -ve	Min -ve	Mod -ve	-	-	-	Min -ve	-	Min -ve	Min -ve/+ve	-	-	M	M	This proposal is not predicted to affect any designated sites or protected historic buildings/features. There is the potential for disturbance to archaeology. The development is not located in any areas designated for landscape value but there is the potential for significant negative effects on landscape character – this is dependent on the scale and design of the upgraded road.
	Signif.	○	✘	✘	-	-	-	○	-	○	●/○	-	-			
LRS 2 – Road Scheme 5 Papa Stour Road Structural improvement of existing road, on existing alignment	Magnitude	Mod -ve	Min -ve	Min -ve	-	-	-	Neg	-	Neg	Neg	Neg	-	H	M	**Biodiversity -** The existing road fringes the SPA, (designated for presence of arctic tern and ringed plover) and SSSI (designated for tern, plover, arctic skua, coastal geomorphology, cliffs, reefs and palaeontology). Papa Stour is also surrounded by an SAC (designated for

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	Signif.	✘✘	✘/?	✘	-	-	-	○	-	○	●/○	●	-			reefs and sea caves). Works to the road have the potential to negatively affect these sites, particularly the SPA and SSSI. Negative effects on the SAC are also possible although this site not adjacent to the proposed works. An Appropriate Assessment will be carried out to determine likely effects on the SPA and it is recommended that the project is screened for Appropriate Assessment to determine likely effects on the SAC. There is the potential for negative effects on cultural heritage – 10 SAMs are in the vicinity of the road, these are not predicted to be physically affected by the road although there is the potential for their setting to be affected. There is also the potential for disturbance to archaeology. It is not possibly to fully assess landscape/visual impacts without more detail regarding design, although there is the potential for negative effects. Negative effects are possible on water quality and material assets although these are not predicted to be significant.
LRS 2 – Road Scheme 6 Gibertson Road, Lerwick Structural maintenance - road and footway reconstruction.	Magnitude	Min -ve	Mod -ve	Mod -ve	-	-	-	Min -ve	-	-	Min -ve/+ve	Min +ve	-	M	M	Effects on biodiversity are not predicted to be significant. A Local Protection Area is located to the East, therefore the potential exists for significant effects on streetscape. There is also the potential for negative effects on the setting of historic buildings as listed buildings are located approximately 50-60 m from the proposed site. Effects on water, waste, biodiversity and accessibility are not predicted to be significant.
	Signif.	○	✘	✘	-	-	-	○	-	-	●/○	●	-			
LRS 2 – Road Scheme 7	Magnitude	Min -ve	Mod -ve	Mod -ve	-	-	-	Min -ve	-	-	Min -ve/+ve	- Min +ve	-	M	M	The development is located 300-400 m of the National Scenic Area and the centre of Scalloway is a Conservation Area,

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
Scord to School, Scalloway Road and footway improvement.	Signif.	○	✘	✘	-	-	-	○	-	-	●/○	●	-			therefore depending on design, there is the potential for significant effects on landscape character/visual amenity. A SAM is approximately 500 m from the development and listed buildings are also in the vicinity. It is possible therefore that their setting of these listed buildings could be is negatively affected. Effects on water, waste, biodiversity and accessibility are not predicted to be significant.
LRS 3: SIC will typically promote road improvements for the following purposes. a) Relatively minor extensions of the existing two-lane road network, to provide links to existing settlements. One example is the link between the A968 and Mid Yell. b) Road scheme development in conjunction with large scale housing development proposals. One example is the input to a master-planning exercise proposed for Gulberwick, to the south-west of Lerwick. c) Footway improvement works within existing settlements, such as that proposed for Germatwatt, Walls. d) On-line structural improvement of specific stretches of minor roads, in order reduce long term maintenance burdens. This may involve edge widening and strengthening to reduce damage caused by HGVs or increased traffic levels. e) Specific junction improvements to respond to increased, or changing traffic flows.	Magnitude	?	?	?	?	?	?	?	?	?	?	?	?	?	?	The effects of this policy are highly dependent on the location of any development or maintenance which results, it is therefore not possible to predicted the likely significance of effects. It should be noted that this does have the potential for significant negative effects, particularly if activities occur within or close to protected sites, species or structures/features.
	Signif.	✘/?	✘/?	✘/?	✘/?	✘/?	✘/?	✘/?	✘/?	✘/?	✘/?	✘/?	✘/?	?	?	?
LRS 4: SIC will continue to implement the Roadside Bio-Diversity Action Plan during routine maintenance work, and road development schemes.	Magnitude	Mod +ve	Min +ve	-	-	-	-	-	-	-	-	-	-	M	M	Positive impacts on biodiversity are predicted, with secondary positive impacts on landscape
	Signif.	✓	●	-	-	-	-	-	-	-	-	-	-			

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LRS 5: STP and SIC recognise that Shetland's unspoilt natural environment and landscape is one of its greatest assets. Accordingly, road improvement schemes will take full account of STP's established environmental objectives.	Magnitude	Min +ve	Min +ve	Min +ve	-	-	-	Min +ve	-	-	-	-	-	M	M	This policy has the potential to reduce the environmental impacts of road schemes, or create enhancements
	Signif.	●	●	●	-	-	-	●	-	-	-	-	-			
Local Road Network – Road Maintenance																
LRM 1: SIC will continue to undertake structural maintenance, routine maintenance, and regular inspections of its local road network in order to maintain the value of the asset, and also to ensure that the roads continue to be "fit for purpose".	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Mod +ve	L	M	This policy contributes to improved road safety
	Signif.	-	-	-	-	-	-	-	-	-	-	-	✓			
LRM 2: SIC will inspect, assess and maintain all structures in accordance with national Codes of Practice for Bridge Management.	Magnitude	Mod -ve	Mod -ve	-	-	-	-	Mod -ve	-	-	-	-		M	L	Significant negative impacts on biodiversity are possible due to the potential to disturb bats (European Protected Species) through bridge maintenance. There is also the potential for negative impacts on adjacent water courses. In addition, maintenance could negatively affect historic bridges.
	Signif.	✘	✘	-	-	-	-	✘	-	-	-	-				
LRM 3: SIC will maintain existing street lighting in accordance with relevant national standards.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Mod +ve	M	M	This policy has potential benefits for road safety
	Signif.	-	-	-	-	-	-	-	-	-	-	-	✓			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
LRM 4: SIC will seek to reduce light pollution and energy consumption by the use of modern street lighting apparatus	Magnitude	Min +ve	Mod +ve	Mod +ve	-	-	-	-	-	-	-	-	-	M	L	Reduced light pollution should benefit landscape/streetscape and the historic environment, particularly in sensitive areas. Some species may also benefit through reduced light pollution.
	Signif.	○	✓	✓	-	-	-	-	-	-	-	-	-			
Local Road Network – Road Safety																
RSF 1: SIC will maintain a programme of traffic calming, discrete road safety schemes, and route action plans, in order to contribute towards the achievement of the targets within Shetland's Road Safety Plan.	Magnitude	-	Min/Mod -ve	Min/Mod -ve	-	-	-	-	-	-	-	-	Mod +ve	M	M	There is the potential for significant positive impacts on road safety through the implementation of this policy. The use of some traffic calming measures can have negative impacts on landscape/streetscape and the setting of historic buildings and features. The extent of impacts is dependent on the design of traffic calming measures and their location. Impacts would be of greater significance in sensitive areas such as Conservation Areas.
	Signif.	-	○/✗	○/✗	-	-	-	-	-	-	-	-	✓			
RSF 2: SIC will monitor road traffic accidents by location and crash type to inform the development of potential remedial schemes.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Mod +ve	L	M	This policy has the potential for road safety improvements
	Signif.	-	-	-	-	-	-	-	-	-	-	-	✓			
RSF 3: STP and SIC will seek to initiate specific road safety education campaigns, in relation to speeding, seat belt enforcement, and driving under the influence of drink/drugs.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Mod +ve	L	M	This policy has the potential for road safety improvements
	Signif.	-	-	-	-	-	-	-	-	-	-	-	✓			
RSF 4: STP and SIC will lobby for regular targeted	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Mod +ve	L	M	This policy has the potential for road safety improvements

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
traffic law enforcement campaigns within Shetland, in order to effectively complement programmes of education and road improvements.	Signif.	-	-	-	-	-	-	-	-	-	-	-	✓			
Local Road Network – Risk Assessment and Contingency Planning																
RRA 1: SIC will continue to develop risk assessment processes in relation to flooding of the local road network, and landslips.	Magnitude	-	-	-	-	-	Min +ve	Min +ve	-	Min +ve	-	-	Min +ve	M	M	Risk assessments have the potential to reduce flooding problems thereby improving safety, water quality, reducing vulnerability to storm activity and limiting damage to material assets.
	Signif.	-	-	-	-	-	●	●	-	●	-	-	●			
RRA 2: STP and SIC will promote contingency planning for the short-term unavailability of key sections of the local road network.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
Local Road Network – Structures																
SIC will inspect, assess and maintain all structures in accordance with the new national Code of Practice for Bridge Management.	Magnitude	Mod -ve	Mod -ve	-	-	-	-	Mod -ve	-	-	-	-	Mod +ve	M	L	Significant negative impacts on biodiversity are possible due to the potential to disturb bats (European Protected Species) through bridge maintenance. There is also the potential for negative impacts on adjacent water courses. In addition, maintenance could negatively affect historic bridges.
	Signif.	✘	✘	-	-	-	-	✘	-	-	-	-	●			
Local Road Network – Winter Maintenance																
RWM 1: SIC will develop and implement the winter maintenance programme and procedures, prioritising action on the most heavily used routes, footways within settlements that link key facilities, and the provision of grit bins.	Magnitude	Mod -ve	-	-	-	-	-	Mod -ve	-	-	-	-	Mod +ve	M	M	This policy has the potential for positive impacts on winter road safety. Run off of road salt has the potential for negative impacts on biodiversity on water quality and biodiversity through run-off into habitats and water bodies in the vicinity of roads
	Signif.	✘	-	-	-	-	-	✘	-	-	-	-	✓			
RWM 2: Winter maintenance policies will be updated on a periodic basis by SIC, and consulted	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this

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upon prior to their adoption.	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			policy, therefore no environmental effects are predicted
Local Road Network – Parking																
PAR 1: SIC will continue to support the existing disk parking system within the centre of Lerwick, in order to ensure availability of off and on street parking for short and long term demands.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
PAR 2: SIC will continue to monitor provision of on and off street parking in Lerwick and other settlement areas, and will consider appropriate solutions to identified problems.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
PAR 3: SIC will provide dedicated parking for disabled users, appropriately sited and marked for their use, within local car parks and Lerwick.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	L	M	Positive impacts on accessibility for disabled drivers are predicted due to this policy
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
PAR 4: STP and SIC support the maintenance and development of park and ride / transport interchange facilities at appropriate sites along the main road network, to facilitate car sharing, and access to the mainline public transport network.	Magnitude	Min -ve	Min -ve	Min -ve	Min +ve	Min +ve	-	-	-	-	-	-	-	M	L	Park and ride/car sharing should reduce emissions to air, although this is not considered to be significant. The provision of new parking facilities has the potential to for negative impacts on roadside habitats, landscape/visual amenity and cultural heritage, through potential impacts on known/unknown archaeology. The extent of any impacts is dependent on the scale, location and design of infrastructure.
	Signif.	○	○	○	●	●	-	-	-	-	-	-	-			
Local Road Network – Monitoring																

LTS Policies		SEA Objectives												Sensitivity of Receptor		Comments
		Environmental Objectives										Social Objectives				
		Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	Improve accessibility and reduce social exclusion	Improve human health	Env	Social	
RMN 1: SIC will undertake regular and systematic surveys of road traffic at a series of key locations on Shetland's Spine Road network.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
RMN 2: SIC will also undertake regular consultation with each community council with respect to local road network issues.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			

LTS Policies	SEA Objectives														Comments
	Environmental Objectives											Social Objectives		Sensitivity of Receptor	
	Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	Improve accessibility and reduce social exclusion	Improve human health	Env	Social	
Summary of Impacts: Internal Links - Local Road Network The Transport Strategy includes a policy to implement the Roadside Biodiversity Action Plan (BAP) during routine maintenance work and in the development of road schemes. This policy is likely to have positive impacts on biodiversity and landscape/visual amenity and where enhancements are not possible these policies may help to mitigate negative impacts. A policy to promote the use of modern street lighting apparatus should improve safety and reduce the impacts of light pollution on landscape character and the historic environment. Road safety should also benefit from policies to carry out education campaigns, road maintenance/road improvements and to monitor accidents. The use of traffic calming measures should also contribute to improved road safety. Depending on their location, traffic calming measures have the potential for negative impacts on landscape/streetscape and the historic environment. This is of greatest significance in sensitive areas such as Conservation Areas, where the setting of historic buildings could be affected. Bridge maintenance has the potential to negatively affect the historic environment, where bridges have historic value. Maintenance activities also have the potential to negatively affect water quality and biodiversity in the vicinity. Winter maintenance has positive impacts in terms of road safety but also has the potential for negative impacts on water quality and biodiversity, due to the potential effects of salt run-off on adjacent water bodies and ecosystems. There is also the potential for negative impacts on biodiversity, landscape and cultural heritage (known and unknown archaeology) from the development of informal park and ride/interchange facilities. This should have minor benefits in terms of reducing transport emissions. The most significant environmental impacts predicted from Road Network policies are due to the promotion of road improvement schemes. The assessment of environmental effects was limited by a lack of information relating to scheme design. Information was available relating to location therefore it has been possible to predict likely effects on protected sites and features. Significant negative effects on landscape character and visual amenity are predicted due to improvements to the A971 between Haggersta and Cova as the scheme is adjacent to the National Scenic Area (NSA). The Scalloway road/footway improvement scheme will be located approximately 300-400 m from the NSA and adjacent to a Conservation Area. Other schemes (e.g. B9081 Mid Yell Link to A968) which although not located within or adjacent to such designated sites still have the potential for significant negative effects on landscape character and visual amenity. This is dependent on the scale and design of schemes and although mitigation measures All road improvement schemes have the potential for negative effects on cultural heritage as archaeology (known and unknown) may be disturbed. Listed buildings and SAMs are present in the vicinity of a number of schemes (Haggersta-Cova, Papa Stour, Walls, Giberston Road, Scalloway) and the setting of these features therefore the potential to be negatively affected. A proposal for a footpath scheme in Walls has the potential for negative effects on biodiversity as it may be as close as 50 m to the Kirkigarth and Bardister SSSI. Proposals for structural improvements to the existing road on Papa Stour have the potential for a number of significant negative effects on biodiversity. The island contains a number of protected sites; the existing road fringes the Papa Stour SPA/SSSI and the island is surrounded by an SAC. It is recommended that an Appropriate Assessment is carried out to determine the likely significance of effects on the SPA and that the development is screened for Appropriate Assessment in relation to potential effects on the SAC.															
Public Transport – Public Transport Services																
PTS 1: STP will continue to support the provision of the existing mainline public transport services, and associated feeder services, aimed at ensuring that each Shetland Mainland Community has access to employment and education opportunities within	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	M	M	The provision of public transport to services reduces social exclusion for those without access to private cars.

LTS Policies		SEA Objectives														Comments
		Environmental Objectives										Social Objectives		Sensitivity of Receptor		
		Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	Improve accessibility and reduce social exclusion	Improve human health	Env	Social	
Lerwick, as well as access to shopping, health, leisure opportunities.	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
PTS 2: STP will continue to support the provision of integrated public transport opportunities for residents of Shetland's offshore islands, including public transport services which are integrated with inter-island ferry and air services	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	M	M	The provision of public transport to services reduces social exclusion for those without access to private cars.
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
PTS 3: STP will continue to support the use of Scottish Executive Rural Transport funding to support the complementary network of shopper services.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-			The provision of public transport to services reduces social exclusion for those without access to private cars.
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
PTS 4: STP will continue to monitor usage of these services, in order to effectively match the level of provision to the demand.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
PTS 5: STP will continue to investigate and trial innovate forms of public transport service delivery in an attempt to improve service levels, reliability, and efficiency whilst reducing costs. In the future, this may include further development of community transport initiatives, and other forms of rural demand responsive provision. An audit of such provision is proposed.	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	there is the potential for this policy to result in improvements to public transport which could benefit more remote areas of Shetland
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
PTS 6: In consultation with community councils, and where there is evidence of demand, STP will continue to trial new or amended service patterns,	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	This policy has the potential to benefit those without access to private transport

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
including evening and late night services.	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
PTS 7: STP supports the development of a dedicated and integrated bus link between Sumburgh Airport and Lerwick, as part of a review of bus services to South Mainland.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	M	L	This policy should have positive impacts on accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
PTS 8: STP will continue to ensure that existing bus services provide an integrated service for users of the Holmsgarth ferry terminal.	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	This policy has the potential to benefit those without access to private transport
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
PTS 9: STP will continue to consult with Community Councils to develop public transport services	Magnitude	-	-	-	-	-	-	-	-	-	-	Min +ve	-	L	M	The impacts of this policy are dependent on the extent of improvements. Environmental impacts are not likely to be significant.
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
PTS 10: STP will promote the use of fuel efficient public transport services.	Magnitude	-	-	-	-	Min +ve	-	-	-	-	-	-	-			This policy has the potential to reduce contributions to climate change although effects are not considered to be significant
	Signif.	-	-	-	-	●	-	-	-	-	-	-	-			
PTS 11: STP will continue to ensure all public transport services in Shetland are delivered in accordance with Disability Discrimination Act policy.	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	L	M	Policy contributes to social inclusion objectives
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
PTS 12: STP will continue to ensure all public	Magnitude	-	-	-	-	-	-	-	-	-	-	-	Mod +ve			This policy should benefit safety

LTS Policies		SEA Objectives												Sensitivity of Receptor		Comments
		Environmental Objectives										Social Objectives				
		Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	Improve accessibility and reduce social exclusion	Improve human health	Env	Social	
transport services in Shetland are delivered in accordance with relevant national safety guidance and legislation.	Signif.	-	-	-	-	-	-	-	-	-	-	-	✓			
Public Transport – Fares and Ticketing																
PTF1: STP will continue to set maximum fare levels as a condition of tender to service providers. The level of fares will be reviewed on an annual basis to take account of both changes in costs of providing the service, but also to ensure that levels of accessibility are maintained.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	M	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
PTF 2: STP will continue to provide free public transport travel for the elderly and disabled groups in accordance with the national transport concessionary scheme offered by Transport Scotland.	Magnitude	-	-	-	-	-	-	-	-	-	-	Miod +ve	-	L	M	Free travel for the elderly contributes to social inclusion objectives
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			
PTF 3: STP will continue to support Scottish Executive proposals for the implementation of concessionary travel scheme for youth groups.	Magnitude	-	-	-	-	-	-	-	-	-	-	Miin +ve	-	L	M	Youth concessions contributes to social inclusion objectives
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
Public Transport – Information																
PTI 1: STP will continue to offer real-time information services from Viking Bus Station and will investigate potential sites that could benefit from real-time information systems in the future.	Magnitude	-	-	-	-	-	-	-	-	-	-	Miin +ve	-	L	M	This policy has the potential for positive impacts on accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	●	-			
PTI 2: STP will market their public transport network through the publication and circulation of timetables and user guides.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
Public Transport – Infrastructure and Facilities																
PTI 3: STP will continue to operate and maintain the Lerwick Viking Bus Station, offering information, left luggage and small parcels services.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
PTI 4: STP will continue to provide and maintain bus shelters and timetable cases where the need is identified.	Magnitude	-	Min/Mod -ve	Min/Mod -ve	-	-	-	-	-	-	-	-	-	M	M	The provision of bus shelters has the potential for negative impacts on streetscape, landscape character/visual amenity and the setting of historic buildings/features. The extent of impacts is dependent on the design of shelters and their location. In appropriate designs in sensitive areas (e.g. Conservation Areas) would have the most significant impacts.
	Signif.	-	✘	✘	-	-	-	-	-	-	-	-	-			
PTI 5: STP will ensure that at the main entry points to Shetland (Holmsgarth and Sumburgh), there are appropriate of timetable information, and waiting facilities.	Magnitude	-	-	-	-	-	-	-	-	-	-	-	-	L	L	It is assumed that no development or direct changes in transport-related activities will occur as a result of this policy, therefore no environmental effects are predicted
	Signif.	-	-	-	-	-	-	-	-	-	-	-	-			
PTI 6: STP will investigate measures to increase the amenity of public transport waiting facilities, and will work in partnership with community groups to achieve this.	Magnitude	-	?	?	-	-	-	-	-	-	-	-	-	M	M	Impacts of this policy are dependent on designs employed and the location of facilities
	Signif.	-	?	?	-	-	-	-	-	-	-	-	-			
Public Transport – Education Transport																
SIC provides school transport services and services for special needs pupils, in line within national guidelines and local policies. SIC also provides transport services for the social work and community development sectors. SIC will continue to identify areas for efficiency and delivery improvements	Magnitude	-	-	-	-	-	-	-	-	-	-	Mod +ve	-	L	M	Positive impacts predicted with regard to accessibility
	Signif.	-	-	-	-	-	-	-	-	-	-	✓	-			

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
Summary of Impacts: Internal Links - Public Transport Positive impacts on accessibility/social exclusion are predicted for public transport policies relating to improved services, better integration with inter-island ferries/flights, provision of transport for the social work sector and free transport for the elderly/disabled. There is the potential for positive impacts on CO2 emissions and local air quality as a result of Policy EMP6 which supports the investigation of using alternative fuels. Depending on their design and location, bus shelters have the potential to negatively affect landscape character and the setting of historic features and cause visual intrusion.																
Environmental Policies																
Natura 2000 Sites EPM 1: Potential Impacts on the integrity of Natura 2000 sites (or proposed Natura 2000 sites) will in the first instance be prevented by locating transport activities likely to cause disturbance away from such sites. Where activities could directly, indirectly or in combination with other proposals affect the interests of a Natura site, the proposals will be screened for the potential for significant effects to the interests of the site in consultation with Scottish Natural Heritage (SNH). If the screening indicates potential for significant effects studies will be completed to inform an Appropriate Assessment	Magnitude	Mod +ve	Min +ve	-	-	-	-	-	-	-	-	-	-	H	L	This policy should lead to positive impacts on biodiversity, in particular in Natura sites (SACs and SPAs). Secondary positive effects are predicted for landscape character
	Signif.	✓✓	✓	-	-	-	-	-	-	-	-	-	-			
Protected Species EPM 2: Potential impacts on protected species will be avoided in the first instance by locating transport activities likely to cause disturbance away from sites associated with protected species. In other cases STP and SIC will seek to avoid impacts by complying with protected species legislation and by licensing proposed disturbance through the relevant licensing authority - Scottish Executive Environment and Rural Affairs Department (SEERAD) or SNH	Magnitude	Mod +ve	-	-	-	-	-	-	-	-	-	-	-	H	L	This policy should lead to positive impacts on biodiversity, particularly European Protected Species.
	Signif.	✓✓	-	-	-	-	-	-	-	-	-	-	-			
Scheme Design EPM 3: New transport infrastructure will minimise impacts on key ecological, heritage, landscape and topographical features. The scale and design of all	Magnitude	Mod +ve	Mod +ve	Mod +ve	-	-	-	-	-	-	-	-	-	H	L	This policy should result positive effects on biodiversity, heritage and landscape through mitigating negative effects of new transport infrastructure

LTS Policies		SEA Objectives: Environmental Objectives: Protect, maintain and enhance biodiversity	Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	Reduce air pollution	Reduce Shetland's contribution to climate change	Reduce vulnerability to the effects of climate change	Protect, maintain and enhance water quality	Enhance access to the natural and historic environment	Protect land and material assets	Reduce, reuse, recycle and recover waste	SEA Objectives: Social Objectives: Improve accessibility and reduce social exclusion	Improve human health	Sensitivity of Receptor: Env	Sensitivity of Receptor: Social	Comments
schemes will be fitting to the local landscape character and aligned or located in a manner which uses the existing landform to good effect and which minimises the scale of required earthworks. In addition: a) design profiles will reflect existing natural slopes and be designed to avoid risks of landslips; b) the scale of road improvement schemes will be in keeping with the local environs; and c) effective environmental mitigation will be part of all transport infrastructure designs.	Signif.	✓✓	✓✓	✓✓	-	-	-	-	-	-	-	-	-			
Waste EPM 4: Wherever practicable, STP and SIC will ensure that waste materials associated with transport infrastructure are reduced, reused, recycled or recovered.	Magnitude	-	-	-	-	-	-	-	-	Mod +ve	Mod +ve	-	-	M	L	This policy promotes conservation natural resources and reduce waste
	Signif.	-	-	-	-	-	-	-	-	✓	✓	-	-			
Water EPM 5: Where appropriate, Sustainable Urban Drainage Systems (SUDS) will be used in development of transport infrastructure.	Magnitude	Min +ve	-	-	-	-	Mod +ve	Mod +ve	-	Mod +ve	-	-	-	M	L	The use of SUDS should reduce flooding and the negative effects of excessive run-off e.g. peat-slides
	Signif.	-	-	-	-	-	✓	✓	-	✓	-	-	-			
Alternative Fuels EPM 6: STP and SIC will undertake a study into the use of alternative fuels (including biofuels) and energy conservation measures for the Council's fleet of vehicles.	Magnitude	-	-	-	-	Mod +ve	-	-	-	-	-	-	-	M	L	
	Signif.	-	-	-	-	✓	-	-	-	-	-	-	-			

Appendix E Policy Assessment Matrix

Appendix F Inter-Island Links - Assessment Matrices

Key Effect Significance

Symbol	Meaning
✓✓	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
O	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

Development: Fetlar Berthing Structure

Description of Development: Construction of a new berthing structure/breakwater at Hamars Ness, to provide protection from weather conditions for berthing vessels.

The precise location of the structure has not been determined but it is to be located in the vicinity of the existing ferry terminal. A design has not been developed at this stage, therefore details of materials to be used are not currently known, although the structure is likely to extend approximately 100-120 m from the shore. This assessment matrix should be read together with Figure 6.

SEA Objective	Matters for Consideration	Comments on Predicted Impacts	Sensitivity of Receptor	Predicted Impact
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ BAP priority habitats and species	The site where the structure would be built is not within any areas designated for importance in terms of natural heritage. The site is however approximately 1 km to the Fetlar SPA, SAC and North Fetlar SSSI. The SPA is designated due to the presence of	High	Magnitude of Impact: Natura sites: Minor –ve EPS: Minor –ve

				Significance of Impact: Natura sites: Significant –ve EPS Significant –ve
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape, seascape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities and public open space, footpaths ▪ Light pollution	There are no areas designated for their landscape value within the area immediately affected. The Brough Lodge, itself a listed building and its surroundings identified in the inventory of Gardens and Designed Landscape is nearby. The berthing structure would introduce a new feature to the local landscape and seascape and depending on the scale of the structure and its design, there is the potential for the landscape character to be negatively affected. Similarly, the scale of the structure will affect how visible it is from various locations and the extent to which it will intrude into existing views. Negative impacts on visual amenity are therefore possible.	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant –ve
Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes ▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	There are no known protected features relating to the historic environment on the site of the proposed structure. The remains of Sna Broch are approximately 1 km from the site of the proposed structure and a further site of interest is Brough Lodge listed in the inventory of Gardens and Designed Landscape. Depending on the scale and exact location of the berthing structure there is the potential for the setting of these features to be affected.	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant

		There is also the potential for negative impacts on known/unknown archaeology, through physical disturbance or by affecting the setting of such features.		
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	There is the potential for an increase in localised dust during the construction of the development. This is likely to be short term in duration and taking account of current air quality conditions this is not considered to result in a significant impact.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	CO_2 emissions are likely due to construction however levels are not predicted to be significant.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	The purpose of the structure is to improve accessibility by reducing the impacts of adverse weather on ferry services.	High	Magnitude of Impact: Moderate +ve Significance of Impact: Highly significant
Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality	During construction and operation the potential exists for a pollution event to occur, which could negatively affect marine water quality.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Improve accessibility and reduce social exclusion	▪ Accessibility of public transport ▪ Accessibility of goods and services, including health services	The purpose of the structure is to improve accessibility by reducing the impacts of adverse weather on ferry services.	High	Magnitude of Impact: Minor +ve Significance of Impact: Significant
Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	The structure could lead to minor improvements to accessing Fetlar's natural and historic sites of interest.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant

Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Construction activities could generate a higher level of noise and vibration than currently experienced however this would be short term in duration.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of 'improved' versus 'unimproved' land ▪ Land contamination ▪ Soil/peat	Construction is not predicted to have a significant effect on land or material assets.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	Construction would be expected to generate waste, however, there is an opportunity to make use of waste materials in the construction of the facility.	Medium	Magnitude of Impact: Moderate –ve/+ve Significance of Impact: Significant –ve/+ve

Development: Laxo ferry terminal upgrade				
Description of Development: Replacement of existing ferry terminal This assessment assumes that the existing terminal is to be removed and replaced with a new structure in the same location. A design has not been developed at this stage, therefore details of materials to be used are not currently known. This assessment matrix should be read together with Figure 7.				
SEA Objective	**Matters for Consideration**	**Comments on Predicted Impacts**	**Sensitivity of Receptor**	**Predicted Impact**
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ BAP priority habitats and species ▪ Habitats adjacent to roads ▪ Coastal processes ▪ Erosion and sedimentation	No designated sites are within close proximity to the site however Laxo Burn SSSI, designated due to two species of hawkweeds, is approximately 1.25km to the west. No effects on the SSSI are predicted as a result of the development. The closest Natura site (Yell Sound Coast SAC) is approximately 4 km from the site and as such no impacts are predicted. Due to the coastal location of the terminal upgrade, there is the potential for disturbance of European protected species (otters, seals and cetaceans). The extent of such impacts is not known at this stage however, there is the potential for such effects to be negative and significant.	High	Magnitude of Impact: Natura site: Negligible EPS: Minor -ve Significance of Impact: Natura site: Not significant EPS: Significant -ve
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape, seascape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities and public open space, important footpaths	The proposed upgrade is not within close proximity of any sites designated for their landscape value. Depending on the scale and design of the new structure there is the potential for negative	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant

	▪ Light pollution	impacts on landscape and visual amenity. However, as the structure will replace an existing terminal, long-term effects on visual amenity are not predicted to be significant.		
Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes ▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	There are no cultural heritage designations within the immediate vicinity of the development. The nearest is the Knowe of Brulland cairn 1.35km to the west and the terminal upgrade is unlikely to affect either the cairn or its setting. There is also the potential for negative impacts on known/unknown archaeology, through physical disturbance or by affecting the setting of such features.	Medium	Magnitude of Impact: Minor –ve Significance of Impact: Not significant
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	There could be an increase in localised dust during the construction of the development. This is likely to be short term in duration and taking account of current air quality conditions this is not considered to result in a significant impact.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	CO_2 emissions are likely due to construction however levels are not predicted to be significant.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	An upgraded terminal is likely to be less vulnerable to increased storm activity and sea level rise caused by climate change	Medium	Magnitude of Impact: Minor +ve Significance of Impact: Not significant
Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality	During construction and operation the potential exists for a pollution event to occur,	Medium	Magnitude of Impact: Minor -ve

	▪ Catchment hydrology ▪ Coastal and marine water quality	which could negatively affect marine water quality.		Significance of Impact: Not significant
Improve accessibility and reduce social exclusion	▪ Accessibility of public transport ▪ Accessibility of goods and services, including health services	The upgrade of the ferry terminal is unlikely to significantly affect accessibility as the status quo will be maintained	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Access to the natural and historic environment is unlikely to be affected	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Construction activities could generate noise and vibration, which could have negative effects on nearby dwellings	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of ‘improved’ versus ‘unimproved’ land ▪ Land contamination ▪ Soil/peat	No significant effects on land or material assets are predicted.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	Construction would be expected to generate waste although there may also be the opportunity to make use of waste materials in construction	Medium	Magnitude of Impact: Moderate –ve/+ve Significance of Impact: Significant –ve/+ve

Development: Vidlin ferry terminal upgrade

Description of Development: Upgrading of existing terminal at Vidlin

This assessment assumes that the existing terminal is to be upgraded by increasing the size of the structure. A design has not been developed at this stage, therefore details of materials to be used are not currently known. This assessment matrix should be read together with Figure 8.

SEA Objective	Matters for Consideration	Comments on Predicted Impacts	Sensitivity of Receptor	Predicted Impact
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ BAP priority habitats and species ▪ Habitats adjacent to roads ▪ Coastal processes ▪ Erosion and sedimentation	The nearest designated site is the Yell Sound Coast SAC/SSSI, 2.36km to the north west. Due to the local topography and distance, there would be no effects on this site or any other Natura sites/SSSIs. There is the potential for construction to cause disturbance to European Protected Species (otters, seals and cetaceans).	High	Magnitude of Impact: Natura sites: Negligible EPS: Minor -ve Significance of Impact: Natura sites: Not significant EPS: Significant-ve
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape, seascape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities and public open space, important footpaths ▪ Light pollution	This upgraded terminal is not located within or close to any area which have been designated for their landscape value. The structure is likely to be clearly visible from nearby dwellings and roads. Although design details of the upgraded terminal are not currently known, given that it will replace an existing structure, impacts on landscape character and visual amenity are not predicted to be significant.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant

Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes ▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	The upgrading of the terminal has the potential to affect the setting of the broch located at the west end of Ayre of Vidlin, A Scheduled Ancient Monument. As this will replace an existing terminal and existing jetties are considerably closer, effects on the setting of the broch are not considered to be significant. There is also the potential for negative impacts on known/unknown archaeology, through physical disturbance or by affecting the setting of such features.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	There could be an increase in localised dust during construction. This is likely to be short term in duration and taking account of current air quality conditions this is not considered to result in a significant impact.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	CO_2 emissions are likely due to construction however levels are not predicted to be significant.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	An upgraded terminal is likely to be less vulnerable to increased storm activity and sea level rise caused by climate change	Medium	Magnitude of Impact: Minor +ve Significance of Impact: Not significant
Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality	During construction and operation the potential exists for a pollution event to occur, which could negatively affect marine water quality.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Improve accessibility	▪ Accessibility of public transport	The upgrade of the ferry terminal is unlikely to	High	Magnitude of Impact: Negligible

and reduce social exclusion	▪ Accessibility of goods and services, including health services	significantly affect accessibility as the status quo will be maintained		Significance of Impact: Not significant
Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Access to the natural and historic environment is unlikely to be affected	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Construction activities could generate noise and vibration, which could have negative effects on nearby dwellings	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant -ve
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of 'improved' versus 'unimproved' land ▪ Land contamination ▪ Soil/peat	No significant effects on land or material assets are predicted.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	Construction would be expected to generate waste although there may also be the opportunity to make use of waste materials in construction	Medium	Magnitude of Impact: Moderate –ve/+ve Significance of Impact: Significant –ve/+ve

Development: Whalsay terminal, North Voe				
Description of Development: Construction of a new harbour at North Voe, as a possible replacement for the existing terminal at Symbister This assessment matrix should be read together with Figure 9				
SEA Objective	**Matters for Consideration**	**Comments on Predicted Impacts**	**Sensitivity of Receptor**	**Predicted Impact**
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ BAP priority habitats and species ▪ Habitats adjacent to roads ▪ Coastal processes ▪ Erosion and sedimentation	There are no European or nationally designated sites on the island of Whalsay; the closest site is a distance of 8 km. There is the potential for the new structure to cause changes to coastal processes, the extent and impacts of which are not known. There is also the potential for disturbance to European Protected Species (otters, seals and cetaceans) due to construction.	High	Magnitude of Impact: Natura sites: Negligible EPS: Minor -ve Significance of Impact: Natura sites: Not significant EPS: Significant -ve
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape, seascape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities, important footpaths ▪ Light pollution	The proposed development is not located within or close to any areas designated for landscape importance. Whilst there are currently man-made structures in North Voe the introduction of a new harbour is likely to be of such a scale and change to the existing landscape that negative impacts on landscape and seascape character are likely to result. Negative impacts are also predicted for visual amenity due to the presence of a number of nearby dwellings. Exact design/location details are not currently known.	Medium	Magnitude of Impact: Moderate –ve Significance of Impact: Significant –ve

Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes ▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	There are no listed buildings or Scheduled Ancient Monuments at North Voe however there are listed buildings within 0.5km of the site. No impacts on these are predicted, either direct physical impacts or on their setting. There is however the potential for negative impacts on known/unknown archaeology, through physical disturbance or by affecting the setting of such features.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	There is the potential for an increase in localised dust during the construction of the development. This is likely to be short term in duration and taking account of current air quality conditions this is not considered to result in a significant impact.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	CO_2 emissions are likely due to construction however levels are not predicted to be significant.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	An upgraded terminal is likely to be less vulnerable to increased storm activity and sea level rise caused by climate change	High	Magnitude of Impact: Minor +ve Significance of Impact: Not significant
Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality	During construction and operation the potential exists for a pollution event to occur, which could negatively affect marine water quality.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Improve accessibility	▪ Accessibility of public transport	The upgrade of the harbour is unlikely to	High	Magnitude of Impact: Negligible

and reduce social exclusion	▪ Accessibility of goods and services, including health services	significantly affect accessibility – the status quo is likely to be maintained or there may be slight improvements		Significance of Impact: Not significant
Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Access to the natural and historic environment is unlikely to be affected	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Construction could generate noise and vibration.	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant –ve
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of ‘improved’ versus ‘unimproved’ land ▪ Land contamination ▪ Soil/peat	No significant effects on land or material assets are predicted.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	Construction would be expected to generate waste, however, there is an opportunity to make use of waste materials in the construction of the facility.	Medium	Magnitude of Impact: Moderate –ve/+ve Significance of Impact: Significant –ve/+ve

Development: Whalsay terminal upgrade				
Description of Development: Extending the existing harbour at Symbister. This assessment matrix should be read together with Figure 9.				
SEA Objective	**Matters for Consideration**	**Comments on Predicted Impacts**	**Sensitivity of Receptor**	**Predicted Impact**
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ BAP priority habitats and species ▪ Habitats adjacent to roads ▪ Coastal processes ▪ Erosion and sedimentation	There are no European or nationally designated sites on the island of Whalsay; the closest site is a distance of 8 km. There is the potential for the new structure to cause changes to coastal processes, the extent and impacts of which are not known. There is also the potential for disturbance to European Protected Species (otters, seals and cetaceans) due to construction.	High	Magnitude of Impact: Natura sites: Negligible EPS: Minor -ve Significance of Impact: Natura sites: Not significant EPS: Significant -ve
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape, seascape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities, important footpaths ▪ Light pollution	The proposed development is not located within or close to any areas designated for landscape importance. The extent of effects on landscape character and visual amenity of extending the existing harbour are dependent on the design and scale of the structure. These details were not known at the time of this appraisal. However, a large structure does have the potential for negative impacts on both, although the degree of impact should be minimised given that a harbour currently exists.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant

Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes ▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	There are a number of Listed Buildings at Symbister and a Scheduled Ancient Monument. The extension to the harbour has the potential to affect the setting of the designated buildings and features although no direct physical impacts on these are predicted. There is the potential for negative impacts on known/unknown archaeology, through physical disturbance or by affecting the setting of such features.	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant –ve
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	There is the potential for an increase in localised dust during the construction of the development. This is likely to be short term in duration and taking account of current air quality conditions this is not considered to result in a significant impact.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	CO_2 emissions are likely due to construction however levels are not predicted to be significant.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	An extended harbour is likely to be less vulnerable to increased storm activity and sea level rise caused by climate change	Medium	Magnitude of Impact: Minor +ve Significance of Impact: Not significant
Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality	During construction and operation the potential exists for a pollution event to occur, which could negatively affect marine water quality.	Medium	Magnitude of Impact: Minor –ve Significance of Impact: Not significant
Improve accessibility	▪ Accessibility of public transport	The upgrade of the harbour is unlikely to	Medium	Magnitude of Impact: Minor +ve

and reduce social exclusion	▪ Accessibility of goods and services, including health services	significantly affect accessibility – the status quo is likely to be maintained or there may be slight improvements		Significance of Impact: Not significant
Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Access to the natural and historic environment is unlikely to be affected	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Construction could generate noise and vibration.	Medium	Magnitude of Impact: Moderate –ve Significance of Impact: Significant –ve
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of 'improved' versus 'unimproved' land ▪ Land contamination ▪ Soil/peat	No significant effects on land or material assets are predicted.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	Construction would be expected to generate waste, however, there is an opportunity to make use of waste materials in the construction of the facility.	Medium	Magnitude of Impact: Moderate –ve/+ve Significance of Impact: Significant –ve/+ve

Development: Belmont ferry terminal replacement				
Description of Development: Replacement of the existing ferry terminal at Belmont, decommissioning of the existing terminal on completion of the new structure. The precise location and design of the new structure was not known at the time of this appraisal, although it is assumed that the new structure will be close to the existing terminal. This assessment matrix should be read together with Figure 10				
SEA Objective	**Matters for Consideration**	**Comments on Predicted Impacts**	**Sensitivity of Receptor**	**Predicted Impact**
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ BAP priority habitats and species ▪ Habitats adjacent to roads ▪ Coastal processes ▪ Erosion and sedimentation	The site of the proposed development is not on or close to any European designated sites. The Gutcher SSSI, on the opposite side of Bluemull Sound (1.5 km away), is designated for geological importance. There is the potential for the new structure to cause changes to coastal processes, the extent and impacts of which are not known. There is also the potential for disturbance to European Protected Species (otters, seals and cetaceans) due to construction.	High	Magnitude of Impact: Natura sites: Negligible EPS: Minor –ve Significance of Impact: Natura sites: Negligible EPS: Significant –ve
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape, seascape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities, important footpaths ▪ Light pollution	The new structure will not be located within any areas designated for landscape importance. It is close to Belmont House; listed in the inventory of Gardens and Designed Landscapes but is not visible from the house. Due to a lack of potential receptors, impacts on visual amenity are not predicted to be significant.	Medium	Magnitude of Impact: Minor –ve Significance of Impact: Not significant
Preserve, protect, enhance and where appropriate restore the historic	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes	No direct physical impacts on historic features are predicted. There are a number of Scheduled Ancient	Medium	Magnitude of Impact: Moderate -ve

environment and other culturally important features	▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	Monuments within 1km of the site including; the Hoga Ness broch, Gallowhill cairn, a house at Mula and a Norse house and field system near Belmont. There is the likelihood of negative impacts on the setting of at least some of these features. There is also the potential for negative impacts on known/unknown archaeology, through physical disturbance or by affecting the setting of such features.		Significance of Impact: Significant –ve
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	There is the potential for an increase in localised dust during the construction of the development. This is likely to be short term in duration and taking account of current air quality conditions this is not considered to result in a significant impact.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	CO_2 emissions are likely due to construction however levels are not predicted to be significant.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	An upgraded terminal is likely to be less vulnerable to increased storm activity and sea level rise caused by climate change	Medium	Magnitude of Impact: Minor +ve Significance of Impact: Not significant
Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality	During construction and operation the potential exists for a pollution event to occur, which could negatively affect marine water quality.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Improve accessibility	▪ Accessibility of public transport	The upgrade of the harbour is unlikely to	Medium	Magnitude of Impact: Minor +ve

and reduce social exclusion	▪ Accessibility of goods and services, including health services	significantly affect accessibility – the status quo is likely to be maintained or there may be slight improvements, due to reduced vulnerability to adverse weather conditions.		Significance of Impact: Not significant
Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Access to the natural and historic environment is unlikely to be significantly affected.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Construction could generate noise and vibration, however due to a lack of potential receptors this is not considered to be significant.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of ‘improved’ versus ‘unimproved’ land ▪ Land contamination ▪ Soil/peat	No significant effects on land or material assets are predicted.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	Construction would be expected to generate waste, however, there is an opportunity to make use of waste materials in the construction of the facility.	Medium	Magnitude of Impact: Moderate –ve/+ve Significance of Impact: Significant –ve/+ve

Development: Gutcher ferry terminal replacement				
Description of Development: Replacement of the existing ferry terminal at Gutcher, decommissioning of the existing terminal on completion of the new structure. The precise location and design of the new structure was not known at the time of this appraisal, although it is assumed that the new structure will be close to the existing terminal. This assessment matrix should be read together with Figure 10				
SEA Objective	**Matters for Consideration**	**Comments on Predicted Impacts**	**Sensitivity of Receptor**	**Predicted Impact**
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ BAP priority habitats and species ▪ Habitats adjacent to roads	The proposed development is not located within any areas designated for importance in terms of biodiversity. The nearby Gutcher geological SSSI (approx 200m to the north of the existing terminal and 30m to the south) is designated for geological interest. There is the potential for the new structure to cause changes to coastal processes, the extent and impacts of which are not known. There is also the potential for disturbance to European Protected Species (otters, seals and cetaceans) due to construction.	High	Magnitude of Impact: Natura sites: Negligible EPS: Minor –ve Significance of Impact: Natura sites: Not significant EPS: Significant –ve
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape, seascape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities, important footpaths ▪ Light pollution	The new structure will not be located within any areas designated for landscape importance. The new structure has the potential for negative impacts on landscape character and visual amenity, although the significance is dependent on scale and design of the development.	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant
Preserve, protect, enhance and where appropriate restore the historic	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes	No direct physical impacts on designated historic features are predicted. There is one listed building close to the existing terminal and there is the potential for the setting of this	Medium	Magnitude of Impact: Moderate -ve

environment and other culturally important features	▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	building to be negatively affected, depending on the location of the new structure. There is also the potential for negative impacts on known/unknown archaeology, through physical disturbance or by affecting the setting of such features.		Significance of Impact: Significant –ve
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	There is the potential for an increase in localised dust during the construction of the development. This is likely to be short term in duration and taking account of current air quality conditions this is not considered to result in a significant impact.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	CO_2 emissions are likely due to construction however levels are not predicted to be significant.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	An upgraded terminal is likely to be less vulnerable to increased storm activity and sea level rise caused by climate change	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality	During construction and operation the potential exists for a pollution event to occur, which could negatively affect marine water quality.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Improve accessibility and reduce social exclusion	▪ Accessibility of public transport ▪ Accessibility of goods and services, including health services	The upgrade of the ferry terminal is unlikely to significantly affect accessibility as the status quo will be maintained. There may be slight improvements, due to reduced vulnerability to adverse weather conditions.	Medium	Magnitude of Impact: Minor +ve Significance of Impact: Not significant

Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Access to the natural and historic environment is unlikely to be affected	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Noise and vibration from construction could cause significant negative impacts for nearby dwellings	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of 'improved' versus 'unimproved' land ▪ Land contamination ▪ Soil/peat	No significant effects on land or material assets are predicted.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	Construction would be expected to generate waste, however, there is an opportunity to make use of waste materials in the construction of the facility.	Medium	Magnitude of Impact: Moderate –ve/+ve Significance of Impact: Significant –ve/+ve

Development:	**Diving survey to investigate the feasibility of rock dredging of the South Mouth, Out Skerries**

Description of Development: Diving survey to investigate the feasibility of rock dredging of the South Mouth, Out Skerries to improve access to the existing terminal.

The policy in the Transport Strategy relates to the diving survey however this matrix highlights potential effects of the dredging itself. The significance of impacts is dependent on the extent of dredging required. Current information suggests that this would involve the remove of a small number of rock peaks below the water surface and the installation of navigation aids. This assessment matrix should be read together with Figure 11.

SEA Objective	Matters for Consideration	Comments on Predicted Impacts	Sensitivity of Receptor	Predicted Impact
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European protected species ▪ Nationally protected species ▪ BAP priority habitats and species ▪ Habitats adjacent to roads ▪ Coastal processes ▪ Erosion and sedimentation	There are no European or nationally designated sites in the vicinity of the Skerries South Mouth. Changes to coastal processes are possible, the impacts of which are not uncertain. Rock dredging is predicted to have direct negative effects on marine ecology in the vicinity and has the potential to negatively affect European Protected Species (otters, seals and cetaceans).	High	Magnitude of Impact: Natura site: Negligible EPS: Minor -ve Significance of Impact: Natura site: Not significant EPS: Significant -ve
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape, seascape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities, important footpaths ▪ Light pollution	It is assumed that any widening of the South Mouth would be below the surface water level therefore impacts on landscape and seascape character are not predicted.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant

Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes ▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	There is the potential for significant negative effects on a protected wreck. The Kennemerland wreck is located within the South Mouth and is protected under the Protection of Wrecks Act, 1973. A 250 m radius exclusion zone exists around this sites and any diving/excavation within this area requires a licence from Historic Scotland. The significance of impacts on the wreck is very much dependent on the precise location were dredging would occur.	High	Magnitude of Impact: Moderate -ve Significance of Impact: Highly significant
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	Effects on air quality are predicted to be negligible	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	Effects on CO_2 emissions are predicted to be negligible	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	The dredging of the South Mouth allows increased flexibility for ferry services, reducing vulnerability to weather conditions	Medium	Magnitude of Impact: Moderate +ve Significance of Impact: Significant +ve
Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality	The rock dredging associated with widening South Mouth could potentially affect water quality by disturbing the sea bed. This effect is likely to be short term.	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant -ve
Improve accessibility and reduce social exclusion	▪ Accessibility of public transport ▪ Accessibility of goods and services, including health services	Accessibility can be positively affected due to reduced vulnerability of ferry services to weather conditions	Medium	Magnitude of Impact: Mod +ve Significance of Impact: Significant +ve

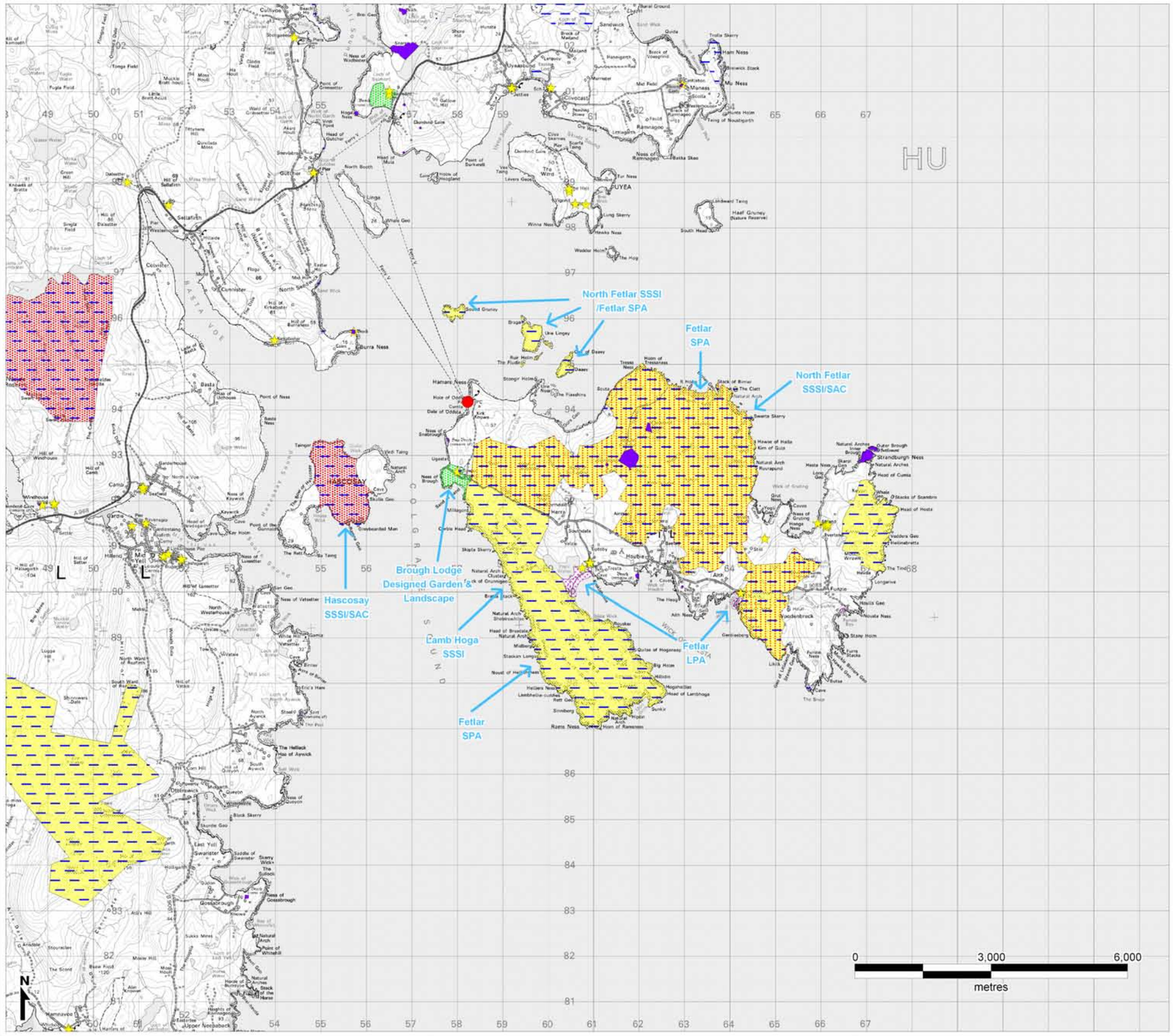
Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Access to the natural and historic environment is not likely to be significantly affected by dredging activity	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Construction activities could generate a high level of noise and vibration however this would be short term in duration	Low	Magnitude of Impact: Mod -ve Significance of Impact: Not significant
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of 'improved' versus 'unimproved' land ▪ Land contamination ▪ Soil/peat	No effects predicted	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-related activity	No effects predicted	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant

Development: Bressay Bridge				
Description of Development: Bridge link between Lerwick & Bressay (see Figure 12). This appraisal is based on the findings of the Environmental Impact Assessment as set out in the Environmental Statement (ERM, 2003).				
SEA Objective	**Matters for Consideration**	**Comments on Predicted Impacts**	**Sensitivity of Receptor**	**Predicted Impact**
Protect, maintain and enhance biodiversity	▪ European protected sites e.g. SPA, SAC ▪ Nationally protected sites e.g. SSSI ▪ Other designated sites ▪ European Protected Species ▪ Nationally protected species ▪ BAP priority habitats and species ▪ Habitats adjacent to roads ▪ Coastal processes ▪ Erosion and sedimentation	Construction could potentially cause disturbance to European Protected Species (cetaceans, otters and seals). No impacts are predicted on Natura sites or other sites designated for nature conservation value. The EIA Environmental Statement indicated that following mitigation, impacts would not be significant.	High	Magnitude of Impact: Natura sites: Negligible EPS: Negligible Significance of Impact: Natura sites: Not significant EPS Not significant
Safeguard and enhance the quality and distinctiveness of the area's landscape (historic and natural)	▪ Designated areas e.g. National Scenic Area ▪ Landscape and townscape character (overlap with cultural heritage) ▪ Potentially sensitive receptors e.g. residential areas, recreation facilities, important footpaths ▪ Light pollution	Although the bridge will result in a clear visible change, it is not predicted to significantly alter landscape character. Significant impacts on visual amenity are predicted as it will be visible from many areas. Whether this is considered a negative or positive effect is subjective.	Medium	Magnitude of Impact: Moderate –ve / +ve Significance of Impact: Significant –ve / +ve

Preserve, protect, enhance and where appropriate restore the historic environment and other culturally important features	▪ Historic buildings, including listed buildings ▪ Scheduled Ancient Monuments ▪ Gardens and designed landscapes ▪ Townscapes and historic landscapes ▪ Known and unknown archaeology, including marine archaeology/protected wrecks ▪ Conservation Areas ▪ The wider setting of the features listed above	Part of what is thought to be the earliest township boundary, which is of regional importance, at Heogan will be destroyed by the works, as will some field drains, rigs and a small derelict structure, which are considered to be of local importance.' (Environmental Statement, ERM, 2003)	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant -ve
Reduce air pollution	▪ Emissions from sea, air and road transport ▪ Effects combined with other potential sources of air pollution e.g. Sullom Voe oil terminal ▪ Key pollution indicators e.g. NO_2 and PM10	There is the potential for an increase in localised dust during the construction of the development and emissions from construction traffic. This is likely to be short term in duration and taking account of current air quality conditions this is not considered to result in a significant impact.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Reduce Shetland's contribution to climate change	▪ Overall transport-related CO_2 emissions	CO_2 emissions are likely due to construction however levels are not predicted to be significant.	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant
Reduce vulnerability to the effects of climate change	▪ Risk to proposals due to effects of climate change e.g. flooding and weather ▪ Risk of flooding of existing infrastructure	No effects are predicted	Medium	Magnitude of Impact: Negligible Significance of Impact: Not significant

Protect, maintain and enhance water quality	▪ Surface and ground water ▪ Chemical and ecological water quality ▪ Catchment hydrology ▪ Coastal and marine water quality ▪ Coastal processes ▪ Erosion and sedimentation	No watercourses are predicted to be physically affected. One well will be covered on Bressay and if this is used by the land owner an alternative provision will be made.	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Improve accessibility and reduce social exclusion	▪ Accessibility of public transport ▪ Accessibility of goods and services, including health services	Significant benefits for accessibility are predicted for the residents of Bressay	Medium	Magnitude of Impact: Moderate +ve Significance of Impact: Significant +ve
Enhance access to the natural and historic environment	▪ Public transport links to natural and historic environment ▪ Footpath network	Access from the Shetland mainland to the Noss National Nature Reserve will be improved	Medium	Magnitude of Impact: Moderate +ve Significance of Impact: Significant +ve
Improve human health	▪ Noise and vibration ▪ Crime and fear of crime relating to transport ▪ Transport accidents ▪ Walking and cycling	Construction will result in increases in noise, although the EIA predicted that this would not be significant. There is the potential for vibration during construction although as this will be short-term in duration, this is not predicted to be significant	Medium	Magnitude of Impact: Minor -ve Significance of Impact: Not significant
Protect land and material assets	▪ Land slips ▪ Private property ▪ Quality agricultural land ▪ Use of ‘improved’ versus ‘unimproved’ land ▪ Land contamination ▪ Soil/peat	The project will result in the loss of acid grassland and heath, although losses would not be significant. Construction will however require the use of large quantities of materials and depending on the source, this has th e potential to significantly affect quarries/borrow pits	Medium	Magnitude of Impact: Moderate -ve Significance of Impact: Significant -ve
Reduce, reuse, recycle and recover waste	▪ Materials used due to transport-related activity ▪ Potential for waste to be generated by transport-	There is the potential for large quantities of waste to be produced in construction	Medium	Magnitude of Impact: Moderate

	related activity			-ve Significance of Impact: Significant -ve



- Approx. location of berthing structure
- Special Area for Conservation (SAC)
  - Approx. 80m S Fetlar SAC
- Special Protection Area (SPA)
  - Approx. 2km S Fetlar SPA
- Site of Special Scientific Interest (SSSI)
  - Approx. 80m S North Fetlar SSSI
- Scheduled Ancient Monument (SAM)
  - 5 SAMs within 5km including Whilsa Pund
- Listed Building
  - Approx 1.5km S Brough Lodge
- Designed Garden & Landscape
  - Approx. 1.5km S Brough Lodge Designed Garden
- Local Protection Area (LPA)
  - Approx. 4.5km S at Papil Water

Applicant: SIC

Project: SHETLAND REGIONAL TRANSPORT STRATEGY
PROJECTS UNDER CONSIDERATION

Title: FIGURE 6 - Fetlar - Berthing Structure

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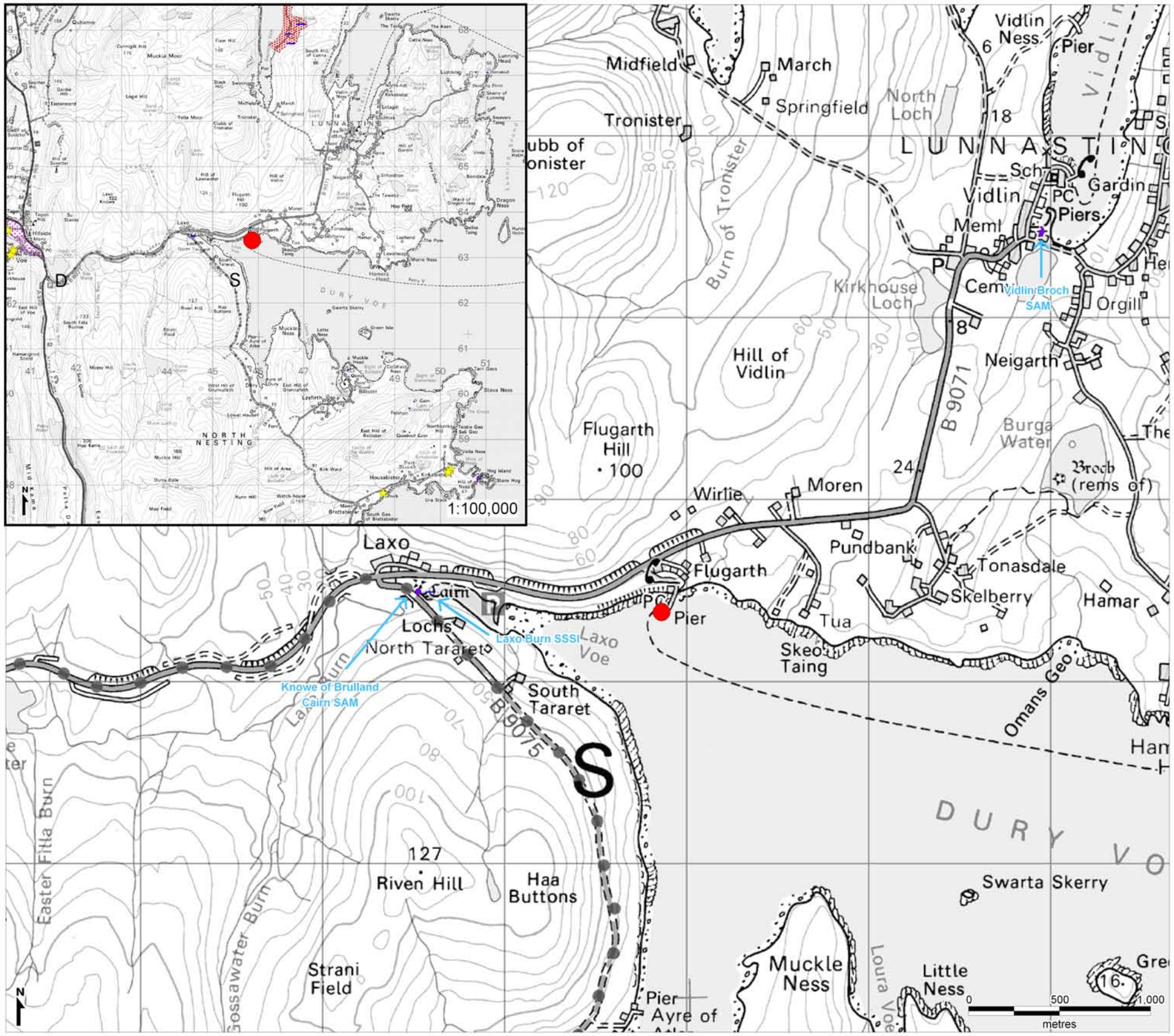

Approx. location of Laxo Ferry Terminal

Special Area for Conservation (SAC)
- Yell Sound Coast approx. 4km N

Site of Special Scientific Interest (SSSI)
- Laxo Burn approx. 1.2km W
- Yell Sound Coast approx. 4km N

Scheduled Ancient Monument (SAM)
- Knowe of Brulland cairn approx. 1.3km W
- Vidlin Broch approx. 2.8km NE

Listed Building
- Approx. 4.5km NE at Voe

Designed Garden & Landscape
- Lunna House approx. 6km NE

Local Protection Area (LPA)
- Approx. 4.5km W at Voe

Applicant: SIC

Project: SHETLAND REGIONAL TRANSPORT STRATEGY
PROJECTS UNDER CONSIDERATION

Title: FIGURE 7 - Laxo Ferry Terminal Upgrade

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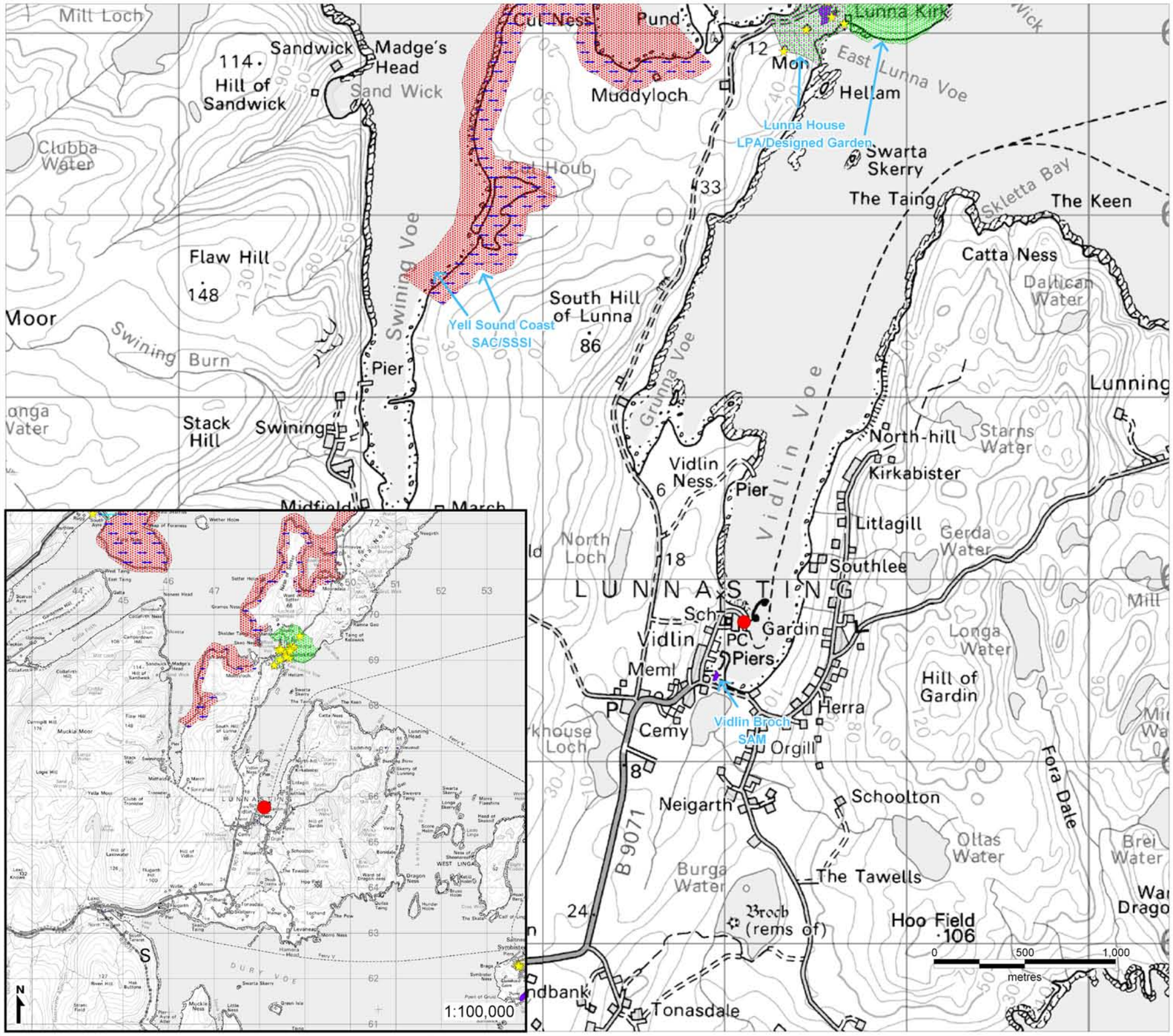

- Approx. Vidlin Ferry Terminal Location
- Special Area for Conservation (SAC)
  - Yell Sound Coast approx. 2.5km NW
- Site of Special Scientific Interest (SSSI)
  - Laxo Burn approx. 4km SW
  - Yell Sound Coast approx. 2.5km NW
- Scheduled Ancient Monument (SAM)
  - Knowe of Brulland cairn approx. 4km SW
  - Vidlin Broch approx. 300m S
- Listed Building
  - Approx. 3.4km N at Lunna
- Marine Conservation Area (MCA)
  - Swinister Voe & the Houb of Fora Ness 7.2km NW
- Designed Garden & Landscape
  - Lunna House approx. 3.4km NE
- Local Protection Area (LPA)
  - Approx. 3.4km N at Lunna

Applicant: SIC

Project: SHETLAND REGIONAL TRANSPORT STRATEGY
PROJECTS UNDER CONSIDERATION

Title: FIGURE 8 - Vidlin Terminal Upgrade

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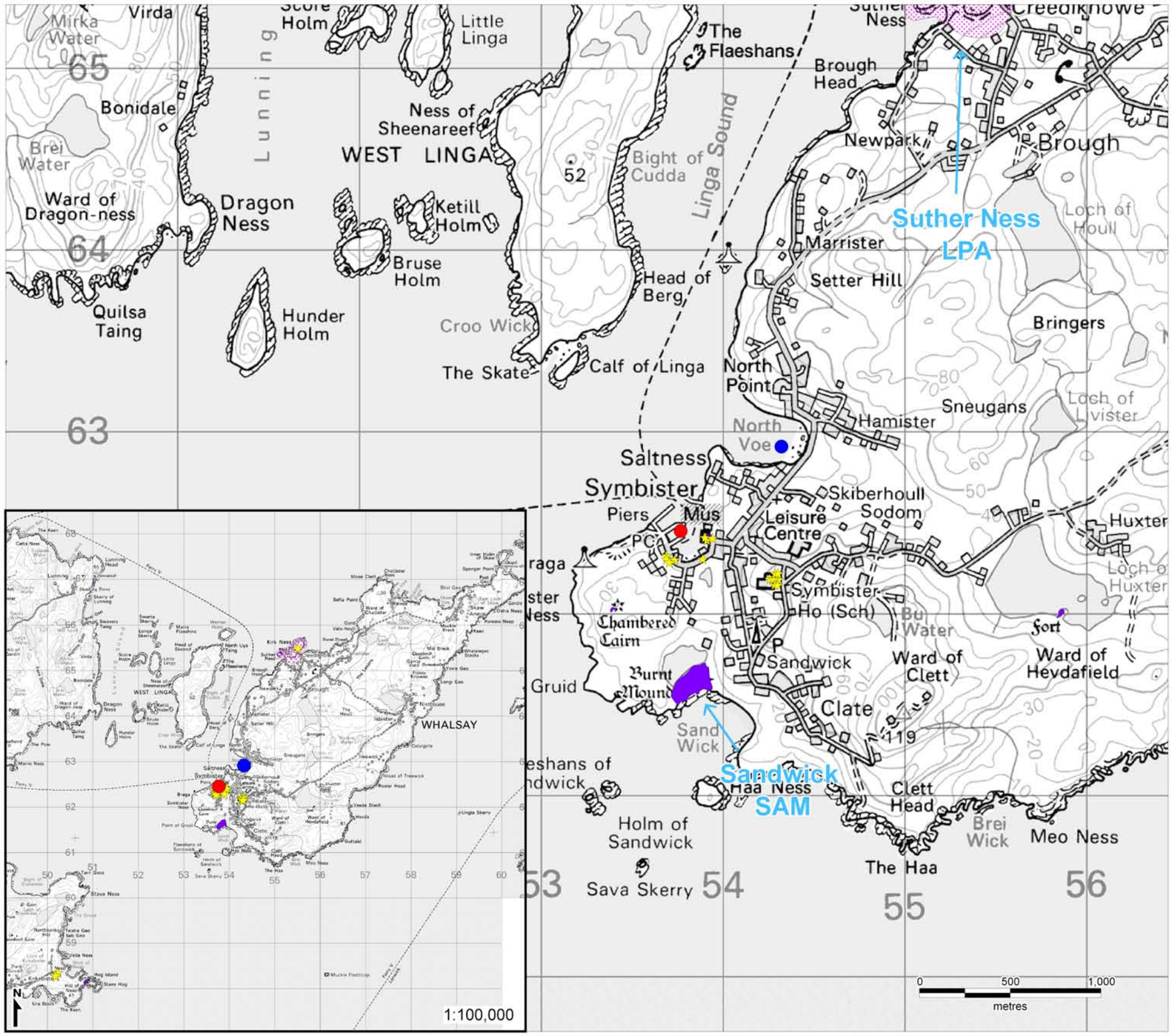

Symbister Harbour

Approx. location of North Voe Harbour

Scheduled Ancient Monument (SAM)
- Sandwick settlement & burnt mounds 90m S

Listed Building
- Within 130m of Symbister Harbour
- Within 600m of North Voe

Local Protection Area (LPA)
- Approx. 2.7km NE at Suther Ness

Applicant: SIC

Project: SHETLAND REGIONAL TRANSPORT STRATEGY
PROJECTS UNDER CONSIDERATION

Title: FIGURE 9 - Whalsay Harbour - Symbister & North Voe

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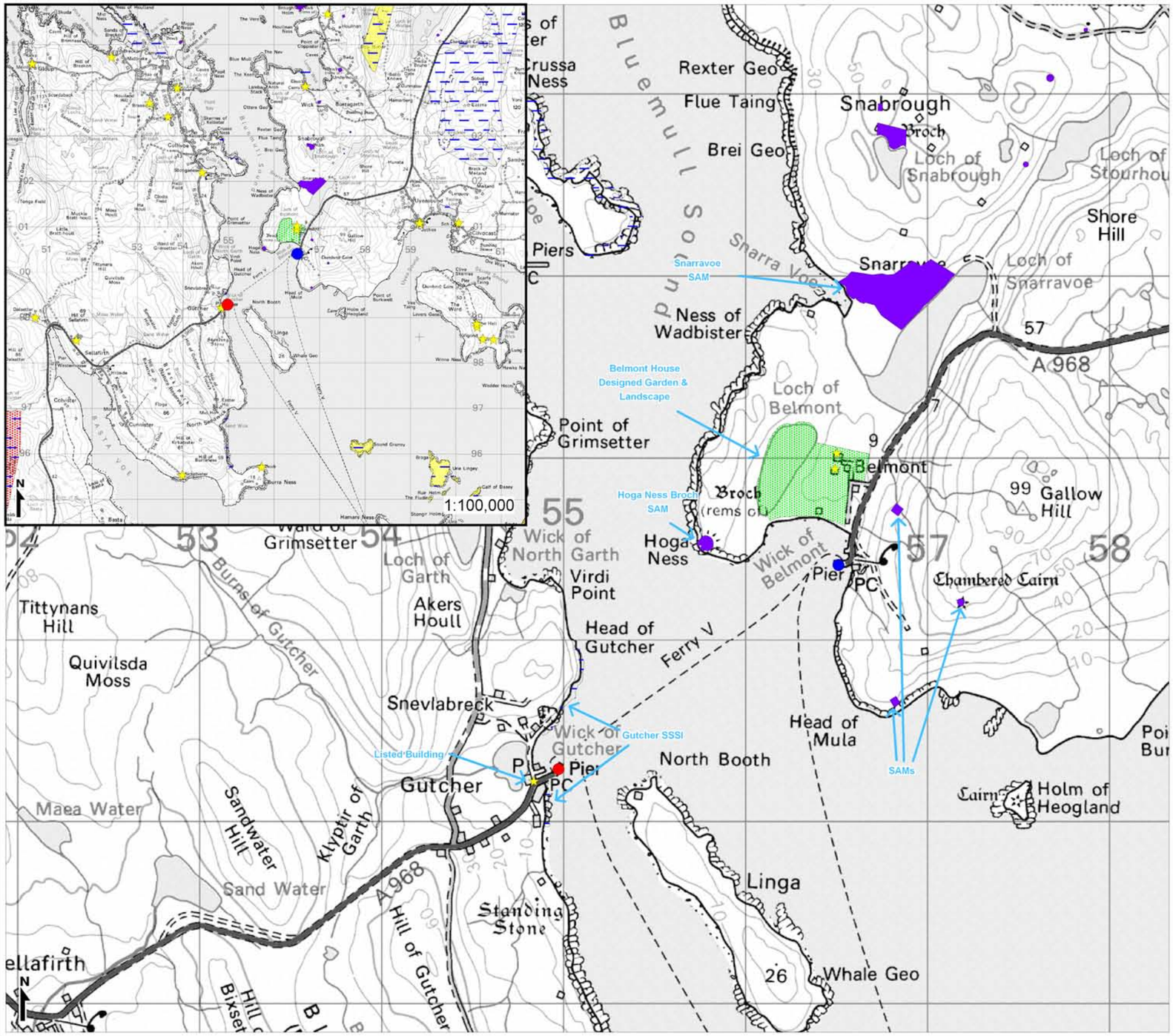

- Approx. location of Gutcher ferry terminal
- Approx. location of Belmont ferry terminal

Special Area for Conservation (SAC)
- 5.4km SW of Gutcher East Mires & Lumbister SAC
- 5.9km S of Gutcher Hascosay SAC

Special Protection Area (SPA)
- Parts of Fetlar SPA within 4.2km of Gutcher
- 4.3km NE of Belmont Hermaness, Saxa Vord & Valla SPA

Site of Special Scientific Interest
- Within a 7km radius of the Belmont and Gutcher terminals there are
- over 10 SSSIs including Easter Loch SSSI and the Gutcher
- SSSI which is within 50m of the Gutcher terminal

Scheduled Ancient Monument (SAM)
- 5 SAMs within 1.5km of Belmont

Listed Buildings
- Within 0.5km of Belmont terminal
- Within 100m of Gutcher terminal

Designed Garden & Landscape
- Within 200m of Belmont terminal

Applicant: SIC

Project: SHETLAND REGIONAL TRANSPORT STRATEGY
PROJECTS UNDER CONSIDERATION

Title: FIGURE 10 - Yell-Unst Ferry Terminals at Gutcher and Belmont

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- Approx. Location of South Mouth Dredging
- Listed Building
  - Within 500m of South Mouth
- Designated Wreck
  - Kennermerland in South Mouth
  - Wrangels Palais 1.6km NE
- Local Protection Area (LPA)
  - Within 1km of South Mouth

Applicant: SIC

Project: SHETLAND REGIONAL TRANSPORT STRATEGY
PROJECTS UNDER CONSIDERATION

Title: FIGURE 11 - Outer Skerries, South Mouth

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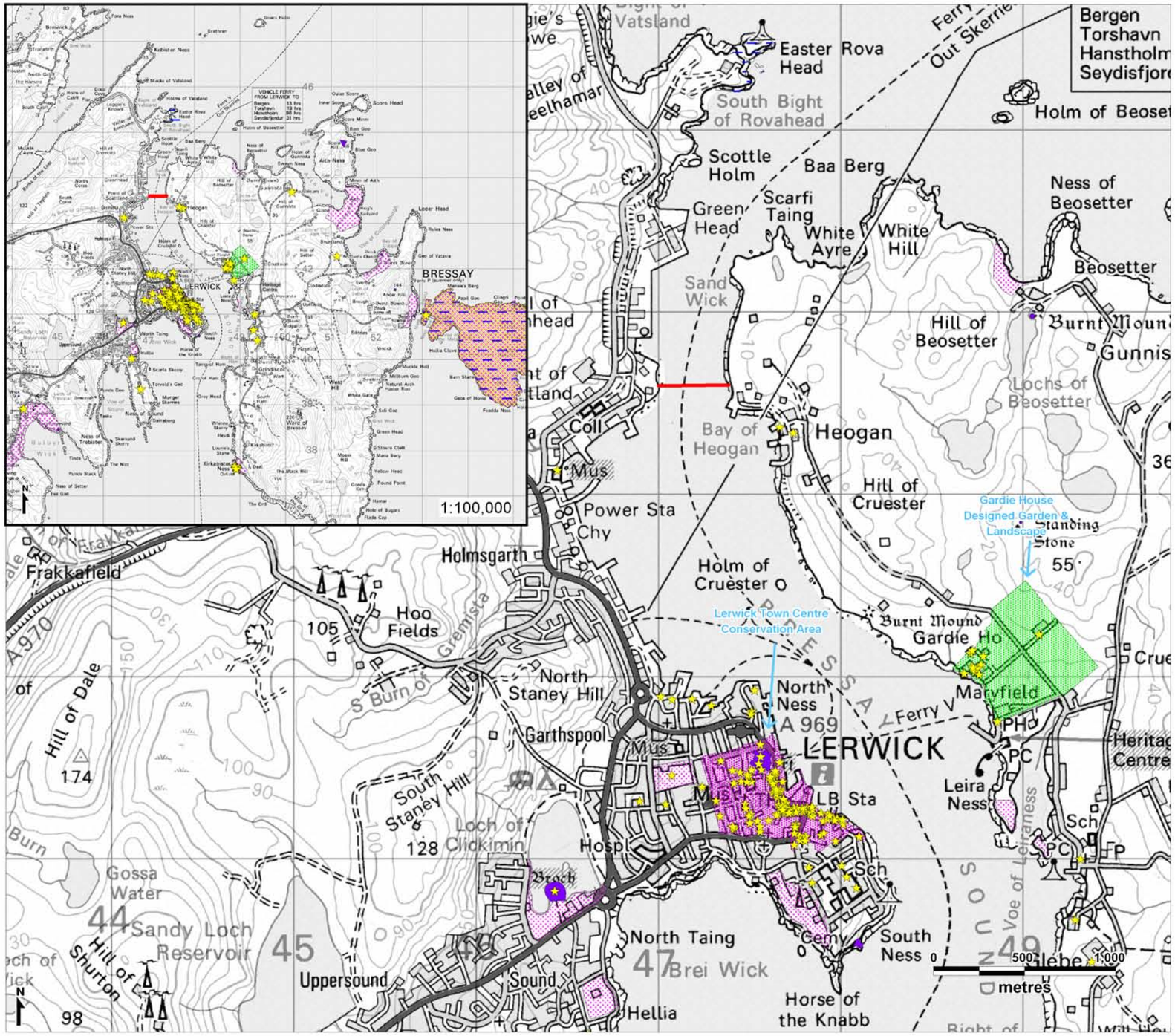

Bergen
Torshavn
Hanstholm
Seydisfjor

Holm of Beoset

Approx. location of Bressay Bridge crossing

Listed Buildings
- A number of Listed Buildings within 2km at Lerwick and on Bressay

Special Protection Area (SPA)
- Noss approx. 4km west of the east coast of Bressay

Site of Special Scientific Interest (SSSI)
- Noss approx. 4km west of east coast of Bressay

Gardens and Designed Landscape
- Gardie House is 2km south west

Scheduled Ancient Monument (SAM)
- Fort Charlotte in Lerwick approx. 2km south

National Nature Reserve (NNR)
- Noss approx. 4km west of the east coast of Bressay

Conservation Area
- Lerwick town centre inc. harbour

Local Protection Area (LPA)
- 4 within 2.8km at Leira Ness on Bressay and to the south and east of Lerwick town centre

Applicant: SIC

Project: SHETLAND REGIONAL TRANSPORT STRATEGY
PROJECTS UNDER CONSIDERATION

Title: FIGURE 12 - Bressay Bridge

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Appendix G Addressing Comments on SEA Scoping Report

Consultation Authority	Comments where action may be required	How Comments have been Addressed
Historic Scotland	1.3 I note that the environmental assessment will consider the likely effects of the strategy on the historic environment. The Scoping Report provides a description of the historic environment baseline, and also gives a useful overview of the potential impacts of transport-related activities on the historic environment. Simply for information, the "historic environment" is defined in Section 16(3) of the Public Appointments and Public Bodies etc. (Scotland) Act 2003 as "… any or all of the structures and places in Scotland of historical, archaeological or architectural interest or importance". NPPG 18 builds on this definition by identifying the following features of interest: ▪ scheduled ancient monuments ▪ historic buildings ▪ designed gardens and landscapes ▪ archaeological sites ▪ townscapes ▪ historic landscapes ▪ the wider setting of the features listed above Please note that this list should be read as including Conservation Areas and marine archaeology.	Features listed have been taken into account and are listed as 'matters for consideration' with the SEA objectives
Historic Scotland	**Key environmental issues** 3. Table 3.1 sets out the key environmental issues in Shetland that are relevant to the strategy. It also identifies some of the potential environmental impacts of transport-related proposals and activities. In addition to the potential effects identified in the cultural heritage and landscape section, transport proposals may also affect the historic environment in the following ways: ▪ Maintenance and management of existing infrastructure may affect historic environment features e.g. historic bridges. ▪ There may also be opportunities to improve the accessibility of historic environment features including towns, landscapes and individual sites, providing that this is undertaken sympathetically. Access could also be combined with measures to improve the enjoyment and understanding of the historic environment, again provided that this is undertaken	First bullet point added to 'Environmental Problems' list. It was felt that the most appropriate place to address the second bullet point is through the SEA objectives, where access to the natural environment is addressed.

	sensitively. (I note that an SEA objective is proposed for enhancing access to the natural and historic environment.)	
Historic Scotland	**The baseline situation** 5. Please note that our records show that there are 365 scheduled ancient monuments in Shetland, rather than the 405 noted in Appendix C.	Amended as per information provided.
Historic Scotland	6. I note that more detailed baseline information will be provided where it is required to inform the assessment of specific proposals or projects. When you undertake the assessment you may find it useful to map the baseline data alongside the elements of the strategy that have spatial information e.g. transport schemes. This will help you to identify any environmental constraints and to consider alternative options.	Major projects have been mapped in relation to e.g. designated sites/historic features to help identify environmental constraints
Historic Scotland	**SEA objectives** 7. I note that SEA objectives will be used to assess the environmental effects of the strategy. My comments on the SEA objectives in Table 5.1 are set out below: ▪ Will potential impacts on townscape character be considered within the SEA objective for the historic environment? ▪ The key criteria for SEA objective 3 should include the wider setting of the historic environment features identified in the table. ▪ Gardens and designed landscapes contribute to the area's historic environment and to the landscape. Potential impacts on gardens and designed landscapes could be considered using the SEA objective for the historic environment or for landscape, and I would welcome clarification in the Environmental Report as to which will be used. ▪ I suggest replacing "built environment" with "historic environment" in SEA objective 9 to be in line with the definition included in point 1.3 of the covering letter.	Comments addressed in SEA objectives and 'matters for consideration'
Historic Scotland	8. I note that the "number of applications for Listed Buildings Consent and Scheduled Monument Consent associated with transport proposals" is proposed as an indicator. I agree that this will be useful, however you may also wish to monitor the outcome of the applications as well as the number. Indicators may also need to be developed to capture effects on other aspects of the historic environment e.g. gardens and designed landscapes or locally important sites, if the strategy is likely to	Outcomes included as indicators

	affect these features. I would be happy to discuss this further should you find it helpful.	
Historic Scotland	I have some queries and comments on the assessment methods and have set these out below: ▪ Will the STAG assessments be documented in the Environmental Report? ▪ My understanding is that the transport projects and measures included in the preferred strategy will be assessed in more detail using an "expanded STAG1" method. I would welcome further detail on the criteria that will be included in an expanded STAG. I am content that different assessment methods are used in the assessment of the strategy, provided that impacts on the historic environment are adequately considered and documented. ▪ Will the Environmental Report include an assessment of alternatives to the preferred project? This will be important in order to demonstrate that the environmental implications of the various options have been taken into account in the final decision that is being taken forward in the strategy. ▪ When assessing policies you may find it useful to group policies which are unlikely to exert environmental effects.	STAG to be included Add comment re change to method i.e. no expansion of STAG1 Will present project level STAG1 Perhaps
Scottish Environment Protection Agency (SEPA)	The ER should be submitted to the Scottish Executive SEA gateway. However, in addition, I would very much appreciate if a hard copy of the ER and draft Strategy were sent to the following address: Planning Unit, SEPA, Graesser House, Dingwall, Ross-shire, IV15 9XB.	Standard protocol to forward 4 hard copies to SEA Gateway for distribution to SEPA, SNH and Historic Scotland
Scottish Environment Protection Agency (SEPA)	All the plans, programmes and strategies SEPA would usually expect to be covered are outlined in Table 2.1 and Appendix A. However, the Council may also wish to consider whether the following SEPA policies, available on our website, are relevant to the Strategy: Groundwater Protection Policy for Scotland (Policy 19) and Policy on the Culverting of Watercourses (Policy 26).	Effects on water assessed through the SEA and a policy regarding SUDS included in the strategy. Relevant project level mitigation also included regarding water quality
Scottish Environment Protection Agency (SEPA)	**The Baseline Situation** Section 4 and Appendix C provide information on the baseline for transportation in Shetland. SEPA considers that the environmental baseline is well established but suggests the following are considered: ▪ Road improvement schemes have included SUDS. For example, the Haggersta to Cova	To date specific SUDS designs

	works; ▪ Potential impact of engineering works, such as harbours, on coastal process such as erosion and sedimentation needs to be considered; and ▪ It is noted that there are no Area Quality Management Areas in Shetland. However, are there any known 'hot spots' such as in Lerwick town centre or near the airport at Sumburgh?	have not been used, although the general approach has used similar techniques. The Strategy includes a policy and mitigation regarding the future use of SUDS Impacts on coastal processes taken into account Baseline has been amended to include information from he Updating and Screening Assessment of Air Quality undertaken in 2003. It found that Shetland was well within NAQOs and did not identify any emissions 'hot spots'.
Scottish Environment Protection Agency (SEPA)	**The Baseline Situation** It would be relevant if additional information on the transportation baseline of Shetland is provided at the beginning on the Annex; this could usefully be linked in with the proposed indicators and any subsequent monitoring proposals. For example: ▪ What are the estimates of car ownership on the islands? ▪ How many airports and ferry routes are there and what is there current usage? ▪ What elements of public transport are already available?	Car ownership info already included, although this transport information is perhaps more relevant to monitoring the Transport Strategy itself rather than its environmental effects
Scottish Environment Protection Agency (SEPA)	**SEA Objectives** SEPA supports the proposal that no environmental issues will be scoped out at this stage, however, it is noted that there is not a SEA objective identified for 'soil'. When assessing the 'key criteria to be considered in the assessment' SEPA would normally expect that the following be considered in the assessment of the Strategy: ▪ Water (both surface and ground water): flood risk; water quality (chemical and ecological); drainage issues (including the use of SUDS); engineering works (such as bridges); erosion	SEA objectives and 'matters for consideration' updated. 'Protect land and material assets' was deemed more appropriate for Shetland, as peat resource can be addressed.

	and sedimentation; associated affects on biodiversity; ▪ Soil: Land contamination, use of 'green field' verses 'brown field' land (or perhaps in Shetlands case 'improved' verses 'unimproved'); ▪ Air: Impact on local air quality, particularly in relation to any declared AQMAs (not applicable in this case) or where air quality thresholds are close to being exceeded; if relevant impact from traffic generated by the proposals on other parts of Scotland; ▪ Climate: Risk to proposals from the effects of climate change (e.g. flooding); and ▪ Health: Impacts on health of local communities caused by environmental effects associated with the Strategy. This should include in the short term from construction or in the long term once completed. ▪ It would be useful in the ER if it were made clearer what exactly is proposed to be measured by some of the indicators. For example, does "flood risk" mean that the number of new developments in flood risk areas will be counted? Is it proposed to use the same dataset and information for the SUDS indicators in the climate and water SEA categories?	Proposed indicators have been tightened up. These will be finalise in the SEA Post Adoption Statement, following consultation on the Environmental Report and draft Transport Strategy
Scottish Environment Protection Agency (SEPA)	SEPA notes and welcomes the testing of the SEA objectives against the Transport Strategy's objectives at this early stage in the process. SEPA is, however, disappointed to note that where incompatibilities have been identified there are no proposals to modify the strategy objectives. Simple word changes to the objectives could have resulted in greater compatibility with the SEA objectives and subsequent environmental impact, for example, "Deliver a sustainable transport system…"	Comment noted
Scottish Environment Protection Agency (SEPA)	SEPA considers the use of the matrix valid, but queries whether this will be a summary of more detailed worksheets? If this is the case SEPA would wish the worksheets to be available as part of the ER as SEPA would want to be able to determine how specific objectives were scored. If not then full use of the comments column will be required to explain each of the assessments in the row.	Matrix of worksheets will be used (depending on number of policies) and notes will be provided
Scottish Natural Heritage (SNH)	**Key environmental issues** These should include reference to the need to ensure that public access to open spaces and the countryside is maintained and enhanced.	Included as SEA objective to 'enhance access to the natural and historic environment'

Scottish Natural Heritage (SNH)	**Key environmental issues** A number of comments were made relating to the environmental problems and issues: ▪ The 1st issue in Table 3.1 is rather vague and may be inaccurate. The issues here are the extent of the footprint of new and re-developed roads and the balance between hard engineering solutions and more 'natural' approaches and hence the opportunities for mitigating impacts or even enhancing biodiversity. Whilst it is probable that some roads are 'over-designed' it is probably more accurate to say that not enough use is made of the scope to modify standard solutions to suit local circumstances. ▪ There is a clear link between this issue and the landscape impacts of roads and also the safety of roads that encourage high speeds. In regard to the latter, perhaps the Transport Strategy needs to encourage more consideration of speed limitation as an alternative to road improvement. ▪ The 5th issue is too narrowly stated. Roadsides present a number of opportunities and constraints that often conflict. Roadsides may be managed for their flora, especially where they are long established and consist of native species. They may also be used as footways by pedestrians. On the other hand in some situations long grasses etc may obscure drivers' views and present a safety hazard. The Transport Strategy needs to ensure that these are balanced and prioritised according to the local situation. ▪ The 8th issue is very poorly defined. Also, damage to UK and European designated sites is an issue on land as well as in the sea. ▪ What are the potential impacts on protected species alluded to in the 10th issue? Examples might include changes to sedimentation patterns, disturbance and noise. The 11th and 12th issues are other examples. The reference to protected species should include European Protected Species (Conservation & Habitats Regulations). ▪ In the section on Landscape and Cultural Heritage the first 6 and the 9th issues are closely related and might be summed up as examples of insensitive design. The same principles apply to roads, ferry terminals or fixed links. ▪ In the section on Vulnerability to the the Effects of Climate Change there should be reference to the influence of coastal infrastructure on coastal processes, especially sediment transport, which can lead to increased vulnerability to sea-level rise and storm damage on coasts adjacent to the development.	The key environmental problems/issues were revisited in light of these comments. Issues suggested by SNH were considered more in the appraisal of the Transport Strategy's policies - this section relating to environmental problems/issues did not attempt to describe all the potential effects that could arise
Scottish	**SEA Objectives**	Air pollution is not currently a

Natural Heritage (SNH)	The objectives are clear and adequate although, given the Shetland context, is it necessary to aim to reduce air pollution (4)?	problem in Shetland but it was decided to retain this objective to assess the potential for air quality to be affected by aspects of the Transport Strategy
Scottish Natural Heritage (SNH)	The Key Criteria are not presented as criteria. They are indicative of the scope and nature of the criteria that might be developed. Some are essentially aspects of the environment that may be affected by the strategy e.g. protected sites, coastal processes and footpaths; others are agents that might affect the environment e.g. light pollution, air pollution and noise. They are the basis of indicators. Perhaps the fourth column of the table would be better titled 'Key environmental elements, processes and agents to be considered in the Assessment'?	'Criteria' changed to 'matters for consideration'