

STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE ORKNEY ISLANDS LOCAL TRANSPORT STRATEGY

APPENDIX A: Table 3 Other plans and programmes which are relevant to the Orkney Islands Local Transport Strategy

APPENDIX A: TABLE 3.1 REVIEW OF INTERNATIONAL AND EUROPEAN POLICY

Name of PPS/ environmental protection objective	Title of legislation and main requirements of PPS / Environmental protection objective	How it affects, or is affected by, The Orkney Islands Local Transport Strategy in terms of SEA issues* at Schedule 3 of the Environmental Assessment (Scotland) Act 2005
UN Framework Convention on Climate Change & its Kyoto Protocol	Energy Act 2004 The UN Framework Convention on Climate Change was established in 1992 as an international framework to agree strategies to reduce emissions of greenhouse gases in relation to their impact on global climate. The Kyoto Protocol established a timetable for reduction in the emissions of these gases as well as a framework for sequestration of carbon by vegetation.	Climatic factors and local air quality. Sets CO ₂ reduction targets that the LTS needs to take into account.
Water Framework Directive (2000/60/EC)(WFD)	The Water Environment & Water Services (Scotland) Act 2003. The Water Framework Directive establishes a new legal framework for the protection, improvement and sustainable use of surface waters, transitional waters, coastal waters and groundwater across Europe.	Water, soil and biodiversity. Sets targets for the chemical and ecological quality of water bodies that the LTS must take into account.
Groundwater Directive 80/68/EEC (Expected to be revoked by the Water Framework Directive in 2013)	The Groundwater Regulations 1998 The prevention of pollution or over-abstraction of groundwater.	Water. The Regulations list substances which, based on toxicity, persistence or potential for bioaccumulation, either should not be allowed to enter the groundwater or should only be permitted for discharge subject to prior investigation. The potential for producing substances on these lists should be considered in the LTS.
Conservation of Wild Birds Directive 79/409/EEC Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC	The Wildlife & Countryside Act 1981 (as amended) The Conservation (Natural Habitats & c.) Regulations 1994 The Nature Conservation (Scotland) Act 2004 Conservation and management of, and human interactions with, wild birds in Europe. The protection of natural habitats and certain species of wild plants and animals.	Local air quality, water, soil, climatic factors and biodiversity. The LTS must take into account the potential impact of its implementation on the habitats and species of sites designated due to their natural heritage value.

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EU Sustainable Development Strategy	The Wildlife & Countryside Act 1981 (as amended) The Conservation (Natural Habitats & c.) Regulations 1994 The Nature Conservation (Scotland) Act 2004 The Water Environment & Water Services (Scotland) Act 2003 The Environmental Protection Act 1990 The Air Quality Limit Values (Scotland) Regulations 2003 Energy Act 2004 The strategy has identified seven key challenges and corresponding targets, objectives and actions: <ul style="list-style-type: none"> • Climate change and clean energy • Sustainable transport • Sustainable consumption and production • Conservation and management of natural resources • Public health • Social inclusion, demography and migration • Global poverty and sustainable development challenges. 	Local air quality, water, soil and geology, climatic factors, biodiversity, health, population and material assets. The LTS must consider its potential impact on the environmental, social and economic aspects of development.
The Biofuels Directive 2003/30/EC	This directive has a target for biofuels to form at least 5% of transport fuels by 2010.	Climatic factors The LTS must make provision to be able to meet this target by 2010.

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Air Quality Directive 2004/107/EC	The Air Quality Limit Values (Scotland) Regulations 2003. Sets new air quality standard for pollutants which include sulphur dioxide, nitrogen dioxide, particulate matter, lead and ozone pollutant.	Air Sets new air quality standards for pollutants which were previously unregulated and which the LTS needs to consider. These include sulphur dioxide, nitrogen dioxide, carbon monoxide, particulate matter, lead and ozone pollutant.

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The Air Quality Strategy for England, Scotland, Wales and Northern Ireland	The Air Quality Limit Values (Scotland) Regulations 2003 Sets new air quality standard for pollutants which include sulphur dioxide, nitrogen dioxide, particulate matter, lead and ozone pollutant. The ultimate objective of the UK Government and the devolved administrations is to ‘render pollution emissions harmless’.	Local air quality. Sets new air quality standard for pollutants which were previously unregulated and which the LTS needs to consider. These include sulphur dioxide, nitrogen dioxide, carbon monoxide, particulate matter, lead and ozone pollutant.
The UK’s Shared Framework for Sustainable Development (2005) Meeting the Needs. Priorities, Needs, Actions and Targets for Sustainable Development in Scotland (2002)	The Wildlife & Countryside Act 1981 (as amended) The Conservation (Natural Habitats & c.) Regulations 1994 The Nature Conservation (Scotland) Act 2004 The Water Environment & Water Services (Scotland) Act 2003 The Environmental Protection Act 1990 The Air Quality Limit Values (Scotland) Regulations 2003 Energy Act 2004 Priorities identified for immediate action are: <ul style="list-style-type: none"> • sustainable production and consumption; • climate change and energy; • natural resource protection and environmental enhancement; and • sustainable communities Priorities outlined for Scotland are: <ul style="list-style-type: none"> • <u>Resource use</u>: to understand where our materials come from, how they are replaced, what happens to the community which supplied them, how they were brought to our use and how they went to their next use. • <u>Energy</u>: To generate less energy and use less power from renewable sources. • <u>Transport</u>: to encourage better land use planning, alternative service delivery and sustainable transport systems. 	Local air quality, water, soil and geology, climatic factors, biodiversity, health, population, cultural heritage and material assets. The LTS must support the economic and social aspects of development by promoting means of transport which are also increasingly environmentally sustainable. The UK’s Shared Framework for Sustainable Development includes indicators for monitoring key issues on a UK basis. Some of these indicators will be used to assess the LTS.

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The National Waste Strategy (Scotland)	The Environmental Protection Act 1990 This strategy provides a framework within Scotland to reduce the amount of waste which it produces and deal with the waste which has been produced in more sustainable ways. The vision is for a resource-efficient culture where waste reduction, reuse and recycling are part of everyday life for everyone.	Water, soil, geology and local air quality. Where possible waste produced by transport activities will be recycled. Where this proves impossible, waste will be disposed of by the correct means.
Environmental Noise Directive 2002/49/EC	The Environmental Noise (Scotland) Regulations 2006 The aim of the END is to define a common approach across the European Union with the intention of avoiding, preventing or reducing on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise	Noise. This directive is unlikely to affect the LTS due to the low levels of transport activity in the Islands.
Scotland's Transport Future: The Transport White Paper (2004)	The Transport (Scotland) Act 2001 This document sets out the Scottish Executive's ambitions for improving the planning and delivery of transport at a local, regional and national level.	Local air quality, water, soil and geology, climatic factors, biodiversity, landscape, health, population and material assets. The LTS will feed into and from The Transport White Paper.
The National Transport Strategy	The Transport (Scotland) Act 2001 The National Transport Strategy will guide policy formulation and investment over the next 20 years to around 2025. Throughout its lifetime the national transport strategy will act as a reference point for all those who wish to contribute to transport policy.	Local air quality, water, soil and geology, climatic factors, biodiversity, landscape, health, population and material assets. The LTS will be guided by the principles which underpin the National Strategy
	Road Traffic Reduction Act 1997 Requires every Council to prepare a report containing: <ul style="list-style-type: none"> • an assessment of the levels of local road traffic; and a forecast of the growth in these levels 	Climate factors and local air quality. The LTS contains objectives which aim to reduce levels of road traffic.
SPP1 The Planning System	Town and Country Planning (Scotland) Act 1997 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 SPP1 provides an overview of the current land use planning system in Scotland and presents the key principles and the Executive's priorities for the system to guide policy formulation and decision making towards the goal of sustainable development.	Local air quality, water, soil and geology, climatic factors, biodiversity, landscape, health, population and material assets. SPP1 sets out how the planning system can encourage more sustainable travel patterns and hence reduce harmful atmospheric emissions.

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SPP2 Economic Development	<p>Town and Country Planning (Scotland) Act 1997 This SPP focuses on four themes where planning can contribute to economic development:</p> <ul style="list-style-type: none"> • Providing a range of development. • Securing new development in sustainable locations – to improve integration between transport and locations for development and to encourage more sustainable forms of development. • Safeguarding and enhancing the environment. • Promoting a dialogue between councils and business. 	<p>Local air quality, water, soil and geology, climatic factors, biodiversity, landscape, health, population and material assets.</p> <p>The LTS includes an objective to ensure travel opportunities meet the needs of the whole community.</p>
SPP3 Planning for Housing	<p>Town and Country Planning (Scotland) Act 1997 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 The Planning system seeks to:</p> <ul style="list-style-type: none"> • create quality residential environments; • guide development to the right places; and • deliver an adequate supply of housing land. <p>Plans and proposals for residential development should seek to minimize adverse effects on natural heritage, including landscape character and biodiversity.</p>	<p>Local air quality, water, soil and geology, climatic factors, health, population, landscape, material assets and biodiversity.</p> <p>The LTS includes an objective to ensure travel opportunities meet the needs of the whole community.</p>
SPP7 Planning and flooding (2004) and PAN61 Planning and Sustainable Urban Drainage Systems (2001)	<p>Town and Country Planning (Scotland) Act 1997 SPP7 aims to prevent further development, which would have a significant probability of being affected by flooding, or which would increase the probability of flooding elsewhere. Flood prevention and alleviation measures should respect wider environmental concerns and not lead to deterioration in the ecological status of the watercourse. Sustainable drainage will be required whenever practicable and watercourses should not be culverted.</p>	<p>Water, soil and geology and biodiversity.</p> <p>Sustainable drainage and alternatives to culverting will be considered when planning any construction works.</p>

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SPP15 Planning for Rural Development (2005)	Town and Country Planning (Scotland) Act 1997 The overarching aim is to have a more prosperous rural economy, with a stable or increasing population that is more balanced in terms of age structure and where rural communities have reasonable access to good quality services. It is imperative to ensure that environmental aspects of regeneration do not fall behind economic and social aspects.	Population, health, local air quality, water, soil and biodiversity. The LTS includes an objective to ensure travel opportunities meet the needs of the whole community.
SPP17 PAN75 Planning for Transport	Town and Country Planning (Scotland) Act 1997 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 The vision for transport outlined in these documents is of ‘a Scotland where the economy can flourish and communities can function without significant environmental and social problems arising from car dependence, traffic congestion and pollution’.	Population, health, local air quality, water, soil and biodiversity. The LTS includes objectives to: <ul style="list-style-type: none"> • ensure travel opportunities meet the needs of the whole community; • increase levels of active travel.
SPP21 Green Belts	Town and Country Planning (Scotland) Act 1997 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 The key objectives of green belt policy are: <ul style="list-style-type: none"> • to direct planned growth to the most appropriate locations and support regeneration; • to protect and enhance the character, landscape setting and identity of towns and cities; and • to protect and give access to open space within and around towns and cities, as part of the wider structure of green space. Green belts should be managed effectively to enhance the quality of life for local people by: <ul style="list-style-type: none"> • providing a range of opportunities for outdoor recreation; • providing access to the countryside; • protecting and enhancing biodiversity and the landscape resource; and • conserving the historic environment. 	Local air quality, climatic factors, water, soil and geology, landscape, population, health, biodiversity and cultural heritage. The objectives of the LTS will support those of green belt policy.

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<p>NPPG5 Archaeology and Planning</p> <p>PAN 42 Archaeology – The Planning Process and Scheduled Monument Procedures</p>	<p>The Ancient Monuments and Archaeological Areas Act 1979 The Protection of wreck Act 1973 The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997</p> <p>As part of its intention to work towards sustainable development, the Government seeks to encourage the preservation of our heritage of sites and landscapes of archaeological and historic interest, so that they may be enjoyed today and passed on in good order to future generations. Planning authorities and all parties involved in development should regard archaeological remains as a finite and fragile resource and should safeguard the integrity of the setting of archaeological sites.</p>	<p>Cultural heritage, water, soil and geology, landscape and material assets.</p> <p>The key environmental objective of the legislation and policy framework is ‘<i>to protect and, where appropriate, enhance the historic environment</i>’. This objective will be taken into account by the LTS.</p>
<p>NPPG18 Planning and the Historic Environment</p>		
<p>Scottish Historic Environment Policy 2. Scheduling: protecting Scotland’s nationally important monuments</p>		
<p>Passed to the Future (Historic Scotland’s policy for the sustainable management of the historic environment.</p>		
<p>Memorandum of Guidance on Listed Buildings and Conservation Areas, Historic Scotland 1998</p>		

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NPPG6 Renewable Energy Developments (2000)	<p>Town and Country Planning (Scotland) Act 1997 The Energy Act 2004</p> <p>NPPG6 is set against the background of the Government’s energy policy and, within it, the policy for renewables and the Scottish Executive’s commitment to the implementation of that policy in Scotland.</p> <p>Policies for renewable energy should indicate how they relate to other structure plan policies, including nationally and internationally important environmental factors and, where appropriate, other factors of local significance.</p> <p>Increasing the proportion of energy supply from renewables is seen as an important contribution to meeting UK targets for reducing its output of greenhouse gases.</p>	<p>Climatic factors and local air quality.</p> <p>The LTS will promote the use of biofuels where possible.</p>
NPPG10 Planning and Waste Management	<p>Town and Country Planning (Scotland) Act 1997</p> <p>The waste hierarchy favours prevention over reuse, recycling, recovery then disposal, thus guiding choices about waste management options. Once waste is disposed of it should not endanger human health or harm the environment, pose a risk of pollution or nuisance or adversely affect the countryside or places of special interest.</p>	<p>Local air quality, water, soil and geology and material assets. Where possible waste produced by transport activities will be recycled. Where this proves impossible, waste will be disposed of by the correct means. The LTS promotes the recycling of road planings and the appropriate disposal of road sweepings</p>
NPPG11 Sport, Physical Recreation and Open Space (1996)	<p>Town and Country Planning (Scotland) Act 1997</p> <p>NPPG11 aims to address the land use implications of sport and physical recreation. It is important to satisfy the demand for recreation in the countryside and the economic development it brings whilst preserving the benefits of a healthy and attractive environment.</p> <p>However potential environmental impacts include: overcrowding, excessive traffic, erosion, disturbance and noise to wildlife, inappropriate development and the inherent use of fossil fuels.</p>	<p>Local air quality, water, soil and geology, landscape, population, health, biodiversity and cultural heritage.</p> <p>The LTS promotes the use of public transport and more active forms of travel in order to reduce private car use.</p>

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NPPG13 Coastal Planning	<p>Town and Country Planning (Scotland) Act 1997</p> <p>NPPG13 aims to:</p> <ul style="list-style-type: none"> • set out how planning can contribute to achieving sustainable development and also maintaining and enhancing biodiversity on the coast; • highlight the need to distinguish between policies for the developed, undeveloped and isolated coast; • indicate how planning authorities would respond to the risk of erosion and flooding in the coastal zone; and • outline policy guidance for developments which may require a coastal location. <p>Pressures from the increased accessibility of the coast must be managed in order to minimize impact on the coastal environment.</p>	<p>Water, soil and geology, biodiversity, landscape, population, cultural heritage and material assets.</p> <p>The LTS will consider the guidance contained in NPPG13, for example, in the promotion of sustainable port development.</p> <p>NPPG13 sets out the Government’s view on how the planning system can contribute to Coastal Zone Management and highlights the need to consider the implications for dealing with coastal erosion both when planning any new transport developments but also when maintaining the existing road infrastructure. It recommends that planning authorities should consider preparing, with advice from specialist sources, non-statutory shoreline management plans.</p>
NPPG14 Natural Heritage	<p>Town and Country Planning (Scotland) Act 1997</p> <p>NPPG14 gives guidance on how the Government’s policies for the conservation and enhancement of Scotland’s natural heritage should be reflected in land use planning.</p>	<p>Water, soil and geology, landscape and biodiversity.</p> <p>In carrying out its objectives the LTS will consider the guidance contained in NPPG14.</p>
NPPG 17 on Transport and Planning	<p>Town and Country Planning (Scotland) Act 1997</p> <p>(NPPG) 17 on Transport and Planning – sets out Government’s commitment to promote sustainable patterns of development through an integrated approach to land use, economic development, transport and the environment.</p>	<p>Local air quality, water, soil and geology, landscape, population, health, biodiversity and cultural heritage.</p> <p>The LTS includes objectives to:</p> <ul style="list-style-type: none"> • ensure travel opportunities meet the needs of the whole community; • increase levels of active travel.
SEPA Policy on the Culverting of Watercourses	<p>The Water Environment & Water Services (Scotland) Act 2003</p> <p>In many cases unnecessary damage to river channels can result from culverting schemes. SEPA’s policy sets out the environmental issues associated with culverting and sets out a consistent and pragmatic approach to this aspect of river engineering. For the purposes of this policy culverts are defined as a variety of artificial channels which may, or may not, be totally enclosed.</p>	<p>Biodiversity, water, soil and geology.</p> <p>It is unlikely that objectives of the LTS will result in culverting work but, should it be necessary, this policy will be considered.</p>

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Changing Our Ways, Scotland's Climate Change Programme (2006)	<p>The Energy Act 2004 Scotland's Climate Change Programme demonstrates how Scotland will deliver carbon savings from devolved policy measures and reduce its vulnerability to the changing climate. Transport objectives include:</p> <ul style="list-style-type: none"> • Consulting on climate change targets for the transport sector as part of the National Transport Strategy. • Consulting on and deciding on the continuation of the existing traffic stabilization target as part of the development of the National Transport Strategy. • Continuing to support UK development work on the implementation of a Renewable Transport Obligation (RTFO) to ensure that 5% of all UK fuels sold on UK forecourts are biofuels by 2010. • Continuing to support developments at UK and international level to promote new and cleaner vehicle technologies and fuels. • Awarding Regional Transport Partnerships £500,000 per year for 2006-08 for the appointment of travel plan officers for the promotion and development of sustainable travel. • Continuing to promote travel behaviour change and modal shift to more sustainable travel modes. 	<p>Climatic factors and local air quality.</p> <p>The Programme sets carbon savings targets that the LTS needs to take into account.</p>
Scottish Executive Marine & Coastal Strategy (2005)	<p>The Energy Act 2004 The Nature Conservation (Scotland) Act 2004 The Water Environment & Water Services (Scotland) Act 2003 Scottish Executive's vision is of a clean, healthy, safe, productive and biologically diverse marine and coastal environment, which is managed to meet the long-term needs of nature and people. The strategy aims to provide a strategic analysis of existing marine activities and provision of a better understanding of environmental capacity, spatial planning issues, current pressures and how the marine environment can be managed in the future.</p>	<p>Water, soil and geology, biodiversity, landscape, population, cultural heritage and material assets.</p> <p>The LTS will consider the guidance contained in these Acts to promote sustainable port development and in the daily provision of ferry services.</p>

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National Cycling Strategy	The Green Paper on Transport (Transport: The Way Forward) highlights the need to manage the existing road network more efficiently. Cycling has a clear role to play within this policy framework. Sustainable transport options are needed for both utility and leisure trips, offering practical alternatives to the private motor car. These will ensure long term economic vitality, improve environmental conditions and safeguard public health. Cycling offers a widely accessible, convenient and environmentally friendly means of making local journeys, especially in urban and suburban areas and it is a healthy, enjoyably, economic and efficient means of traveling.	Human health and local air quality. The LTS will support outdoor access through a series of active travel strategy interventions which include: <ul style="list-style-type: none"> • improve, extend and maintain the walking and cycling network; • ensure that all new developments are planned and developed to be optimally accessible by walk and cycle; • encourage active travel from an early age through the provision of safe access to schools and other facilities;
	Disability Discrimination Acts 1995 and 2005 The 1995 act aimed to end the discrimination that many disabled people face. The Act gives disabled people rights in the areas of: <ul style="list-style-type: none"> • employment • education • access to goods, facilities and services • buying or renting land or property The Act also sets minimum standards so that disabled people can use public transport easily. The 2005 Act amends or extends existing provisions in the DDA 1995 including: <ul style="list-style-type: none"> • making it unlawful for operators of transport vehicles to discriminate against disabled people • ensuring that discrimination law covers all the activities of the public sector • requiring public bodies to promote equality of opportunity for disabled people 	Human health and population The LTS aims to promote accessibility for all. This will be achieved through several strategy interventions: <ul style="list-style-type: none"> • ensure the availability of concessionary travel opportunities for those who are entitled • ensure that the access of pedestrians, cyclists and people with mobility difficulties are prioritised in the design of new developments and existing significant car-based developments • consider progress towards an accessible taxi fleet for the County • promote the inclusion of Disability Awareness Training as part of the licensing process

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Scottish Biodiversity Strategy	<p>Nature Conservation (Scotland) Act 2004 The Wildlife & Countryside Act 1981 (as amended) The Conservation (Natural Habitats & c.) Regulations 1994 ‘Scotland’s Biodiversity: It’s in your hands’ sets out a vision for the future health of our biodiversity, and maps out a 25 year framework for action to conserve and enhance biodiversity for the health, enjoyment and well-being of the people of Scotland. Its vision is: <i>‘It’s 2030: Scotland is recognized as a world leader in biodiversity conservation. Everyone is involved; everyone benefits. The nation is enriched.’</i>.....and its aim is: <i>‘To conserve biodiversity for the health, enjoyment and wellbeing of the people of Scotland now and in the future.’</i> This aim is underpinned by four objectives:</p> <ul style="list-style-type: none"> • to halt loss of biodiversity and continue to reverse previous losses through targeted action for species and habitats; • to increase awareness, understanding and enjoyment of biodiversity in all our urban, rural and marine environments through better planning, design and practice; • To develop an effective management framework that ensures biodiversity is taken into account in all decision making; and • To ensure that the best new and existing knowledge on biodiversity is available to all policy makers and practitioners. 	<p>Air, water, soil and geology, climatic factors, landscape, population, health and biodiversity.</p> <p>The LTS will ensure that biodiversity is taken into account in fulfilling its objectives.</p>

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APPENDIX: TABLE 3.3 REVIEW OF LOCAL POLICY

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HITRANS Partnership Regional Transport Strategy	<p>The Transport (Scotland) Act 2005</p> <p>The Partnership’s vision for the region is to enhance the region’s viability. From the vision a common theme emerges to improve interconnectivity of the region to strategic services and destinations.</p> <p>Then, the Partnership’s desirable outcomes for the region are to:</p> <ul style="list-style-type: none"> • Enable the region to compete and to support growth. • Enable the people of the region to participate in everyday life; • Improve the safety and security of travel • Manage the impacts of travel on the region’s assets • Improve the health of the region’s people. 	<p>Air, water, soil and geology, climatic factors, biodiversity, landscape, health, population, cultural heritage and material assets.</p> <p>The LTS will feed into and from the HITRANS Partnership Regional Transport Strategy.</p>
A Smart, Successful Highlands and Islands, 2005	<p>A Smart, Successful Highlands and Islands, an enterprise strategy for the Highlands and Islands, was launched in 2005 by Highlands and Islands Enterprise (HIE). The expressed aim is: <i>‘to enable people living in the Highlands and Islands to realize their full potential on a long-term sustainable basis’</i></p> <p>This will be realised by pursuing four strategic objectives:</p> <ul style="list-style-type: none"> • Strengthening communities. • Developing skills. • Growing businesses. • Making global connections. 	<p>Health, population, cultural heritage and material assets.</p> <p>The latter objective is relevant to the LTS and priorities for action on this objective include:</p> <ul style="list-style-type: none"> • Working in partnership on a regional scale to address the area’s quality and range of physical communications, including a strong air services network together with improved road, sea and rail transport facilities. • Playing an active role in the development of regional policy within the European Union, including the attraction of additional EU Structural Funds.

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APPENDIX: TABLE 3.3 REVIEW OF LOCAL POLICY

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OIC 2020 Community Plan (2003)	Town and Country Planning (Scotland) Act 1997 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 Nature Conservation (Scotland) Act 2004 The Wildlife & Countryside Act 1981 (as amended) The Conservation (Natural Habitats & c.) Regulations 1994 The Water Environment & Water Services (Scotland) Act 2003 The Environmental Protection Act 1990 The Air Quality Limit Values (Scotland) Regulations 2003 Energy Act 2004 The community plan for Orkney, Orkney 2020 articulates the vision of the Orkney Community Planning Framework and its three advisory groups.	Air, water, soil and geology, climatic factors, biodiversity, landscape, health, population, cultural heritage and material assets. The ideal for Orkney is: <i>‘to have a place within a caring community, living in a healthy environment, supported by a thriving economy.’</i> The LTS outlines the ways in which transport can support the overarching vision for all of Orkney. Transport is an enabler to achieving the three key principles underpinning the ideal for Orkney:
OIC Corporate Strategic Plan 2005 - 2008	The Corporate Strategic Plan focuses on how it will improve services within Orkney and provides a link between the decisions which are made in the council chamber, the everyday work of the Council, and the community. The aims of the Plan are: <ul style="list-style-type: none"> • <u>Governance</u> – that all Council affairs are conducted in accordance with its corporate strategic objectives and in a manner consistent with the principles of openness and accountability whilst promoting excellence, efficiency and innovation in the provision of public services. • <u>Survival</u> – that Orkney’s interests are pursued to the highest level, maintaining the viability of fragile communities as places where people can live and work, so changes and developments act for the benefit of all Orkney. • <u>Social inclusion</u> – that Orkney’s people are protected and the opportunities for individuals maximised, through the removal of barriers to inclusion. • <u>Sustainability</u> – that Orkney’s communities are strengthened, sustained, developed and promoted; meeting the needs of the present without compromising benefits for future generations. 	Air, water, soil and geology, climatic factors, biodiversity, landscape, health, population, cultural heritage and material assets. Of the Nine Key Priorities for Action two have specific relevance to the LTS. These are: <ul style="list-style-type: none"> • Pursue the development of an integrated transport infrastructure which is economically, socially and environmentally sustainable. • Progress modernisation of services in pursuit of continuous improvement in efficiency and best practice.

* Biodiversity, flora, fauna, population, human health, soil, water, air, climatic factors, material assets, cultural heritage (including architectural and archaeological heritage), landscape, inter-relationship between these issues; secondary and cumulative effects.

APPENDIX: TABLE 3.3 REVIEW OF LOCAL POLICY

Name of PPS/ environmental protection objective	Title of legislation and main requirements of PPS / Environmental protection objective	How it affects, or is affected by, The Orkney Islands Local Transport Strategy in terms of SEA issues at Schedule 3 of the Environmental Assessment (Scotland) Act 2005
OIC Structure Plan (adopted 2001 and covering the 10-year period until 2011)	<p>Town and Country Planning (Scotland) Act 1997 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997</p> <p>The Orkney Islands Council Structure Plan sets out the strategic framework for the development of land in the County over the 10-year period. It aims to assist in the creation of an economically, environmentally and socially sustainable set of individual island communities by supporting development which provides opportunities for:</p> <ul style="list-style-type: none"> • Promoting economic growth and access to a range of job opportunities. • Maintaining and improving the natural heritage and historic environment. • Promoting access to a range of services and facilities. 	<p>Air, water, soil and geology, climatic factors, biodiversity, landscape, health, population, cultural heritage and material assets.</p> <p>The LTS outlines the ways in which transport can support the implementation of the Structure Plan.</p>
The Orkney Local Plan	<p>Town and Country Planning (Scotland) Act 1997 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997</p> <p>The Orkney Local Plan sets out a detailed framework for the development of land in the County over the next 5(10) years and aims to:</p> <ul style="list-style-type: none"> • apply national and regional planning policies at local level; • stimulate and encourage appropriate development; • protect the environment from inappropriate development; • provide a detailed basis for the determination of planning applications; and • show how those who are interested in the area are affected by or can contribute to the implementation of the Plan. <p>The Local Plan together with the Orkney Structure Plan, form the Orkney Development Plan.</p>	<p>Air, water, soil and geology, climatic factors, biodiversity, landscape, health, population, cultural heritage and material assets.</p> <p>Key transport objectives of the Development Plan which are promoted by the LTS are:</p> <ul style="list-style-type: none"> • to support development of integrated transport system; • to encourage maintenance and enhancement of vital air, sea and other public transport services; • to encourage appropriate traffic management in a manner which is sensitive to the natural heritage and historic environment; • to encourage development of no-motorised modes of travel such as walking and cycling; and • to encourage development in locations where it can be served by means other than the private car.

* Biodiversity, flora, fauna, population, human health, soil, water, air, climatic factors, material assets, cultural heritage (including architectural and archaeological heritage), landscape, inter-relationship between these issues; secondary and cumulative effects.

APPENDIX A: TABLE 3.3 REVIEW OF LOCAL POLICY

Name of PPS/ environmental protection objective	Title of legislation and main requirements of PPS / Environmental protection objective	How it affects, or is affected by, The Orkney Islands Local Transport Strategy in terms of SEA issues* at Schedule 3 of the Environmental Assessment (Scotland) Act 2005
<p>OIC Biodiversity Action Plan</p>	<p>Nature Conservation (Scotland) Act 2004 The Wildlife & Countryside Act 1981 (as amended) The Conservation (Natural Habitats & c.) Regulations 1994 The objectives of the Plan are to maintain and, where practicable, to enhance:</p> <ul style="list-style-type: none"> • the overall population and natural ranges of native species and the quality and range of wildlife habitats and ecosystems; • internationally and nationally important and threatened species, habitats and ecosystems; • species, habitats and managed ecosystems that are characteristic of Orkney or are perceived to be of local importance; • the biodiversity of natural and semi-natural habitats where this has diminished over recent decades; and also: • to increase public awareness of, and involvement in, conserving biodiversity; and • to identify priorities for habitat and species conservation in Orkney and set realistic targets and timescales for these. 	<p>Biodiversity, climatic factors, water, soil and geology.</p> <p>The overall key objective of the BAP is to ensure that other plans, programmes and policies incorporate appropriate biodiversity targets and are committed to their implementation.</p> <p>The LTS will incorporate and implement appropriate biodiversity targets.</p>
<p>Orkney Outdoor Access Strategy</p>	<p>Land Reform (Scotland) Act 2003 This strategy will help ensure that the Council is able to fulfill its duties under the legislation. Key issues in the strategy include:</p> <ul style="list-style-type: none"> • a need to develop off road cycle routes in the countryside; • a need to stimulate public interest in walking and cycling as a means to improve their health; • the need to provide access opportunities which encourage people to walk and cycle; • a need to reduce the reliance on cars for short journeys in towns, e.g. to access services, schools, workplaces and amenity sites; and • a need to develop further safe cycle routes in towns and villages. 	<p>Human health and local air quality. The LTS will support outdoor access through a series of active travel strategy interventions:</p> <ul style="list-style-type: none"> • improve, extend and maintain the walking and cycling network; • ensure that all new developments are planned and developed to be optimally accessible by walk and cycle; • encourage active travel from an early age through the provision of safe access to schools and other facilities; • provide accessible information on the facilities that are available and encouragement and promotion of taking advantage of the facilities; • support outdoor access for all through the Core Paths network.

* Biodiversity, flora, fauna, population, human health, soil, water, air, climatic factors, material assets, cultural heritage (including architectural and archaeological heritage), landscape, inter-relationship between these issues; secondary and cumulative effects.

APPENDIX A: TABLE 3.3 REVIEW OF LOCAL POLICY

Name of PPS/ environmental protection objective	Title of legislation and main requirements of PPS / Environmental protection objective	How it affects, or is affected by, The Orkney Islands Local Transport Strategy in terms of SEA issues* at Schedule 3 of the Environmental Assessment (Scotland) Act 2005
Orkney Environmental Strategy and Action Plan	<p>Nature Conservation (Scotland) Act 2004 The Wildlife & Countryside Act 1981 (as amended) The Conservation (Natural Habitats & c.) Regulations 1994 The Water Environment & Water Services (Scotland) Act 2003 The Environmental Protection Act 1990 The Air Quality Limit Values (Scotland) Regulations 2003 Energy Act 2004</p> <p>The Orkney Environmental Partnership is one of the sub-strategies of the Community Plan and was established:</p> <ul style="list-style-type: none"> • in response to the Government’s Local Agenda 21 and Community Planning Initiatives; • to assist in the development of the Local Biodiversity Action Planning process; and • in recognition that whilst many of the partner organisations are undertaking individual initiatives and projects for the benefit of Orkney’s environment, there was a lack of a strategic overview which would allow resources to be targeted in a more co-ordinated and integrated manner. 	<p>The overall vision for Orkney is that of a high quality environment which contributes to the continued economic and social wellbeing of the County and where the principles of sustainable development have been adopted by all agencies and sectors of the economy.</p> <p>This vision includes:</p> <ul style="list-style-type: none"> • a more sustainable and integrated transport network which contributes to a better environment; and • the limiting of pollution to levels which natural systems can cope with without damage.

* Biodiversity, flora, fauna, population, human health, soil, water, air, climatic factors, material assets, cultural heritage (including architectural and archaeological heritage), landscape, inter-relationship between these issues; secondary and cumulative effects.

STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE ORKNEY ISLANDS LOCAL TRANSPORT STRATEGY 2007 – 2010

Appendix B – Environmental Baseline Report

In order to enable the current state of the environment to be assessed, a range of baseline data has been collected. This allows any existing problems to be identified and provides the benchmark against which the forecast and monitored levels of environmental effects will be evaluated. The following aspects of the environment are examined:

- Climatic effects.
- Local air quality.
- Water, soils and geology.
- Biodiversity.
- Landscape.
- Cultural heritage.
- Health.
- Population.
- Material assets.

This report provides a baseline under each of these aspects. Each aspect is presented together with the Strategic Environmental Assessment objective for that aspect as part of the Local Transport Strategy.

Baseline Overview

Number of islands:	70+
Number of inhabited islands:	17
Total (land) area of the Orkney Islands:	989.9 km ² ¹
Total length of coastline:	over 980 km
Dimensions:	Approximately 85 km north to south and 37 km east to west
Largest outlying island:	Hoy
Smallest inhabited island:	Papa Stronsay
Longitude: (Kirkwall)	3° W
Latitude: (Kirkwall)	59°N
Population (2004):	19,500
Least distance from Scottish mainland:	10.5 km

¹ Scotland's Census Results Online www.scrol.gov.uk/scrol/analyser

1. Climatic effects

SEA Objective:

- To minimise output from transport of CO₂ emissions

It is widely accepted that increasing levels of certain gases in the atmosphere are causing significant changes to global climates through their “greenhouse effect,” whereby they reduce the rate of radiative heat loss from the atmosphere, resulting in temperatures on earth to rise. Recorded weather data confirms that temperatures have indeed increased in the UK over recent decades but not at the same rate in all regions. Information on climate trends published by the Scotland and Northern Ireland Forum for Environmental Research (SNIFFER)² shows that between 1961 and 2004 the average annual temperature in the north of Scotland increased by 0.92 °C.

The United Nations Convention on Climate Change was established in 1992 as an international framework to agree strategies to reduce emissions of greenhouse gases. The Kyoto Protocol agreement subsequently established a timetable for reduction in emissions as well as a framework for the sequestration of carbon by vegetation. In 1997, under the Kyoto Agreement, the UK Government agreed to reduce emissions in the UK of the ‘basket of six greenhouse gases’ (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride) by 12.5% in the period to 2008-2012 in comparison with a 1990 baseline. By 2004 emissions of these gases had decreased by 15.1 per cent relative to 1990 and the UK looks set to exceed the target.

However, over the next 100 years carbon dioxide is forecast to make the largest contribution to global warming³ and the UK Government has a further, more ambitious, domestic goal to cut CO₂ emissions by 20 per cent below 1990 levels by 2010. Statistics to 2004 show that achievement of this target is less likely. The Department for Environment, Food and Rural Affairs (Defra) publishes annual statistics on emissions of total greenhouse gases and also carbon dioxide. **Table 1.1** below shows changes in emissions of greenhouse gases and carbon dioxide in the United Kingdom during the period 1990 – 2004.

Table 1.1 Emissions of greenhouse gases in the UK: 1990 - 2004⁴

Million tonnes (carbon)								
	1990	1995	2000	2001	2002	2003	2004	% change (1990 – 2004)
Basket of greenhouse gases	211	194	183	185	179	180	181	-14.2
Carbon dioxide	161	150	149	153	149	152	152	-5.6

Table 1.2 below illustrates levels of carbon dioxide emissions by end user during the period 1970 – 2004 in the United Kingdom. In 2004 transport was responsible for 28 per cent of carbon dioxide emissions in the UK.

Table 1.2 Carbon dioxide emissions in the UK by source: 1970 - 2004⁵

Million tonnes (carbon equivalent)									
	1970	1980	1990	2000	2001	2002	2003	2004	
INDUSTRY	83	60	52	43	44	41	42	43	
DOMESTIC	54	48	42	40	42	41	42	42	
TRANSPORT	21	28	38	41	41	42	43	43	
OTHER	29	29	29	25	26	25	25	25	
TOTAL	187	166	161	149	153	149	152	152	

Detailed information on the level of CO₂ emissions at local authority level is not available for the Orkney Islands. However the Scottish Executive publication *Key Scottish Environmental Statistics 2006* shows that in 2003,

² SNIFFER, ‘A handbook of climate trends across Scotland’, 2006 www.sniffer.org.uk

³ Climate Change The UK Programme 2006

⁴ Defra e-Digest Environment Statistics, Global Atmosphere

<http://www.defra.gov.uk/environment/statistics/globalatmos/kf/gagccukem.htm>

⁵ Defra e-Digest Environmental Statistics, Global Atmosphere

<http://www.defra.gov.uk/environment/statistics/globalatmos/kf/gakf07.htm>

Scotland's net emissions were 12.07 million tonnes of carbon equivalent (around 8% of the UK total), a decline of 1.7 million tonnes from 1990 levels.

Table 1.3 below shows the contribution of the transport sector to total emissions in Scotland

Table 1.3 Net emissions by source in Scotland taking account of emissions and removals (million tonnes of carbon equivalent)⁶

Sector	1990	1995	2000	2001	2002	2003
	Million tonnes of carbon equivalent					
Energy supply	5.86	6.68	6.70	6.57	6.34	6.32
Agriculture, business, industrial processes and waste management	3.60	2.60	2.42	2.51	2.05	2.03
Public and residential	2.37	2.29	2.28	2.42	2.23	2.18
Transport	2.77	2.73	2.80	2.76	2.81	2.87
Net land use change & forestry	-0.83	-1.19	-1.26	-1.27	-1.32	-1.34
Total net emissions	13.77	13.11	12.95	12.99	12.11	12.07
% of transport contribution	20.1	20.8	21.6	21.2	23.2	23.8

'R' indicates that figures have been revised since previous publications.

Road and air traffic levels are forecast to increase across Scotland and the rest of the UK and as Table 1.4 below shows, these are the modes of transport which produce higher levels of CO₂ emissions.

Table 1.4: Comparison of grams of CO₂ produced per passenger km travelled in different transport modes⁷

Transport mode	grams CO ₂ /pkm
Petrol car (fleet weighted average)	110
Diesel car (fleet weighted average)	106
All cars (fleet weighted average)	109
Bus	76
Moped	75
Motorcycle	94
Rail passenger (average UK – electric and diesel)	40
Air (short haul)	150
Air (long haul)	110

Air travel is important to the population of the Orkney Islands, for business and leisure use and also to allow patient travel to and from hospital in Aberdeen or further afield, and as an access means for tourists visiting Orkney, which is a vital part of the economy.

In a study carried out during 2003 into the environmental impact of aviation in the Highlands and Islands Region⁸, data on the fuel consumed and the passenger loadings were used to calculate the total CO₂ emissions for each route operated in the region. Table 1.5 highlights results from this study which relate to flights operating to and within the Orkney Islands, and includes, for comparison, CO₂ emission values for two services operating between Inverness and Gatwick.

Table 1.5: Climate-change inducing emissions in aviation serving the Orkney Islands (2003)

Route	Emissions per passenger per journey (kg CO ₂)	Climate impact (including RFI) per passenger (kg CO ₂)*	Number of single flights per year
Loganair			
Glasgow Inverness Kirkwall Sumburgh	149	149	724

⁶ Scottish Executive, Key Scottish Environmental Statistics, 2006
<http://www.scotland.gov.uk/Publications/2006/08/15095714/10>

⁷ Energy Savings Trust website. <http://www.est.custhelp.com>

⁸ The Environmental Impact of Aviation in the Highlands and Islands, Highlands and Islands Enterprise, 2003

Route	Emissions per passenger per journey (kg CO ₂)	Climate impact (including RFI) per passenger (kg CO ₂)*	Number of single flights per year
Kirkwall Inverness Edinburgh	116	116	724
Edinburgh Wick Kirkwall	124	124	620
Aberdeen Kirkwall	47	47	1,938
Orkney inter-island BA CitiExpress	33	33	1,665
Inverness Gatwick EasyJet	145	377*	148
Inverness Gatwick	83	216*	148

* RFI (Radiative Forcing Index) of 2.6 is applied to routes where aircraft travel at higher altitudes. All other routes have RFI of 1.0 to reflect the lower altitudes of these flights.

Factors which determine the level of emissions per passenger per journey include aircraft size, the altitude at which aircraft operate, the number of take-off and landing phases and the level of passenger loading.

Air travel to / from and within the Orkney Islands has a lower polluting impact compared to that in the UK as a whole or globally, mainly due to the use of smaller aircraft travelling at lower altitudes.

However, as illustrated above, this was partially offset by the fact that many of the routes had multiple legs involving two take-off and landing phases. This is less so now with direct flights to Edinburgh and Glasgow. The only multiple leg journey from Orkney now is the Sumburgh-Kirkwall-Inverness flight.

Approximately 346 tonnes of carbon dioxide were produced by inter-islands air service operations during 2004.

Ferries are a further vital mode of travel in the Orkney Islands both as an inter-island service and as a means of connecting Orkney with mainland Scotland. In **Table 1.6** CO₂ emissions produced by each of the inter-island ferries are calculated from their fuel consumption during 2004.⁹

Table 1.6: Fuel consumption and CO₂ emissions of Orkney Ferries vessels (2004)

Ferry	Fuel consumption during 2004 (litres)	Conversion factor	Emissions of CO ₂ (tonnes)
MV Earl Sigurd	739,995	2.68	1983.2
MV Earl Thorfinn	695,400	2.68	1863.7
MV Eynhallow	148,700	2.68	398.5
MV Graemsay	69,680	2.68	186.7
MV Hoy Head	235,736	2.68	631.8
MV Shapinsay	130,000	2.68	348.4
MV Thorsvoe	72,380	2.68	194.0
MV Varagen	576,958	2.68	1546.2
Total	2,668,849	2.68	7,152.5

Car ownership is high throughout the Orkney Islands (similar to that of other areas such as Shetland, the Western Isles, the Highlands, Argyll and Bute and in many cases there is more than one car on average per household. **Table 1.7** below compares the trends in car ownership during 1991 and 2001 in the islands of Orkney with those in Scotland as a whole. It shows that during both years the percentage of households without a car was in all cases lower in Orkney than that in Scotland; and also that the percentage of households with more than one vehicle was higher. Single and multiple car ownership over the period increased both in Orkney and in Scotland as a whole. Only on the islands of Flotta and Stronsay had a greater percentage of households not owning a car in 2001 than in 1991. Factors influencing higher car ownership in these areas include their remote rural nature, thin public transport routes and, in some instances, people having one car on an island and another which is left on the mainland for use when necessary.

⁹ Orkney Islands Council, Carbon Management Programme, 2006

Table 1.7 Trends in car ownership in the Orkney Islands 1991 - 2001¹⁰

	Households with no cars or vans (%)		Households with 2 or more cars / vans (%)	
	2001	1991	2001	1991
Scotland	34.2	42.6	22.4	16.2
Burray	12.3	24.4	33.6	29.8
Eday	16.9	27.3	23.1	18.2
Flotta	23.1	21.2	20.5	21.2
Hoy	20.8	27.2	29.4	21.2
Mainland Orkney	23.3	27.3	28.4	21.6
North Ronaldsay	27.8	30.3	33.3	33.3
Papa Westray	26.7	30.6	43.3	33.3
Rousay	12.2	28.4	47.0	22.9
Sanday	15.0	21.5	32.5	24.9
Shapinsay	21.3	28.7	37.8	24.0
South Ronaldsay	22.3	26.5	33.9	21.7
Stronsay	20.3	16.6	29.1	24.8
Westray	18.4	22.2	39.6	31.6

A scheduled bus service operates on several routes throughout the Orkney mainland and carbon dioxide emissions resulting from this service have been calculated from fuel consumption. A total of 120,000 litres of diesel was used during 2004, resulting in emissions containing 321.6 tonnes of CO₂.

Existing Transport Types and Frequencies in the Orkney Islands

Bus services are operated on the Orkney mainland by Orkney Coaches and are, at most, hourly (between Kirkwall and Stromness) on six days per week. Many areas have only three or four buses per day and, in more remote areas, bus services tend to consist of a morning service and an afternoon service, perhaps with the addition of a shopping run in the middle of the day on certain days of the week. Some of the more remote island areas have only a daily Post Bus or school bus and certain areas have no bus service.

Orkney Ferries operates nine ferries to thirteen islands. Most islands currently receive at least a daily service throughout the year. The exceptions are firstly, North Ronaldsay and Papa Westray which receive very limited Lift-On, Lift-Off services and are also served by the internal air service. The second group receiving less than a daily service are some of the smaller South Isles, although a daily service is maintained during the summer months.

The external ferry services serving Orkney are as follows:

- Northlink Ferries operate three sailings between Stromness and Scrabster on five days per week, two/three on Saturdays and two on Sundays. They also operate a service between Lerwick, Kirkwall and Aberdeen on two/three days per week, Aberdeen and Kirkwall and Lerwick on three/four days per week.
- Pentland Ferries operate three/four sailings daily between St Margaret's Hope and Gills Bay.
- John O'Groats Ferries operate a passenger-only service between John O'Groats and Burwick two/four times daily between May and September.

The Inter-Isles air service, operated by Loganair, provides:

- Three flights daily to North Ronaldsay and Papa Westray on five days per week; two flights on Saturday and one on Sunday;
- Two flights daily to Westray on six days per week and one on Sunday;
- Two flights daily to Sanday and Stronsay on six days per week;
- Two flights to Eday on Wednesday.

¹⁰ Scottish Executive: 2001 Census <http://www.gro-scotland.gov.uk/files/occasional-paper-10-table4b.xls>

The external air service, also operated by Loganair, provides:

- Four flights daily to Aberdeen on five days per week, two/three on Saturday and one on Sunday;
- Two flights daily to Inverness on five days per week, one on Saturday and one on Sunday;
- Two flights daily to Edinburgh on five days per week, one/two on Saturday and one on Sunday;
- One flight daily to Glasgow on seven days per week;
- Two flights daily to Sumburgh on five days per week, one on Saturday and one on Sunday.

The Orkney Islands Local Transport Strategy is unlikely to contribute significantly towards reducing the overall growth in travel in Scotland and the UK and the resulting emissions; however by continuing to promote improvements to public transport and the construction of further paths and cycle ways it hopes to encourage a shift from use of the private car towards more sustainable forms of transport locally.

2. Local air quality

SEA Objective:

- To maintain a good standard of air quality

Part IV of the Environment Act 1995 introduced the requirement for the development of a national strategy to improve air quality and reduce risks to human health from air-borne pollutants. The resulting *Air Quality Strategy for England, Scotland, Wales and Northern Ireland*, published in January 2000 identified clear and measurable targets to improve air quality in line with European Council directives, World Health Organisation guidance and the UK's Expert Panel on Air Quality Standards. In February 2003 the *Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Addendum* was published.

All local authorities are required to review and assess air quality within their area to see if any of the National Air Quality Strategy (NAQS) objectives are unlikely to be met.

Within Orkney air quality is generally very good as there are few significant industrial processes on the islands and road traffic volumes are low. With the exception of small areas of urban development, and the oil industry activity on Flotta and in Scapa Flow, the County is mainly rural in character. Furthermore, aircraft volumes and passenger numbers at Kirkwall airport are currently less than 2% of the suggested action threshold of 5 million passengers per year.

Levels of three air pollutants are monitored in Orkney: benzene, nitrogen dioxide and sulphur dioxide. All three are produced in transport emissions but in the Orkney Islands the major source of benzene is recognised to be the Flotta oil terminal and the predominant source of SO₂ is from the combustion of sulphur-containing fossil fuels, principally coal and heavy oils for heating. Benzene is monitored at three locations (Waulkmill, St Mary's and Herston) with sulphur dioxide and nitrogen dioxide monitored at six locations (the previous three plus Stromness, Kirkwall and Stronsay). Monitoring is carried out in all areas using passive diffusion tubes.

The air quality objective for NO₂ is:

- 200 µg/m³ (105ppb), as a 1-hour mean, not to be exceeded more than 18 times a year, to be achieved by 31 December 2005.
- 40 µg/m³ (21 ppb), as an annual mean, to be achieved by 31 December 2005.

Monitoring results collected so far indicate that the sites at Kirkwall and Stromness experience the highest levels of NO₂. Maximum values during 2004-2005 were 21 µg/m³ in Kirkwall and 15 µg/m³ in Stromness, both recorded during October 2004. In 2005-2006 maximum values were 38 µg/m³ at Kirkwall and 13 µg/m³ at Stromness, both recorded during July 2005. It has not been possible to calculate annual means for either year due to incomplete data sets, but the highest measured six-month mean for Kirkwall is 16.2 µg/m³ and at the four rural sites NO₂ levels were below the detection limits of the instrument and were therefore recorded as being less than 0.2 µg/m³. Orkney Islands Council subsequently produced a Local Air Quality Assessment and Screening Report stating that '*the likelihood of the Air Quality Objective for nitrogen dioxide being exceeded in Orkney is negligible.*'

The air quality objectives for SO₂ are:

- 266 µg/m³ (100ppb), not to be exceeded more than 35 times a year, measured as a 15-minute mean, to be achieved by December 2005.

- 350 µg/m³ (132 ppb), not to be exceeded more than 24 times a year, measured as a 1-hour mean, to be achieved by 31 December 2004.
- 125 µg/m³ (47 ppb), not to be exceeded more than 3 times a year, measured as a 24-hour mean, to be achieved by 31 December 2004.

Results of SO₂ monitoring carried out during the period between 2004 and 2006 indicated that levels in the county were very low, with the majority of readings being below the detection limits of the instrument

(0.2 ppb or 0.5 µg/m³). Diffusion tubes are not recommended for monitoring SO₂ on the grounds that they measure concentrations over a long averaging period, and the results cannot easily be compared with the shorter-term objectives. Therefore, to ensure compliance with the short-term limits (15 minutes, 1 hour, 24 hour), a study was carried out by SEPA Field Chemistry to measure SO₂ in ambient air at a further two sites: close to the SEPA authorised animal incinerator at Chinglebraes and within the Clay Loan area in Kirkwall (an area where approximately 150 houses have solid-fuel fires). Over two separate periods between October 2004 and April 2005, SO₂ levels were measured, averaged and stored as 15-minute averages. The results of this monitoring programme confirmed the very low readings taken from the diffusion tubes and it was concluded that SO₂ levels within Orkney are not likely to exceed the air quality objectives presented within the Air Quality Strategy, 2003.

The air quality objective for benzene in Scotland is:

- 3.25 µg/m³ (5ppb) measured as a running annual mean, to be achieved by 31 December 2010.

During 2004-2005 the highest level of benzene recorded was 1.6 ppb and over the following year there were no significant changes in levels recorded. All levels recorded over a six month period were below the level of detection of the measuring instrument (0.1 µg/m³). It is therefore concluded that benzene levels within Orkney are not likely to exceed the air quality objective.

The air quality objective for Particulate Matter (PM₁₀) is:

- 50 µg/m³ when expressed as a 24hr hourly mean: not to be exceeded more than 7 times a year by 31 December 2010.

Due to the low levels of other pollutants from exhaust emissions it is not deemed necessary to monitor Particulate Matter in the Orkney Islands.

There are no Air Quality Management Areas in the Orkney Islands.

3. Water, soils & geology

SEA Objectives:

- To protect and maintain the quality of water bodies, wetlands and floodplains
- To safeguard soil quality and quantity

Water

Water quality in Scotland is monitored by the Scottish Environment Protection Agency (SEPA) and the subsequent system of classification is based on both chemistry and biology results. An explanation of SEPA's rivers classification scheme can be found at http://www.sepa.org.uk/data/classification/river_classification.htm.

The total network length which is classified in Orkney has increased from 23.8 km in 2000 to 71.9 km in 2005 but accurate classification has only been possible during the last two years with improvement of the biological classification tool, RIVPACS. The islands' rivers were not classified until 2004. A Highlands and Islands RIVPACS module was used in 2005 and this gave more accurate results for Orkney. It resulted in a decrease in class A1, B and C watercourses and an increase in A2 watercourses.

It is important to note that the overall network length increased from 57.6 km in 2004 to 71.9 km in 2005 and new rivers would have been classified for the first time. This factor could partly account for the increased number of A2 watercourses in 2005. There was a negligible change in the percentage of class D watercourses which currently account for 1-3% of all Orkney's rivers.

A summary of the freshwater classification results for Orkney is provided in **Table 3.1** below.

Table 3.1: Classification of freshwater watercourses in the Orkney Islands 2000-2005

	Water sampled (km)	Classification (% of water sampled (km))				
		A1	A2	B	C	D
2000	23.8	21	46	19	2	12
2001	23.7	21	46	19	2	12
2002	25.7	19	50	18	2	11
2003	24.4	48	50	0	2	0
2004	57.6	28	45	16	8	3
2005	71.9	19	66	12	1	2

Groundwater quality data has been collected by SEPA from three monitoring points in Orkney and these are listed below in **Table 3.2**.

Table 3.2: Groundwater monitoring points in the Orkney Islands

Location	OS National Grid Reference
Shapinsay	HY 50813 17370
Little Mill House	HY 48843 02539
Lintybrae	HY 40216 07024

SEPA ceased monitoring at Lintybrae after 2003 but continues to monitor groundwater at the Shapinsay and Little Mill House locations.

Coastal water from eighteen locations around the Orkney Islands has been classified and results from samples taken during 2005 are included in **Table 3.3**.

Table 3.3: Orkney coastal water classification 2005

Classification of coastal water					
Total class A		Total class B		Total class C	
Sites	Length (km)	Sites	Length (km)	Sites	Length (km)
1	0.1	16	7.2	1	2

Flooding

In the past flooding in the Orkney Islands has involved inundation by the sea, generally due to storm surges combined with high spring tides. However, changes to our climate, for example increases in temperature and rainfall, mean that the incidence of flooding may in future become more frequent. Heavy and persistent rain during October 2006 caused widespread disruption on the road network when many areas of Orkney were affected by flooding.

SEPA's Indicative River and Coastal Flood Map (Scotland)¹¹ indicates areas which are at risk of flooding and will enable effective planning of any changes to the transport system.

Fishing and Aquaculture

The coastline around the Orkney Islands is fished for a variety of shellfish, including lobster, brown crab, velvet crab, scallops, razor shells (known locally as spoots), winkles and cockles. The coastal seas are also popular with sea angler fishing from small boats and with trout fishermen fishing from the shore.

Aquaculture is an important contributor to the economy of the islands and there are currently 30 licensed fish farm sites in Orkney waters. However, these are not all in production at any one time as some have never been stocked and each site must lie fallow periodically. Salmon account for most of the fish produced but some farms are diversifying by producing Sea Trout, Rainbow Trout and Halibut. Mussel culture is also being trialled at two sites in Scapa Flow.

¹¹ Indicative River and Coastal Flood Map (Scotland), SEPA, 2005. www.sepa.org.uk/flooding/mapping/

Soils

Data is currently not available on the quality of soils in Scotland as no monitoring is carried out on their composition. However, as part of a commitment made in Scotland's Climate Change Programme¹² there are plans to establish a soil monitoring system, especially with regard to carbon content, and to develop a soil strategy. We would anticipate using the resulting data to monitor impacts from transport on soils, in particular those of roadside verges. Baseline information on soil types in the county is available from the 'Orkney and Shetland Soil 1:250,000 map and the accompanying soil and land capacity for agriculture digest.

Agricultural Land

Much of the land of the Orkney Islands is fertile agricultural land and in recent years farming methods have been predominantly intensive. However, the progression from the production-led agricultural subsidy system to the present Single Farm Payment with Modulation may bring changes to stocking densities and farming methods. Modulation is intended to fund improvements to the environment and increasing uptake of agri-environment schemes such as the Rural Stewardship scheme and SNH's Natural Care scheme may further change the farming landscape of Orkney. **Table 3.4** below illustrates agricultural land use in the Orkney Islands during 2002 and 2005.¹³

Table 3.4 Agricultural Land Use in Orkney during 2002 and 2005

Agricultural Land Use Practice	Total area (hectares)	
	2002	2005
Grass for mowing	16,539.79	15,691.78
Grass for grazing	33,426.43	33,577.15
Cereals	4,035.75	4,080.04
Arable crops for stock feeding	391.03	443.38
Potatoes	58.49	48.39
Vegetables for human consumption	9.72	10.87
Other crops	40.37	77.25
Bare fallow	137.92	220.79
Total tillage	5014.15	5122.34
Set aside	336.87	229.09
Farm woodland	92.76	125.76

Under Part IIA of the Environmental Protection Act 1990 (as inserted by the Environment Act 1995) each local authority is required to "cause its area to be inspected from time to time for the purposes of identifying contaminated land". The local authority therefore has the responsibility to determine whether any land is contaminated.

Contaminated land is defined as,

"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that

- a) significant harm is being caused or there is a significant possibility of such harm being caused; or*
- b) pollution of controlled waters is being, or is likely to be, caused"*

To ensure compliance, and to deal with contaminated land in the Orkney Islands, Orkney Islands Council Department of Environmental Health has produced a Contaminated Land Strategy. Information gathered on potential contaminated land sites includes some 37 waste management sites, over 70 Second World War military sites and a number of other sites totalling 149 sites. These sites are listed in a Contaminated Land Register which is maintained by the Environmental Health Department and is available for inspection at the Council Offices.

Geology

The oldest rock exposed in Orkney is the Precambrian Basement Complex, examples of which outcrop around the town of Stromness and on the neighbouring island of Graemsay. These outcrops represent the tops of island

¹² Changing Our Ways, Scotland's Climate Change Programme Scottish Executive (2006)

¹³ Scottish Agricultural Census 2002 and 2005

hills which, during the Devonian period, were surrounded by a large lake which is now referred to as Lake Orcadie. At that time (416-359 million years ago) the area was located in an equatorial and mid-continental desert region and fluctuations in rainfall caused the depth and extent of the lake to vary as it periodically dried out and flooded. The Orkney Islands today are dominated by rocks which were originally deposited as sediments in Lake Orcadie. These sedimentary layers accumulated to great depths and ranged from fine-grained muds which settled in deep, still waters, to sands and coarser conglomerates which were deposited from faster flowing streams and rivers, and even to wind-blown sands which formed dunes during particularly arid periods. Over time these sediments have formed the flagstones and sandstones which characterise most of Orkney today.

Lake Orcadie appears to have been very productive but during periods of drought large numbers of fish died, sinking out of the water column to the bed of the lake where they became preserved in the fine-grained muds. These are now found as fossils in strata known as the Sandwick and Rousay fish beds.

The area also experienced considerable volcanic activity, evidence of which is visible as intrusive dykes dating from the Younger Permian (250 million years ago). These igneous dykes are visible in the intertidal areas of many rocky shores and a particularly clear example can be found at the Point of Buckquoy in Birsay where the black basalt contrasts strongly with the surrounding paler sedimentary rock.

During the Quaternary, the geology of Orkney was heavily modified by glaciation which smoothed and rounded hills and ridges on land and excavated the major firths of Hoy Sound, Eynhallow Sound and Westray Firth. Local glaciers developed at intervals on the island of Hoy where they carved out striking corries and valleys. As the last ice sheet thinned and retreated, considerable thicknesses of glacial deposits were laid down in hollows. A good example of glacial till can be seen at Denwick in Deerness.

The geological past of Orkney is most clearly visible along its coastlines where the rock has been subject to sea level change, deformation, erosion and localised deposition and a number of these coastal areas have been designated due to their geological or geomorphological importance. These sites are included in Appendix B1 Natural Heritage Sites.

No major construction projects are anticipated in the LTS which would impact negatively on the geology of the Orkney Islands so geology will not be considered further in this document.

4. Biodiversity

SEA Objectives

- To protect, maintain and, where possible, enhance biodiversity
- To improve opportunities for people to appreciate the natural environment

Designated Areas

The Orkney Islands are particularly valued for their wildlife and a range of sites are designated for conservation under European, national and local legislation. The main protected area designations are as follows:

- **Natura 2000** is a European network of protected sites which represent areas of the highest value for natural habitats and species of plants and animals which are rare, endangered or vulnerable in the European Community. The term Natura 2000 comes from the 1992 EC Habitats Directive; it symbolises the conservation of precious natural resources for the year 2000 and beyond into the 21st century. Scotland's Natura 2000 sites will help to protect these important areas now and for generations to come. The Natura 2000 network includes two types of area:
 - **Special Areas for Conservation (SAC)** are classified under the Habitats Directive for the protection of rare, endangered or vulnerable natural habitats and species of plants or animals (other than birds). These are the 189 habitats listed in Annex I and the 788 species listed in Annex II of the Habitats Directive. Species occurring in Orkney for which the UK has special responsibility include otter, grey seal and common seal.
 - **Special Protection Areas (SPA)** are classified under the Birds Directive and are areas which support rare, vulnerable and regularly occurring migratory bird species which are listed in Annex I of the Birds Directive. SPAs are intended to safeguard the habitats of the species for which they are selected and to protect the birds from significant disturbance.
- **Ramsar Sites** are internationally important wetland sites protecting wildfowl habitat.

- **Sites of Special Scientific Interest (SSSI)** represent the best of Scotland's natural heritage and are special for their plants, animals or habitats, their rocks or landforms, or a combination of such natural features. They form a network of the best examples of natural features throughout Scotland, and support a wider network across Great Britain and the European Union. Designation of an SSSI is a legal process and sites are protected under the Nature Conservation (Scotland) Act 2004.
- **Local Nature Reserves (LNR):** places with special local natural interest, set up to protect nature and for people to enjoy and appreciate;

Designated sites in the Orkney Islands are summarised in **Table 4.1**

Table 4.1: Numbers of designated sites and area they cover in Orkney

Designation	Total number	Area within Orkney (ha)	% of Total Area of Orkney*
Site of Special Scientific Interest	36	23,644	23.9
Special Area of Conservation	6	12,908	13.0
Special Protection Area	13	17,530	17.7
Ramsar Site	1	1,607	1.6
Area of the Orkney Islands is 989.9 km ² or 98,990 hectares			

- Source – SNH and JNCC, some designations may overlap

The Special Areas of Conservation (SAC) in Orkney are at the following locations:

Faray and Holm of Faray

Sanday

Loch of Stenness

Stromness Heaths and Coasts

Hoy

Loch of Isbister

The Special Protection Areas (SPA) in Orkney are at the following locations:

West Westray

Papa Westray

Rousay

Calf of Eday

East Sanday Coast

Auskerry

Orkney Mainland Moorlands

Hoy

Copinsay

Switha

Pentland Firth Islands

Marwick Head

Sule Skerry and Sule Stack

The Ramsar designation for Orkney encompasses the East Sanday Coast.

A Local Nature Reserve is located at the Mull head in Deerness.

The locations of areas in the Orkney Islands with the above designations are shown in Figure 1, Map of Orkney.

A list of all Orkney's designated sites including the reasons for their notification is included in Appendix B.1.

RSPB Reserves

The Royal Society for the Protection of Birds manage over 8000 hectares in Orkney, with most of this designated as nature reserves. The 13 reserves are at the following locations:

Noup Cliffs, Westray

North Hill, Papa Westray

Trumland, Rousay

Onziebust, Egilsay

Mill Dam, Shapinsay	Birsay Moors
Marwick, Birsay	The Loons, Birsay
Cottasgarth and Rendall Flows	Brodgar, Stenness
Hobbister, Orphir	Hoy
Copinsay	

Sites of Local Nature Importance

These are sites which have been designated by Orkney Islands Council and are listed in the Local Plan. They are regarded by the local community as being worthy of protection for their ornithological, botanical or geological interest. It is the Council's policy to protect these areas from development unless the development provides facilities which benefit the community as a whole. A full list of these sites is included in Appendix B1.

European Protected Species (EPS)

Certain species are listed on Annex IV of the Habitats Directive as species of European Community interest and in need of strict protection. The protective measures required are outlined in **Article 12** of the Directive. The species listed on Annex IV whose natural range includes any area in Great Britain are also listed on Schedules 2 (animals) and 4 (plants) of the [Habitats Regulations](#) and are specifically protected under Regulations 38-46 and Regulations 10-13 of the Amendment Regulations.

All European Protected Species are also fully protected under the Wildlife and Countryside Act 1981, but the Regulations provide a greater level of protection, primarily through licensing procedures. For any European Protected Species of animal, the legislation makes it an offence to deliberately or recklessly capture, kill, injure or disturb any such animal. It is also an offence to damage or destroy their 'breeding sites' or 'resting places' (this does not have to be deliberate, reckless or intentional for an offence to have been committed).

For any European Protected Species of plant, the legislation makes it an offence to deliberately or recklessly pick, collect, cut, uproot or destroy any such plant. This applies to all stages of their biological cycle.

The European Protected Species most relevant to the LTS are otters and cetaceans (dolphins, porpoises and whales). Several cetacean species are regularly seen in Orkney waters. These include harbour porpoise, killer whale, minke whale, Risso's dolphin, white-sided dolphin. Sperm whales and humpback whales are also occasionally seen. Otters are known to be widespread in the Orkney Islands particularly in the vicinity of aquatic environments, either freshwater or marine.

Other EPS known to occur in and around the Orkney Islands are bats and marine turtles.

Wider Countryside Measures

There are a few bird species, either listed on Annex I of the Birds Directive or regularly occurring migratory species, for which Special Protection Areas are not appropriate in Scotland. For some other species, a large proportion of the population is not protected within SPAs. In both these cases, special measures outwith designated areas are of particular significance.

Article 10 of the Habitats Directive encourages national governments, through their land-use planning and development policies, to manage landscape features which are of major importance for wild fauna and flora, particularly with a view to improving the ecological coherence of the Natura 2000 site network. Features which are essential for the passage and dispersal of wild species in the countryside, such as river corridors, and features which act as 'stepping stones' between sites such as small woods and ponds, are highlighted as particularly valuable.

The Scottish Executive also makes reference to wider countryside issues in its National Planning Policy Guideline on the Natural Heritage (NPPG 14). This guidance advises planning authorities that they should seek to safeguard and enhance the wider natural heritage beyond the confines of designated areas. NPPG14 states that the effect of a development proposal on the natural heritage can be a material consideration whether or not a designated area is likely to be affected.

Priority Habitats and Species

Each local authority in the Highlands and Islands has developed its own Biodiversity Action Plan (BAP) that lists the priority habitats and species for its area. Although many of these habitats and species are covered by the range of areas protected by designations such as SPA, SAC and SSSI, it is recognized that important flora and

fauna are also located in areas outwith these protected areas and should be considered when developing the objectives of the LTS. This includes species and habitats in freshwater and marine environments.

A total of 83 different species (or species types) and 21 distinct habitats have been identified as being of importance in the Orkney Islands. Lists of these are included in Appendix B.2 Lists of Priority Species and Habitats

Further information on the distribution and abundance of these species and habitats in the county is available from The Orkney Biodiversity Records Centre which is located in Kirkwall Library.

Roadside verges

Grass verges alongside roads provide habitat for a range of flora and fauna, and certain roadside plant species are important in maintaining populations of insects, which in turn support other species. For example, the great yellow bumble bee, *Bombus distinguendus*, an important pollinator of flowering plants, is known to feed on red clover, a common roadside species. To allow these plants to complete the various stages of their life cycle Orkney Islands Council has a policy on the frequency and timing of grass cutting on verges. This policy is presently under review.

Access to the Natural Environment

Although public transport is presently available to provide access to any particular aspect of Orkney's Natural Environment, there may be the opportunity in future to gauge public interest in such provision and it may be possible to establish an appropriate service, for example through a Community Transport Initiative.

5. Landscape

SEA Objective:

- To protect and enhance the quality and distinctiveness of the area's landscapes and townscapes

The relatively unvaried geology of Orkney, along with the modifying effects of glaciation during the last ice age, has resulted in a landscape in which the differences are often subtle rather than dramatic. Physical processes together with human influences which began when settlers first arrived on the islands over 5,000 years ago have helped create the diversity of landscapes visible in the Orkney Islands today. The high quality visual amenity of the islands is valued by its resident population and is a major factor in attracting the thousands of tourists who visit each year.

Scottish Natural Heritage have carried out assessment of the Orkney landscape¹⁴ enabling the landscape character to be described in a hierarchical framework which establishes the patterns of landscape variations. This is done by identifying and describing Regional Character Areas, Landscape Character Types and Island Character Areas. Explanations of these classifications are reproduced below:

REGIONAL CHARACTER AREAS

The Orkney archipelago is recognisable as a distinct landscape 'region', based on the general characteristics of geology, landform, land use and historical associations. It is also the fact that it is a group of islands that contributes to its unity of character, particularly in the importance of the sea. Its isolation from mainland Scotland, yet mutual inter-dependence, has created a strong identity for the county. It is concluded therefore, that the County of Orkney constitutes the 'Orkney Regional character Area'.

LANDSCAPE CHARACTER TYPES

Landscape character types are tracts of countryside, defined at a more detailed level, which have a distinct character due to particular combinations of landform and land cover and a consistent pattern of constituent elements. Landscape character types are generic: they can be found anywhere distinct combinations of features occur.

ISLAND CHARACTER AREAS

Although there are many similarities between the islands of Orkney, there are also many characteristics which reflect the individual history of each. For that reason, descriptions of 'Island Character Areas' have been included for the main inhabited islands. Each island contains several landscape character types.

¹⁴ Scottish Natural Heritage Review No 100, Orkney Landscape Character Assessment. Land Use Consultants, Glasgow (1998)

This assessment resulted in the identification of a total of 23 landscape character types in the Orkney Islands. These are:

Holms	Whaleback Island landscapes
Ridgeline Island Landscapes	Low Island Pastures
Undulating Island Pastures	Coastal Plain
Coastal Basins	Inclined Coastal Pastures
Coastal Granite Pastures	Isolated Coastal Knolls
Enclosed Bay Landscapes	Coastal Hills and Heath
Cliff Landscapes	Coastal Sand Landscapes
Peatland Basins	Loch Basins
Low Moorland	Plateau Heaths and Pasture
Rolling Hill Fringe	Moorland Hills
Glaciated Valley	Rugged Glaciated Hills
Urban and Rural Development	

A general description is provided of each Landscape Character Type and key characteristics and landscape sensitivities are listed. Advice is also provided on conservation and the potential for enhancement of the landscape.

The Environment Report for the SEA of the Renewable Planning Framework for Orkney identified the following landscape changes in Orkney over the last 50 years:

- changes in vegetation cover and field patterns
- loss or deterioration of some distinctive features such as stone dykes, crofts and other buildings
- erosion of character due to the addition of telecommunications apparatus, aquaculture developments, wind turbines, roads, and other urbanising features
- new buildings that have not always reflected the settlement pattern, scale, design and materials that are appropriate to the landscape character.

National Scenic Area (NSA)

National Scenic Areas are areas of exceptional scenic value and comprise some of the best examples of Scotland's landscapes. The Hoy and West Mainland NSA is the only area of Orkney to have this designation and includes examples of several of the landscape character types listed above.

Gardens and Designed Landscapes

The Inventory of Gardens and Designed Landscape identifies gardens and designed landscapes in Scotland that are of national significance. These include private gardens, parks in country estates, public parks, cemeteries and botanical gardens. Three gardens and designed landscapes in the Orkney Islands are listed in the Inventory. These are located at Balfour Castle in Shapinsay, Melsetter House in Hoy and Skail House in Sandwick.

6. Cultural heritage

SEA Objectives:

- To preserve historic buildings, archaeological sites and other culturally and historically important features
- To improve opportunities for people to appreciate the historic environment

Sites of Archaeological Importance

The Orkney Islands have a rich cultural heritage, with a total of 365 Scheduled Ancient Monuments, ranging from prehistoric times to the 20th century. Of the Scheduled Monuments, 36 are in the care of the Scottish

Ministers, including the **World Heritage Site** known as The Heart of Neolithic Orkney. The site contains archaeological remains which are concentrated in two separate areas: the Ring of Brodgar area which includes Maeshowe (a large chambered tomb), the Stones of Stenness and the Ring of Brodgar itself (two ceremonial stone circles); and the Skara Brae area which contains the Neolithic village of Skara Brae. Both of these areas are also termed **Historic Landscapes** in recognition of the importance and wealth of the historic fabric of these landscapes.

Monuments from more recent periods in history include the St Magnus Cathedral, which was founded during the twelfth century by the Viking Earl Rognvald in memory of his uncle Magnus.

The history of the twentieth century is also well represented throughout Orkney, largely due to the strategic importance of the islands during World Wars I and II. Scapa Flow was used as an anchorage for the British Naval Fleet during both wars and ships of the German High Seas Fleet were scuttled in Scapa Flow towards the end of World War I. Many of the ships were salvaged, but seven major wrecks remain on the seabed. These are protected under the Ancient Monuments and Archaeological Areas Act 1979 and are now popular with sport divers providing a significant contribution to Orkney's tourism industry. There are also a number of war graves in Orkney waters. Of these, HMS Royal Oak and HMS Vanguard are protected under the Orkney Harbour Byelaws 1977 which prohibit diving on these wrecks. HMS Royal Oak and HMS Hampshire are controlled wrecks under the protection of Military Remains Act 1986.

A further 2,000 sites are listed on the Sites and Monuments Record.

There is a presumption in favour of the physical preservation of all scheduled ancient monuments and archaeological sites. Developments that would adversely affect such remains or their settings will only be permitted in exceptional circumstances, where there is no practical alternative site and where there are imperative reasons of over-riding need. Development which would affect other sites of archaeological interest not yet included on the Sites and Monuments Record may be permitted after the Islands' Archaeologist confirms that the significance of the remains are not such as to justify their physical preservation when judged against other material considerations and the possible benefits of the development.

The historic environment is vulnerable to impacts arising from maintenance of the existing transportation network as well as the provision of new infrastructure.

Conservation Areas

Buildings may be 'listed' for their special architectural and/or historic interest. The 'listing' of buildings is carried out by Historic Scotland on behalf of the Scottish Minister. They are assigned to one of three categories (A, B or C(S)) according to their relative importance. Conservation areas are "*areas of special architectural or historical interest, the character or appearance of which it is desirable to preserve or enhance*", for the enjoyment and benefit of future generations.¹⁵ Within Orkney there are four Urban Conservation Areas: Balfour Village in Shapinsay, St Margaret's Hope in South Ronaldsay, Kirkwall and Stromness. The latter two are regarded as 'outstanding' which means they are of national importance. The island of Eynhallow and the inner buffer zone of the World Heritage Site (Brodgar Rural Conservation Area) have been designated as Rural Conservation Areas.

A total of 642 listed buildings are located throughout the Orkney Islands. Comprehensive lists of all scheduled historic monuments and listed buildings in the Orkney Islands are presented in Appendix B.3.

Access to the Historic Environment

Between the months of June and September each year Orkney Coaches operates a return service between Kirkwall and Stromness, travelling via the 'Heart of Neolithic Orkney' World Heritage Site and including stops at the Standing Stones of Stenness, the Ring of Brodgar and Skara Brae. If interest in this service were to grow, it may be possible to increase its frequency or to extend its duration.

7. Health

SEA Objective:

- To protect human health through the promotion of active lifestyles and improvements to road safety

The population of the Orkney Islands is relatively healthy, with almost 73% reporting that they feel in good health. **Table 7.1** contains selected health statistics from data collected during the 2001 National Census and compares aspects of the health of the Orkney population with that of Scotland as a whole.

¹⁵ The Orkney Islands Council Structure Plan 2001

Table 7.1: General health of the population of the Orkney Islands and Scotland¹⁶

	Orkney Islands	Scotland
Total resident population	19,245	5,062,011
- % Good	72.55	67.91
- % Fairly good	20.79	21.94
- % Not good	6.66	10.15
Average age of a person with good health	34.94	32.86
Average age of a person with a limiting long term illness	60.22	57.94
Percentage of economically inactive people who are permanently sick/disabled	15.60	21.25
- % Having a limiting long term illness	17.43	20.31
- % Not having a limiting long term illness	82.57	79.69

Life expectancy in the Orkney Islands is also among the highest of all Scottish local authorities and since 2000 has generally displayed an increasing trend, with a slight decrease however to the year 2005. These figures are shown in **Table 7.2**.

Table 7.2: Life expectancy of residents of the Orkney Islands over the period 2000 – 2005¹⁷

Gender	PERIOD			
	2000-2002	2001-2003	2002-2004	2003-2005
Males	75.4	75.9	76.5	76.3
Females	81.7	81.0	80.5	81.4

The Scottish Index of Multiple Deprivation (SIMD) is used to measure health inequalities associated with low income and deprivation. Orkney has no neighbourhoods which register on the most deprived 15% in Scotland, if the 2004 SIMD composite indicator is used.

Exercise is important for good health but in general physical activity levels are low in the UK. The 2003 Scottish Health Survey found that only 42% of men and 30% of women were meeting the target. The same survey found that 30% of men and 35% of women were inactive.¹⁸ In order to achieve an active lifestyle, adults should accumulate at least 30 minutes of moderate physical activity most days of the week. Children should accumulate at least 1 hour or more of moderate physical activity most days of the week.¹⁹ Travelling to work and school is one area where exercise can be regularly obtained. However many people opt to take the car or bus rather than walk. The LTS seeks to improve conditions for walking and cycling in Orkney in order to encourage greater use of active forms of travel. This would have the added advantage of reducing congestion in the towns of Stromness and Kirkwall and in turn would lead to improved air quality.

Safety on the roads, for motorists, cyclists and pedestrians alike is a further important factor relating to human health and the LTS aims to promote road safety. **Table 7.3** shows road accident figures in the Orkney Islands for 2004.

Table 7.3: Road accident casualties (killed and seriously injured) in the Orkney Islands showing data for the period 1996-2005 and comparing averages for the years 1994-1998 and 2001-2005²⁰

Year	Child (0-15 years)	All ages
1994-98 average	3	17
1996	1	10
1997	2	19
1998	1	17

¹⁶ Scottish Executive National Census 2001 www.scrol.gov.uk/scrol/browser

¹⁷ Scottish Executive National Census 2001

¹⁸ British Heart Foundation Website www.heartstats.org

¹⁹ Scottish Executive and NHS Health Scotland healthy Living website www.InfoScotland.com

²⁰ Scottish Executive Road Accident Statistics, 2006 www.scotland.gov.uk/Publications/2006/11/22093058/60

Year	Child (0-15 years)	All ages
1999	3	32
2000	-	7
2001	-	10
2002	-	9
2003	-	9
2004	-	9
2005	2	8
2001-2005 average	0	9
% change on 1994-1998 average		
2005	-23	-53
2001-2005 average	-85	-47

The statistics above indicate an overall trend of decreasing numbers of fatalities and serious injuries on the roads of Orkney when comparing the periods 1994-1998 and 2001-2005. However there is little change in numbers of casualties of all severities due to road accidents. The LTS aims to improve the safety of travel through a continued combination of road user education, engineering solutions and enforcement.

Statistics reporting accidents of all severities have remained almost constant over this time period, ranging between 51 and 54. This highlights the fact that, although there has been a general decline in the numbers of those 'killed and seriously injured', there has been a slight increase in the number of slight injuries on the roads.

8. Population

SEA Objective:

- To improve accessibility and reduce social exclusion

Over the period between 1992 and 2004 population levels in the Orkney Islands have fluctuated, decreasing to a minimum of 19,210 in 2002 before increasing again to 19,500 in 2004. Birth rates over this period have decreased and the increasing trend in 2003 and 2004 was due to numbers migrating to the county slightly outweighing a falling birth rate and outward migration. This trend is illustrated in **Table 8.1**.

Table 8.1: Population change, based on Orkney Islands Council 2006 Economic Review²¹

Ended 30 June	Births	Deaths	Natural population change	Migration	Population
1992	262	241	+21	+129	19,710
1993	206	260	-54	+104	19,760
1994	257	247	+10	+40	19,810
1995	231	229	+2	+58	19,870
1996	217	242	-25	-45	19,800
1997	233	232	+1	+39	19,840
1998	200	244	-44	-246	19,550
1999	202	217	-15	-35	19,600
2000	163	220	-57	-63	19,480
2000	(revised)		-	-	19,290
2001	153	199	-46	-24	19,220
2002	176	210	-34	+24	19,210
2003	168	212	-44	+144	19,310
2004	167	224	-57	+247	19,500

These overall trends are predicted to continue until 2007, after which the population is predicted to begin to decline slowly as is shown in **Table 8.2** below.

²¹ General Register Office for Scotland (GROS)

Table 8.2: Population estimates for Orkney 2006-2024²²

Year	Population Estimate
2006	19,779
2007	19,837
2008	19,831
2009	19,826
2010	19,811
2015	19,686
2020	19,439
2024	19,108

The values shown above do not include the internal population changes which are taking place within the Orkney Islands as a result of migration from the smaller islands towards the mainland of Orkney. Depopulation of these islands has given cause for concern for a number of years and initiatives are under way to try to reverse this trend. One of the factors implicated in the migration to the Orkney mainland is geographical isolation whereby residents of the smaller isles experience reduced ease of access to facilities and services on the mainland of Orkney and beyond.

Geographical deprivation is one component of the Scottish Index of Multiple Deprivation in which parts of the Orkney Islands do register within the top 15% most deprived in Scotland. Geographical deprivation is measured by ranking areas for geographical access to services. There are a total of 6,505 data zones in Scotland and the data zone ranked 1 is the most deprived. **Table 8.3** shows that so far as this indicator is concerned, even the relatively accessible causeway linked islands of Burray and South Ronaldsay fall within the most geographically deprived 10% in Scotland.

Table 8.3: SIMD ranking of areas in the Orkney Islands for geographical access to services

INTERMEDIATE GEOGRAPHY – ISLES ZONE SO2000947			
Data zone	Islands	Population	SIMD ranking for geographical access to services
S01004968	Rousay, Shapinsay, Egilsay and Wyre	567	387 (top 6% most deprived)
S01004969	Sanday, Stronsay and North Ronaldsay	906	87 (top 2% most deprived)
S01004970	Eday, Westray and Papa Westray	749	43 (top 1% most deprived)
S01004971	South Ronaldsay (south), Hoy and Flotta	935	27 (top 1% most deprived)
S01004972	Burray and South Ronaldsay (north)	749	595 (top 10% most deprived)

9. Material assets

SEA Objective:

- To reduce, re-use and recover waste

Orkney's geography presents a complex challenge for the provision of transport. The archipelago of islands lends itself to a 'hub and spoke' provision of services with internal and external ferry and air services, and bus services. The nature of scattered rural housing means that providing an efficient public bus network is difficult. Almost half of Orkney's roads are unclassified (452km); 161km are A class roads; 205km B and 160km C. The Scottish Executive has acknowledged that there is a considerable backlog of maintenance and improvement work to be done on the local networks.

The internal ferry services are provided through the Council owned and subsidised company Orkney ferries. A total of seven Roll On-Roll-Off (RO-RO) vessels and two small passenger and cargo launches serve the inner and outer isles. External RO-RO ferry services are provided by the subsidised Northlink Ferries Ltd (from Stromness to Scrabster, and Kirkwall to Aberdeen), and Pentland Ferries (Between St. Margaret's Hope and Gills Bay).

Preparation of the Orkney Outdoor Access Strategy began with a comprehensive audit which examined existing provision for access throughout the islands. The results showed there are a number of opportunities for outdoor access available, including public rights of way, paths promoted by the Council and routes developed by individual landowners or local community groups. There are also areas used informally by the public for

²² General Register Office for Scotland (GROS) estimates

recreational access. The supply audit also highlighted problems with the current provision. In many areas existing routes do not link up to form effective path networks. Approximately a third of the public rights of way are in poor condition, blocked or overgrown. Many of the routes are not accessible for all user groups or for people of all abilities. There is also a lack of signposting, interpretation and information to help the public make the most of the access opportunities available.

Transport-related development has the potential to affect material assets such as buildings and public amenity land. In addition materials for construction and maintenance projects are required from quarries.

No major projects are anticipated during the lifetime of the Local Transport Strategy but ongoing maintenance, for example on the islands' roads will continue to be carried out. All stone aggregate for maintenance is accessed locally from Cursiter Quarry which is owned and operated by Orkney Islands Council. Tar for making tarmac is imported into the county.

Orkney Islands Council Roads Department do not presently use recycled materials for road maintenance but instead transport all road planings and construction and demolition wastes to Cursiter Quarry from where it is made available to the wider community as secondary aggregate. During 2005-06 this amounted to 3836 tonnes and the estimated amount for 2006-07 is 4200 tonnes

Grit swept from the roads following top-dressing is also sent to Cursiter Quarry.

General debris swept from the roads and pavements is transported to the Orkney Islands Council waste reception facility at Chinglebraes where organic materials are filtered out and the resulting contaminated water is processed through a system of reed beds. The remaining grit is then disposed of at the OIC landfill site at Bossack in Tankerness. 1153 tonnes of street debris were processed at Chinglebraes during 2005-06 and the estimated amount for 2006-07 is 1318 tonnes.

Salt is spread on the roads of the Orkney Islands during icy conditions. The LTS includes a commitment to review and update the Winter Maintenance Policy and Plan annually. 3972 tonnes of salt were used during 2005-06 but due to the recent mild winter it is estimated that salt usage during 2006-07 will be considerably less at 2100 tonnes.

Summary of data collected in compiling an environmental baseline of the Orkney Islands

The Environmental Report features a summary of the data sources accessed in compiling this environmental baseline of the Orkney Islands. A copy of this summary (Table 4) is also included below.

Table 4: Summary of data collected in compiling an environmental baseline of the Orkney Islands

DATA	SOURCE
Information on climate change	SNIFFER, 'A handbook of climate trends across Scotland', 2006
Information on carbon dioxide emissions and contribution by transport	Defra e-Digest Environment Statistics, Global Atmosphere Scottish Executive, Key Scottish Environmental Statistics, 2006 Energy Savings Trust website. A Study into the Environmental Impact of Aviation in the Highlands and Islands Orkney Islands Council, Carbon Management Programme, 2006
Trends on car ownership in the Orkney Islands	Scottish Executive: 2001 Census
Local air quality data for Kirkwall	Orkney Islands Council Department of Environmental Health
Water quality data (freshwater and coastal)and Groundwater quality data	Scottish Environment Protection Agency (SEPA)
Data on Agricultural Land Use in Orkney during 2002 and 2005	Scottish Agricultural Census 2002 and 2005
Information on contaminated land in Orkney	Orkney Islands Council Department of Environmental Health
Information on the geology of Orkney	Orkney Geology http://www.fettes.com/orkney
List of statutory and non-statutory designated natural heritage sites	Scottish Natural Heritage (SNH) and Orkney Islands Council Local Plan
List of RSPB reserves in Orkney	RSPB website
Lists of Priority habitats and species in Orkney	Orkney Islands Council Local Biodiversity Action Plan
Information on Landscape Character Assessment	Scottish Natural Heritage Review No 100, Orkney Landscape Character Assessment
Lists of Scheduled Ancient Monuments and Listed Buildings Information on Conservation Areas	Orkney Islands Council Local Plan The Orkney Islands Council Structure Plan 2001
General health of the populations of Orkney and Scotland Life expectancy of residents of the Orkney Islands over the period 2000-2005 Information on health and physical activity	Scottish Executive National Census 2001 British Heart Foundation Website www.heartstats.org Scottish Executive and NHS Health Scotland healthy Living website www.InfoScotland.com
Road accident statistics for Orkney	Scottish Executive Road Accident Statistics, 2006 www.scotland.gov.uk/Publications/2006/11/22093058/60 Statistical Bulletin Transport Series: Trn/2006/4: Key Road Accident Statistics. www.scotland.gov.uk/Publications/2006/06/15094628/10
Population change in Orkney 1992 - 2004	General Register Office for Scotland (GROS)
SIMD ranking of areas in the Orkney Islands for geographical access to services	Scottish Executive website www.scotland.gov.uk/stats/
Traffic levels in Kirkwall	Orkney Islands Council Roads Department
Source of materials used in road maintenance and fate of used road materials	Orkney Islands Council Roads Department

APPENDIX: B.1

Natural Heritage Sites in the Orkney Islands

Abbreviations

SSSI:	Site of Special Scientific Interest (notified under the Wildlife and Countryside Act 1981)
SPA:	Special Protection Area (EC Wild Bird Directive (79/ 409/ EEC)
pSPA:	proposed Special Protection Area
RAMSAR:	internationally important wetland site
NCR:	Nature Conservation Review Site- nationally important biological sites
NSA:	National Scenic Area
RSPB Reserve:	Royal Society for the Protection of Birds Reserve
SAC:	Special Area of Conservation (EC Habitats and Species Directive (92/ 43/ EEC)
GCR:	Geological Conservation Review site- nationally important Earth Science Sites
LNR:	Local Nature Reserve
BBP:	British Breeding Population

BIRSAY

SITE	DESIGNATION	AREA HA	INTEREST
Glims Moss and Durkadale	SPA/ SSSI/ NCR/ RSPB Reserve (part)	225.3	Raised mire and most northerly example of a calcareous valley mire in Britain.
Kirbuster Hill	local site ornithological	25	Heather Moorland
Loch of Banks	SSSI/ RSPB Reserve	44	Basin Mire complex of ornithological & botanical interest. Hen harrier.
Loch of Boardhouse	Local Nature Conservation Site	na	Breeding record for Red-throated Diver; wintering wildfowl
Loch of Hundland	local site ornithological	183	Loch, Wet heath and wetland. Important for passage waders
Loch of Isbister and the Loons	SAC / SSSI/ RSPB Reserve	104	Basin Mire complex of botanical and ornithological interest.
Loch of Sabiston	local site ornithological	41	Loch and wetland margins
Marwick Head	SPA/ SSSI / NCR/ RSPB Reserve	9.1	One of three biggest seabird colonies in Orkney (4% of BBP Guillemots, 2% of BBP Razorbill)
Point of Buckquoy,	local site geological	31.6	Unique exposure demonstrates consequences of oscillation in the level of the Orkney Lake during Sandwick Fish Bed times
Tufta, Loch of Boardhouse	local site ornithological	15	Wetland
Unigarth	local site ornithological	13	Wet grassland
Whitaloo Point	local site geological	0.61	A typical monoclinial fold in Upper Stromness Flags

EDAY

SITE	DESIGNATION	AREA HA	INTEREST
Doomy and Whitemaw Hill	SSSI	209	Sub-montane heath supporting Whimbrel & Arctic Skua both at nationally important levels
Greenan Nev Coast,	local site geological	6	Exposure of Eday marls of interest in the study of Palaeo environments
Loch of Doomy	local site ornithological	20	Loch and dune system
Loch of London	local site ornithological	12	Wet grassland and heather moorland
Mill Loch	SSSI	23.7	Dense breeding concentration of Red Throated Diver.
Red Head	local site ornithological	111	Moorland and coastal heath
Newbiggin to Neven Point,	local site geological	22.7	Good section of the western limb of the Eday Syncline
Sealskerry	local site ornithological	28	Dunes, Coastal grassland & reverted grassland
South Fersness Bay,	local site geological	15.4	Good section of the western limb of the Eday Syncline
Ward Hill	local site ornithological	179	Moorland habitat

EVIE & RENDALL

SITE	DESIGNATION	AREA HA	INTEREST
Burn of Ellibister, Rendall	local site ornithological	16	Low lying wet Heathand fen. Important for hunting raptors
Burns of Blubberdale & Bluebraes, Rendall/ Firth	local site ornithological RSPB Reserve (part)	264	Low lying wet Heathand fen. Important for hunting raptors
Loch of Brockan, Rendall	local site ornithological	17	Lochan important for wintering wildfowl
Loch of Vastray, Rendall	local site ornithological	2	Small shore- side loch, otter have been present.
North Mainland Coast	local site ornithological	na	wintering waders
Oyce of Isbister	local site ornithological	10	Area of saltmarsh and rough grassland, important for wintering wildfowl and waders
Peerie Water, Evie	local site ornithological	30	Loch and heather moorland
Quoyhenry, Rendall	local site ornithological	10	Low lying wet Heathand fen. Important for hunting raptors
Sands of Evie	local site geological	0.27	Outcrops of Aeolianite unique in Scotland
West Mainland Moorland	SPA/ SSSI/ NCR / RSPB Reserve (part)	2523	Sub- Montane moorland. Wet & dry heaths with extensive blanket bog. Red-throated Diver and Short Eared Owl. Nationally important Hen Harrier Site.

FIRTH & SUNNYBRAE

SITE	DESIGNATION	AREA HA	INTEREST
Barebrecks, Firth	local site ornithological	62	Low lying wet Heath and fen. Important for hunting raptors

Binscarth, Firth	local site botanical	3.25	Broadleaved plantation
Burns of Blubberdale and Bluebraes, Rendall / Firth	local site ornithological RSPB Reserve (part)	264	Low lying wet Heath and fen. Important for hunting raptors
Heddle, Firth	local site botanical	58	Heath and willow scrub
Hewing, Firth	local site ornithological	11	Low lying wet Heath and fen. Important for hunting raptors
Keelylang Hill and Swartabeck Burn	SPA/ SSSI	925.6	Nationally important moorland. Ornithological interest (2% of BBP of Hen harrier, 1% of BBP of Merlin)
Loch of Wasdale, Firth	local site ornithological	28	Low lying wet heath & heather
North Mainland Coast	local site ornithological local nature conservation importance (1) & (2)	na	wintering waders
Rennibister, Firth	local site ornithological	9	Area of rank grazing.
Rossmyre, Firth	local site ornithological	13	Wet Moorland dominated by heather
The Ouse and Heddle, Firth	local site botanical	71.3	Saltmarsh, Wet Moorland dominated by Heather. Important area for hunting raptors
Wideford Hill, St Ola	local site ornithological	199	Large hilltop area of heather moorland with, in places extensive stands of Juncus spp.

GRAEMESAY, HOY & FLOTTA

SITE	DESIGNATION	AREA HA	INTEREST
Berry Lochs, Hoy	local site ornithological	na	
Bring Head, Hoy	local site botanical	na	"Undercliff" with residual native woodland
Bu, Moaness, Hoy	local site botanical	na	Native woodland
Burn Of Ore, Hoy	local site botanical	na	Botanically rich fen
Calf of Flotta	local site botanical	na	Woodland understory vegetation
Hap, Graemsay	local site botanical	na	Dune and Machair
Hill of White Hamars	SWT reserve, local site botanical	71.5	Coastal Heaths and grasslands. Lichen Rich Heaths.
Hoglines Water, Hoy	local site ornithological	na	
Hoy	SSSI / SPA/ SAC/ RSPB Reserve (part)/ NCR/ GCR/ NSA (part)	9499.9	geology, geomorphology, great skuas, red throated divers, > 20000 seabirds, wet & montane heath, petrifying tufa springs, woodland, moorland birds, upland heaths
Hoy and West Mainland	NSA	c15,000	Landscape.
Hoy Lodge Marsh	local site botanical	na	Marsh and small loch
Lyrawa bay, Hoy	local site botanical	na	Saltmarsh
Lyrawa Plantation, Hoy	local site ornithological	na	

Melsetter Coast section, Hoy	local site geological	na	Outcrops of the Hoy Lavas
Melsetter Links, Hoy	local site botanical	na	Machair and Dune
Mill Burn and Mill Bay,	local site botanical	na	Saltmarsh
Muckle Head and Selwick	SSSI/ GCR / NSA (part)	1.7	Geological site due to locally important raised beach deposits
North and South burns of Quoys	local site botanical	na	Native woodland, Orchid colony
North Coast of Graemsay	local site geological	na	Exposure of the lower section of the Stromness Flags and Crystalline basement
North Hoy Coast	local site geological	na	Exposures of the Hoy Volcanics and the Hoy Sandstone in their type area
Pegal Glen, Hoy	local site botanical	na	Native scrub woodland
Quoy, South Walls	local site ornithological	9	Fragment of heath with rough grassland and a small pool.
Quoys Glen	local site botanical	na	Native Scrub woodland
Rottenloch, Hoy	local site ornithological	na	
Rysa Bay	local site botanical	na	Reedbeds
The Pinnacles, Hoy	local site botanical	na	Native woodland
Wastlee Moor, Hoy	local site ornithological	na	
Whaness Burn, Hoy	local site botanical	na	Native scrub woodland
Witter and Bu Hill, Hoy	local site ornithological	na	
West Hill & Golta	local site ornithological	325	Heather Moorland

HARRAY & STENNESS

SITE	DESIGNATION	AREA HA	INTEREST
Anderswick, Stenness	local site ornithological	45	Moderately grazed wet moorland. Important area for feeding raptors.
Bigswell, Stenness	local site ornithological	71	Moderately grazed wet moorland. Important area for feeding raptors.
Breckan, Harray	local site ornithological	22	Wetland favoured by migrant waders and wintering wildfowl
Lochs of Harray and Stenness	SSSI/SAC (Loch of Stenness)/ c RAMSAR (under review)/ NCR	1930 (792 cSAC)	Lochs which exhibit unique salinity gradient and vegetation community. Important for wintering wildfowl.
Brogar, Loch of Harray	local site ornithological	16	Wetland favoured by migrant waders and wintering wildfowl
Harray Road End, Moorside Stenness	SWT reserve (part) Local Ornithological site	28	Low lying wet heath and heather
Hoy and West	NSA	c15,000	Landscape

Mainland			
Kirk Quoy, Loch of Harray, Harray	local site ornithological	2	Wetland favoured by migrant waders and wintering wildfowl
Knowes of Trotty, Harray	local site ornithological	16	Low lying wet heath and Heather
Loch of Bosquoy, Harray	local site ornithological	59	Medium sized loch with associated margin & wet grassland. Important for wintering wildfowl
Neterborough, Harray	local site ornithological	19	Wetland favoured by migrant waders and wintering wildfowl
Orphir and Stenness Hills	SPA/ SSSI	890.4	Ornithological and Botanical interest including 3% of BBP of Hen Harrier and dwarf shrub, deer grass and lichen heath communities.
Quoyer, Loch of Harray, Harray	local site ornithological	17	Wetland favoured by migrant waders and wintering wildfowl
Reed Meadow, Loch of Harray, Sandwick	local site ornithological	10	Wetland favoured by migrant waders & wintering wildfowl
Setter, Harray	local site ornithological	76	Low lying wet heath and Heather
Stenness Kirk, Loch of Harray	local site ornithological	5	Wetland favoured by migrant waders and wintering wildfowl
The Shunan, Harray	local site ornithological	17	Loch complex surrounded by rough grassland and heather
West Mainland Moors SSSI Fringes	local site ornithological	498	The main moorland area omitted from the SSSI is on its western margins. Areas of blanket bog and heather moorland.

HOLM & WIDEFORD

SITE	DESIGNATION	AREA HA	INTEREST
Blown, Tankernes	local site ornithological	21	Moorland and Bog. Important for hunting raptors
Breckquoy, Holm	local site ornithological	153	Moorland and Bog. Important for hunting raptors
Culdigeo, Holm	local site ornithological	89	Moorland and Bog. Important for hunting raptors
Gaitnip Hill, Holm	local site ornithological	120	Moorland and Bog. Important for hunting raptors
Heathery Howes, Holm	local site ornithological	221	Moorland and Bog. Important for hunting raptors
Loch of Ayre, Holm	local site ornithological	9	Loch with wetland. Important for wintering wildfowl
Loch of Graemshall, Holm	local site ornithological	17	Loch with reed bed. Important for migrants, feeding terns and gulls
Rose Ness, Holm	local site ornithological	63	Coastal heath, heather moor and rough grassland
Swart Howe, Holm	local site ornithological	101	Moorland and Bog. Important for hunting raptors

The Loons, Holm	local site ornithological	9	Wetland
White Moss	local site ornithological	40	Moorland and Bog. Important for hunting raptors
Wideford Burn, St Ola	local site ornithological	60	Area of wetland and scrub woodland important for attracting migrants

NORTH RONALDSAY

SITE	DESIGNATION	AREA HA	INTEREST
Ancum loch	local site ornithological	6	Loch with wet grassland
Bride's Ness	local site ornithological	13	Overgrown loch and wet grassland
Gretchen Loch	local site ornithological	24	Loch and grazed grassland
Hooking Loch	local site ornithological	9	Overgrown Loch
Kirbist	local site ornithological	1.5	Marsh area
Loch of Garso	local site ornithological	3	Loch with marginal wet grassland
Whole Island	local site of nature conservation importance		
North Ronaldsay Coast	local site ornithological		black guillemot and wintering waders

ORPHIR & SCAPA

SITE	DESIGNATION	AREA HA	INTEREST
Akla, Orphir	local site ornithological	75	Heather moorland, wetter areas dominated by Juncus
Berryhill, St Ola	local site ornithological	15	Heavily grazed heather moorland
Brig 'o' Waithe	local site ornithological	21	Complex site of Estuarine & lochside habitat
Burn of Greenigoe, Orphir	local site ornithological	54	Heavily grazed heather moorland
Hill of Midland, Orphir	local site ornithological	57	Heather Moorland
Hoy and West Mainland	NSA	15,000	landscape
Keelylang Hill and Swartabeck Burn	SPA/ SSSI/ RSPB Reserve (part)/ NCR	925.6	Nationally important moorland. Ornithological interest (2% of BBP of Hen harrier, 1% of BBP of Merlin)
Loch of Kirbister, Orphir	local site ornithological	3	Lightly grazed wetland
Longhouse, St Ola	local site ornithological	20	Wetland dominated by Willow scrub. Important roost for migrant species
Orphir and Stenness Hills	SPA/ SSSI	890.4	Ornithological and Botanical interest including 3% of BBP of Hen Harrier and dwarf shrub, deer grass and lichen heath communities.
The Fidge, Swanbister	local site ornithological	33	Salt marsh and fresh water marsh. Dense stands of Iris and Juncus spp.
Tuskerbister, Orphir	local site ornithological	65	Moderately grazed wet moorland. Important area for feeding raptors.

Waulkmill	SSSI/ RSPB Reserve (Part)	71	Wide range of Nature conservation interest. Sandflat, Saltmarsh Herb rich low cliffs & heather heath. Botanical & lepidopteral interest
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PAPA WESTRAY

SITE	DESIGNATION	AREA HA	INTEREST
Backskail	Local site ornithological	3	Wetland
Hookin	local site ornithological	1	Wetland
Links of Moclett	local site botanical	na	Dune Grassland
Loch of Ness	Local site ornithological	6	Wetland
Loch of St Tredwell	local site ornithological	50	Loch with marginal wetlands
Loch of Via	local site ornithological	2	Large iris bed with open water
Mayback	local site ornithological	4	Wetland
North Hill	SPA/ SSSI/ RSPB Reserve/ NCR	206	Regionally important maritime heath vegetation community. Arctic Tern & Arctic Ski. Ornithological importance (4% of BBP of Arctic Skua)
Wellpark	local site ornithological	4	Wetland

ROUSAY, EGILSAY & WYRE

SITE	DESIGNATION	AREA HA	INTEREST
Maeness, Egilsay	local site botanical	6	Rich Wetland habitat
Loch of the Graand, Egilsay	local site ornithological	6	Lochs with wet grassland
Warsett, Egilsay	local site ornithological	2	Grassland with marsh
Loch of Wasbister, Rousay	local site ornithological	42	Loch with unimproved marginal fringe, wet grassland.
Lochs of Watten & Welland, Egilsay	local site ornithological	6	Marshland site around two lochs
Manse loch, Egilsay	local site ornithological	10	Loch with wet marsh
Rousay	SPA (part)/ SSSI/ RSPB Reserve (part)	2313 (633.4 pSPA)	Ornithological and Botanical interest. Maritime & wet heath, Heather dominated moorland & high altitude plant communities. Arctic tern colony (15% of BBP) Arctic Skua Population (3% of BBP) Hen Harrier (2% of BBP)
The Taing, Wyre	local site botanical	15	Area of rough grazing
Trumland, Rousay	local site botanical	4.8	Broad leaved plantation
Whitelett, Egilsay	local site ornithological	5	Marshy grassland.

SANDAY

SITE	DESIGNATION	AREA HA	INTEREST
Backaskaill, Sanday	local site ornithological	3	Small wetland area with dense iris beds
Bea Loch, Sanday	local site ornithological	67	Loch with reedbeds
Central Sanday	SSSI/ GCR	654.7	Machair and other blown sand shingle landforms unique in North Scotland. Botanical and Ornithological interest
Colli Ness, Sanday	local site ornithological	27	Area of Saltmarsh and shingle spit Important hunting area for raptors
Doun Helzie, Sanday	local site geological	89.8	Beach Dune and Machair association
East Sanday Coast	SSSI/ SPA(1515ha)/ RAMSAR	1607.3	Wintering waders (purple sandpiper, turnstone), common seal.
Grunavi Head, Sanday	local site ornithological	12	Small area of degraded moorland.
Hegglie Ber, Sanday	local site geological	9.4	Coarse pebbly and conglomeratic facies of Lower Eday Sandstone
Lochend	local site ornithological	6	Small area of marsh, dominated by Iris, marestail and bog bean.
Mires of Whip, Sanday	local site ornithological	3	Wetland
Northwall	SSSI	251.3	Botanically diverse Machair . Largest extent of machair outside the Western isles
Roos Loch, Sanday	local site ornithological	20	Loch with stoney shoreline bordered by rough grassland
Sanday	SAC (marine)	10971.7	Common seal
Scar, Sanday	local site geological	na	Glacial erratic
Spaney Geo, Sanday	local site ornithological	17	Relict area of rank grass and short heather.
Start Island, Sanday	local site ornithological	24	Small tidal island dominated by grassland but with a small wetland.
Tafts Ness	local site ornithological	86	Rough grassland with small pools and wet areas.
Westbrough, Sanday	local site ornithological	7	Wetland with open water
Whitemill Sanday	local site ornithological	106	Grazed machair type habitat with open water &reedbed. Important hunting area for raptors

SANDWICK

SITE	DESIGNATION	AREA HA	INTEREST
Bay of Skail	SSSI/ GCR	7.85	Middle Devonian Fish beds with fossil plant community
Bookan Quarry, Sandwick	local site geological	0.38	Exposure of the Sandwick fish beds
Breck of Linqoy, Sandwick	local site ornithological	12	Wetland. Raptor hunting area

Brig 'o'Waithe	local site ornithological	21	Complex site of Estuarine and lochside habitat
Burn of Cruland, Sandwick	local site ornithological	44	Heather moorland and wetland Raptor hunting area
Burn of Ess, Sandwick	local site ornithological	14	Wet grassland and Heather
Cruaday Quarry	SSSI/ GCR	6.8	Outstanding geological importance due to preservation of the fossil bearing rock known as "sandwick fish beds"
Decca Station, Loch of Harray, Sandwick	local site ornithological	25	Wetland favoured by migrant waders and wintering wildfowl
Deepdale, Loch of Stenness, Sandwick	local site ornithological	26	Wetland with rough grassland and willow scrub
Hestwall, Sandwick	local site ornithological	20	Wetland
Hoy & West Mainland	NSA	c15,000	Landscape
Loch of Clumly, Sandwick	local site ornithological	38	Loch with extensive marginal wetlands. Important for wintering wildfowl
Loch of Rosemire	local site ornithological	3	Small loch and wet grassland
Loch of Skail	local site ornithological	77	Small loch with marginal wetland. Important for overwintering wildfowl
Lyking Quarry, Sandwick	local site geological	0.58	Exposure of Sandwick Fish Beds
Mill Dam of Rango	local site ornithological	13	Small loch with marginal wetland
Orr Shun, Sandwick	local site ornithological	23	Wet grassland and Heather
Quholm, Sandwick	local site ornithological	26	Wetland with rough grassland and willow scrub
Scarwell Quarry, Sandwick	local site geological	0.01	Exposure of Sandwick Fish Beds
Southerquoy, Sandwick	local site ornithological	69	Small marsh, maritime heath.
Stones of Via, Sandwick	local site ornithological	4	Wetland
Stromness Heaths and Coast	SAC/ SSSI/ GCR/ NCR / NSA (part)	755	Prime example of coastal vegetation communities with associated breeding birds. Noteable <i>Primula scotica</i> colonies. Coastal Geomorphology
Wester Voy, Loch of Stenness, Sandwick	local site ornithological	2	Wet Marginal lochside.

SHAPINSAY

SITE	DESIGNATION	AREA HA	INTEREST
Ayre of Vasa	local site geological	13.1	Complex cusped foreland
Lairo Water and the Ouse	local site ornithological	26	Inter tidal sand and mud, saltmarsh and coastal grassland
Mill Dam	RSPB Reserve	15	Marshland
Swart Helligo, East Hill	SWT reserve (part)	102	Marginal moorland, Coastal heath and marsh
The Galt	local site ornithological	15	Area of degraded maritime heath.
Vasa Loch, Shapinsay	local site ornithological	7	Lochs with wet Grassland
Veantrow Bay,	local site geological	17.9	Complex of shingle depositional landforms

SOUTH RONALDSAY & BURRAY

SITE	DESIGNATION	AREA HA	INTEREST
Aikers, South Ronaldsay	local site ornithological	14	Open water and grazed wetland
Ayre of Cara, South Ronaldsay	local site geological	na	Provides opportunity for study of rates of accretion and erosion due to the construction of the Churchill Barriers
Barth Head, South Ronaldsay	Local Nature Conservation Site	na	Coastal / maritime heath
Blows Moss, South Ronaldsay	local site ornithological	20	Wetland. Important hunting area for raptors
Burwick loch, South Ronaldsay	local site ornithological	6	Wetland with no open water
Cleat, South Ronaldsay	local site botanical	na	Coastal maritime heath from Sandside to Lay Taing
Croo Stone Vent coast section, South Ronaldsay	local site geological	na	Largest and most complex vent to be found in Orkney
Dale Moss, South Ronaldsay	local site ornithological	20	Heather Moorland and wetland. Important raptor hunting area
Dam of Collie, South Ronaldsay	local site ornithological	7	Grazed wetland. Hunting area for short eared owls
Dam of Hoxa, South Ronaldsay	local site ornithological	78	Open water and rough grassland with marsh
Echna Loch	Local Nature Conservation Site	na	Breeding Wigeon; wintering wildfowl
Glimps Holm	Local Nature Conservation Site	na	Arctic Tern colony; Common Gull colony
Graemston Loch, South Ronaldsay	local site ornithological	8	Loch and marginal wetland with willow scrub
Green Head, South Ronaldsay	Local Nature Conservation Site	na	Maritime heath

Grim Ness, South Ronaldsay	local site ornithological	42	Heavily grazed heather dominated headland
Herston Bay	local site ornithological	na	wintering waders
Honeysgeo, South Ronaldsay	local site botanical	na	Dunes
Hoston Bay, South Ronaldsay	Local Nature Conservation Site	na	Heath with Juniper
Hoxa Dam South Ronaldsay	local site botanical	na	Wetland
Hoxa, South Ronaldsay	local site geological	na	Composite depositional structure
Hunda, Burray	local site ornithological	83	Degraded grassland and heather moorland.
Klondyke, Burray	local site ornithological	105	Degraded heather moorland, areas of wet heath with cotton grass and <i>Juncus</i> spp.
Liddel Loch, South Ronaldsay	local site ornithological	14	Loch and wet rough grassland and maritime heath. Important for wintering wildfowl
Loch of Lythe, South Ronaldsay	local site ornithological	6	Small loch with surrounding Wetland. Important for wintering wildfowl
Newark Bay, South Ronaldsay	local site botanical	na	Dune and machair
No 4 Barrier	local site botanical	na	Very high botanical interest
Sandy Hill, South Ronaldsay	local site botanical	na	Heath with Juniper
North Links, Burray	local site ornithological	130	Machair like habitat and sand dune with marsh
Sounds Loch, South Ronaldsay	local site ornithological	33	Wet rough grassland
Old Head to Halcro Head, South Ronaldsay	local site geological	na	Shows relationship of coastal morphology to geological structure.
South Links, Burray	Local Nature Conservation Site	na	Wintering waders; seal haul out; Orkneys only site for Dark Green Fritillary
Sutherlands Links, Burray	Local Nature Conservation Site	na	Major site for <i>Bombus distinguendus</i>
The Altar, South Ronaldsay	local site geological	na	Demonstrates the influence of jointing on the resultant coastal landforms
Vensilly Hill, South Ronaldsay	local site botanical	na	Wetland
Ward Hill (3 separate sites)	Local Nature Conservation Site	na	Upland and maritime heath; breeding sea, moorland and wetland birds
Ward Hill Cliffs	SSSI	35.57	Floristically rich cliff top plant communities. Breeding Grey seals.
Ward Hill, South Ronaldsay	local site botanical	na	Species Rich Heath
Weddell Point	Local Nature Conservation Site	na	Arctic Tern colony; Little Tern breeding site
Windbrek, South Ronaldsay	local site botanical	na	Bog

ST. ANDREWS & DEERNESS

SITE	DESIGNATION	AREA HA	INTEREST
Bay of Suckquoy, Toab	local site botanical	28.5	Saltmarsh
Braebuster Ness, Deerness	local site ornithological	6	Headland with wetland and open water
Denwick	SSSI/ GCR	0.5	Geological site. Best example of a multiple till section in Orkney
Eves Loch, Deerness	local site ornithological	9	Wetland with open water
Greenock, Tankerness	local site ornithological	56	Wet heath and Grassland
Head of Work, St Ola	local site ornithological	37	Heavily grazed maritime heath
Kirkwall airfield, St Ola	local site ornithological	18	Heather and grassland. Important raptor hunting site
Loch of Carness, St Ola	local site ornithological	17	Small loch and associated wetland
Loch of Lakequoy, Tankerness	local site ornithological	15	Coastal wetland and lagoon, important for wintering and migrant waders
Loch of Ouse, Deerness	local site ornithological	27	Wetland with open water
Loch of Tankerness, Tankerness	local site ornithological	84	Loch and wetland margins. Important to wintering wildfowl
Loch of Yinstay, Tankerness	local site ornithological	23	Loch with two areas of rank grassland.
Mirkady Point, Deerness	local site ornithological	15	Shingle spit. Also of Geomorphological importance
Mossclair, Tankerness	local site ornithological	8	Wet heath and Grassland
Mull Head	LNR	na	Botanical, ornithological and geomorphological interest
Newbiggin, Tankerness	local site ornithological	7	Coastal wetland and lagoon, important for wintering and migrant waders
Point of Ayre, Deerness	local site geological	na	Area of basaltic lava flow.
Sebay, Toab	local site ornithological		Saltmarsh
South Coast of Deerness	local site geological	51.6	Section showing transition from Rousay Flag series to Lower Eday Flag series.
Swarsquoy, Tankerness	local site botanical	14.8	Saltmarsh and unique double Ayre of Geomorphological importance
Rerwick Head, Tankerness	Local Nature Conservation Site	na	Major site for <i>Bombus distinguendus</i>
Tarracliff, Deerness	local site geological	31.8	Section showing transition from Rousay Flag series to Lower Eday Flag series.
Veddertownmail, Tankerness	local site ornithological	9	Area of wet heath and grassland

Wideford Burn, St Ola	local site ornithological	60	Area of wetland and scrub woodland important for attracting migrants
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STROMNESS

SITE	DESIGNATION	AREA HA	INTEREST
Brunt Hill, Stromness	local site ornithological	70	Heavily grazed heather.
Hoy and West Mainland	NSA	5,000	Landscape
South Stromness Coast, Stromness	local site geological	na	Crystalline basement rock with overlying Stromness flags. Lead mineralization
The Loons, Stromness	local site ornithological	32	Wetland with rough grassland and willow scrub. Raptor hunting site

STRONSAY

SITE	DESIGNATION	AREA HA	INTEREST
Auskerry	SSSI/ SPA	101.97	Arctic terns and storm petrels.
Blan Loch, Stromsay	local site ornithological	22	Dune and Machair like grassland
Bleaching Knowe, Stromsay	local site ornithological	1	Small loch with marginal wetlands
Bruce's Loch Stromsay	local site ornithological	1	Small loch with marginal wetlands
Burgh Head	local site ornithological	47	Grassland and maritime heath.
Burial Ground Loch, Stromsay	local site ornithological	2	Small lochan with dry grassland
Cro Taing Loch, Stromsay	local site ornithological	2	Small loch with marginal wetlands
Grice Ness, Stromsay	local site ornithological	0.5	Small lochan with dry grassland
Kent's Pond	local site ornithological	1	Grassland and two small pools with little emergent vegetation.
Lea Shun, Stromsay	local site ornithological	51	Loch with wet margins, machair like grassland.
Little Water, Stromsay	local site ornithological	5	Rough grassland and wet marsh
Loch of Matpow, Stromsay	local site ornithological	6	Loch with wet grassland and marsh
Loch of Rothiesholm, Stromsay	local site ornithological	15	Freshwater loch and wetland favoured by migrant waders and wintering wildfowl
Miekle water, Stromsay	local site ornithological	48	Lochs with associated wetlands
Mill Bay, Stromsay	SSSI/ GCR	1.9	Geological: Classic shelly till with paleo-geomorphological

			importance.
Papa Stronsay	local site ornithological	82	Eutrophic loch and associated wetland.
Rothiesholm, Stronsay	local site ornithological	382	Heather dominated moorland
South east Stronsay	Local Nature Conservation Site	na	Ornithological interest
Straenia Water, Stronsay	local site botanical	na	Shingle Ayre and Freshwater Lagoon

WESTRAY

SITE	DESIGNATION	AREA HA	INTEREST
Ayre of Roadmire	local site ornithological	4	Small marsh and lochan with reed bed favoured by migrant waders and wildfowl
Fribo Marsh	local site ornithological	4	Marsh area, breeding ducks and waders
Loch of Burness, Westray	local site ornithological	26	Loch and wetland margins. Wetland favoured by migrant waders and wintering wildfowl
Loch of Garth, Westray	local site ornithological	13	Machair type grassland and wetland
Taftend, Westray	local site ornithological	7	Dry Marshland
Loch of Saintear, Westray	local site ornithological	16	Loch and wetland favoured by migrant waders and wintering wildfowl
Loch of Swartmill, Westray	local site ornithological	34	Loch with well developed marginal marshes
Loch of Tuquoy, Westray	local site ornithological	19	Machair type grassland
Mae Sand, Westray	local site botanical	na	Machair plain
South Westray Coast	local site ornithological site of local nature conservation importance	na	wintering waders
The Ouse, Westray	local site ornithological	1	Narrow shingle spit.
West Aikerness, Westray	local site ornithological	67	Dry maritime grassland with lochans
West Westray	SPA/ SSSI/ NCR/ RSPB reserve (part)	371.97	Seabird Colonies. Largest colonies of Guillemots & Kittiwake in the British Isles. Maritime grassland & Maritime sedge heath communities.

UNINHABITED ISLANDS

SITE	DESIGNATION	AREA HA	INTEREST
Calf of Eday	SPA/ SSSI	242	Nationally important cormorant colony; 3% of British breeding population. Seabird assemblage
Cava	local site ornithological	65	Low lying heather clad.
Copinsay	SPA/ SSSI/ RSPB Reserve	151.8	Nationally important populations of guillemots (4% of BBP) & Kittiwake (2% of BBP) Other ornithological & botanical interest
Damsay	local site ornithological	21	Important area for grey and common seals.
Eynhallow	SSSI	102.7	Ornithological site with history of study. Important common seal haul out.
Faray and Holm of Faray	SAC (marine) (785ha)/ SSSI	116.62	Important area for grey seals.
Gairsay Hill	local site ornithological	140	Heather moorland area which otters have frequented.
Holm of Papa Westray	SPA/ SSSI	47.6	Black Guillemot colony (1% of BBP) and other ornithological interest
Rysa Little	local site botanical	na	
Linga Holm	SWT reserve	56	Important for Grey Seals.
Muckle and Little Green Holm	SSSI	53	Nationally important grey seal breeding colony (3% of BBP)
Pentland Skerries	SPA/ SSSI	}168	Maritime grassland, and bare rock skerries. Large arctic tern colony.
Swona	SPA/ SSSI		Grassy island with feral cattle. Cliffs up to 25m. Arctic Terns
South Fara	local site ornithological	na	
Switha	SPA/SSSI	57.4	Barnacle Geese roost
Sule Skerry	SPA/ SSSI/ NCR	15.6	Puffin colony (12% of BBP) 2 % of BBP of Shags
Sule Stack	SPA/ SSSI/ NCR	3.3	Gannet Colony

STRATEGIC ASSESSMENT OF THE ORKNEY ISLANDS LOCAL TRANSPORT STRATEGY (2007-2010)

APPENDIX : B.2 UK Priority Habitats and Species

Habitat Action Plans

Broad Habitat	UK Priority Habitats	Local Priority Habitats	Other occurring habitats
BroadLeaved Mixed and Yew Woodland	Upland birchwood	Willow scrub Broad-leaved plantation and policy woodland	
Coniferous Woodland			Conifer plantation
Boundary and Linear Features		Miscellaneous field boundaries Road verges	Hedges Stone and earth boundary features
Arable and Horticulture	Cereal field margins	Arable crops	
Improved Grassland		Extensive hay/silage crops	Improved grassland
Neutral Grassland		Wet meadow Species-rich grassland	Semi-natural grassland
Dwarf Shrub Heath	Upland heath	Lowland heath Treeless woodland and dales Maritime heath Empetrum heath Lichen heath Species-rich heath	
Fen, Marsh and Swamp	Fens Reedbeds	Marsh Base-rich flush Base-rich fen	
Bog	Blanket bog	Basin bog	
Standing Open Water and Canals	Eutrophic standing waters Mesotrophic standing waters	Oligotrophic and Dystrophic Lochs Ponds and milldams	
Rivers and Streams		Burns and canalised burns	
Montane Habitats		Montane habitats	
Inland Rock		Inland rock	
Built Up Areas and Gardens		Built-up areas and gardens	
Supralittoral Rock	Maritime cliff and slopes	Maritime grassland	
Supralittoral Sediment	Coastal sand dunes Machair Coastal vegetated shingle	Links Aeolianite Coastal strandline	Storm beach

Littoral Sediment	Coastal saltmarsh Mudflats Sheltered muddy gravels
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Inshore Sublittoral Rock	Tidal rapids <i>Modiolus modiolus</i> beds
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Inshore Sublittoral Sediments	Seagrass beds (<i>Zostera marina</i> and <i>Zostera angustifolia</i>) Maerl beds Saline lagoons Mud in deep water Serpulid reefs Sublittoral sands and gravel	Inlets and enclosed and sheltered bays
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Offshore, Shelf and Oceanic Habitats	
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APPENDIX B.3

Listed Buildings and Scheduled Ancient Monuments in the Orkney Islands

1. Listed Buildings

BIRSAY

'A' Listed - The Earl's Palace, Birsay

'B' Listed - Birsay Kirk (St. Magnus); Old Birsay Manse; Boardhouse Threshing Mill & Steadings; Old Barony Meal Mill, Boardhouse; New Barony Meal Mill, Boardhouse; Kirbister Farmhouse; Sabiston Meal Mill; St. Peter's Monastery, Brough of Birsay

'C(S)' Listed - Birsay Bridge; The Kitchener Memorial; Old Bea Farmhouse

EDAY

'B' Listed - Carrick House

EVIE and RENDALL

'A' Listed - Broch of Gurness, Aiker Ness

'B' Listed - Woodwick Doocot; Crook Farmhouse; Rendall Doocot; Breck Farmhouse & Steading; Langaskaill Garisay

FIRTH and SUNNYBRAE

'B' Listed - Old Firth Manse, Curister; Firth Meal Mill, Millquoy; Burness House; Binsgarth House

HARRAY and STENNESS

'B' Listed - The Click Mill, Millbrig Hillside; Harray Kirk (St. Michael's); Mill of Harray Conyar; Midhouse of Corrigal; Holodyke; Mill of Tormiston; Mill of Ireland

'C(S)' Listed - Stenness Kirk; Bridge of Waithe

HOLM and WIDEFORD

'A' Listed - The Italian Chapel including Statue, Lamb Holm

'B' Listed - Graemeshall, including boundary walls, gatepiers & walled gardens; Greenwall House, including outbuildings & boundary walls; Hestakelday; Pentland View, Former U P Church Manse including walled garden & outbuilding; Storehouse, St Mary's Village; St Nicholas's Church, Former Holm Kirk including walled churchyard, gatepiers & outbuilding; The Pier, St Mary's Village

'C(S)' Listed - Eastbanks including outbuilding; Howa including Kiln; Little Millhouse; Netherbutton including boundary walls, gatepiers & outbuilding; Smithy Cottage including former smithy & boundary walls; Clairness Cottage & adjoining cottage including boundary walls & railings, St Mary's Village; Dunnet's Cottage, St Mary's Village; Former Temperance Hall, St Mary's Village; West End Cottage including boundary walls, St. Marys Village; Wideford Farmhouse

HOY and GRAEMSAY

'A' Listed - Hoy Sound High Lighthouse, Gramesay, including keepers' houses, boundary walls & gatepiers; Melsetter House; Rysa Lodge.

'B' Listed - Hoy Sound Low Lighthouse, Gramesay, including keepers' houses, boundary walls & gatepiers, Gramesay; Sandside Farmhouse including steading & slipway; Bu of Hoy including ancillary buildings & boundary walls; Burra House, Hoy, including boundary walls, gatepiers & ancillary range with kiln; East Linksness, Hoy, including ancillary buildings; Hoy Lodge including

kennels, boundary walls & gatepiers; Burmmouth, Rackwick, Hoy including boundary walls; Cantick Head Lighthouse; Moodie Burial Place, Kirkhope Burial Ground; Martello Tower, Hack Ness, Longhope; Ness House, Southness, South Walls; Snelsetter, Longhope

'C(S)' Listed - The Clett, including boundary walls & outbuildings, Gramesay; Gorn, Gramesay; Gramesay Kirk including graveyard; Quoys including outbuildings, Graemsay; Scarrataing, Gramesay; Newstead, Hoy including ancillary building; Orgil Farm, Hoy; Muckle House including ancillary building, Rackwick, Hoy; The Mount, Rackwick, Hoy; West End, Hoy

KIRKWALL

'A' Listed - Bishop's Palace (Palace Road and Watergate Street); 35 Broad Street; 37 Broad Street; 39 Broad Street; 41 Broad Street (The Orkney Museum) including garden walls; Earl's Palace (Palace Road); St Magnus Cathedral, Cathedral Church of St Magnus the Martyr including boundary walls, railings, graveyard & war memorial

'B' Listed - 8 Albert Street (Former Commercial Bank); 20 Albert Street; 33 Albert Street; 34 Albert Street; 43 Albert Street (I) (Patrick Trails House); 43 Albert Street (II); 56 Albert Street (Bank of Scotland); 60 Albert Street; Alton House, Berstane Road, including boundary walls; Ayre Hotel, Harbour Street; 7 Bridge Street; 13 Bridge Street; 15 & 17 Bridge Street; 21 & 23 Bridge Street; 31 & 33 Bridge Street; 20 & 22 Bridge Street; 24 Bridge Street, including Arch from St Olaf's Church; 2 Broad Street; 4 Broad Street; 5 Broad Street (Formerly Provost Riddoch's House) including boundary walls, gatepiers & railings; 6 Broad Street (Orkney Tourist Board); 8 Broad Street; 32 Broad Street; 36 Broad Street (Former Grammar School); 8 Clay Loan, including building attached to rear; 12 Clay Loan; 54 Clay Loan, including boundary walls & railings; Colwyn, Watergate Street & Victoria Road; Council Offices, School Place; 1- 9 (odd nos.) Cromwell Road; Daisybank House, including boundary walls & gatepiers, East Road; 18 East Road, including boundary walls; Former Fish Processing Plant, Harbour Street; Former Storehouse, Queen Street & Bridge Street Wynd; Garmisgarth, including boundary walls, Mill Street; Grainbank House, Ayre Road; 2- 8 (even nos.) Gunns Close; 20 Harbour Street (The Girnel Keeper's House); 22 Harbour Street (The Girnel House); Highland Park Distillery, Holm Road; 12 High Street; 2 King Street including boundary walls & gatepiers; 6 & 8 King Street, including ancillary building, boundary walls & railings; 9 King Street, including ancillary building, boundary walls, gatepiers & railings; 10 King Street including boundary walls; Kirkwall Harbour; Kirkwall Hotel, Harbour Street; Kirkwall Public Library, Laing Street; 3 Main Street; 5 Main Street; 14 Main Street, including railings (West End Hotel); 23 Main Street; 25 Main Street; 28, 28a and 28b Main Street; 6 Nicolson Street, including boundary walls; 8 Old Scapa Road, including boundary walls, railings & doocot; 1 Palace Road; Papdale House, Berstane Road; Papdale House walled garden including Doocot, Berstane Road; Paterson/East Church, School Place; 12 & 14 Queen Street, including boundary walls; 9-12 St Catherine's Place; 13 & 14 St Catherine's Place; 15-18 St Catherine's Place; 19 & 20 St Catherine's Place; 21 & 22 St Catherine's Place, including ancillary buildings; 23 St Catherine's Place, including ancillary buildings; 24 St Catherine's Place; 25 & 26 St Catherine's Place, including ancillary buildings; St Olafs Church (Episcopalian) including boundary walls, gatepiers & railings, Dundas Crescent; 5 School Place, including boundary walls; Sheriff Court & Police Station, including boundary walls, gatepiers and railings; 16 & 18 Shore Street (John Pottinger's House); 22 Shore Street (Tounigar); 1-6 The Strynd; Strynd Tearooms, The Strynd; Strynd Walls, including storehouse, North Side; Summerhouse rear of Bridge Street; Town Hall, Broad Street; 6 Union Street; 12 & 14 Victoria Street; 19-23 (odd nos) Victoria Street; 22-26 (even nos) Victoria Street; 25 Victoria Street; 27 Victoria Street; 29 Victoria Street; 37 and 39 Victoria Street; 51 Victoria Street; 54 & 56 Victoria Street; 60 Victoria Street; 61 Victoria Street; 62 & 64 Victoria Street; 72 Victoria Street (Spence's Square); 74 Victoria Street (Spence's Square); 79 & 81 Victoria Street; 83 Victoria Street; 86 Victoria Street; 87 Victoria Street; 91 Victoria Street, including boundary walls; 6 Watergate Street (The Old Manse); 2 and 4 Wellington Street, including ancillary building & boundary walls; 6 and 8 Wellington Street; 12 Wellington Street,

including boundary walls; 14 Wellington Street; 16 & 18 Wellington Street; 30 Wellington Street & 34 Wellington Street

'C(S)' Listed - 9 Albert Square (rear of Mounthoolie Place) including boundary walls & railings; 6 Albert Street, including boundary walls; 9 & 11 Albert Street; 27 & 29 Albert Street; 31 Albert Street; 35 Albert Street; 41 Albert Street, including boundary walls; 42 Albert Street; 45 & 47 Albert Street; 52 & 54 Albert Street; 59 Albert Street; 63 & 65 Albert Street; 67 & 69 Albert Street; Bignold Park Pavilion; 1 Bridge Street; 2 Bridge Street; 11 Bridge Street; 19 Bridge Street; 26 Bridge Street; 17,19 & 21 Broad Street; 10 Clay Loan; 18 & 20 Clay Loan; Drinking Fountain, St Magnus Cathedral Green; Eastbank House, East Road; 6 & 8 Dundas Crescent including boundary walls, gatepiers & railings; 5 East Road, including boundary walls & railings; 9 & 11 East Road; 13 East Road, including boundary walls; 17 East Road, including boundary walls & railings; 19 & 21 East Road, including boundary walls & railings; 20- 26 (even nos) East Road; Former Ayre Mills, Ayre Road; Glaitness House, Glaitness Road; 2 High Street; 6 High Street; 18 High Street; 20 High Street; 22 High Street; 24 High Street; 30 High Street, including boundary walls; 1 Junction Road (The Orkney Wireless Museum); King Street Church (Church of Scotland) including boundary walls; Kirkwall Baptist Church, Victoria Street, including hall & boundary walls; Kirkwall Bowling Green (Bowling Pavilion); 10 Laing Street; Lilybank House, East Road; Madras Villa, Bignold Park Road; 8 Main Street; 10 Main Street; 22 Main Street; 24 Main Street; 1 Nicolson Street, including boundary walls & gatepiers; 7 Nicolson Street, including boundary walls; 8 St Olafs Wynd; 10 St Olafs Wynd; 6 Old Scapa Road, including boundary walls & gatepiers; 3-9 (odd nos) Palace Road; Park Cottage, Berstane Road; 1 School Place; 3 School Place, including boundary walls; 6 School Place; 8 School Place; 10 School Place; 11 School Place; 12 School Place; 2 Shore Street; 1 Victoria Street (Royal Bank of Scotland); 7 Victoria Street, including courtyard walls & railings; 33 Victoria Street; 35 Victoria Street; 41 Victoria Street; 47 & 49 Victoria Street; 59 Victoria Street; 58 Victoria Street; 66 Victoria Street; 66a Victoria Street; 66b Victoria Street; 76 Victoria Street; 78 Victoria Street; 80 Victoria Street; Vorsheed, Berstane Road, including ancillary structures, boundary walls & gatepiers; 5 Walls Close, including boundary walls; 3 Wellington Street, including ancillary building and boundary walls; 26 Wellington Street.

NORTH RONALDSAY

'A' Listed - Dennis Head Beacon including remains of keepers house; North Ronaldsay Sheep Dyke and associated puns.

'B' Listed - Gateside including outbuildings; Nether Linnay; New Church (former UF Church); Old Kirk including boundary walls & gatepiers; Peckhole Mill; Peckhole Windmill; Rue including outbuildings & boundary walls; Verracott; North Ronaldsay Lighthouse including keepers' houses, boundary walls & foghorn

'C(S)' Listed - Barren Ha; Dennis Head Fishing Station and Pier; Holland House including outbuildings garden walls, steading & cottages; Holland House steading, factor's house & bothy; Hooking Watermill; Lurand including boundary walls & outbuilding; Linklet House including outbuildings, boundary walls & gatepiers; Nouster; Sandback

ORPHIR and SCAPA

'A' Listed - St. Nicholas' Chapel and the Earl's Bu; Hall of Clestrian

'B' Listed - Kirbister Meal Mill; Old Orphir School, Kirbister; Swanbister House.

'C(S)' Listed - Hobbister House; Orphir House (Hall of Gyre); Grindally House; Howth Farmhouse; Quoy of Howton

PAPA WESTRAY

'B' Listed - Old Papa Westray Kirk (St. Boniface's); Holland House; Holland Doocot; Nouster Stores.

ROUSAY

'A' Listed - Mid Howe Broch, Outer Westness; St. Magnus Church (Old Egilsay Kirk).

'B' Listed - Westness House, Inner Westness; Trumland House; Rousay Meal Mill Sourin; Howan House, Egilsay, including remains of service court; Old Wyre Kirk (St. Peters); Cubbie Roo's Castle; Monastery, Eynhallow; Viera Lodge, including outbuildings, boathouse, gate piers & boundary walls.

SANDAY

'B' Listed - Backaskail Mains; Boloquoy Farm including boundary walls, ancillary buildings, meal mill & farm cottages; Kettletoft Pier, including slipway; Marygarth Manse with ancillary buildings including drying kiln, boundary walls & gatepiers; Quivals Farmhouse (Former School) including boundary wall & ancillary buildings; Burness Saville Farmhouse including ancillary buildings; Scar House, Westove, including ancillary range with mill & Doocot, walled garden & farm cottages; Scar former Water Mill, Westove; Scar former windmill, Westove; Stove Farmhouse & Farm Cottages; Warsetter Farm, Cross, including boundary walls, gatepiers & ancillary farm courtyard with threshing barn; Warsetter Farm Cottages, Cross; Warsetter Farm Doocot, Cross.

SANDWICK

'A' Listed - Sandwick Kirk (St. Peter's); Skail House.

'B' Listed - Skail Doocot; West Aith

'C(S)' Listed - Mill of Rango; Nether Benzieclett

SHAPINSAY

'A' Listed - Balfour Castle (with garden gateway)

'B' Listed - Shapinsay Kirk (South Church); Balfour Burial Aisle (South Churchyard); Shapinsay Meal Mill, Ellwick; Balfour Castle, Doocot; Stone Lodge (Gate Lodge), Balfour Castle; Shapinsay Lighthouse; 10 Balfour Village; The Smithy, Balfour Village; 23 & 24 Balfour Village.

'C(S)' Listed - Gate Piers, Balfour Castle; 2 Balfour Village; 3 & 4 Balfour Village; 5 Balfour Village; 6 Balfour Village; 7 & 8 Balfour Village; 9 Balfour Village; 12- 22 (consecutive) Balfour Village.

SOUTH RONALDSAY AND BURRAY

'A' Listed - Pentland Skerries Lighthouses

'B' Listed - South Kirk (St. Mary's) & Kirkyard Gateway; Sandwick House (New House); Kirkhouse Meal Mill, Widewall; North Kirk (St. Peter's); Swanson House, Front Road St. Margaret's Hope; 'Lairdene', Front Road, St. Margaret's Hope; St. Margaret's Hoose (Creel), Front Road, St. Margaret's Hope; Garden Gate, Smiddy Bank, St. Margaret's Hope; Old Burray Kirk (St. Lawrence's); Bow Farmhouse (The Bu of Burray); Tomison's Academy; Burwick Farm, including ancillary buildings; South Ronaldsay Smithy, South Parish; Store House, Westshore.

'C(S)' Listed - Cara Mill; Corner House (The Anchorage), Front Road, St. Margaret's Hope.

ST ANDREWS AND DEERNESS

'B' Listed - Copinsay Lighthouse, including foghorn & keeper's houses; Covenanter's Memorial; Derbyshire; Hall of Tankerness, including boundary walls & gatepiers; Hall of Tankerness Steading, including farmhouse, barn & smithy; Mirkaday Fishing Station, Mirkaday Point; North House; Old St Andrews Manse, including boundary wall, ancillary building & cottage; Sebay Meal Mill; St Andrews Burial Ground, including Baikie Burial Vault, Hall of Tankerness; St Ninians Church (Church of Scotland) Skail including walled churchyard & railings; Tankerness Fishing Station, including curing house, salt warehouse, bothy & pier; Tankerness Meal Mill, including boundary wall & lade; Scarpigar Farm Buildings, Yinstay

'C(S)' Listed – Braebuster, including farmhouse, boundary walls, gatepiers, steading, kiln & cottages; Canniemyre; Cellardyke, including dwelling house & barn; Braebuster including farmhouse, boundary walls, gatepiers, steading, kiln & cottages; Former School, including boundary walls & lavatory block; Midhouse, including barn; Mirkaday Steading, including farmhouse & horse mill; Quoypettie, including ancillary structures; Sebay Farmhouse, including boundary wall & steading; St Andrews Kirk (North Church, Church of Scotland); Linkness, The Ness, including threshing barn & wind powered water pump; Berstane Doocot.

STROMNESS

'A' Listed - Sule Skerry Lighthouse

'B' Listed - 53 and 55 Alfred Street, including garden wall & gates; 69 Alfred Street, 2 Alfred Street (The Haven); 38, 40 & 46 Alfred Street, including slipway, quays & boat derricks; 50- 56 (even nos) Alfred Street including The Stromness Museum; Citadel Farmhouse, including outbuildings; 23 & 25 Dundas Street; 27 Dundas Street, including walled garden & outbuilding; 78 Dundas Street, including outbuilding & former quay; 90 Dundas Street; Garson Farm, including farm outbuildings & horse mill; Garson House; 1- 5 (odd nos) Graham Place; 41 Graham Place; 5 Hellihole Road (Melvin House) including boundary wall incorporating outbuilding; 13 John Street (The Miller's House); 36- 42 John Street (even nos), (The Lieutenants House, Speedings including walled garden); 1 Manse Lane, 3 Manse Lane, including outbuilding & walled garden; 1, 3 & 5 Melvin Place; 2 Melvin Place, including boundary walls, gatepiers & railings; 4 Melvin Place; 6 Melvin Place; 2 - 12 Ness Road (The Double Houses) including quay & walled garden; Stenigar, Ness Road, including boundary walls & outbuildings; 3 South End; 5 South End; Stromness Parish Church, Victoria Street, (Church of Scotland) including church hall, gatepiers; Stromness Hotel, Victoria Street, including walled garden; 69-73 Victoria Street (formerly The Commercial Hotel) including outbuilding; 97 Victoria Street (The Bank of Scotland); 8 Victoria Street (Orkney Tourist Office); 28 Victoria Street (The Pier Art's Centre) including quay; 102 Victoria Street, including boundary walls, gatepiers & railings; 112 Victoria Street, including gig house & quay; 116 Victoria Street; 118 Victoria Street; 134 Victoria Street, including quay & slipway; White House, Whitehouse Lane, including outbuildings to rear

'C(S)' Listed - Alexander Graham Fountain, Victoria Street; 5 & 7 Alfred Street; 8 Alfred Street, including gatepier; 9 Alfred Street; 10 Alfred Street; 14 Alfred Street; 15 & 17 Alfred Street, including boundary walls, gatepiers & railings; 16 Alfred Street; 20 Alfred Street; 22 & 24 Alfred Street, including outbuilding; 30-32 Alfred Street (Former Shellfish Processing Depot) including slipway; 42 Alfred Street; 44 Alfred Street; 49 & 51 Alfred Street; 57 & 59 Alfred Street; 61 Alfred Street; 65 Alfred Street; The Bothy, Sutherland's Pier, including common quay, Victoria Street; 3, 4 & 5 Alfred Terrace; Breckness House; 5 Church Road; 17 Church Road; 19 Church Road; 1 & 5 Dundas Street; 2 & 4 Dundas Street, including outbuilding, slipway & quay; 13 & 15 Dundas Street; 17, 19 & 19a Dundas Street; 34 Dundas Street, including quay & slipway; 36 & 38 Dundas Street; 40 Dundas Street, including walled garden; 46 & 48 Dundas Street, including boundary wall & slipway; 84 & 86 Dundas Street; Fishing Store, Ness Road; 1 Franklin Road, including boundary wall with entrance, & outbuilding; 3 Franklin Road, including boundary walls, gateway & garden railings; 8 Franklin Road & 4 Manse Road, including boundary wall & outbuilding; 12 Franklin Road; 14- 20 (even nos) Franklin Road; Garth Farm, North Breck, including ancillary structure & remnants of walled garden; 7 Graham Place; 8 & 10 Graham Place (Lyness House) including boundary walls; 12 & 14 Graham Place; 15 Graham Place (Alquist) including walled garden & outbuilding; 20 & 22 Graham Place, including boundary wall & outbuilding; 25 Graham Place; 33 & 35 Graham Place (The Hamnavoe Restaurant); 39 Graham Place; 43 Graham Place (Ardenlea); 49 Graham Place; 16 Harbour Street (The Harbour Office); 2 Hellihole Road (Stromness Public Library); 4 Hellihole Road, including outbuildings; 5 Hillside Road, including boundary walls & railings; 17 & 18 Hillside Road (Sunnybank, including outbuilding & boundary wall); 24 & 26 John Street, 30 John Street; 45 & 47 John Street; 55 John Street; 59, 61 & 63 John Street; 87 John Street, including outbuilding & walled garden; 3 Kyhber Pass; 4 Kyhber Pass; 5 Kyhber Pass; 6 Kyhber Pass, including outbuilding &

shared walled garden; Lingmira Farm, Outertown Road, mill); Little Arion, including gatepiers, boundary walls & ancillary structures; 5 Manse Lane (The Manse) including boundary walls, gateway & outbuilding; Millhouse, Kirkwall Road, including ancillary structures & boundary walls; 1 Ness Road, including boundary walls & gatepiers; 15 Ness Road (Former Sule Skerry Lighthouse) including boundary walls & gatepiers; 8 North End Road; 22 North End Road, including railings, gatepiers, outbuildings & walled garden; 34 North End Road; Old North Manse (Vagaland) including boundary walls, gatepiers & gates, Back Road; Ogalby, Outertown Road, including gatepiers & boundary walls; Quildon Cottage, Back Road, including former kiln; 2 South End, including quay; 7 South End; 10 & 12 South End, including slipway & quay; 19- 25 (odd nos) South End; Stackaldbrae; Town Hall, Church Road (Former North Kirk) including outbuilding, boundary walls & railings; Victoria House, Back Road, including boundary walls & railings; 1 & 3 Victoria Street (The Royal Bank of Scotland) including boundary walls; 5 Victoria Street (Former Masonic Lodge) including railings; 11 Victoria Street (The Town House) including boundary walls, gatepiers & railings; 18 & 20 Victoria Street (The Eventide Club & Registrar's Office respectively); 30 Victoria Street (Entrance to the Pier Art's Centre); 49 and 51 Victoria Street, including walled garden; 51 Victoria Street; 68 & 70 Victoria Street, including quay; 78- 86 Victoria Street (even nos) including quay & slipway; 79- 91 (odd nos) Victoria Street; 103, 105 & 107 Victoria Street; 108 Victoria Street; 108a Victoria Street, including quay & slipway; 109 Victoria Street; 110 Victoria Street; 111 Victoria Street; 113 Victoria Street; 122 Victoria Street (Seahaven); 124 Victoria Street; 126 Victoria Street & 132 Victoria Street, including quay and slipway

STRONSAY

'B' Listed - Stronsay Meal Mill, Lower Millfield; Lower Millfield Farm, including outbuildings & boundary walls; Papa Stronsay House; Auskerry Lighthouse.

WALLS & FLOTTA

'A' Listed – Chapel, Melsetter House, Walls, Hoy; Melsetter House, including garden walls & former kennels, Walls, Hoy; Kitchen garden, including tea house and Doocot, rookery walls, and gatepier, Melsetter House, Walls, Hoy; Rysa Lodge, including garden wall to S&E & outbuildings to SE, Hoy

'B' Listed – Cantick Head Lighthouse including Keepers Cottages, sheds, perimeter wall and sundial, South Walls, Hoy; Old Custom House including Westburn, including boundary wall, Longhope, South Walls, Hoy; Snelsetter, South Walls, Hoy; Ness House, South Ness, South Walls, Hoy; Lifeboat Station, Longhope, Walls, Hoy; The Estate Office, including boundary wall and adjacent outhouse, and stone flagged yard and gatepiers to west, Melsetter, Walls, Hoy; gardeners cottage including stone setts and garden wall to north, Melsetter, Walls, Hoy; The Hall, including gatepiers to west, Melsetter, Walls, Hoy; The Laundry House, including walled yard to north and walls and gatepiers to SE, Melsetter, Walls, Hoy; Spinning Cottage, Melsetter, Walls, Hoy; Walled garden, formerly rose garden, NW of Melsetter House including cartshed to west, Melsetter, Walls, Hoy; Muckle Rysa including gate wall, Walls, Hoy; Munitions Depot, SW of Ore Farm, Walls, Hoy; Bridge SE of Pegal Hill, Walls, Hoy; Wee Fea Naval Communications and Operational Centre, Walls, Hoy; Moodie Mausoleum and Graveyard, Osmondwall, South Walls, Hoy.

'C' Listed – Bow Old Farmhouse, byre & barn, Flotta; Flotta Church including War Memorial, Flotta; Whome Kiln & Barn, Flotta; Pigsty, Crowtaing, South Walls, Hoy; Milestone N of Gallow Taug, South Walls, Hoy; Letterbox, Kirbuster, South Walls, Hoy; Glebelands including walled garden and boundary wall, South Walls, Hoy; Hillside, South Walls, Hoy; Milestone S of Kirbuster House, South Walls, Hoy; Church of Columba, Longhope, South Walls, Hoy; Milestone NE of Morven, Longhope, South Walls, Hoy; Royal Hotel including boundary wall, Longhope, South Walls, Hoy; Milestone, Lythes, South Walls, Hoy; Quoy, South Walls, Hoy; Snelsetter gatepiers, South Walls, Hoy; War Memorial, South Ness, South Walls, Hoy; The Garrison, Walls, Hoy; Naval Cemetery including pavilions, War Memorial and boundary walls, Lyness, Walls, Hoy; Lyness Pier, Walls, Hoy; Decontamination shed, Lyness, Walls, Hoy; Milestone W of Haybrake, Lyness, Walls, Hoy; Romney

Hut, Lyness, Walls, Hoy; Milestone W of Lywara Bay, Walls, Hoy; Melsetter Farmhouse including boundry walls, Walls, Hoy; steading, Melsetter Farm, Walls, Hoy; Lodge Gates, gatepiers and field boundary walls and gatepiers, Melsetter House, Walls, Hoy; Burial Enclosure, Melsetter Hill, Walls, Hoy; Millhouse, Walls, Hoy; Milestone N of Millhouse, Walls, Hoy; 1 North Ness, Walls, Hoy; Milestone, North Ness, Walls, Hoy; Milestone to E of Pegal Hill, Walls, Hoy; St John's Church including boundary walls, Walls, Hoy.

WESTRAY

'A' Listed - Noltland Castle

'B' Listed - Cleat Farmhouse & Farm; Cleat Doocot; Cross Kirk (Holy Cross Chapel), Westside; Old Cross Manse, Langskail; Brough House, Braehead; Trenabie Mills, Peirowall; Noup Head Lighthouse; Lady Kirk (St. Mary's), Pierowall.

'C(S)' Listed - Brough Home Farm

2. Scheduled Ancient Monuments

BIRSAY

SCHEDULED MONUMENTS		
1244	Black Knowe : mound	HY 286245
90034	Brough of Birsay : St Peters Church & settlement'	HY 239285
1259	Durka Dale : burnt mound	HY 299250
90033	Earls Palace', Birsay	HY 248277
1262	Esgar : two burnt mounds	HY 295211
1268	Gairsty : cairn	HY 234227
1270	Green Knowe : burnt mound	HY 285247
1397	Hillhead : three mounds	HY 257277
1319	Hundland : cairn	HY 299267
1318	Hundland : cairn	HY 299268
1284	Hundland : mound	HY 297263
1285	Kirbuster Hill : mounds	HY 284264
1289	Knowe of Brenda : burnt mound	HY 266238
1292	Knowe of Crustan : mound	HY 274289
1294	Knowe of Dale : burnt mound	HY 249243
1295	Knowe of Eversti : burnt mound	HY 230229
1296	Knowe of Flaws : burnt mound	HY 231243
1297	Knowe of Garraquoy : burnt mound	HY 237237
1302	Knowe of Makerhouse : burnt mound	HY 293211
1304	Knowe of Nesthouse, settlement	HY 279256
1305	Knowe of Netherskaill : burnt mound	HY 234242
1458	Knowe of Skogar : broch	HY 264234
1308	Knowe of Skorn : mound	HY 249238
1309	Knowe of Smirrus : mound	HY 291215
1312	Knowes of Cuean : mounds	HY 303228
1314	Knowes of Lingro : mounds	HY 284290
1372	Loch of Sabiston : island structure	HY 293219
2934	Marwick : chapel & burial ground	HY 230241
2884	Marwick : Viking houses	HY 228239
1350	Mittens : two mounds	HY 296282
1354	Mount Misery : mound, Boardhouse Farm	HY 245273
1444	Oxtro or Oxtro, broch, Boardhouse	HY 253267
1362	Park Holm : artificial island and causeway	HY 312269
1290	Point of Buckquoy : five mounds	HY 244282
1405	Queena : two mounds	HY 277278
1357	Queena Fjold : mounds	HY 267251
1402	Quoyhorrie : two mounds	HY 284270
1368	Raviehall : three mounds	HY 259249
1403	Runa : mound	HY 265244
1373	Saevar Howe : mound	HY 246270
1389	Stanerandy : mound & two standing stones	HY 267276
1394	Stoney Holm : crannog	HY 311273
1400	Summmerfield : three mounds	HY 276228
1414	Wheebin : standing stone	HY 252262

EDAY

SCHEDULED MONUMENTS		
1241	Bay of London : mound	HY 557348
1356	Burn of Mussetter : standing stone	HY 555329
1249	Calf of Eday : chambered cairns	HY 579385
1250	Carrick : chambered cairn	HY 562377
1251	Carrick Farm : chambered cairn	HY 563375
1432	Carrick House : chambered cairn	HY 563388
1252	Chapel Hill : chambered cairn by ruined kirk	HY 560324
1257	Dale : burnt mound	HY 529331
1258	Doomy : chambered cairn	HY 556345
1261	Eday Church Hall: chambered cairn	HY 560334
1441	Fold of Setter : enclosure	HY 564374
1287	Knoll of Merrigarth : burnt mound & mound	HY 552288
1321	Mill Hill Chambered cairn	HY 567353
1355	Muckle Hill or Linkataing : chambered	HY 553393
1440	Quoy : broch	HY 527380
1471	Resting Hill : chambered cairn	HY 561368
1375	Sandhill : burnt mound	HY 565329
3535	Sandhill : chambered cairn	HY 561329
1381	Southside : standing stone	HY 561292
5944	Stackel Brae, castle, Maltbarn, Eday	HY 564288
4299	"Stone of Setter : standing stone	HY 564371
1410	Vinquoy Hill : chambered cairn	HY 560381

EVIE & RENDALL

SCHEDULED MONUMENTS		
90157	Aikerness : Broch of Gurness	HY 3832682
1245	Black Knowe : mound	HY 369198
1426	Burgar : broch	HY 352276
1247	Burgar : chambered cairn	HY 348278
1485	Hall of Rendall: St Thomas Kirk	HY 424210
1420	Hall of Rendall : broch	HY 424209
1280	Howana Gruna : cairn	HY 336263
1453	Knowe of Dishero or Discrow : broch	HY 425199
1454	Knowe of Grugar or Ryo : broch	HY 356272
1343	Knowe of Lyron : mound	HY 386196
1303	Knowe of Midgarth : settlement & cairn	HY 398235
1459	Knowe Stenso : broch	HY 363267
1313	Knowes of Euro : mounds	HY 413188
2181	Langskaill, Viking Houses	HY 434220
1415	Midland : mound	HY 397235
1465	Mithouse : souterrain	HY 323290
1442	Ness of Boray : broch	HY 442210

1467	Ness of Woodwick : broch	HY 400248
1360	Northwald : mounds & burnt mound	HY 390180
1483	Peters Kirk, church, burial ground and broch	HY 337286
1369	Reeky Knowes : mounds	HY 387265
1371	Robies Knowe : burnt mound	HY 362266
1376	Sandyhall : mounds	HY 399193
1378	Seven Knowes : mounds	HY 393207
1340	Skelbust : chambered cairn	HY 449223
1486	South Ettit : church	HY 424197
1395	Sweyns Castle : burnt mound	HY 450219
1473	Thing Woll : broch	HY 401228
1408	Varme Dale : mounds	HY 406187
1474	Verron, broch 640m NW of Upper Midhouse	HY 319298
1477	Vinquin : broch	HY 327283
1412	Wass Wick : mound	HY 412219
1413	West Puldrite : two mounds	HY 414186

FIRTH AND SUNNYBRAE

SCHEDULED MONUMENTS		
1253	Burness : broch & chapel	HY 388156
90092	Cuween Hill : chambered cairn	HY 364128
2949	Damsay : St Marys Chapel	HY 389142
1281	Howe Harper : cairn	HY 345143
1450	Ingashowe : broch	HY 390127
1365	Quanterness, chambered carin and prehistoric house	HY 417129
90245	Rennibister : souterrain	HY 397127
1404	Setter : two mounds	HY 345154
1396	Syra Dale : two cairns	HY 346157
1448	The Hillock : broch	HY 361141
90315	Wideford Hill : chambered cairn	HY 409121

GRAMESAY, HOY & FLOTTA

SCHEDULED MONUMENTS		
3253	Buchanan Battery	ND 374933
2726	Crockness : Martello Tower	ND 324934
90122	Dwarfie Stane	HY 244005
1422	Green Hill of Hesti Geo : broch	ND 336890
90211	Hackness : Martello Tower	ND 338912
2656	Hackness : The Battery	ND 336914
5567	Lyness, Hoy : diesel pumping station	ND 301943
5438	Lyness, Hoy : steam pumping station and oil tank	ND 309947
3302	Stanger Head Battery	ND 374924
1437	Upper Cairn : souterrain	HY 220054

HARRAY & STENNESS

SCHEDULED MONUMENTS		
1237	Ballart House, burnt mound	HY 303164

90341	Barnhouse Stone, standing stone	HY 312121
1341	Boardhouse, mound 225m SSE of Bimbister	HY 328159
1339	Breckquoy, mound 230m SE of, Netherbrough	HY 314167
1489	Bridge of Scuan, 375m NNE of Scuan	HY 320188
1428	Burrian Broch, broch, Corrigall	HY 323193
90076	Click Mill, 500m ESE of Eastabist, Dounby	HY 325228
1256	Cummi Howe, broch	HY 282103
5871	Diamond Cottage	HY 283117
1248	Hall of Ireland, cairns	HY 290098
1272	Handest, settlement, Dounby	HY 302207
1398	Hollands, mound S of, Mirbister	HY 315199
1392	Hollands: two mounds SSE of, Mirbister	HY 316198
1282	Howen Brough, broch, Corston	HY 318191
1431	Knowe of Burrian : broch	HY 308168
1455	Knowe of Gullow : broch	HY 307163
90232	Knowe of Onstan, or Unstan : chambered cairn	HY 283117
1311	Knowe of Yesko : mound	HY 312208
1315	Knowes of Trinnawin : mounds	HY 334189
1316	Knowes of Trotty : mounds	HY 342172
7647	Lochview, standing stones and cairn	HY 303128
90209	Maes Howe : chambered cairn	HY 318128
1322	Melrose : mound	HY 321171
1464	Midhouse : broch	HY 308199
1326	Mound Dilly : cairn	HY 304202
1337	Ness : mound	HY 305148
1468	Nettleter : broch	HY 323174
1358	Newhouse : cairn	HY 304211
1335	Quoyer : mound	HY 314139
90042	Ring of Brodgar : stone circle	HY 294133
1390	Staney Hill : standing stone	HY 319156
90285	Stenness : stone circle and henge	HY 306126
8177	Watch Stone, stone settings, Barnhouse Settlement and related remains	HY 300120
7855	Wasbister, Stenness- Sandwick parish boundary, earthwork	HY 291137
1417	Yeldavale : mound	HY 311166

HOLM & WIDEFORD

SCHEDULED MONUMENTS		
1434	Castle Howe : broch	HY 513003
6153	Cornquoy, barrow 200m SSE of Holm	ND 523996
1277	Hillock of Garth : cairn	HY 470067
1276	Hillocks of Garth : mounds	HY 467078
6246	Lamb Holm, settlement 450m WSW of Italian Chapel	HY 484005
1462	Loch of Ayre : broch	HY 470013
1359	North Cairn : chambered cairn	ND 526992

KIRKWALL

SCHEDULED MONUMENTS		
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90193	Bishops Palace'	HY 447108
90194	Earls Palace'	HY 448108
90154	Grain Earth House : souterrain	HY 442117
4346	Pickaquoy : burnt mound & settlement	HY 441112

NORTH RONALDSAY

SCHEDULED MONUMENTS		
1419	Brae of Stennabreck : house	HY 770526
8631	Bride's Loch burnt mound:340m WNW of Bride's Kirk	HY 768523
1427	Burrian : broch	HY 762514
6596	Dennis Head,Old Lighthouse	HY 789553
1384	Holland: standing stone	HY 752529
1449	Howmae Brae : settlement	HY 758522
8632	Knowe O' Samilands, burnt mound	HY 765530
8645	Muckle Gairsty, linear earthworks between Viggay Banks and Gairsna Geo	HY 758529
1334	Neven : mound	HY 772550
8651	Strom Ness, settlement 400m S of Howar	HY 760514
8647	Southness, farm mound	HY 767526
8650	Versa Breck, buildings 130m W of Lighthouse	HY 783559

ORPHIR & SCAPA

SCHEDULED MONUMENTS		
1461	Broch of Lingro : broch	HY 434087
4725	Bu of Orphir : burnt mound and mill dam	HY 333046
90236	Earls Bu : Norse settlement and mill	HY 334043
1338	Groundwater : mound	HY 369087
1351	Groundwater : mounds	HY 375087
1445	Hillock of Breakna : broch	HY 353055
3245	Houton Chapel	HY 312035
6405	Lavacroon, settlement W of Bu of Orphir	HY 332044
1463	Loch of Kirbister : enclosures	HY 371081
90235	St Nicholas Church	HY 334043

PAPA WESTRAY

SCHEDULED MONUMENTS		
1433	Castle of Bothikan : broch	HY 492497
2198	Holm of Papa : chambered cairn	HY 505523
90163	Holm of Papa : long cairn	HY 509518
90195	Knap of Howar : houses	HY 483519
4065	Knowes of Maebeck : burnt mound	HY 494522
1466	Munger House : house	HY 486527
3759	Ramni Geo Chambered Cairn	HY 507518
1484	St Boniface Church	HY 488527
1478	St Boniface Graveyard : tombstone	HY 488527
2124	St Tredwalls Chapel & Brough	HY 496508

ROUSAY, EGILSAY & WYRE

SCHEDULED MONUMENTS		
90035	Blackhammer Cairn : chambered cairn	HY 414276
2292	Braes of Rinyo : settlement	HY 440323
1425	Brough : broch, Westside	HY 372303
1254	Cobbie Rows Burden : chambered cairn	HY 438280
90079	Cobbie Rows Castle	HY 442264
1255	Cogar : burnt mound	HY 395327
1263	Eynhallow : standing stone & mound	HY 359287
90144	Eynhallow Church and settlement	HY 359289
1269	Geord of Nears : cairn	HY 423273
1451	Knowe of Burrian : broch	HY 400275
1291	Knowe of Craie : chambered	HY 419315
1293	Knowe of Dale : burnt mound	HY 374320
1298	Knowe of Gorn : burnt mound	HY 387334
1456	Knowe of Hunclett : broch	HY 414273
1300	Knowe of Lairò : long cairn	HY 398279
1301	Knowe of Lingro : chambered cairn	HY 396324
1306	Knowe of Ramsay : chambered cairn	HY 401288
1307	Knowe of Rowiegar : chambered cairn	HY 373298
1310	Knowe of Swandro : mound	HY 375297
90198	Knowe of Yarso : chambered cairn	HY 404279
1286	Loch of Knitchin : cairn	HY 429288
1377	Loch of Scockness : broch	HY 449331
1267	Long Stone : standing stone	HY 404275
1363	Lower Quandale : burnt mound	HY 368319
90218	Midhowe Broch	HY 371308
90219	Midhowe Cairn : chambered cairn	HY 372306
1469	North Howe : broch	HY 370307
3549	Onziebust : chambered cairn	HY 474278
1367	Quoynalonga Ness : burnt mound	HY 364319
3864	Skirmie Clett : enclosures	HY 455262
90137	St Magnus Church, Egilsay	HY 466304
90317	St Marys Chapel, Wyre	HY 443264
90297	Taversoe Tuick : chambered cairn	HY 426276
5773	The Wirk, tower and hall, Westness, Rousay	HY 373301
1401	Too of Nugle : cairn	HY 382335
1364	Upper Quandale : cairn	HY 373315
1476	Viera Lodge : broch	HY 391281
3534	Westness : Viking houses, noost & graveyard	HY 375296
3626	Westness Church	HY 374302
1416	Yateness Stone : standing stone	HY 447327

SANDAY

SCHEDULED MONUMENTS		
1236	Augmond Howe, Cairn, Els Ness	HY 676375
1480	Backaskail Bay: Cross Parish Church	HY 653392
1331	Mount Misery : chambered	HY 784435

90243	Quoyness : chambered cairn	HY 677378
6162	Scar, Viking Burials and settlementNE of, Sanday	HY 676457
1353	Sivers Geo : mounds	HY 670376
5080	Tofts Ness : cairns, enclosures and field systems	HY 755466
1330	Tres Ness : chambered cairn	HY 711375
1424	Wasso : broch	HY 709379
3399	Whistlebare : platform settlement	HY 663450

SANDWICK

SCHEDULED MONUMENTS		
1418	Borwick, Brough of : broch	HY 224167
1487	Breckness House	HY 224093
1246	Brockan : burnt mound	HY 230095
1385	Brockan : standing stones	HY 230092
6214	Brough of Bigging, promontory fort, Yesnaby	HY 219157
1243	Buckan : chambered cairn	HY 286141
1429	Burrian : broch	HY 296183
1430	Burrian : broch	HY 288153
1347	Cumbla Newgarth : mounds	HY 261190
5286	East Bigging : burnt mounds	HY 226149
1346	East Bigging : burnt mounds	HY 226150
1333	East House : burnt mound	HY 289206
1332	East House : mound	HY 291208
1264	Fan Knowe : burnt mound	HY 299197
1279	Howaback : mound	HY 293195
1288	Knowe of Angerow : mound	HY 235172
1299	Knowes of Howana : mound	HY 264216
1317	Knowes of Yonbell : two mounds	HY 245225
1348	Linga Fold : mounds	HY 264153
1423	Loch of Clumly : broch	HY 251164
1460	Loch of Harray : broch	HY 276176
1349	Mid House : five mounds	HY 277161
1336	Mid House : mound	HY 292208
1488	Nether Benzieclett : house	HY 280205
1406	Newbigging : two mounds	HY 252220
1370	Ring of Bookan : chambered cairn	HY 283145
1352	Rosemount & Easthouse : five mounds	HY 273165
1379	Skae Frue : mound	HY 282144
4591	Skara Brae : settlement	HY 229188
90276	Skara Brae : settlement	HY 231188
1380	South Seatter : mound	HY 233163
2399	South Unigarth : souterrain	HY 246173
1472	Stackrue : broch	HY 270151
1342	Stockan : mound	HY 264179
1393	Stones of Via: chambered cairn, Loch of Clumly	HY 260160
1475	Verron : broch	HY 230197
1470	Vestra Fiold : enclosure & quarry	HY 239217
1409	Vestra Fiold : four mounds	HY 241221

1266	Vetquoy : five mounds	HY 268186
1344	Voy : burnt mound	HY 253149
7700	Wasbister Disk Barrow and Round House	HY 288137
7855	Wasbister, Stenness- Sandwick parish boundary, earthwork	HY 291137
7857	Wasbister, mounds SSE of The Brecks	HY 285142

SHAPINSAY

SCHEDULED MONUMENTS		
1325	Castle Bloody : chambered cairn	HY 536164
1275	Helliar Holm : chambered cairn	HY 484154
1421	Hillock of Burroughston : broch	HY 541210
1328	Hillock of Howe : broch	HY 512162
1482	Linton Chapel	HY 530186
1323	Mor Stein or Standing Stone	HY 524168
1447	The Hillock : broch	HY 536223
1407	Unyatauk : mound	HY 524198

SOUTH RONALDSAY & BURRAY

SCHEDULED MONUMENTS		
1383	Cloddyhall : standing stone	ND 434895
1438	East Broch of Burray	ND 489988
3268	Hoxa Battery & Balfour Battery, Hoxa Head	ND 403928
2136	Isbister : chambered cairn	ND 470846
1386	Sorquoy : standing stone	ND 469914

ST. ANDREWS & DEERNESS

SCHEDULED MONUMENTS		
2438	Bay of Meil : chapel	HY 479117
4654	Brough of Deerness : chapel & settlement	HY 596087
3249	Car Ness Battery	HY 466145
1435	Dingys Howe : broch	HY 547033
1439	Eves Howe : broch	HY 548061
1273	Hawell : burnt mound	HY 512065
1274	Head of Work : long cairn	HY 483138
1283	The Howie : mound	HY 588054

STRONSAY

SCHEDULED MONUMENTS		
1479	Auskerry : chapel & Monkshouses	HY 677159
1382	Auskerry : two standing stones	HY 670162
3681	Auskerry Island : homestead	HY 678164
3689	Auskerry Island : kelp kiln	HY 675159
3691	Auskerry Island : long cist capstone	HY 679162
3756	Auskerry Island : longhouse	HY 670167
3836	Auskerry Island : mound	HY 670167
3852	Auskerry Island : mound & rectilinear foundations	HY 671168

3857	Auskerry Island : recumbent stones	HY 674166
3859	Auskerry Island : square structure	HY 672188
3889	Auskerry Island : three stones	HY 677162
3862	Auskerry Island : two graves	HY 677164
3873	Auskerry Island : two rectangular buildings	HY 676160
1242	Benni Cuml : mound	HY 671214
1436	Doocot Knowe, broch, Papa Stronsay	HY 665299
1260	Earls Knoll : long cairn	HY 668292
1443	Green Hill : broch	HY 632300
1391	Grice Ness : cairn	HY 672284
1446	Hillock of Baywest : broch	HY 619242
1278	Holm of Huip : cairn	HY 628311
5631	Lamb Head : broch	HY 690214
1399	Linga Holm : mound	HY 617275
1374	Linga Holm : two cairns	HY 614273
5992	Lochend, chambered cairn 450m NW, of Stronsay	HY 617288
1361	Orams Fancy : two cairns	HY 645271
1411	Ward of Housebay : chambered cairn	HY 670211

WESTRAY

SCHEDULED MONUMENTS		
1329	Howa Tower : chambered cairn	HY 435446
1452	Knowe of Burrestae : broch	HY 431429
1457	Knowe of Queen oHowe : broch	HY 425495
90337	Links of Noltland : settlements	HY 428492
90231	Noltland Castle	HY 429488
90240	Pierowall Church	HY 439488
1366	Quoybirse : standing stone	HY 443472
1388	Trenabie Farm : standing stone	HY 443510
8208	Tuquoy, settlement W of Cross- Kirk, Westray	HY 454431
90312	Westside : Tuquoy Church	HY 455432

STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE ORKNEY ISLANDS LOCAL TRANSPORT STRATEGY

APPENDIX C Assessment of Strategy Interventions

KEY TO SYMBOLS

☺ = positive environmental effects, # = negative environmental effects, ☐ = no environmental effects ? = don't know

LT = LONG TERM

MT = MEDIUM TERM

ST = SHORT TERM

COMPONENT OF PPS	ASSESSMENT CRITERIA									Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
1. Active travel	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	
AT1: improve, extend and maintain the walking and cycling network	☺ LT	☺ LT	# ST ☺ LT	# ST ☺ LT	☺ LT	?	☺ LT	☺ LT	# ST ☺ LT	Overall positive impact due to the encouragement and enabling of a modal shift away from use of the private car. Benefits to health through active travel. Potential for localised habitat or species loss, soil disturbance and increased suspended solids in water due to construction and maintenance work on network. Impact on historic environment is uncertain, as there is potential for negative impact to archaeological remains. Improved transport network material assets. May lead to reduced traffic congestion, particularly in Kirkwall and Stromness.
AT2: ensure that all new developments are planned and developed to be optimally accessible by walk and cycle	☺ LT	☺ LT	# ST ☺ LT	# ST ☺ LT	☺ LT	☐	☺ LT	☺ LT	# ST ☺ LT	Overall positive impact due to the encouragement and enabling of a modal shift away from use of the private car. Benefits to health through active travel. Potential for localised habitat or species loss, soil disturbance and increased suspended solids in water if separate cycle ways are constructed. Positive impact on transport network material assets. May lead to reduced traffic congestion, particularly in and around Kirkwall and Stromness.
AT3: encourage active travel from an early age through the provision of safe access to schools and other facilities, including educational resources and facilities for the storage of bicycles	☺ LT	☺ LT	# ST ☺ LT	# ST ☺ LT	☐	☐	☺ LT	☺ LT	# ST ☺ LT	Overall positive impact due to the encouragement and enabling of a modal shift away from use of the private car. Benefits to health through active travel. Potential for localised habitat or species loss, soil disturbance and increased suspended solids in water. Positive impact on transport network material assets. May lead to reduced traffic congestion around schools.
AT4: provide accessible information on the facilities that are available and encouragement and promotion of taking advantage of the facilities	☺ LT	☺ LT	☺ LT	☺ LT	☐	☐	☺ LT	☺ LT	☐	Potential positive impact on climatic factors, air quality, biodiversity, water and soils, human health and population due to the encouragement of a mode shift away from use of private car to active travel. Benefits to health through active travel.
AT5: support outdoor access for all through the Core Paths Network	☺ LT	☺ LT	# ST ☺ LT	# ST ☺ LT	☐	?	☺ LT	☺ LT	# ST ☺ LT	Overall positive impact due to the encouragement and enabling of a modal shift away from use of the private car. Benefits to health through active travel. Potential for habitat or species loss, soil disturbance and increased suspended solids in water due to path construction and maintenance. Impact on historic environment is uncertain, with potential for negative impact to archaeological remains. Improved transport network material assets.

COMPONENT OF PPS	ASSESSMENT CRITERIA									
2. Air services	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
A1: Encourage network development of direct links to key national gateways	# LT	# LT	□	# LT	□	□	ü LT	ü LT	# LT	Any increase in flight frequency would result in increased air emissions and, possibly, the need for increased runway maintenance. The extension of airport operating hours may necessitate the use of greater quantities of runway de-icer during the winter months, resulting in negative impact on water and soils. A positive impact on health and other social impacts will result from increased accessibility and connectivity to key national gateways.
A2: Ensure the air services meet the social and economic needs of the isles in association with the service level provided by the inter-isles ferry services	# LT	# LT	□	# LT	□	?	ü LT	ü LT	# LT	More frequent flights would result in increased air emissions and, possibly, the need for increased runway maintenance. The extension of airport operating hours may necessitate the use of greater quantities of runway de-icer during the winter months, resulting in negative impact on water and soils. There will be improved access to services and facilities on mainland Orkney, e.g. to attend hospital or dental appointments or to participate in cultural activities. Improved connectivity will benefit patients returning from hospital on mainland UK. Secondary effects such as increased levels of tourism may result from improved opportunities for people to visit the isles and to appreciate the natural and historic environment. However impact on the historic environment is uncertain as improved opportunities to visit sites may cause additional pressure on resources and may lead to adverse effects.
A3: improve information and booking and ticketing systems for air services	□	□	□	□	□	?	□	ü LT	□	Travel to and from the islands will be more convenient. Secondary effects such as increased levels of tourism in the isles may result from improved opportunities for people to visit the isles and appreciate the natural and historic environment. However impact on the historic environment is uncertain as improved opportunities to visit sites may cause additional pressure on resources and may lead to adverse effects.

COMPONENT OF PPS	ASSESSMENT CRITERIA									
3. Bus services & Community and Voluntary Transport	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
BC1: review the Council's existing allocation of public transport subsidy	Ü LT	Ü LT	Ü LT	Ü LT	□	?	Ü LT	Ü LT	□	General improvement to the public transport network aims to bring about reduction in emissions (through reduction in car trips due to encouragement and enabling of mode shift away from use of private car), reduced levels of road kill, cleaner water run-off from roads, improved geographical access and reduced social exclusion as well as improved access for those who do not have a car available. Will lead to reduced congestion in towns of Kirkwall and Stromness. May result in improved opportunities for people to appreciate the natural and historic environment. However impact on the historic environment is uncertain as improved opportunities to visit sites may cause additional pressure on resources and may lead to adverse effects.
BC2: ensure the viability of concessionary travel opportunities for those who are entitled	□	□	□	□	□	□	Ü LT	Ü LT	□	Positive impact on health and population through administration, and therefore take-up, of the National and local concessionary travel schemes. However, national concession does not extend to ferry and air services, and does not address issues where there is no or insufficient bus connectivity.
BC3: encourage and support applications to the Rural Community Transport Initiative	□	□	□	□	□	□	Ü LT	Ü LT	□	Positive impact on aspects of health and population through improving provision of community transport services. Improved access to services and facilities will reduce social exclusion and help sustain communities.
BC4: Kirkwall Travel Centre	□	□	□	□	□	□	□	Ü LT	□	Positive impact on population, providing a convenient central location to access public transport and travel information.
BC5: investigate the opportunities for developing a Transport to Employment scheme and/or a car sharing scheme	Ü LT	Ü LT	Ü LT	Ü LT	□	□	Ü LT	Ü LT	□	Potential long term positive impact on climatic factors, air quality, biodiversity, water & soil, human health and population due to encouragement and enabling of mode shift away from use of private car. Positive impact on health and population through reducing social exclusion by providing transport opportunities to those in more remote areas where public transport provision is infrequent and/or unsuitable for a journey to work.

COMPONENT OF PPS	ASSESSMENT CRITERIA									
4. Ferry services, ports and harbours	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
FPH1: improve information and booking and ticketing systems for ferry services	☐	☐	Ü LT	☐	☐	☐	Ü LT	Ü LT	☐	Ease of travel to and from the islands will be improved. Secondary effects such as increased levels of tourism in the isles may result from improved opportunities to visit and appreciate the natural and historic environment.
FPH2: rationalise tariff structures	☐	☐	☐	☐	☐	☐	☐	?	☐	Impact is uncertain until changes are known. Intention is to enhance connectivity, and efficiency and effectiveness of the existing services.
FPH3: improve accessibility and connectivity to / from the mainland	# MT	☐	Ü LT # LT	# LT	☐	?	Ü LT	Ü LT	☐	Any increase in ferry service provision would result in medium term negative impact on climate factors until more energy-efficient ferries were provided. The present network is constrained though, and so no significant increase in provision is expected in the lifetime of this strategy. Slight negative impact on water and marine biodiversity including European Protected Species, e.g. cetaceans and Annex I species, Grey seal and Common seal, due to increased movement of vessels in sea and risk of pollution. Improved connectivity and access to services and facilities will benefit patients returning from hospital on mainland UK. Secondary effects such as increased levels of tourism may result from improved opportunities to visit the isles and to appreciate the natural and historic environment. Impact on the historic environment is uncertain as improved opportunities to visit sites may cause additional pressure on resources and may lead to adverse effects and if the construction of new infrastructure is required, as there is potential for negative impact on archaeological remains.
FPH4: secure the ongoing provision of lifeline service to the isles	# MT	☐	Ü LT # LT	# LT	☐	☐	Ü LT	Ü LT	☐	Any increased ferry service provision would result in medium term negative impact on climate factors until more energy-efficient ferries could be provided. Slight negative impact on water and marine biodiversity including European Protected Species and Annex I species, Grey seal and Common seal, as a result of increased movement of vessels in sea and risk of pollution. Security of lifeline ferry service provision will have long term positive effects on human health and population levels.
FPH5: work with interested parties to promote sustainable port development	☐	☐	Ü LT	Ü LT	Ü LT	☐	☐	☐	# ST Ü LT	Cleaner operational practices would result in positive impacts on the biodiversity and water quality of the marine environment. May also be positive impact on landscape from changes to design considerations. If construction work were needed, impact on material assets would be negative in short-term, positive long-term. Policy on disposal of dredge spoil would ensure protection of vulnerable marine habitats.

COMPONENT OF PPS	ASSESSMENT CRITERIA									
5. Freight transport	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
F1: liaise with neighbouring authorities and regional transport partnerships to provide a consistent approach to freight transport, to maintain and improve accessibility of Orkney to / from its markets	☐	☐	☐	☐	☐	☐	☐	ü LT	☐	No increase in freight transport provision is anticipated during the lifetime of this strategy. This intervention is directed at more efficient use of the present network. There could be an opportunity to improve efficiency of provision such that fewer journeys are made while carrying the same quantity of goods. This could have positive impact on environmental factors such as climate change and local air quality. Improved freight services may result in a positive impact on the population of Orkney.
F2: consult with representatives of the freight transport industry to ensure that their views are represented when considering changes to the transport network that may impact upon freight movements	☐	☐	☐	☐	☐	☐	☐	ü LT	☐	This intervention is directed at improving communication with representatives of the freight transport industry. Improved freight services may result in a positive impact on the population of Orkney.
F3: improve livestock shipping	☐	☐	ü LT	ü LT	☐	☐	☐	☐	ü LT	Improvements to the lairage facility in Kirkwall will have a positive impact on marine biodiversity and water quality as animal waste will be collected and disposed of appropriately. Positive impact to material assets due to improved port facilities.

COMPONENT OF PPS	ASSESSMENT CRITERIA									
6. Land use planning	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
<p>LUP1: encourage development in areas that are close to local services and amenities and / or are in areas that are served by public transport</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT # LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Overall the environmental and social impacts are positive. This will encourage and enable a modal shift away from use of the private car, and will help establish positive behaviour from the outset. Reduced car use may lead to decreased congestion in Kirkwall and Stromness and will in the least help avoid possible future problems. However, in rural areas where sewage treatment is by private septic tank, there is potential for multiple developments in close proximity to cause negative impact on watercourses and groundwater.</p>
<p>LUP2: ensure that all significant developments are accompanied by a Transport Assessment and a Travel Plan and seek opportunities to obtain developer contributions to enable improvements to the travel network</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>□</p>	<p>□</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Overall the environmental and social impact should be positive if improvements to the travel network encourage a modal shift from the private car to public transport or active travel. Will encourage greater consideration of transport and travel and may result in improvements to the material assets of the travel network. Possible improvements to the travel network might also include environmental enhancement such as screen planting to reduce noise pollution from road vehicles, habitat restoration or preservation of wildlife corridors.</p>
<p>LUP3: ensure that the access of pedestrians, cyclists and people with mobility difficulties are prioritised in the design of new developments and existing significant car-based developments</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>□</p>	<p>□</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p># ST Ü LT</p>	<p>Overall the environmental and social impacts are positive as people may choose to walk or cycle rather than drive. Design and construction of cycle ways and paths may require the use of additional material assets but this impact will be short term and will lead to long-term positive impact on material assets. Will encourage active travel and will also reduce certain aspects of social exclusion for people with mobility difficulties.</p>

COMPONENT OF PPS	ASSESSMENT CRITERIA									
7. Local roads and road maintenance	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
LR1: ensure an up to date inventory is kept of the road network	☐	☐	?	☐	☐	☐	Ü LT	☐	Ü LT	Potential positive impact on material assets and human health (through improved road safety) if inventory enables better planning of road asset maintenance budget. Potential positive impact on biodiversity if monitoring of species assemblages in selected stretches of roadside verges were to be included.
LR2: ensure that the road network is inspected	☐	☐	Ü LT	Ü LT	☐	☐	Ü LT	☐	Ü LT	Positive impact on biodiversity, water and soil, human health and material assets if more frequent inspections allow repairs to be carried out before damage becomes more serious and potentially dangerous. May reduce incidence of road accidents which harm people, wildlife and habitats.
LR3: sustain and improve connections in the locally significant network	☐	☐	# ST	# ST	# LT	#	Ü LT	Ü LT	# ST Ü LT	Short term negative impact is possible on biodiversity, water & soil through disturbance of habitats and the potential for increased suspended solids to enter watercourses, in particular in association with bridge replacement works. Long-term negative impact is possible to landscape from construction works. Excavation work also has potential to result in negative impact on archaeological remains. Negative impact on material assets due to use of aggregate for infrastructure repairs and improvements. Positive long term impact on material assets due to improved road network.

COMPONENT OF PPS	ASSESSMENT CRITERIA									
<p>8. Smarter choices and travel information</p>	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	<p>Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)</p>
<p>SM1: the Council commits to preparing and implementing a Travel Plan during the lifetime of this local transport strategy, and will support others in following suit</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>□</p>	<p>Overall positive impact as promoting sustainable travel choices. Benefits to human health through active travel. Climate factors will be reduced as more people choose either to travel to work by public transport or to walk or cycle. Air quality will improve leading to positive impact on human health and biodiversity of towns. Positive impact on cultural heritage and townscapes through traffic reduction in built up areas. Decreasing levels of congestion will lead to positive effects on population.</p>
<p>SM2: review the means by which we communicate public transport information to the public and visitors to Orkney, then subsequently develop and deliver an information improvement strategy</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Overall positive impact as timetables and connectivity will be more easily understood. This will encourage greater use of public transport leading to lower levels of traffic. Less traffic would lead to reduced emissions, lower risk of road kill, cleaner road water run-off, positive impact on landscape and the cultural heritage, e.g. in the vicinity of historical landscapes, fewer accidents and reduced wear on the roads. There is potential for positive secondary effects on tourism in the islands as visitors become more aware of the travel options.</p>
<p>SM3: promote and provide multi-modal information at key sites, including the new Kirkwall Travel Centre, Kirkwall Airport and Stromness Travel Centre.</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Ü LT</p>	<p>Overall positive impact as timetables and connectivity will be more easily understood. This will encourage greater use of public transport leading to lower levels of traffic. Less traffic would lead to reduced emissions, lower risk of road kill, cleaner road water run-off, positive impact on landscape and the cultural heritage, e.g. in the vicinity of historical landscapes, fewer accidents and reduced wear on the roads. There is potential for positive secondary effects on tourism in the islands as visitors become more aware of the travel options.</p>

COMPONENT OF PPS	ASSESSMENT CRITERIA									
9. Taxi and private hire vehicles	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
TP1: consider the development of a taxi-sharing scheme	Ü LT	Ü LT	□	□	□	□	Ü LT	Ü LT	□	Positive impact on environmental, health and other social impacts. The sharing of taxis will lead to slight decreases in emissions and will increase availability of this door-to-door transport opportunity. Positive impact on population through addressing specific issues of social exclusion.
TP2: consider progress towards an accessible taxi fleet for the County	□	□	□	□	□	□	Ü LT	Ü LT	□	Positive impact on health and other social impacts through development of a more accessible door-to-door transport service.
TP3: promote the inclusion of Disability Awareness Training as part of the licensing process	□	□	□	□	□	□	Ü LT	Ü LT	□	Positive impact on health and other social impacts through improving the provision of this door-to-door transport service for people with disabilities.

COMPONENT OF PPS	ASSESSMENT CRITERIA									
10. Travelling safely	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
TS1: review and update the Winter Maintenance Policy and Plan annually	☐	☐	Ü MT	Ü MT	☐	☐	Ü MT	Ü MT	Ü ST	Use of weather forecasts utilising thermal mapping and road sensors in Orkney will aid operational decision making regarding treatment of roads with salt in winter and should allow more efficient use and targeting of resources. Salt may cause negative impact on species and habitats of roadside verges and freshwater environment.
TS2: improve the safety of travel through a continued combination of road user education, engineering solutions and enforcement	☐	☐	# ST Ü LT	# ST Ü LT	☐	?	Ü LT	Ü MT	Ü ST	Overall positive impact as accidents cause damage to human health and the environment alike. However, potential short-term negative impact to biodiversity and water and soils through engineering solutions. SEPA's policy on culverting and advice on river realignment should be consulted if engineering solutions involve work on water courses. Principles of Best Practical Environmental Option should be used to ensure environmental enhancement of habitats damaged by road works. There is potential for engineering solutions to have adverse effects on the historic environment so impact on cultural heritage is uncertain.
TS3: review speed limits throughout Orkney by 2011 and introduce appropriate measures.	Ü LT	Ü LT	Ü LT	Ü LT	☐	☐	Ü LT	Ü LT	☐	Potential for positive impact on climate factors and local air quality if there is improved control of road traffic speed as this would result in improved fuel efficiency, particularly during extra-urban driving. The resulting improvements to road safety may also encourage greater participation in Active Travel, e.g. walking, cycling and horse riding. Potential for positive impact on biodiversity due to reduced risk of road kill. Potential for positive impact on health and also on water and soils. Excessive speed is one of the main causes of road accidents which in turn result in personal injury and mortality and may also lead to environmental pollution due to spillages of fuel and other pollutants. Improved control of speed limits may result in positive impact on population due to an increased perception of Orkney as a safe place to live.

COMPONENT OF PPS	ASSESSMENT CRITERIA									
11. Traffic and parking	Climatic factors	Local air quality	Biodiversity	Water & soils	Landscape	Cultural heritage	Human health	Population	Material assets	Comments and overall assessment including information on: secondary, cumulative or synergistic effects or effects on existing environmental problems relating to any areas of a particular environmental importance such as areas designated pursuant to the Habitats or Birds Directives (Natura 2000 sites)
TP1: manage traffic in and around Kirkwall	Ü LT	Ü LT	Ü LT	Ü LT	Ü LT	?	Ü LT	Ü ST # MT	Ü LT	Reduced traffic congestion in Kirkwall will result in improved air quality and a safer, more pleasant environment for pedestrians, cyclists and wildlife and cleaner water run-off from roads. There is potential for secondary effects on population. People without access to a car rely on shops in the town centre rather than supermarkets. Fear has been voiced by traders that “access restrictions” to their premises may impact negatively on their businesses. Improvements to the townscape and opportunity to enjoy its cultural heritage without traffic pressures may encourage growth in the tourism sector. Reduced traffic in town centre will lead to reduced wear and vibration on road surfaces. Certain traffic management measures may have adverse effects on the historic environment so impact on cultural heritage is uncertain.
TP2: manage traffic in rural areas, including at tourist attractions and viewpoints	□	□	# ST Ü LT	# ST Ü LT	Ü LT	Ü LT	Ü LT	Ü LT	# ST Ü LT	The aim is to keep traffic flowing smoothly and to reduce congestion at tourist attractions and viewpoints. If construction work were necessary, e.g. on lay-bys or road widening, this would result in short term negative impact on material assets, biodiversity, water and soils. May offer opportunities for habitat enhancement. Overall, long term environmental and social impacts will be positive, improving road safety, the road network and opportunities to appreciate the natural and historic environment.
TP3: review and develop a parking strategy for Orkney	□	□	□	□	Ü LT	?	□	?	□	Provided adequate parking provision is retained for holders of blue badges, access could be improved for all by minimising conflict between cars and pedestrians, cyclists and public transport or Dial-a-Bus users. Potential impact on town centre shops is uncertain and these are important to people without access to a car. Certain traffic management measures may have adverse effects on the historic environment so impact on cultural heritage is uncertain.

